

NEW AGE

SECOND EDITION

# MODERN COMMERCIAL BANKING



**H.R. Machiraju**



NEW AGE INTERNATIONAL PUBLISHERS

MODERN  
COMMERCIAL  
BANKING

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# MODERN COMMERCIAL BANKING

**Second Edition**

**H.R. Machiraju**

PH.D. (INDIANA, U.S.A.)

Financial Economist



PUBLISHING FOR ONE WORLD

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## **Dedication**

*To my dear children  
Raghu, Suren and Rajasri  
who have done me proud by excelling in their chosen fields*

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## *PREFACE TO THE SECOND EDITION*



Since the publication of the first edition of this book five years ago several developments covering the money market, the government securities market and the foreign exchange market have taken place to strengthen their integration and enhance their efficiency. Efficient settlement mechanisms, greater transparency and best market practices are put in place, which facilitate faster transactions and lower their costs.

Efforts have been concentrated on improving the credit delivery mechanisms. Although the Narasimhan Committee on the Financial System (1991) recommended the phasing out of the directed credit programme at 10 per cent of the bank credit not only the proportion has been retained at 40% level but its coverage has been considerably enlarged. The appropriate instrument to achieve distributive justice is fiscal policy not credit policy. Fiscal policy ensures the scrutiny of budget provision at various levels. Efficiency and economy in the spending of public money are ensured by the different agencies of financial control which include the legislature, the Estimates Committee and the Public Accounts Committee. The audit of the government expenditure prescribed by the Constitution is to be undertaken by the Comptroller and Auditor General. All these agencies of control direct their control or review towards ensuring that money is available for the purpose for which it is spent, that the manner of expenditure conforms to the manner prescribed by the legislature and full value is obtained for the money spent. Further, the expenditure is either tax financed (with no *quid pro quo*) or by borrowing (revenue expenditure included in fiscal deficit) with inflationary consequences. While the inflationary impact of expenditure financed either by credit or budget is common, there are no checks constitutional or otherwise in the end use of funds in the case of credit.

Directed credit in the name of social banking is extended out of deposits made by public in trust with banks. While the Banking Regulation Act (BRA)



does not envisage protection of depositors interest like the protection of investors interest by the Securities and Exchange Board of India it requires RBI to have due regard to the interests of depositors in enunciating banking policy from time to time. BRA however mentions the need or equitable allocation and efficient use of deposits. In discussions of credit policy and banking systems, the safety of deposits which are after all placed with the bank in trust, the phrase depositors interest does not find any mention. It is indeed perplexing that bank shares listed on the Stock Exchange do not seem to be analysed by any maximization of deposit holders' interests which are used to leverage the activities of the bank and the effect of directed credit on the erosion of deposits and profitability.

While the requirements of the priority sector lending has been retained at 40 per cent of bank credit, the categories of advances eligible for priority sector have been expanded to provide banks increased opportunities to lend to these sectors. The earlier definition of priority sector comprising agriculture, small industrial units, new entrepreneurs, road and water transport operators, retail traders, small businessmen, professionals, self-employed, weaker sections has been extended to include venture capital (for limited time), housing and micro credit. Under the concept of financial inclusion, pensioners, weaker sections and groups who were excluded earlier from credit facilities are to be brought in. The efforts of banks towards financial inclusion will be monitored and their behaviour reinforced by a system encouragement (incentives for conformity) and disincentives (penalisation for non conformity).

At the end of March 2005 priority sector advances outstanding were Rs.3,45,627 crores (37.1% of gross bank credit) and advances for housing Rs.75,173 crores (8.1%) which together constitute 45.5% of gross bank credit. The NPAs of priority sector constitute more or less the same proportion of total NPAs of the banking system. The NPAs of rural cooperative sector add up to another Rs.20,000 crores. The housing loans under the priority sector have given rise to land/real estate bubble. Prices have gone up in the last three years by more than five times.

While financial exclusion is nobody's case the credit requirements of individuals/households are mainly for social purposes. Social attitudes towards expenditures associated with birth, marriage (including dowry) and death have not changed. People also choose to live on credit by deferring payments to landlord for housing, milk vendor, provision stores, friends and whatever. As it is, personal loans amounted to Rs.87,000 crores with banking system in 2003-04. How is the banking system to meet the requirements? To realize personal loans whatever collateral has been pledged has to be liquidated. Again loans are preferred to outright sale of collateral in the Indian society in the hope of redeeming the collateral.

If such individuals are excluded earlier how is the banking system to include

them now? If there is no collateral promise of a cash flow from some form of market oriented activity has to be shown to extend credit. Financial inclusion is going to be difficult given the risk aversion of banking personnel and delinquent behaviour of unsecured borrowers.

Now micro credit is held out as the panacea for rural poverty. Given the extant feudal structure of rural society the inclusion of individuals who were earlier outside any market oriented activity in SHG/NGO is not certain. Regular effort has to be made to locate and include them. Further mere readiness to support NGO/SHGs is not enough. Our plans provide opportunities but the poor cannot avail them because there is a hiatus between the provision of an opportunity and ability to avail it. Envisaging an organisational form and readiness to extend credit does not ensure end use by the needy. Projects or activities or things-to-do with a market and generate cash flows have to be identified. That requires techno-economic skills. NGOs/SHGs is only an organizational form into which the poor have to be fitted. The members of SHGs have to be assembled from the numbers who have not been participating in any form of production for market. Merely counting the number of SHGs who have availed credit does not assure that poverty has gone down by that number. With 30% population outside the economic framework the number of SHGs and credit required would be very large indeed.

The constitution of techno-economic team at each RRB with an interface to SHG/NGO would ensure that micro credit is a poverty reduction measure which augments supply of goods and services. The membership of poor in the SHG and their involvement in projects which generate cash flows will alone help meet the depositors interests. An efficient banking system should deliver credit for generation of cash flow over time in the hands of poor. The rural cooperative sector was hijacked and ruined by the politicians and their cronies belonging to the feudal class. Micro credit should not fall prey to the machinations and manipulations to capture micro credit. It should be saved from the fate that has befallen rural cooperative credit system.

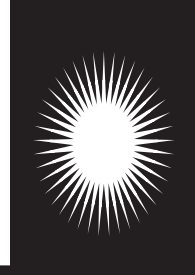
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# *PREFACE TO THE FIRST EDITION*

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The banking system in India has remained insulated from global developments for almost half a century because of barriers to entry, exchange controls, public ownership of banks (80% of the total assets of the banking system), directed credit and pre-emption of deposit accruals for financing government expenditure. On the other hand, there was a sea change in the nature and functioning of banks in U.K., USA and Euro dollar market with marketisation of banking accompanied by globalisation. There the discipline of the market in terms of credit spreads, share price and subordinated debt is brought to bear on banks contributing to their prudent behaviour.

Banks abroad which lost their monopoly of acceptance of deposits and provision of payment services to non bank financial institutions assumed new risks by undertaking securities related services, asset management and insurance to maximise their income. Since there were no restraints on lending they financed or undertook liquidity management. Starting in late 1960s they met the demand for loans by borrowing or liability management. Although the mismatch between short-term deposits and long-term loans was covered by innovations such as rollover credit and flexi rates, the risks had to be hedged by the use of derivatives. Risk management has come to occupy the centrestage of bank management. Bank management became the management of balance sheet risks of assets and liabilities and extensive resort was made to derivatives traded on both organised and over-the-counter (OTC) markets to hedge risks. All these evolutionary changes bypassed the banking system in India because the economy was a closed one.

The asset liability management guidelines in India (1999) are hardly a year old and are a response to the credit risk banks took in the accumulation of non-performing assets. There are also guidelines for forward rate agreements and interest rate swaps but their use would depend upon the extent of interest rate

risk arising out of mismatch of banks and other participants' sources of funds and maturity of loans. The resort to interbank borrowing is mainly for meeting very short-term, say, overnight, problems of liquidity and not to meet credit demand. The problem is of non-performing assets as it is has choked credit flow to medium and small sector.

Promoting healthy banks is a crucial prerequisite for financial stability. Banks as well as central bank need autonomy. Banks should be subject to the discipline of the market like firms in other industries. This trend is likely to grow as and when the public sector banks access the market or the government disinvests. The marketisation of banking and shareholder demands together would constrain the banks to maximise the return on capital. They need however autonomy to manage risks in their balance sheet. Despite the review of the financial system and its component the banking sector in 1991 and 1998, respectively, little has changed. Pre-emptions of deposit accruals continue with the need to finance fiscal deficit which has gone up from 9% in 1990-91 (the crisis year before reforms) to 11% in 2000-01. Financial stability which demands the maintenance of stability in the domestic and international value of the rupee has to be buttressed by granting autonomy of action to central bank and reining in fiscal deficit. The conflict of objectives arising out of the dual role of RBI of debt management and monetary policy functions has to be eliminated.

Commercial banks may be encouraged to offer gold denominated deposits like the State Bank of India has done. But SBI scheme has failed to attract deposits. Unlike the SBI scheme gold in the form of jewellery should be retained in the form and shape deposited and returned on demand. This would eliminate the loss on melting and cost of remaking jewellery which are acting as disincentives. This would encourage temples also to deposit gold jewellery. Interest rate on gold deposit should be based on time or lock-in period say 5% p.a. for 3 years and 8% p.a. for 5 years lock-in period. Gold deposits may be insured up to Rs.10 crores or 20 kg. Once the gold deposits are mobilised a central issue of Indian Gold Depository Receipts in the international capital market may be organised. With appropriate accounting methods securitisation of gold deposits may be undertaken. The hoards are estimated at \$100 billion and represent genuine saving. Foreign exchange flows in the form of NRI deposits and FII investment accounting for two thirds of our forex reserves of \$33 billion are fair weather investors. The reserve position can be strengthened by mobilising gold.

Risk management requires the setting up of institutions/ exchanges for futures and options trading. NGOs may be encouraged to frame rules and accounting methods for over-the-counter instruments such as swaps. It is necessary that we have the institutional framework in place as well as over-the-counter market to hedge various risks banks face in managing their assets and liabilities. It

would also get the economy ready to add foreign currency hedging instruments as and when capital account convertibility is adopted. Most of the risk management techniques would remain esoteric unless we take in hand the promotion of institutions for the purpose.

The attitude to take risk of bank executives is a key factor influencing bank's income. The question of management of risk arises only when banks undertake risk to maximise income. This requires that banks be given autonomy to deal in their funds within the guidelines of their boards in regard to exposure and select staff who can evaluate and undertake risk within the exposure norms. As a nation we are highly risk averse and bank executives are no exception. The banking system did not make any demands on risk taking ability of the executives as long as the emphasis was on deposit mobilisation to fill the borrowing needs of the government. Even now banks prefer to park surplus funds in government securities rather than lend. Suitable behavioural testing before recruitment and training after induction have to be devised. Provisioning norms should take care of any losses that arise in the normal execution of duties rather than by personal accountability which cramps the style of bank executives. Banking is business and like any other the return on capital and maximisation of share value have to be pursued within the overall framework of prudential regulations.

Banking system in India has been put to inappropriate use for far too long as a social instrument to eradicate poverty and to take care of organised labor within the banks. Depositors funds are to be held in trust to earn a return. Demands of organised labor should be linked to gains in productivity rather than behaviour of price which can be held stable if fiscal deficit is reined in. The principle of neutralisation of price rise when viewed over a long period has gone quite beyond the protection of real wages and contributed to the wide differential in reward to workers in the banking industry and others with comparable skills in other industries and activities. The key to strengthening the banking system is to close the captive market for government securities and reducing the allocation to priority sector to 10% as was originally suggested by the Committee on Financial System in 1991. Our banking system is fragile and unless we reform it in the real sense we cannot join the global banking system as an equal partner. National interest rather than political interest should govern the decisions in regard to the economy, its growth and financial stability. Our record so far is that we are prisoners of political compulsions rather than free modern decision-makers to build a strong modern India with a modern commercial banking system that is second to none in the world.

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# *BANKING IN THE NEW MILLENNIUM*

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1

## **GLOBAL TRENDS**

The third millennium has ushered in a global financial services industry which is a result of desegmentation, consolidation and convergence of banks, banks and development finance institutions, banks and asset management firms and insurance firms. Global financial services industry has become desegmented in the closing decade of 20th century on account of the transformation of traditional banking institutions into new financial firms taking on new business lines such as securities trading, insurance and asset management and assuming concomitant risks. Banks had to diversify by taking on related activities in different markets since their lending business suffered on account of competition from securities markets and institutional asset managers. Banks had to seek new ways of intermediating funds. The degree of disintermediation however varies between banks and countries. Banks in turn have to face competition from non-bank financial institutions such as mutual funds, investment banks and pension funds.

During 1990s, the business of bank with international focus experienced displacement especially lending, by other activities, larger growth in off balance sheet items relative to total assets and larger increase in other operating income as compared to traditional deposit loan spread. Derivatives and fee-based income became important sources of income.

Restructuring of banking industry is reflected in banks expanding into other segments of financial industry and by consolidation within the banking industry. In the insurance business banks distribute insurance products such as annuities and variable life policies that mirror other long-term investment products to retail customers. In Europe, banks distribute low-cost standardised savings type policies referred to as 'bancassurance'; and some have acquired insurance companies. With the passage of recent (1999) legislation banks in USA can now enter insurance business. Banks earlier were fastest growing distributors

of annuities and life insurance policies. They have also set up or acquired asset management units to earn fee income from providing investment management services and widen the range of financial services to their traditional customers. Universal banks in Europe which have been providing asset management services have to meet competition now from asset managers.

Finally there is a wave of mergers and acquisitions activity among domestic banks in North America, Japan and Europe since size is considered an advantage in competing both domestically and internationally. Globally mergers and acquisitions in banking sector accounted for 11.7% of total value of mergers and acquisitions in all industries in 1991-92 (2098 transactions of \$84.7 billion), 8.5% in 1993-94 (2032 transactions of \$83.2 billion), 11.0% in 1995-96 (2162 transactions of \$200.8 billion) and 18.9% in 1997-98 (1360 transactions of \$534.2 billion).

Further, international competition is a reality since restrictions on the entry of foreign financial institutions are being removed. The global banks can maintain extensive distribution channels, develop new products and transfer risks around the globe. The trend in disaggregation at national and regional levels is likely to lead banks and other financial institutions to become more specialised, niche players. The institutions may specialise in only a few areas and meet particular customer needs.

Liberalisation of domestic capital markets and of international capital flows since the early 1970s coupled with rapid gain in information technology has been the catalyst for financial innovation and the growth in cross border capital movements. These national financial markets have become increasingly integrated into a single financial system.

Global markets are integrated by the exchanges which link up across borders. This results in reduction of costs, lower trading fee and longer trading hours. SIMEX and Chicago Mercantile Exchange, EUREX with DTB and SOFFEX and EUREX and CBOT are now connected. Exchanges are also relaxing membership criteria to expand participation by including off site members. The switch from floor trading to screen based trading has also opened the door to remote membership and broader participation. Broader membership means access to more capital and less risk for clearing house and larger volume. Some exchanges (MATIF) are combining floor trading with electronic trading by allowing some of each.

Finally, financial information business facilitates globalisation. Reuters Holding, Bloomberg, Dow Jones Markets and Bridge Information Services are the four large firms. However, the line between information provision and trading is becoming blurred in the race to provide globally accessible financial services. Internet is breeding a host of niche players with connection to financial institutions and investors.

## **DOMESTIC TRENDS**

The closing decade of the 20th century has witnessed the ushering in of financial liberalisation in India to free the financial system from the financial repression which inhibited its healthy growth. The formal banking sector is the largest segment of the financial system and consists of state owned banks and state sponsored cooperative and regional rural banks and private and foreign banks. The informal sector consists of non-bank finance companies, *nidhis* and *chit funds*. These financial intermediaries are the repositories of the nation's savings which should be deployed in a manner which ensures their soundness while furthering investment, production and wealth creation. They are also responsible for managing the country's payment system whose efficiency would be reflected in reduction of costs. India is a subcontinent with enormous resources occupying a special position in South Asia and the world and should emerge in near future as a major economy. In terms of purchasing power parity, GNP of India is the fourth biggest according to World Development Report 1999/2000. It should share the responsibilities of such a position by upgrading especially its banking system through a holistic approach to it to ensure an adequate level of credit for the economy. The banking sector reforms conform to the global initiatives of the Bank for International Settlements in terms of micro and macro prudential norms. But they do not address the problems the economy faces. They are credit repression and central bank autonomy.

### **Financial Repression**

Through credit controls, regulation of interest rates, nationalisation of major banks and insurance, restricting entry into the financial sector, directed credit, pre-emption of banks deposits for financing government deficits, the government intervened so heavily that civil servants were deciding where credit came from, who received it and how much it cost. Ad hoc interference in day to day management of public sector banks which have 52.3% market share in terms of total assets of scheduled commercial banks (SCBs) of the formal sector, added to staff and assets ignoring their quality. Branch expansion was pursued on the basis of population unrelated to the need for financial intermediation.

### **Credit Repression**

Financial repression especially in India has another dimension, the restriction of credit to commercial sector/private sector resulting in credit repression. Commercial sector is the residuary recipient of credit from banks after meeting the stipulations for directed credit and liquidity requirements used to finance revenue/fiscal deficit of the central government. The monetized deficit alone was Rs.12,914 crores in 1997-98 and Rs.11,800 crores in 1998-99. RBI has



always confined its credit policy exercises to restrict expansion of credit to private sector since expansion of credit to public sector is given. RBI as a state owned institution has no say in the matter and the relevance of autonomy has to be seen from this context. Net bank credit to government was Rs.41,997 crores in 1997-98 and Rs.56,554 crores in 1998-99; and to commercial sector Rs.57,002 crores in 1997-98 and Rs.57,054 crores in 1998-99. This is in stark contrast to share of public and private sectors in GDP of about 25% and 75% respectively. The combined gross fiscal deficit of centre and states which was in the range of 9.0-9.9 to GDP between 1998-99 and 2003-04 was financed by market borrowings (47.2% to 56.4%) and small savings (22.2%-48.0%) especially by investment in special securities by National Small Savings Fund (NSSF). The revenue deficit which reached an all time record of Rs.72,240 crores in 2003-04 (RE) continues to be financed by borrowing. Under the Fiscal Responsibility and Budget Management (FRBM) Act 2003 the government is mandated to eliminate revenue deficit by March 2009. It may be noted that outstanding holdings of central government dated securities inclusive of securities sold under LAF and investment of Centre's surplus have been going up from Rs.35,190 crores in 1999-00 to Rs.104.066 crores in 2003-04.

There has never been an estimation of total credit requirement of non-governmental/private sector (to public knowledge) of the economy and how it is met. RBI exercises were limited to incremental aspects and the residual portion without any concern for the adequacy of the amount allotted to private sector. The result is under financing of the economy. Indian economy has always experienced shortage of credit. Banks always turned away would-be customers on account of credit crunch. Bank credit to commercial sector as a proportion of GNP in 1998-99 was about 4.3 percent while outstanding credit (assets) was about 26.5 percent. On the other hand bank assets as a percent of GNP were 120% in China, 111% in Korea, 180% in Taiwan, 150% in Japan and 120% in Singapore in 1998. Even in US which has a vibrant equity market, bank assets are 60% of GNP. In India borrowers have to turn to the informal sector or non-bank sector because the truck owners, taxi drivers, traders, contractors, small shopkeepers, hawkers and others access to equity market is restricted on account of the small size of public issue or being not eligible to make one.

The commercial sector is more or less confined to borrowers in the urban and semi-urban areas who are organised entities. Even their requirements were never met adequately. That leaves a large segment of credit demand unmet. Actually the preoccupation in the regulation of credit was to restrict it since it was a scarce resource. The regulations built on the basis of Tandon Committee, Chore Committee and Jalani Committee have nothing to do with credit analysis or appraisal. The traditional system of commercial bank lending was initially

worked out for financing trade. The emphasis there was on security or collateral. In the case of industrial units or projects, generally income generation or adequacy of cash flows to service the loan should be the criterion. Bank lending has to be based on appraisal of the unit to run successfully on its own strength. The real security in lending for financing working capital of projects is a well functioning unit which can use bank money productively, generate a surplus and continue to exist as a viable unit. Under the cash credit system of lending for instance even though the loan was repayable on demand, the bank had to restrict itself to what should be permissible level of bank finance. This resulted in a large number of units across a cross-section of industries not being able to obtain working capital to operate at break even point. The widespread sickness especially in small scale sector is to be mainly attributed to units operating below the break-even point which ultimately leads to cash illiquidity and defaults in meeting fixed charges and sickness/insolvency.

The second dimension of credit repression is restriction of the concept of financial intermediary to banks in the formal sector often with a nationwide network of branches housed in 'bricks and mortar' structures owned/sponsored by state including commercial banks (there are private banks accounting for 10.3% of SCB assets and foreign banks accounting for 8.2%), cooperative banks, regional rural banks and local area banks. The indigenous ones, the institutions in the informal sector which are not sponsored by state and recognised only in a negative manner by calling them 'non-banks' have been subjected to draconian regulations by invoking depositor's interest. This has shut off the access to credit of several small traders, taxi drivers, contractors, small vendors and hawkers and rendered NBFCs insolvent or bankrupt because they had to return deposits to public as well as their borrowings from commercial banks.

## **DICHOTOMY OF APPROACH**

The 'credit repression' is the result of the dichotomy in approach to the banking system which consists of formal and informal sectors and subjecting the informal sector to draconian regulation. Several of the public sector banks (PSBs) had they been in the informal sector and not owned by state would have faced closure. The pre-emption of funds of banks for government and directed credit has also contributed to credit repression.

The formal sector, 'bricks and mortar' one with wide network of branches in urban and semi-urban areas is westernised in character and approach. The emphasis is on norms and techniques evolved in West. For instance capital adequacy should not be rigid. It should be a range depending on the quality of assets. Actually we got along with low or no capital because banks were owned by government. Public in India ignore the quality of banks' assets and whether

it is making profit or not and trust the banks because they are owned by government. It is only when our banks deal with their counterparts abroad our banks' capital base comes under scrutiny and RBI chose voluntarily to conform to global standards of prudential norms. Simultaneously the quality of banks' assets, nearly half of them acquired under executive fiat became relevant only when our short-term borrowing abroad became difficult to service as in 1991 and capital account convertibility was mooted. We got along with a fragile banking system which was serving the ends of a ruling political party through extension of credit to government and meeting requirements of directed credit. It did not serve national interest in terms of being the prime mover of innovation, enterprise and growth by meeting credit requirements at large. It has also to be noted that we were not touched by Asian crisis and contagion not because of the rock solid nature of our banking system but because of absence of capital account convertibility and restricted borrowing abroad on short term.

The informal sector, the non-bank financial companies cater at a local level to a wide segment of demand for credit from traders, hawkers, vendors, taxi drivers, transport operators and what have you, who by and large do not rate even a reception at a formal bank. The NBFCs have their own techniques of appraising a loan request. A lot of it is character based since both the lender and the borrower are local. Further, they have evolved their own methods of monitoring and recovery. Recent moves at disciplining them have not only choked off credit but also rendered several NBFCs illiquid/insolvent. It has to be recognised that for quite some time to come, a generation or two in the new millennium there would be need for local institutions in the informal sector. We cannot brand what is not bank as evil. Human greed manifests all over and not confined to promoters of non-bank outfits. Five states have enacted legislation to protect investors from errant NBFCs.

### **NEED FOR HOLISTIC APPROACH**

A holistic approach to the banking system has to be taken to appreciate that the institutions in the informal sector have evolved in response to felt needs and should be treated as complementing the institutions in the formal sector. Non-banks have their own style of assessment, delivery and recovery of loans to suit the nature of their clientele. The informal sector can reinforce the formal sector especially at the local level where growth or income generation has to be triggered. The local nature of institutions in the informal sector would complement the activities of the formal sector. They should be linked in terms of not only access to funds from banks but to on-lend, as another link in the chain of intermediaries to deliver credit especially to the priority sector. At local level, the chain would have one more link in terms of NGOs to help organise activities which generate cash flows and ensure repayment of loans.

Recognition of NBFCs as an important component of the banking system would increase availability of credit with beneficial impact on economic growth. Easy access to credit will dynamise the economy. If we check the experience of other prosperous economies we cannot but wonder how we throttle initiative and activity which would have added to output/services by denying credit. If we look at NBFCs in a positive manner, serving an important intermediation function they can be linked to the formal sector. The links could be in terms of access to bank funds, acting as agents of banks and DFIs to monitor their clients and loans and agents of insurance companies. A beginning has been made by RRBs to on-lend through NBFCs to tiny sector, small road and water transport operators. Such a link between the formal and informal sectors of banks and non-banks will also facilitate the 'liquidity pass through' leading to a reduction of inordinately high rates of interest obtaining in the informal sector. Such reduction is likely to have a beneficial impact on economic growth by encouraging the promotion of less risky projects. The high rates obtaining now are not necessarily a reflection of riskiness of projects or loan proposals. They are primarily a consequence of lack of liquidity or paucity of funds.

### **Three Tier Structure**

The restructured banking system in the wider sense would have three tiers as envisaged by the Committee on Financial System (1991). First tier would consist of the large ones who could be potential global banks, like the one that would emerge by merging State Bank and its seven associates. Two or three more banks in the first tier could be formed by merging DFIs, IFCI and ICICI with two or three public sector banks. The first tier would have to be restructured to provide multiple financial services including banking, securities market related services, asset management and insurance (at least the sale of annuity and variable life policies). Such convergence is in consonance with global trends and help in augmenting non-fund based income of banks. In the second tier would be about 10 large banks of a national or regional character. They would be specialised and niche players. Such institutions will specialise only in a few areas and meet particular customer demand. Finally, in the third tier would be local banks consisting of cooperative banks, regional rural banks and NBFCs.

### **Microprudential Norms**

While the problems relating to capital adequacy, asset quality, settlement, supervision are in the process of resolution the question of autonomy for state/RBI owned commercial banks is yet to be resolved. In regard to capital adequacy, a more flexible approach has to be adopted depending on the quality of assets. Further the capital raised abroad by banks may be allowed to be kept in foreign securities to render the banks acceptable to their counterparts abroad. The

question of capital especially strengthening it through accessing domestic capital market is tied up to reducing Government/RBI ownership and granting autonomy to public sector banks. If the banks are allowed to reduce the public ownership to 30 per cent level as suggested by CBSR, 1998, (through adoption of necessary legislation) autonomy would automatically follow and market discipline would be brought to bear on the banks.

In February 1999, banks were given autonomy to raise rupee denominated subordinated debt as Tier II capital. To restrict cross holdings an individual bank's investment is restricted at 10 per cent. CBSR, 1998 recommended issue of bonds guaranteed by government to bolster capital adequacy. The bonds according to CBSR would also be eligible for SLR investment by banks and approved instruments for LIC, GIC and provident funds. In USA capital of banks includes long-term debt of seven years. In the context of regulatory capital long-term debt only serves to absorb operating losses in the event of bank failure.

The Basle Committee on Banking Supervision has issued in June 1999 a new capital adequacy framework to replace the Capital Accord of 1988. The new capital adequacy framework consists of minimum capital adequacy requirement, supervisory review of an institution's capital adequacy and internal assessment process; and effective use of market discipline as a lever to strengthen disclosure and encourage safe and sound banking.

## **AUTONOMY FOR CENTRAL BANK**

Autonomy for Central Bank is a crucial issue. The Reserve Bank of India Act does not assure autonomy to the bank. It is true that the Central Bank can only be independent within the government but not from the government. In USA, there are adequate safeguards to ensure that the Federal Reserve is not compelled to act against its own judgment. In India, there have been historic accords limiting the access of government to RBI but they are breached in practice. RBI should not be involved in under-writing government securities. It acts as a principal and as an agent in the securities market. The dual role of RBI as an issuer and regulator of debt gives rise to conflict of policies of debt management and monetary policy. The advisory group on monetary and financial policies headed by M. Narasimhan suggested (September, 2000) the separation of debt management and monetary policy functions and the setting up of an independent debt management office by the government.

Further the fiscal profligacy of the government is abetted by the system of pre-emption of large portion of net accrual of banks deposits through the prescription of statutory liquidity ratio. The Indian banking system was operating for a long time with a high level of reserve requirements in the form of statutory liquidity ratio (SLR) and cash reserve ratio. As per law SLR is 25% and CRR is

3%. Through policy prescriptions they were raised to 54% of deposits before reforms were initiated in 1992. Progressive reduction since has brought down the effective SLR from 37.4% in the prereform period to 25% and the effective CRR from 16.5% to 8%. The statutory prescriptions are now about 35% double the proportion of banks resources available for commercial sector. The additional resources will also increase the profitability of banks since CRR is not adequately remunerated. Reduction in statutory pre-emption is constrained as long as fiscal deficit remains high. The Report of the Committee on the Financial System, 1991 has pointed at that SLR should not be used to mobilise resources for financing budgetary deficits but as a prudential measure. It has also stated that CRR should be used for pursuing monetary policy objectives.

In the context of globalisation of the financial system, Reserve Bank needs autonomy to define benchmarks or anchors such as inflation and money supply to guide policy and use its judgment to assess the impact of the ever changing financial environment on the design and implementation of policy. There is a general consensus that monetary authorities' primary objective should be price stability; central bank should have sufficient independence to vary its operational instrument; and its main instrument is its control over short term interest rates<sup>1</sup>. Reform of the banking system is not complete unless it includes the Central Bank. The emphasis on market as a source of financial discipline requires an autonomous Central Bank which can strike a right balance with the operation of market forces. The responses would be quick and effective only if the Central Bank is autonomous.

Central banks which are mandated to pursue monetary and financial stability should enjoy autonomy in the execution of policy and be accountable for the achievement of the objective<sup>2</sup>. The profound transformation of the financial environment had a major effect both on the relationship between the monetary policies across countries and on their design within the countries. Central banks while defining benchmarks or anchors to guide policy to achieve monetary and financial stability have to take into account the increasing constraints that result from the growing power of markets to arbitrage across currencies, instruments and institutions as well as across legal, regulatory and tax jurisdictions. The increasing power of markets put a premium on transparency to guide market expectations, market incentives and credibility of policies. The market orientation of the framework has to be strengthened by

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1 Goodhart, Charles A E "Wither Central Banking", RBI *Bulletin*, January, 2001.

2 Bank for International Settlements, "The Evolution of Central Banking", *Annual Report 1996-97*, pp. 140-160.



- Enlisting and upgrading the market's disciplinary mechanism
- Enlarging the domain and improving the quality of public disclosure
- Designing regulatory constraints such as capital standards so as to make them less vulnerable to financial arbitrage
- Limiting the impact of those forms of intervention that provide protection without commensurate oversight which reduce the incentive to prudent behaviour.

Central bank's initiatives for stability require supporting policies in terms of sustainable fiscal positions and greater flexibility in labor market. Further the effectiveness of market forces depends on fostering ownership structures through privatisation which are more responsive to market and removing obstacles to the adjustment of capital and labor. The systemic orientation has to be sharpened by upgrading payment and settlement systems to contain the knock-on effects of failures of institutions. A right balance between the market and the central bank as a source of financial discipline has to be struck.

### **ASSET QUALITY**

A large proportion of gross NPAs of Rs.57,710 crores of PSBs in March 1999 (Rs.48,406 crores, March 2006) relate to directed credit (43.7% in 1999 and 40.3% in 2006 of net bank credit). They may be erased and where possible collateral may be sold and the curtain drawn on the issue. In future priority sector lending may be confined to lending by third tier local banks with the help of NGOs.

### **Banking Supervision**

An independent Board for Financial Supervision under the aegis of the RBI is set up with focus on off-site surveillance based on prudential supervision framework covering capital adequacy, asset quality, loan concentration, operational results and connected lending and control system internal to banks. In regard to on-site inspection the focus is on the evaluation of total operations and performance of the banks under the CAMELs system i.e., capital adequacy, asset quality, management, earnings, liquidity and internal control system.

The Committee on Banking Sector Reforms (CBSR), 1998 recommended an integrated system of regulation and supervision be put in place to regulate and supervise the activities of banks, financial institutions and non-bank finance companies. The functions of regulation and supervision are recommended to be combined and entrusted to a Board for Financial Regulation and Supervision (BFRS). It should be given statutory powers and be composed of professionals. This is in accord with the holistic approach to the banking system suggested here.

**Settlement**

Indian banking system has to migrate to real time gross settlement (RTGS) to put in place an integrated payment system. A gross settlement system is one in which both processing and final settlement of funds transfer instructions can take place continuously (in real time). The focus of the integrated payment system is on computerisation, establishing connectivity and interface with banks' treasury/funds department, setting up controlling offices and providing connectivity among banks in an on-line and real time environment.

Gross settlement reduces the settlement risk, principal (credit risk) and systemic risk. In gross settlement knock-on or domino effect on the system is avoided. RTGS is critical for an effective risk control strategy. It helps in distinguishing temporary liquidity problems from insolvency which could have helped in averting South Asian Crisis.

**CURRENCY CONVERTIBILITY**

Currency convertibility implies the absence of restriction on foreign exchange transactions or exchange controls. We have convertibility for current international transactions but restrictions exist for international capital movements. In a number of countries elimination of exchange controls for capital movements has been slower than for current account. In the 1980s, the pace of reforms in several countries quickened and by 1994, industrial countries eliminated virtually all exchange restrictions with respect to capital movements, making their currencies fully convertible. However, a large number of developing countries still retain capital controls.

The case for capital account convertibility is based on three arguments. First, exchange restrictions are an inefficient and ineffective method to protect balance of payments. Secondly viability of balance of payments is achieved by flexibility and realism in exchange rate and macroeconomic policies. Finally, empirical evidence suggests that elimination of exchange restrictions increases capital inflows in the short run and promotes efficiency in the allocation of these inflows, if liberalisation is carried out as a part of structural adjustment package designed by the International Monetary Fund (IMF).

The Committee on Capital Account Convertibility recommended in June 1997 the full convertibility of the rupee in a phased a manner after meeting certain preconditions/signposts. These conditions are low fiscal deficit (3.5% of GDP), low inflation (3 to 5%), efficient financial system and a healthy foreign exchange position. Several aspects of the functioning of the Indian economy suggest that time is not ripe for full convertibility. Inflation is running at 8-10%; fiscal deficit above 10%; and the revenue account of the central budget continues to be financed by borrowing and the technological base of our production and exports is poor. Finally all is not well with the banking system. It is quite fragile.



Banks are now (2000) permitted to fix their own position limits as per international terms and aggregate gap limits; to borrow from and invest abroad up to 15% of their Tier I Capital; and to arrange to hedge risks for corporate clients through derivative instruments. Additional instruments to hedge risk and help reduce exchange rate volatility consist of forward cover for some participants and the development of the rupee forex swap markets. The pace of liberalisation of capital account depends on domestic and international developments. However, the process of liberalisation of capital account will depend on progress of financial sector reforms.

While global consensus exists on meeting the preconditions convertibility depends in the Indian context not only on financial factors but also on real factors which influence the competitive strength of the economy. The veil of money has to be lifted and assessment of real economic variables has to be made. Ever since deregulation was initiated the emphasis is on financial factors, encouraging foreign capital inflows, rise in market capitalisation, mobilisation by Indian corporates of funds abroad, reduction of tariffs and tax rates. There is very little concern about the poor technological base of our industry and its productivity which is hardly 20 to 50% of the level to be found in industrial economies. The form of protection which does not promote competitiveness is the highest among the developing countries. Indian industry scores poorly in regard to innovation, costs, labour quality, infrastructure and management practices.

Capital account convertibility renders an economy susceptible to financial contagion especially where the banking systems are fragile. Liberalisation by changing the rules of the game increases the riskiness of the traditional behaviour. Further the increased globalisation of financial markets affects the capital account more than in the past.

The evidence from Chile and recent experience in South Asia have shown that the extent to which capital movements are destabilising depends largely on the strength of a country's financial system and the soundness of its economic policy. Financial liberalisation requires strict bank regulation and supervision to prevent a reversal in capital flows or a sharp rise in interest rates from breaking banks. A rock solid banking system is one reason why Hong Kong with the most open financial market in East Asia has weathered the storm better than many of its neighbours. An adequate capital base and a satisfactory system of prudential regulation, income recognition, provisioning and supervision as well as disclosure and auditing requirements of banks to achieve greater transparency are being built into the Indian banking system. But there are significant structural problems which have been discussed above. The banking system, however, was not adversely affected by the contagion effect due to limited exposure of Indian banks to exchange rate movements and the economies of the rest of Asia.

## **OFF-SHORE BANKING CENTRE**

As a prelude to convertibility on capital account an off-shore banking centre may be set up. It would help foster a regional capital market which enlarges the flow of foreign capital to raise the level of domestic investment. The Expert Group on Foreign Exchange Markets in India (1995) set up by Reserve Bank of India also suggested the setting up of the off-shore centre within India to encourage off-shore transactions towards development of a financial centre particularly for a country which has not adopted capital account convertibility. According to the Expert Group the setting of off-shore banking unit is seen as an interim (but necessary) step towards development/sophistication of the Indian foreign exchange transactions. Any future plans of full convertibility of the Indian rupee according to the Group are greatly dependent on narrowing the gap between international financial markets and domestic markets. Off-shore banking units offer the benefit of providing Indian financial institutions global know-how, human skills, technology and infrastructure in a relatively controlled environments prior to opening up of the foreign exchange markets to full impact of convertibility. Banking system in India which is yet to adopt modern technology would be exposed to international finance and business based on electronic data processing and telecommunications networks, if we set up an off-shore banking centre.

## **BANKING AND THE POOR**

Economic liberalisation since 1991 like our plans since 1951 has not touched our poor because the poor do not have any skills to avail of any opportunities that have been opened up by planning or liberalisation. They remain outside any market oriented economic activity. Various provisions in the central budget amounting annually to about Rs.10,000 crores do not create lasting assets and offer relief to a small segment of the population for the duration of budget cycle. They add to demand without augmenting supply of goods and services.

### **Concept of Development**

The approaches to rural development so far have been emphasizing employment generation. The concept of employment is really not relevant because the poor do not possess any skills to avail of the opportunities created by investment in industry or if they do not possess property (land to avail of the benefits from investment in irrigation projects). The antipoverty programs emphasize the involvement of poor during the budget cycle, in creating assets like roads which do not endure. Actually, they have become a big source for building vote banks since only 20 percent reaches the poor. Finally, all the efforts add only to demand without generating goods or services. The supply side or the sigma effect of investment is ignored. The vision of Gandhiji of a self-sufficient village is highly relevant.

Conventional economic wisdom emphasizes investment for elongation of production or increase in its round aboutness by adding capital. This would certainly raise productivity but would not integrate the poor into income/real goods/services generating activity. We should emphasize the human being rather than the machine/ capital. The traits of the poor are that they are not capable of working 8 hrs a day for 5 or 6 days a week, because they are undernourished and physically not fit to put forth the effort. They do not have any skills and are not even 3R literate. If we approach the problem of rural development from the view point of bringing the poor into income generating activity by making them directly productive, we can make their life meaningful. Labour earns a wage when it contributes to production for market or exchange. That is what we have to ensure.

Poverty can be alleviated only if the poor are integrated into the national economic framework by involving them in income generating activities on a continuous basis. Wages/compensation for time are earned only if labour contributes to a product or service that is sold or exchanged in the market. This involves at each village/taluka or contiguous village (which can be grouped together for purposes of viability) identification of activities based on resource endowment which could be natural resources, traditional skills or in their absence footloose activities into projects which generate a cash flow. Project approach not only imparts accountability but eliminates middle men who have been appropriating 80% of the funds provided by the government budgets. We have so far left out the 'process part' of rural development because we assume that poor would take the initiative to avail the opportunities. However, the poor are by nature apathetic and fatalistic and cannot come forth with viable projects.

Identification of activities, planning and implementation of projects (IPIP) which are viable/bankable and generate cash flows to meet the service charges and leave adequate compensation for the labour by organizing the poor into groups to implement the projects has to be undertaken. These projects could be resource based, footloose (no resource) or traditional craft-based. The barefoot managers can undertake like an entrepreneur IPIP themselves or join the existing institutional mechanism and help in the integration of the poor into market-oriented activities. The objective is to provide an opportunity for all those *willing and able to work* at the minimum/going wage defined in terms of calories. Public distribution of food-grains can be integrated with it. The integration of the poor into market oriented activity would turn them from persons with zero marginal productivity to producers of surplus. The savings of the poor would also enlarge the total pool and help step up savings rate.

### **Social Agenda**

An essential component of making the poor directly productive is the implementation of a social agenda for the poor. Fuel, lighting and drinking

water requirements of the village can be met from power through setting up biogas plants. Biogas as an energy source is ignored in a country with the largest livestock population. Construction of a community hall to serve several purposes: as a market place, school for imparting 3Rs, provide primary healthcare and meetings for village governance.

### **Imparting 3Rs**

It is essential to conceive of literacy as an open 3Rs program where without compulsion of attendance or moving from one grade/standard to another adults and children are taught the skills of reading, writing, addition, subtraction and multiplication. Personal computers with the local language software may be installed. Tap and learn may be encouraged. Along with spread of literacy, use of computers would spread for downloading information about development and communication in rural and tribal areas. Open schools should have only one agenda, impart 3Rs to adults or children in a flexible manner. A literacy programme based on imparting 3Rs is an integral part of social agenda. The results would be immediate and help in delinking education from job expectations as happens under a formal system. 3Rs would help poor in acquiring skills to participate in projects and democratic process.

### **Implementing Development**

Regional rural banks may be made dynamic agents of social and economic development if they are entrusted with integration of rural poor into national economic framework by undertaking productive economic activities. Credit is helpful only if a viable activity is identified, financed and dues recovered out of the cash flows the project generates. According to All India Debt and Investment Survey (1981-82) the access of the poor to organised banking was only 23.3 percent in the case of those with assets up to Rs.1,000 and 26.9 percent with assets between Rs.1,000 and 5,000. In 1996, formal sources accounted for only 7 percent and informal sources 93 percent. The low rate of credit access is attributable to the dispersal of focus of loans as they cater to proposals sponsored by different agencies for different categories with targets and sub-targets such as SC/ST, IRDP, SLARS, Special Component Plan and Tribal Development.

The programme needs at each location a group of 5 young persons, call them a Techno-Economic Group, to act as catalysts for integration of rural poor and tribals into the main stream of economic activity. They can survey rural areas, identify activities and markets, organize production adopting appropriate technology and arrange credit for viable projects involving poor. The group would act as facilitators/managers equipped with skills to identify, plan and implement viable projects, however, small or tiny without involvement of outsiders. They would act in collaboration with Regional Rural Bank (RRB)

and conduct due diligence on the projects. The groups, let us say 500 ( $500 \times 5 = 2500$ ) to start with may be recruited from management, economics, sociology, psychology, accountancy, paramedical, medical and education streams. An honorarium of Rs.3,000 pm may be paid. Universities may be encouraged to consider the programme as practice school for six months with a project report at the end of postgraduate programme and preference for employment. The expenditure may be met from reappropriation of funds from some of the existing antipoverty programmes in the budget. Local RRB may be refinanced for the project loans by sponsor bank.

The third tier of banking can be revitalised by making regional rural banks as agents for rural change. They can be supported by Techno-Economic Teams at branch level. About 87,000 fresh graduates would be trained in rural development work 'to serve and share' instead of 'command and patronise' which has been the bane of Indian society.

The RRBs can use SHGs/NGOs at the village level to organise projects. They would act as an intermediary between the group undertaking the project and RRB. They would help in monitoring and timely recovery of dues. RRBs with the techno-economic team and NGOs to identify, monitor and ensure repayment of dues can be entrusted with the execution of poverty alleviation programmes. These three groups would constitute the checks and balances. CBSR(1998) suggested that banking policy should facilitate the evolution and growth of micro-credit institutions which focus on agriculture, tiny and small-scale industrial units including such specialist institutions as may be promoted by NGOs for meeting the banking needs of the poor.

### **Microcredit**

Microcredit institutions and self-help groups are voluntary, decentralized and of non-bureaucratic nature in rural and semi-urban areas. They constitute important vehicles for credit delivery to self-employed persons. A pilot project to link self-help groups with banks was launched by the NABARD in 1991-92 which has since been extended to RRBS and cooperative banks. Their number exceeded 7,17,360 as on March 31, 2003 withh 40% concentrated in Andhra Pradesh.

A SHG is a registered or unregistered group of micro entrepreneurs with a homogeneous social and economic backgrounds. The group voluntarily puts together savings to organize economic activity. The group uses peer pressure to ensure proper end use of credit and timely repayment. Peer pressure is a good substitute for collateral and financing through SHG reduces transaction costs. As at end of March 2003, the total number of credit linked SHGs stood at 2,81,338, total bank loans Rs.975 crores with commercial banks accounting for 65% of total linkage and 65% of credit extended and RRBs accounting for 35% of linkage and 33% of the credit.

The SHG's cover a wide range of activities including crop production, purchase of yarn/cloth, weaving and share cropping, idea making, food processing, dairy, small business, pickle making, small hotels, bamboo basket making, vegetable vending, saree business, tailoring and fruit vending.

Andhra Pradesh Government has graded SHGs and a category was entrusted to banks for financing. NABARD makes a quality check. The SHGs are regularly monitored and their quality is maintained with adequate support from the state government. SHGs' in Andhra Pradesh make timely payment 95% of the time.

SHGs receive financial support from commercial banks, RRBs and Cooperatives. Commercial banks account for 58% of total finance (Rs.5,254 crores to 5,38,422 SHGs).

### **Credit Linkage**

Credit linkage of self-finance groups with the banking system has emerged as a major micro finance programme. Over 14 lakhs SHGs were linked to banks as at March 2005 with an outstanding credit of Rs.6,300 crores. The Union Budget has proposed an annual target of 2.5 lakhs SHGs during 2005-06. By end March 2007 NABARD and Banks have set a target of linking additional 5.85 lakhs SHGs to banks. NGOs engaged in micro finance activities are also permitted to access up to US \$5 million during a financial year for permitted end use under automatic route as an additional channel of resource mobilization.

### **Improvement of Efficiency of Microcredit**

While SHGs are taken as a role model for credit delivery, their composition bears closer scrutiny. The Indian society has not yet emerged from the feudal system where power is captured by dynasties and families and inherited by their progeny. The entire governance structure is dominated by feudal order. Power is passed on from generation to generation and the constant attention and exposure to media helps to sustain the system. The graduation from cinema to politics illustrates the importance of exposure. A person seen day in and day out as a hero/heroine dons the mantle of political leadership and the public accept them on account of familiarity. Democracy and elections cannot eliminate the link between the feudal social order and governance structure. Feudal order is all pervasive and perpetuates it by patronage and cronyism. A candidate standing for election even with a criminal record has an edge over the opponent if he is related or is a crony of the families in power. Gender does not make any difference. Women are also human and governed by same desires and ambitions. The phenomenon in Bihar is not an isolated one and the social structure in villages is such that the Sarpanch or President of Zilla Parishad can ensure that the women in SHG group toe his way. The implication is that credit is not delivered to the



needy or poor but diverted to those who are part of the feudal nexus in the village. They in turn would of course establish its spread and growth.

Our experience with cooperative movement shows that it was hijacked by the dominant in the social order in the village. For decades the Central Budget supported the cooperative movement with rural budget provisions of about Rs.150 crores without achieving any purpose. The entire movement fell into disrepute because dominant elements of the social system were availing the benefits defeating the purpose credit delivery to poor in rural areas through cooperation.

To make microcredit efficient, it has to be based on the concept of a project with cash flow. That requires skills of techno-economic management with an interface with a banker to assess viability and arrange finance. The project beneficiaries should be the poor. Instead of individual responsibility, group responsibility is enforced through SHGs. The three sides of the triangle the NGO/SHG techno economic team and RRB would constitute the checks and balances to ensure that microcredit benefits those poor who are really outside market oriented activity.

## **THE FUTURE**

Banks globally have undergone fundamental changes because of the ongoing revolution in information technology and communications. Electronic funds transfer, e-cash, internet/ on-line banking are the pillars of modern banking development. These are slowly being introduced in a diluted form because of inconvertibility of rupee. However, the market for distribution of financial services is being contested by a new set of potential competitors, such as software houses and computer network providers who put pressure on networks of 'bricks and mortar' branches. In India, just as the bullock cart and automobile contest the highways, global banks, national banks and local banks including NBFCs would continue to coexist. The banking system, both formal and informal can take advantage of widening demand for financial services by achieving cost effectiveness and deployment of resources towards more profitable activities while avoiding the temptation to take excessive risks. National interest lies in augmenting supply of credit whether it is from banks or non-banks. The efficiency of both will increase if they are linked which will ensure not only the flow of adequate credit to meet the requirements of the cash flow generating activity but also its recovery. The objective of the banking system should be to ensure credit for any project which generates cash flows to service a loan. Such an approach would empower poor and alleviate poverty as well as help in wealth creation.

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# *EVOLUTION OF COMMERCIAL BANKING*

# 2

## **MARKET ORIENTED VS BANK ORIENTED FINANCIAL SYSTEMS**

The evolution of banking which lasted for centuries until two types of modern banking developed in the industrially advanced economies in the late 19th century was an integral part of the expansion of capitalism. The techniques of banking developed in the 17th century facilitated the industrial and territorial expansion that began about the same time. The two systems of banking are the market oriented financial system (Anglo Saxon) characterised by a division of functions and the bank oriented financial system (central European) characterised by universal banking. In a market oriented financial system, specialised financial institutions including banks, financial markets and market intermediaries cater to the different financial needs. In a bank oriented financial system savings are largely transferred directly from those who generate them to those wishing to use them by the intermediation of banks. Britain with her functional specialisation represents a market oriented financial system while Germany with her tradition of universal banking has a bank oriented financial system.

### **Banking in Pre-industrial Era Abroad**

*Italy:* The cradle of modern banking was in the northern Italian cities. To circumvent ecclesiastical prohibition of usury, the business of banking was conducted in the context of trading which was regarded by church as non-usurious. The objective of banking business in those early times was exchanges and transfers. In the 14th and 15th century Florence banking business was built on a network of family connections and trust rather than on rules set by an anonymous market. The Italian cities which were 'first mover' in the development of banking fell behind as the centre of commercial activity shifted

from the Mediterranean to the Atlantic and northwestern Europe and new banking techniques spread to those regions with which commercial centres were connected by long distance trade. Banking techniques spread along the established medieval trade routes.

The practice of endorsement and discounting which were technically outstanding innovations stimulated the transferability and negotiability of commercial paper were developed by Antwerp bankers during the 16th century and fully exploited in Amsterdam. A public deposit and clearing bank, the *Amsterdamsche Wisselbank* was founded by Amsterdam authorities. The bank was the cornerstone of Amsterdam's position as the leading financial centre of the 17th and early 18th centuries. It refined banking techniques which it had copied.

In southern Italy and Naples, public banks functioned as main lenders to the government and provided services to the public such as opening savings accounts, lending money on collateral and issuing paper documents which were used both as credit and as means of payment.

In Italy, banking reappeared during the catching up process of industrialisation in the 19th century. The banking system was modelled on an adaptation of the *Credit Mobilizer* strongly influenced by German banks. Italian banking in the first half of 20th century followed the path of universal banking to total state control of the financial system.

**Sweden:** A major innovation of public banks such as Neapolitan public banks and Stockholms Banco was paper money which was accepted as legal tender by the state for tax payments. Its successor the Swedish Riks Bank was founded in 1668 by the Swedish parliament, divided the giro from credit function and successfully introduced paper money in a specie scarce economy.

**England:** In England, banking grew out of the custom of goldsmiths who frequently accepted bullion and coins for storage and safe keeping. The goldsmiths discovered that they could lend such coins out keeping just a certain proportion as a reserve. Depositors were issued receipts which were transferred by them to settle claims on themselves. Over time the receipts which were issued in round number became bank notes, that is currency notes issued by and repayable on demand by the banker.

The merchant elite of the city of London set up the Bank of England in 1694. The privately owned bank was developed and protected by state which became financially dependent on it. The bank which was fairly independent from state control developed both its commercial activities and related central banking strategies. The bank was turned into a national central bank when the state forced it to extend its activities to the English provinces where the industrial revolution was taking place. While the Bank of England provided the means of

payment, the short-term credit needs were met by the London money market. In 1707, Bank of England was given the right to issue bank notes. Although the Bank was established to meet the state's demand for a banker, it was relatively free to develop its commercial business of bullion, purchases, note issuing, discounting and with it the Bank became the backbone of the emerging financial centre of the world. The bank in the provinces provided credit by refinancing through the London money market. However, the growing dependence of banks in provinces on their London correspondent and the long-term effect of the crisis of 1878 led to the transformation of independent provincial banks into branches of the London based deposit banks.

**U.S.A.:** In colonial America, the first bank in the modern sense of the term, was the Bank of North America founded in 1782. Established in Philadelphia it issued paper money convertible into gold and silver. The successful example set by Bank of North America led to formation of 30 more commercial banks by 1800. Among them was the First Bank of United States chartered by Congress of the United States in 1791. In 1811, when Congress did not renew the charter (owned by foreigners, dabbled in politics, and wielded monopoly power) the second Bank of United States was set up in 1816 with the federal government owning one-fifth of the stock and appointing one-fifth of directors.

A major development after the expiry of the Charter of Second Bank of the United States in 1836 was the system of free banking led by Michigan. Any one who met rather easy conditions could organise a bank and issue bank notes as well as take deposits. Many new banks were organised and issued their bank notes. With so many different bank notes around it was hard to differentiate between genuine and counterfeit notes or notes issued on non-existent banks. The system of free banking was followed by the national banking system that provided safer currency.

**France:** In France the Banque de France was created in 1800. The breakthrough for a centralised banking system with Paris at its centre came with the building of railway network in the mid 19th century. A new generation of banks was created including Credit Mobilier in 1860. The bank provided long-term engagement in industry and transport. The bank however failed because it was unable to cope with the illiquid nature of long-term engagements. Investment banking was abandoned and from the 1880s the banking system *à la française* was established with two types of banks: the deposit banks, collecting savings and lending short term to industry and commerce; and the banques d' affaire which applied the resources of the haute banque to capital market operations such as foreign government loans and public utilities.

**Germany:** For the German banking system, the third quarter of the 19th century was the crucial period. Investment banking which failed in France was

successfully extended by the first joint stock banks modelled on Credit Mobilier. Lending shifted from railways to industry. This was facilitated by their current account and overdraft business which were suitable to meet the needs of credit of industry. The relative success of the German universal banking system before 1914 depended on the holding of a relatively large guarantee capital and also on the central bank's *de facto* liquidity guarantee for fundamentally sound banking houses whose assets were temporarily unavailable. The whole system however collapsed when the banks operated on a much smaller capital basis and when in 1931 the Reich bank was not prepared to step in as a lender of last resort. The system was rebuilt with massive state intervention.

**Japan:** In Japan bank finance according to the orthodox view played a decisive role from late 19th century to 1970s. However, public financial institutions became important from the early 20th century onwards for the bulk of all long-term investments in the 1950s. Bank of Japan also played a key role from the late 19th century until 1973 by supporting financial institutions which granted loans to industrial enterprises such as city banks, regional banks, trust banks and others. The Bank of Japan had always supplied the strategic industries with growth money except during the depression of the 1920s.

## MONEY LENDING IN ANCIENT INDIA

India has a long tradition of money lending. The money lenders obviously lent out their money confining the profession of money lending to rich. There was no collection of deposits for safe keeping which could be lent out. It emerged later with indigenous bankers. In the vedic times, 2000 to 1400 BC, the literature refers to existence of money lending operations. The literature of the Buddhist period, the Jatakas and archaeological discoveries contain evidence of existence of Sresthis or bankers. There are extensive references in the laws of Manu to money lending and other problems. The rate of interest was around 15 percent as prescribed by Hindu law givers Manu, Vasistha, Yajna Valkya, Gautama, Baudhayana and Kautilya. Differential interest rates were charged according to Manu and Vasistha which were linked to caste of borrowers: Brahmin 2%; Kshatriya 3%; Vaishya 4%; and Shudra 5% per month. According to Chanakya however, the interest rate structure was risk weighed. It varied with the risk involved in the borrower's business. The rate was 15% per annum (p.a.) for general advances, 60% p.a. for trading, (120% p.a. when merchandise had to pass through forests) and 240% p.a. for export-import business. Money lending business could be taken up only by Vaishyas according to Dharma Shastra.

**Money Lenders and Indigenous Bankers:** The indigenous banker who is a more recent addition for the supply of credit and money lenders together catered to the needs of the population. They provided finance for the

agriculturist and village artisan and formed an integral part of the village economy. The village money lender lent for the purpose of finance of consumption as well as productive requirements of agriculturists. The indigenous banker combined money lending and trading with banking operations by discounting hundis (internal bills of exchange) for financing trade. Lending was based on mutual trust and the system lent itself to abuse. Indigence was often the reason for borrowing to meet social needs as well as productive purposes and the exorbitant interest charges as well as cultivator's meager income rendered to cultivator unable to repay the loan and sank deep into debt as the years went by. Large number of agriculturists were dispossessed of land and moneylenders flourished.

The indigenous bankers also made loans but received deposits or dealt in hundis. Their working capital was large. Indigenous bankers demanded security. Repayments were regular and rates of interest were lower than those charged by money lender. Indigenous bankers combined their banking operations with trading. Their profession was more or less hereditary and confined to a few castes and communities, such as Multanis, Shroffs and Marwaris in Northern and Central India. Nattu Kottai Chettis and Brahmins of Kalladaikurichi of South India. The operations of Chettis, accepting deposits and money lending extended to Burma, Thailand and other areas of South Asia. Their lending policy was flexible and facilitated by close personal knowledge of clients.

**Commercial Banks:** In India, banks are a relatively new institution. The first joint stock bank, the Bank of Hindustan was set up at the beginning of 19th century. It was under European management but failed. Commercial banking in India was ushered in 1806 with the setting up of three 'Presidency' Banks of Bengal, Bombay (1840) and Madras (1843). The presidency banks enjoyed the right of note issue in their respective regions. Commercial banks set up by Indians appeared on the scene much later at the turn of the century. The first was Oudh Commercial Bank set up 1889. It was followed by Punjab National Bank in 1894 and the Peoples Bank in 1901. The three presidency banks were amalgamated to form the Imperial Bank of India under the Imperial Bank of India Act, 1920. It was constituted as a quasi public institution to perform certain central banking functions until a separate central banking institution came into being. It was the sole agent of the Reserve Bank of India for government Treasury business in those places where the RBI had no office. It was the first bank to be set up on an all-India basis with three local head offices at Mumbai, Kolkata and Chennai. On government initiative, it embarked upon a vigorous branch expansion in the 1920s at the rate of 100 offices in five years. In addition it had offices in London, Colombo and Rangoon. Its contribution to the extension of banking facilities was considerable with one-fourth of the total deposits of scheduled banks. Its position in the money market

was pre-eminent and the Imperial Bank rate set the rate pattern in the Indian money market.

The exchange banks were the oldest and closely knit sector of the Indian banking structure. They were mainly British primarily located in Bombay, Calcutta, Delhi and Madras they were concerned with the financing of foreign trade as well as internal trade.

Indian joint stock banks vary greatly in size, the largest being the Central Bank of India, the Bank of India and the Punjab National Bank. There were several small non-scheduled banks. The development of regionalised branch concentration revealed a tendency toward unit banking of the American type. These banks restricted their operations to local areas and to specialised clientele.

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## **INTRODUCTION**

Banking systems evolved to meet the demands of the constituents, vested interests and regulations governing their establishment. The British system evolved around central banking system with a central bank and clearing banks with a large network of offices regulated by the central bank while the German one evolved out of an identification of interests of finance, industry and government to provide multiple services to constituents. The U.S. system however, was set apart by the dominance of the unit banks, the role played by an active interbank market in deposits and reserves and the cooperative lending practices. It also features wholesale banking which was the source of several innovative practices such as rollover credit or flexirate lending.

## **BRANCH VS UNIT BANKING SYSTEMS**

The banking systems operating in different countries may be classified into branch banking and unit banking systems. Unit banking exists when banking services are provided by single offices. Some of these banks are often allowed to have some branches within a limited area. These unit banks are linked together by the correspondent bank system. The correspondent bank system acts as a medium for remittances between one bank and another, and provides facilities for consultation for lending risks and sharing loan business.

Approximately one third of American banking offices are unit banks. The presence of unit banks in American banking system is partly a result of law, vested interests and the ability of the unit type of bank organisation to meet the demands of banks' customers. In the absence of transportation and communication facilities in the 19th century, the most practical banking organisation was unit banking. The unit banking system in US would perhaps be termed as local banking system emphasizing the limited areas served by



most banks rather than a form of bank organization. Unit banking is largely concentrated between the Mississippi and the Rockies.

In branch banking system, a typical commercial bank is a large institution having a large number of branches scattered all over the country. The branches are controlled from one location referred to as the head office. The bank organization in US is quite homogeneous. Widespread branching is predominantly a western phenomenon. The eastern third of the United States is primarily a limited branching area. The choice of location of a branch was subject to approval in India by the central bank, the Reserve Bank of India. In India, the total number of branch offices of all scheduled banks was 67,097 at end June, 2004.

R.S. Sayers, in his classic work, *Modern Banking*, noted a tendency for banking systems around the world, despite some national differences to gravitate towards a common pattern. The pattern had first taken shape in Britain in the second half of 19th century and remained largely unchanged until the 1960s in terms of structure, practices and technology. Sayers could record in the 7th and final edition of *Modern Banking* in 1967 that the ordinary business of banking had been practised for generations and the shape of British banking had been settled for more than a century. The features are: firstly, banking in a majority of developed countries was highly concentrated with a few clearing banks dominating the British banking; secondly banking was national and organized on national lines; and thirdly the universality of the principles of banking. Banks were fewer, larger and of the branch banking type because of a advantages of large-scale organization. The chief exception was the US banking system with unit banks geographically spread and having local traditions and practices.

The unit and branch banking systems evolved around the central banking system which consists of the central bank, commercial banks and other financial institutions. Unit banking consists of provision of banking services by a single institution. The size as well as area of operation are small and far more limited than under branch banking system. However, the unit bank may have branches within a strictly limited area. A third of banking offices in the United States are unit banks. Unit banking gave way to branch banking in many parts of US with the economic interdependence of large areas the improvement of transportation and communication, the growth of big business firms, a more mobile population and increasing emphasis placed on local and convenience.

The advantage of unit banking is adoption to local conditions which facilitates the mobilization of deposits and deploying them for local needs (agriculture, small scale industrial units and agro-industrial units) and developing a friendly image. The unit bankers serves local needs in an effective manner. Local resources are put to local use and not transferred elsewhere. The concept of local area bank which is being fostered in India since 1995 fits in with the unit banking system.

**Bank Holding Companies in U.S.A.<sup>1</sup>**

Bank holding companies in U.S.A. which came into prominence after the passage of Bank Holding Company Act of 1956 own banks as well as non-banking subsidiaries. Bank holding companies have long been able to conduct a broad range of banking and non-banking activities in a broad range of geographic markets. The bank holding company structure has allowed institutions to call up on a broad array of deposit and non-deposit funding sources. The holding companies have helped enhance the efficiency of the U.S. banking system in a manner consistent with protecting the federal safety net and the financial system.

Bank holding companies (2003) control 97% of commercial banking assets of \$7 trillion in the U.S. By linking banking and non-banking activities into larger and more diverse financial enterprises they control another \$2 trillion in non-banking financial services assets. Net of inter company claims bank holding company assets totaled \$8.7 trillion at the end of September 2003. Bank holding companies with equity of \$700 billion are able to mobilize capital in financial markets to support both banking and non-banking operations.

**Local Area Banks (LAB)**

As at end-March 2004, five banks were functional. Their deposits amounted to Rs.157 crores and advances Rs.103 crores. The smaller banks had a very high credit-deposit ratio.

The concept of LAB model is weak because its size, capital base, inherent inability to absorb the losses which are bound to arise in the course of business, risk prone credit portfolio, inability to diversify and derisk the business model in view of size and location.

**BRANCH BANKING**

Branch banking consists of conducting banking operations at two or more centres by a bank from one location called as *head office*. The branches may be located in the same city, state or across other states in the nation or overseas. The head office and all other branches are controlled by the same board of directors and are owned by the Government of India in the case of public sector banks or by shareholders in the case of private sector banks. While some banking services are basic and provided at all branches, the management of reserve position and of investment account are performed at the head office. At the end-June 2004, the number of scheduled banks was 105 and the total number of offices of scheduled commercial banks were 67,097. Of the total number of offices 48 percent were in rural areas, 22.4 percent were in

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<sup>1</sup> Federal Reserve Bulletin, Winter 2004,

semiurban areas, 29.6 percent in urban and metropolitan areas. The average population per branch is about 15,000.

The branch expansion programme since nationalization had a positive impact on poverty and non-agricultural output. Branch licensing rule succeeded in encouraging commercial banks in opening branches in backward rural locations which managed to reach the rural poor. The rural branches constituted an avenue to save by the rural households. Significant social returns are generated, if banks exist in rural areas and are accessible to rural poor. Viability of the branches and the excess capacity created by the branch licensing rank have been commented upon by CBSR. Who bears the cost of social banking? Obviously the banks do, ending up in red.

*Advantages of branch banking are*

- Branch banking facilitates the allocation or transfer of savings to their most efficient use
- Division of labour
- Provisions of remittance facilities
- Spread of risks

Branch banking facilitates the allocation or transfer of savings to their most efficient use irrespective of their origin. Savings mobilized in the form of deposits are deployed at any location in the nation depending on maximum return or correction of regional imbalances. It is also likely to lead to uniform structure of interest rates guided mainly by risk or other policy-dictated guidelines. Banks do not need to specialize in any particular area or industry as in the case of unit banking. Risks are spread over the entire spectrum of commercial sector and the assets of the entire bank are behind every branch. The remote communities in the far flung areas of the nation, enjoy the benefits of large national banks. Branch banking also fosters trader-customer contacts across the nation as well as across borders. Unlike unit banking loans and advances can be made purely on considerations of viability and not by personal or local considerations. Branch banking renders the task of management of reserves quite efficient, and control of central bank more effective.

A major criticism of branch banking is the absence of delegation of powers and the need to refer to head office in decision-making leading to delays and loss of initiative. The lack of familiarity of the branch personnel with local conditions and special problems faced by constituents is a disadvantage of branch banking setup. While the allocation of savings on a national basis satisfies efficiency criteria, there is a good deal of opposition to such transfers. Local savings for local development is the political approach.

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**Factors Affecting Banking Systems**

While provision of payment services involving the transfer of ownership of bank deposits from one account to another, provision of deposit facilities and advance credit by means of overdrafts and loans, by the discounting of bills and by trade finance constitutes the ordinary business of banking, there has been a sea change in the business of banking in the last 40 years as exemplified by the rise of wholesale banking, liability management, international banking, multiple currency loans, rollover credits, 'securitised lending', collateralised mortgages, note issuance facilities, interest rate and currency options and financial futures. Credit cards, debit cards, automated teller machines, e-cash and on-line banking are also a part of the worldwide process of change which began in 1960s has been sustained ever since. Banks globally have undergone fundamental changes because of the ongoing revolution in information technology and communications. The winds of change are reshaping the nature of banking and financial markets. The demand for new types of services as well as the need to step up earnings through fee income are changing the nature of banking. On the other hand technological advances by reducing costs give individuals and business firms direct access to markets reducing the need for banks to offer certain services. Technological advances and subsequent innovations have also led to the creation of new markets in terms of futures, forwards, options, secondary mortgage markets expanding the range of portfolio strategies open to financial intermediaries. The changes in competitive conditions since 1990 with banks as a leading partner of financial services industry have transformed banks (especially large international ones) into new financial firms. Among the important factors behind changes in competitive conditions are the internationalisation of banking and financial markets. The opening up of financial markets, the supply of cross border financial services and the impact from the entry of foreign commercial and investment banks are the important features of the process. Other factors are the continuous process of deregulation, partly as a consequence of the globalisation of the markets and partly as a muddle through process. The sources of change of banking industry are desegmentation of financial services industry, restructuring of banking industry, mergers and amalgamations of banks, integration of markets by exchanges, growth of financial information business and internet.

**RETAIL VS WHOLESALE BANKING**

Retail banking refers to the mobilisation of deposits from individuals and lending to small business and in retail loan markets. Retail banking consists of large volumes of low-value transactions. On the other hand, wholesale banking refers to dealing with large customers often multinational companies, governments or government enterprises. The retail-wholesale division was a

feature of U.S. banking prewar with the Wall Street money market banks being predominantly wholesale banks. Wholesale banks deal in large-valued transactions, usually in small volumes. They draw funds from and lend funds to business. Wholesale banking is the term used for transactions between banks and large customers (corporate and government) involving large sums. It also includes the transactions which the banks conduct with each other via interbank market separate from customers.

## **WHOLESALE BANKING**

In the 1960s, there were two banking systems in operation in Britain. One was primary or retail banking system conducted by clearing banks and the small deposit banks dealing with households and small and medium sized firms. The other was a wholesale or secondary banking system operated by other banks. The concept of wholesale banking in U.K. is to be traced to a paper written by J.R.S.Revellin in 1968<sup>2</sup> drawing attention to the growth of a new banking system with a method of operation quite different from the deposit banks. He identified four distinguishing characteristics of wholesale banking. They are mix of domestic currency and foreign currency business with international business accounting for more than half of all the assets and liabilities of secondary (wholesale) banks. Secondly, the size of both deposits and advances is large which were cheap to process. Thirdly, the nature of advances was tailor made to each financing problem with a definite period (term loans) at a variable interest rate. Finally the growth of secondary banking system or wholesale banking was dependent on Euro-dollar market and an active interbank market. Wholesale or secondary banking system was operated by other banks and dealt in large sums with large companies and public authorities. Wholesale banking was divided into foreign currency (or Euro-dollar) business and domestic wholesale business. The two systems were separated by practices and regulatory controls. Reforms to monetary controls in 1971 and 1980 and the new Banking Act in 1979 in UK have resulted in similar regulations for all banks. All British banks are now multi product firms operating simultaneously in the different markets and providing different kinds of services.

The stimulus for the development of wholesale banking in London came from the influx of US banks in 1950s and 1960s which brought the techniques they practiced in US. They were merged with British scene, refined in Euro currency operations and spread worldwide.

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2 Revell, J.R.S. (1968), "Changes in British Banking; The Growth of Secondary Banking System", in Johnson, H.G. (Ed) *Readings in British Monetary Economics*, 1972, The Clarendon Press.

***The practices basic to wholesale banking are***

- Interbank markets in domestic and foreign currencies
- Issue of certificates of deposit in domestic and foreign currencies
- Lending by means of term loans (rollover credits).

**Adoption of Wholesale Banking Practice**

During the 1960s as British banks began to participate in wholesale markets and make loans with the funds they borrowed, the growth of wholesale banking started. The balance sheets of clearing banks assumed a different character. On the assets side, holdings of cash, bills and securities declined. Money market assets, of which three quarters were interbank and loans and advances dominate and the advances to deposit ratio was about 70%. The increased lending was not short-term self-liquidating paper but medium-term loans. On the deposits side funds drawn from the wholesale market contributed more than 60% representing the liability management revolution amongst banks. Banks abandoned the practice of asset management holding cash reserves and other liquid assets to meet unexpected contingencies and started to manage liabilities and buy-in (borrow) funds when needed from the market for interbank deposits, large-size time deposits and certificates of deposits. In the US also similar trends manifested. There has been a switch from asset to liability management. Holding of cash reserves and interbank balances declined sharply. While banks in U.K. relied upon funds 'bought-in' from the wholesale markets, US banks issue of certificates of deposits (contributing one-fifth of deposits). US banks also rely on non-deposit liabilities in the form of repurchase agreements (repos) and bought Federal funds drawn from wholesale markets to finance asset holdings. In both UK and USA a large increase in bank lending (1960s to 1990s) was accompanied by a reduction of cash reserves, decline in demand and current deposits and an increased reliance upon markets for wholesale funds. Banks by placing 70% of deposits in medium-term loans have assumed higher risk with little increase in yields as compared to their earlier investment predominantly in government securities.

**Matching and Liquidity Distribution in Wholesale Banking**

The basis of operations of wholesale banking is the principle of matching. The principle of matching which corresponds to the maturity laddering approach forms the basis of liquidity distribution theory. Liquidity distribution theory states that wholesale banks are pure brokers or distributors of liquid assets. As producers of liquidity financial institutions use factors of production to transform primary securities into technically different products. As brokers they use factors of production to facilitate the exchange of technically unchanged product. Liquidity is distributed without producing it. In wholesale

banking brokerage function is dominant. Wholesale banks balance or match the maturity structure of their liabilities and assets dispensing the need for reserves to meet liquidity needs. Wholesale banks engaged in the function of liquidity distribution reduce costs which otherwise exist in credit markets and distribute funds at a margin that is lower than in direct dealings. Wholesale banks through specialisation acquire information which enables them to offer interest rates preferable to the effective rates otherwise available. Apart from liquidity distribution based on information and transaction costs wholesale banks have a relatively matched balancesheet with respect to their total business, interbank transactions and their non-bank customer business. Banks in wholesale operations are involved in the production of liquidity including transformation of short-term funds into long-term borrowing.

Banks in practice do not conform to purely retail ones, tapping retail deposit markets and lending only in retail markets. Indian scheduled banks are really retail banks. Indian banks have 22.5% of assets in loans to industry and have less than 8.4% of assets in commercial loans. In contrast the great bulk of banking assets in the United States is controlled by the big money centre banks. Clearing banks in the UK, Chartered banks in Canada, trading banks in Australia combine retail and wholesale activities. Sometimes deposits are mobilised from retail deposit markets such as the households but deployed to finance wholesale as well as retail lending. The large international banks in the Eurodollar market finance their lending from the large offshore deposits as well as by interbank borrowing. Savings institutions such as savings and loan associations in USA which are retail establishments have moved into commercial lending. In the UK, trustee savings banks have become full fledged retail and wholesale banks. The ceiling on project loans at Rs.17000 crores for banks in India imparts the character of a wholesale bank to Indian bank. They mobilise deposits in retail and make loans upto Rs.1000 crores, which is quite large. The trend that has emerged across the globe is the overlap or integration of retail and wholesale activities.

### **Gap between Regulated and Wholesale Deposit Rates**

While regulated rates applied (until late 1970s abroad) to personal chequing deposit, time and savings deposits, corporations received market rates of interest on certificates of deposit and negotiated wholesale accounts. There was a gap between retail or regulated deposits and wholesale deposits. Market innovations called money market mutual funds (USA), money market accounts (UK) and cash management trusts (Australia) were created to arbitrage the size differences which separated the retail and wholesale segments of the capital market. These market devices enabled retail depositors to take advantage of the higher rates paid on wholesale funds by aggregating the small amounts into parcels large enough for access to the wholesale sector, selling deposits or unit holders shares



in the pooled portfolio. The market devices also afford limited transactions services by offering ready encashment of units or by allowing funds encashed to be transferred into a cash management account against which cheques could be written. Money market deposit accounts in the US and high interest cheque accounts in the UK (in 1980s) pay market related deposit rates in return for limited cheque writing facilities, bringing about an unbundling of transactions and depository services. Banks monopoly of cheque transfer system disappeared. Other depository institutions (building societies, saving banks, credit unions and saving and loan associations), provide transaction services. Unit trusts and merchant banks in UK offer them. In USA cheque facilities can be obtained from insurance companies, finance houses, securities firms and other financial institutions. Cheques on money market mutual funds and securities firms are not by exchange or transfer of notes and coins in the form of bank deposits (which are guaranteed claims to fixed amounts of notes and coins) but against portfolios of securities. Markets in future may allow individuals as they do large corporations to bypass banks and other financial intermediaries when conducting their day to day transactions.

### **Variable Rate Lending**

In the UK and the USA over three quarters of deposits bear interest which fluctuate with market rates, increasing the chance of sudden loss of earnings should market rates rise and loan rates not follow. This has led to the switch to variable rate lending or 'flexi rate' loans.

The need for payment related services offered on deposit instruments such as transferability by cheque, convertibility into cash with depository or safe keeping facilities decreased when banks developed certificates of deposit to compete in the wholesale market. No payment services were provided by banks on CDs and transferability or encashability came from the secondary markets in which the instruments could be traded. The same phenomenon on assets side involves banks originating loans and then packaging them and selling the resulting securities in the market place such as secondary mortgage markets.

### **Marketisation of Banking**

The marketisation is reflected in the industrial structure of banking. While retail banking is highly concentrated wholesale banking by virtue of its interaction with securities and funds markets has taken on large numbers form and has led to internationalisation of banking. While retail banking is national in character wholesale banking is international in operation and straddles the various national money markets. In the management of liquid assets and their liability raising (funding), international banks arbitrage between the various international financial centres and between the major international currencies. Their funding,



lending and off-balancesheet activities have been the major vehicles for the integration of capital markets and currency markets worldwide. The growth of international banking and wholesale banking has gone hand in hand. International banking is retail as well as wholesale. Wholesale banking is domestic as well as international.

Wholesale banking practices have spread not only geographically with the internationalisation of banking but have filtered through the retail end. Loan syndications, interbank funds markets, rollover credits and floating rate loans which are features of wholesale banking have been adapted. For instance in term lending at retail level rollover credits at a flexirate or prime plus have been adapted.

## **UNIVERSAL BANKING**

A good deal of interest is generated in India in the concept of universal banking in view of the expansion of the activities of all India development banks into traditional commercial banking activity such as working capital finance and the participation of commercial banks in project finance, an area earlier confined to all India financial institutions. Further, the reforms in the financial sector since 1992 have ushered in significant changes in the operating environment of banks and financial institutions driven by deregulation of interest rates and emergence of disintermediation pressures arising from liberalised capital markets. In the light of these developments, the Reserve Bank appointed a Working Group (Chairman Shri S.H.Khan) in December 1997 to examine and suggest policy measures for harmonising the role and operations of development finance institutions and banks. Before we turn to the Working Group's recommendations it is proposed to examine the properties of universal banking systems in Germany and United Kingdom.

### **Definition of Universal Banking**

Universal banking refers to the combination of commercial banking and investment banking including securities business. "Universal banking can be defined as the conduct of range of financial services comprising deposit taking and lending, trading of financial instruments and foreign exchange (and their derivatives) underwriting of new debt and equity issues, brokerage, investment management and insurance"<sup>3</sup>. The concept of universal banking envisages multiple business activities. Universal banking can take a number of forms ranging from the true universal bank represented by the German model with few restrictions to the UK model providing a broad range of financial activities through separate affiliates of the bank and the US model with a holding company structure through separately capitalised subsidiaries.

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3 Saunders, Anthony, A. and Walter, Ingo, *Universal Banking in the United States*, Oxford University Press, New York 1994, p. 84.

## **UNIVERSAL BANKING IN GERMANY**

The term universal banking originally applied to financial institutions whose members engaged in commercial banking covering deposit acceptance and extension of credit as well as investment banking covering securities as well as investment management. The term universal was employed to differentiate them from specialist banks which performed only one type of activity. Universal banks in Germany can provide all financial services and are free to choose the organisational form that best suits them from a market perspective. In practice universal banks in Germany undertake banking and security activities and through subsidiaries undertake insurance, mortgage banking and other services.

Universal banks in Germany are classified into—commercial banks, savings banks and cooperative banks accounting for three-fourths of banking assets. The commercial banks (Gross banken) which include Deutsche Bank, Dresdner Bank and Commerzbank provide under the German banking statutes, all activities within the structure of parent bank except for insurance, mortgage banking, building savings activities and mutual funds which require separate subsidiaries. However, all commercial banks have subsidiaries and/or holdings in financial service companies engaged in the restricted activities.

Regional banks are licensed to operate as mortgage banks in addition to the normal range of universal banking activities. Foreign based banks carry out commercial and investment banking activities in Germany but are prohibited from securities underwriting. Finally private banks restricted to customer, region and type of activities provide middle market financial services.

Specialist banks account for one-fourth of banking assets and perform sector-region and client restricted financial services.

### **Insurance**

All types of insurance are offered by German banks through separately capitalised insurance subsidiaries of the parent banks. Subject to federal insurance regulation both with respect to fit and proper criteria including capital adequacy and with respect to the conduct of business. Apart from Deutsche Bank which has set up a wholly owned subsidiary in 1989, since it has the highest cross selling potential against other retail financial services, other major German banks have chosen to form strategic alliances with insurance companies. The banks sell insurance products and the insurance companies take on pension plans, mutual funds and related financial services created by banks.

The German form of universal banking has been influenced by the industrial-financial alliance consisting of hausbank system, bank ownership of non-bank stock and proxy voting of depository shares. In Germany, a long standing alliance exists between large banks and large German industrial corporations which has

been strengthened by the evolution of universal banking whereby a corporation can access both capital market services, capital issues and M&A transactions, and working capital requirements from the same institution.

### **The Hausbank System**

The Hausbank System is founded on the relationship between a business firm and a principal bank (Hausbank) as its prime supplier of all forms of financing. The Hausbank is deeply involved in the affairs of the company than would a financial institution. The status of Hausbank is gained by standing ready to provide all of the financing needs of start up companies. These consist of subscribing to seed capital initiating public offerings of stock, underwriting bonds and supplying working capital with rolling line of credit often consisting of permanent financing. The arrangement is illustrated by Deutsche Bank's relationship with Daimler-Benz AG in which Deutsche Bank holds 28% equity stake.

### **Ownership of Non-Bank Stock**

Banks in Germany own 5% of the equity of the top 100 companies. The 10 large privately owned banks sit each on 20 (of the top 100) of the supervisory boards.

### **Shareholder Trust Depository System**

Large portfolios of shares are held by banks in trust for individuals and institutions as a part of the universal banking function. The voting rights are however exercised by banks through proxy voting giving banks large control industrial units than would be the case under proportionate share ownership.

### **Financial Stability**

In Germany the interests of finance, industry and government are considered to be identical. The separation of credit and capital markets was never considered to be a prerequisite for financial stability. On the other hand, bank equity share holding and proxy voting systems are assumed to impart stability to industrial concerns since markets are short sighted and dynamically inefficient.

### **Internal Capital Market**

Entrusting banks with corporate control is perceived to contribute to maximisation of social welfare in the long run. Actually information asymmetries are resolved where the bank is an equity insider and a creditor insider. This is the concept of internal capital market that is more efficient than the external capital market.

The public image of universal banks has been tarnished by the excessive economic power possessed by them which can be used for their own gain at the expense of public interest especially in the context of relatively inefficient capital markets. To sum up, four interrelated aspects are involved in regard to the power

of German banks: direct share ownership, voting rights covering shares in fiduciary accounts and tiering of influence through multiple bank-corporate relationships. However, the Banking Commission Report of 1979 (Gessler Commission) found no evidence of excessive influence on the part of universal banks that could be considered inimical to the interests of shareholders. In 1989, direct ownership of equity was only 0.7% of outstanding shares. This compares favourably with the ECs 10% cap on bank shareholding in industrial companies and five percent in India. The banks however have access to information obtained in the course of their credit business which was pointed at by Gessler Commission which advocated the strengthening of insider trading rules.

### **UNIVERSAL BANKING IN UNITED KINGDOM**

UK has historically but now legally separated the activities of its banking industry into commercial banking dominated by four clearing banks and investment banking the preserve of a dozen or so merchant banks in London. The four big clearers (Barclays Bank, National Westminster Bank, Midland Bank and Lloyds Bank) are essentially universal banks. Banks in UK avoid industrial control and have separate merchant banking activities. They pursue investment banking activities mainly through wholly owned subsidiaries. The clearing banks have established life insurance operations. Life insurance underwriting is considered to be complementary to retail banking. Insurance and security underwriting is less risky than bank lending. A broad range of activities increase the stability of the financial institutions.

### **UNIVERSAL BANKING IN INDIA**

The competition between financial intermediaries is not equal. Banks have to bear higher regulatory costs in the form of higher CRR on their deposits while DFIs do not have any such pre-emptions on their resources. If the reserve requirements are brought down it would be easier for DFIs to become universal banks. Secondly DFIs do not have the advantage of branch network for fund mobilisation. DFIs can pursue banking activity if they acquire a branch network through a process of mergers and acquisition or setting up a full-fledged subsidiary as a part of a conglomerate. It will give DFIs greater flexibility to meet the demand of universal banking. Reserve requirements have to be linked to maturity profile of liabilities. They should be applicable only to cash and cash like liabilities. This has systemic implications. Finally, DFIs have a maturity mismatch since it is attractive to raise more of short-term resources and lend specially for capital intensive projects.

### **Distinction between Commercial Banks and Other Financial Institutions**

Financial institutions (FIs) include development financial institutions, (IDBI, IFCI, ICICI at all India level and at state level SFCs), investment institutions

(LIC, GIC, UTI), mutual funds (UTI and others) in public and private sector and non-banking financial companies (NBFCs). There are prudential requirements as also entry conditions to undertake banking business. DFIs were set up either under the Companies Act 1956 or as statutory bodies under the Acts of Parliament.

The distinction between commercial banks and FIs arises because certain bank liabilities are money. The lending function actually is not peculiar to banks. But in lending money, they create money in the form of deposits which can be exchanged for money or used to settle monetary obligations. The lending that may be safely undertaken by the bank is conditioned by the fact that in order to create money, banks have to be ready to supply cash on demand for a portion of their deposit liabilities. Banks have to be liquid and a bank is liquid only when it can produce cash on demand. The liquidity of an asset depends on the time it takes to turn it into cash without loss. Shiftability ultimately means shiftability on to the central bank to the ultimate source of cash. Shiftability depends on the eligibility rules for different assets for use in obtaining rediscount or other facilities at the central bank.

Further, commercial banks have confined their operations to short-term or medium-term lending only. The development banks have been specifically set up to provide long-term loans for projects/fixed capital formation. In India, banks are permitted to extend term finance as per prudential norms and subject to compliance with guidelines on its exposure limits. The main argument against the participation of commercial banks in long-term or even medium term lending is that since their deposits are largely short-term deposits, it would be risky if a bank locks up its resources in term lending.

Banks provide, in a very indirect manner and to a limited extent, long-term finance by purchasing shares of industrial enterprises as portfolio investments. Banks are allowed to invest in shares of private corporate bodies and PSUs upto 5 per cent of their incremental deposits in the previous year. Within this ceiling, banks are also allowed to purchase shares and debentures in the secondary market. Banks have been permitted to invest in preference shares outside the five per cent ceiling from April 16, 1997. Investments of scheduled commercial banks in the instruments of capital market amounted to Rs.1,23,741 crores as on March 31, 2003.

On the other hand, Development Finance Institutions (DFIs) have entered into short-term lending for working capital purposes. If they access the deposit market which is a short-term market, the rules covering DFIs have to change. They have been allowed partially into the deposit market subject to a limit related to their net worth. If development banks want to enter the short-term

money market on resources side and lend for working capital on the assets side, then their present assets and liabilities have to be governed differently, perhaps by rules applicable to commercial banks.

The provision of diversified services (universal banking) both by banks and DFIs either in-house or subsidiary was examined by the Committee on Banking Sector Reforms (CBSFR, 1998) and the working group for Harmonising the Role and Operations of DFIs and Banks under the chairmanship of S.H.Khan (1998).

The CBSR in its report observed that a move towards universal banking is viable and DFIs should convert themselves into banks and be subjected to the same discipline of regulatory and prudential norms as applicable to the commercial banks. In future only two categories of financial intermediaries banks and NBFCs are envisaged. DFIs which do not convert to banks would be categorised as NBFCs.

#### ***Recommendations of CBSR(1998)***

- Banks and NBFCs are envisaged.
- A transitional path for DFIs to become a full fledged NBFCs or banks.
- Any conglomerate in which a bank is present should be subject to consolidated approach to supervision and regulation.
- Financial intermediaries should have a corporate form of organisation under the Companies Act to provide the necessary flexibility for mergers, acquisitions and diversification.
- Supervisory functions should be delinked from refinancing function and brought under a consistent supervisory framework.
- Ownership of financial intermediaries should be transferred from RBI to GOI so that there is a focussed attention on its supervisory/regulatory functions.
- Harmonisation in the working of various institutions should be at the initiative of the organisations with RBI being available for guidance and consultation.
- Efficiency issues pertaining to the organisation should be decided by individual organisation.

#### ***Report of the Working Group (1998)***

The Working Group in its Report suggested changes in role, structure and operations of DFIs and banks.

- Progressive move towards universal banking and the development of an enabling framework for the purpose.
- Granting full banking license to DFI; and in the interim DFI may be permitted to have a banking subsidiary with 100% holding.

- The appropriate corporate structure should be an internal management/shareholder decision.
- Permit mergers between banks and DFIs encompassing both strong and weak (but viable) entities or two strong ones.
- Provide DFIs with appropriate level of financial support to enable them to fulfill their development obligations.

With regard to the regulatory and supervisory framework the Group recommended among others,

- The development of a function-specific regulatory framework that is institution neutral with regard to the regulatory treatment of identical services rendered by any participant in the financial system.
- A system of consolidated supervision of financial entities.
- A focus on off site supervision based on periodic reporting by banks/DFIs.
- The establishment of a super regulator to supervise and co-ordinate the activities of the multiple regulators.
- Speedy legal reforms in the debt recovery area of banks and financial institutions.

#### **RBI Discussion Paper, January 1999: Architecture for the Financial Sector**

Against the backdrop of these recommendations the RBI prepared a Discussion Paper (DP) in January 1999 to address the various issues of universalisation of banking and elimination of the specific functional role as specialised financial institutions.

The main focus of the DP is to rationalise and harmonise the relative roles of banks and DFIs in future. The main proposals in the DP are:

- Provision of diversified services (universal banking) both by banks and DFIs (in house or subsidiary) restructured.
- Banks and NBFCs are envisaged.
- A transitional path for DFIs to become full fledged NBFCs or banks.
- Any conglomerate in which a bank is present should be subject to consolidated approach to supervision and regulation.
- Financial intermediaries should have a corporate form of organisation under the Companies Act to provide the necessary flexibility for mergers, acquisitions and diversification.
- Supervisory functions should be delinked from refinancing function and brought under a consistent supervisory framework.
- Ownership of financial intermediaries should be transferred from RBI to GOI so that there is a focussed attention on its supervisory/regulatory functions.



- Harmonisation in the working of various institutions should be at the initiative of the organisations with RBI being available for guidance and consultation.
- Efficiency issues pertaining to the organisation should be decided by individual organisation.

### **Prudential Norms and Entry Conditions**

DFIs enjoyed access to concessional resources till the reform process began in 1992. While improved access to short-term resources through the traditional banking route helps diversify DFIs' business it would not necessarily add to long-term resource base. DFIs have however to meet prudential requirements as also entry conditions applicable to all banks.

### **Transformation of DFI into a Bank**

The paper stated that DFIs have a special role in the financial system until the long-term debt market acquires liquidity and depth. Large and medium size firms depend on DFIs for long-term financing and DFIs have special skills to appraise projects. Banks are yet to acquire fully such skills. DFIs can choose to become a bank or NBFC and tailor their needs in the interim depending on the nature of DFI and its comparative advantages.

### **Consolidated Supervision**

Risks and failures of large universal banks might engender serious repercussions throughout the financial system. The move towards a consolidated balance sheet in respect of each public sector bank would be possible only over a period of time especially in view of the increasing diversification of their ownership.

The new capital adequacy framework of BIS envisages the application of Banking Accord on a consolidated basis for preserving the integrity of the capital base in the banking system. Holding companies that are parents of banking group have to be covered. The Banking Accord as an alternative to full consolidation can be applied on stand alone basis if investments in subsidiaries and significant minority owned stakes are deducted from the capital.

### **Supervisory Regime**

While there is a uniform supervisory regime for both banks and NBFCs consisting of on site supervision off site monitoring and periodic external auditing, DFIs are loosely defined. They have to be brought under a transparent framework as suggested by CBSR.

The efficacy of a common supervisory mechanism however, requires not internal control and monitoring by focusing on a few identifiable parameters but also on strict auditing and disclosure standards.



In this connection, Shri Y.V. Reddy, Dy. Governor, RBI suggested an apex regulatory authority<sup>4</sup>. Under the proposal banks and non-banks will be supervised by the Board for Financial Supervision with the Deputy Governor as Chairman; The Insurance Regulatory Authority will supervise insurance companies; and SEBI will continue with its regulatory jurisdiction. The apex financial regulatory authority may be constituted by statute with the Governor of RBI as chairman and the members could be chairmen of the three regulatory agencies. It would have by law jurisdiction to assign regulatory gaps to one of the agencies, arbitrate on regulatory overlaps, and ensure regulatory coordination.

### **Insurance**

Banks abroad have generally been permitted to act as distributors of insurance products. They have set up their own subsidiary or bought shares of insurance company or swapped shares with insurance companies. Insurance companies in turn have acquired stakes in some banks either as investment, diversification or to promote the distribution of insurance products through bank branches.

Banks and insurance companies could combine to mutual benefit. Commercial banks can use their branch network to sell all types of insurance, particularly life insurance to their traditional customers. Insurance companies design complex financial products and offer them for placing savings that private customers find particularly appealing such as retirement funds or single premium insurance policies.

Banks could engage in insurance activities in-house via a department of the banks, a separately capitalised subsidiary of the bank or a separately capitalised affiliate of its branch holding company. Expansion into insurance by banks will result in new and complex risks leading to larger claims on deposit insurance or the safety net in general. The combining of banking and insurance activities raises the question of competing jurisdiction of two regulators.

The linkages between banks and insurance companies have to be defined by the Government as a owner of public sector banks, DFIs and insurance companies and as a sovereign it has to assign appropriate regulatory jurisdiction whenever the two activities overlap.

### **Banks Entry into Insurance**

Banks have been permitted to enter into insurance business after the enactment of the Insurance Regulatory and Development Authority Act, 1999. Banks having a minimum networth of Rs.500 crores and satisfying capital adequacy, profitability,

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4 Y.V. Reddy, "Discussion Paper on Universal Banking and Beyond", RBI Bulletin, August 1999.

NPA level and track record of existing subsidiaries can undertake insurance business through Joint Venture with risk participation. Others which are not eligible can participate up to 10% of their net worth or Rs.50 crores in an insurance company for providing infrastructure and services support without taking on any contingent liability. Insurance products can be distributed as agent by any scheduled commercial bank or its subsidiary.

### **Narrow Banking**

The concept of narrow bank has been mooted as a solution to the problem of high non-performing assets. Narrow banks as advocated by Robert E. Litan in 1987 refer to banks that only invest demand deposits in highly marketable liquid assets. They would provide ready and ample liquidity. All incremental deposits are diverted to riskless securities foreclosing the buildup of non-performing assets. Narrow banks are also suggested to be set free from major regulatory stipulations to offer their depositors a competitive return on their deposit.

The narrow bank approach goes against the concept of intermediation. Banks are in the business of allocating savings to productive investment. In the process they manage risks. Actually the function of banks is the management of risks. If the banks collect scarce savings to invest in risk-free assets they would only be supporting fiscal profligacy.

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# FUNCTIONS OF A COMMERCIAL BANK

# 4

## **SPECIAL NATURE OF BANKS**

Banks are financial firms and depend on economies of size and gains arising from internalising certain activities rather than relying on market transactions. Banks provide packages of financial services which individuals find too costly to search out, produce and monitor by themselves. Banks are also special as they not only accept and deploy large amounts of uncollateralized public funds in a fiduciary capacity, but also leverage such funds through credit creation. Capital represents a very small fraction of total assets of banks especially when compared to non-financial institutions. A minimum percentage of capital of 8% of assets is equivalent to a leverage ratio (debt/equity ratio) of  $92/8 = 11.5$  which is unsustainable with non-financial institutions. Borrowers would consider it as impairing too much the repaymentability and causing an increase in the bankruptcy risk beyond acceptable levels. The high leverage of banking institutions does not interfere with their functioning because the discipline imposed by borrowers does not apply to depositors who are protected by deposit insurance. Banks require easy and immediate access to financial markets for raising funds as long as the perceived risk by potential lenders remains acceptable. The risks are however made visible and explicit by bank ratings.

The special nature of banks, creation of liquidity, carries risks unique to management of banks<sup>1</sup>. The basic function of bank management is risk management. One would be stretching the point, if this is equated with the

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<sup>1</sup> See Biagio Bossone, 2000, What is special about banks? Mimeo, The World Bank, Washington, D.C. and "Circuit Theory of Banking and Finance", *Journal of Banking and Finance*, 25, 2001, pp. 857-890.

conferment of special privilege which calls for the imposition of an obligation to provide banking services to all segments of population on equitable basis<sup>2</sup>.

## **CHARACTERISTICS OF COMMERCIAL BANKS**

Among the financial institutions, the role of commercial banks is unique. Firstly, bank demand deposit liabilities Rs.2,56,039 crores as at end March 2004 constitute a large proportion (44.4 percent) of narrow money M1 (consisting of currency with the public, demand deposits and other deposits with the RBI) of Rs.5,76,651 crores. Of the broader measure of money supply, M3 of Rs.20,03,102 crores at the end of March, 2004, (which includes M1 + post office savings banks deposits = M2) time deposits with banks of Rs.14,26,451 crores, aggregate deposits of Rs.16,82,491 crores with banks constitute 83.9 percent.

Secondly commercial banks are the primary vehicle through which credit and monetary policies are transmitted to the economy. Credit and monetary policies are implemented through action on bank reserves (cash and statutory liquidity ratios), margin requirements and the rate at which scheduled banks can borrow from the RBI. These affect the supply, availability and cost of credit at banks.

Thirdly, the nature of lending and investing by commercial banks is multi-functional. They deal in a wide variety of assets and accommodate different types of borrowers. They facilitate the spread of the impact of monetary policy to non-bank lenders and to other sections of the economy. Further, the operations of commercial banks are highly flexible since they provide facilities for financing different types of borrowers which enables them to channel funds according to specified priorities and purposes.

### **Definition of Banking**

The Banking Regulation Act, 1949, defines banking as accepting for the purpose of lending or investment, of deposits of money from the public, repayable on demand or otherwise and withdrawable by cheque, draft, order otherwise.

### **Functions of Commercial Bank**

#### *The functions of a commercial bank are*

- to change cash for bank deposits and bank deposits for cash.
- to transfer bank deposits between individuals and/or companies.
- to exchange deposits for bills of exchange, government bonds, the secured and unsecured promises of trade and industrial units.

2 See "Annual Policy Statement 2005-06", RBI *Bulletin*, May 2005, P.354.

- to underwrite capital issues. They are also allowed to invest 5% of their incremental deposit liabilities in shares and debentures in the primary and secondary markets. The commercial banks have set up subsidiaries to provide advice on portfolio management or investment counselling. They also offer their constituents services to pay insurance, advise on tax problems and undertake executive and trustee services.

## **PAYMENTS SYSTEMS**

Commercial banks are institutions which combine various types of transactions services with financial intermediation. Banks provide three types of transactions services. Banks, first, stand ready to convert deposits into notes and coins to enable holders of deposits to undertake transactions in cash. Secondly, bank deposits are used as a means of settling debts. Thirdly, where exchange controls do not exist, banks exchange cash and deposits from one currency into cash and deposits of another currency.

Commercial banks earlier had a monopoly on transaction services. Other financial intermediaries such as savings and loans, saving banks and credit unions in the United States have been authorised to offer transaction accounts. Money market mutual funds, another type of financial service organisation have developed financial product against which checks may be written.

Commercial banks are at the very centre of the payments systems. Bank money constitutes 38 percent of the money supply (M1) of the Indian economy. An efficient payment system is vital to a stable and growing economy and the banks' role is important.

In advanced economies commercial banks are also at the heart of the electronic payment system which is replacing paper based payment methods. In USA electronic payment between commercial banks are done through Fedwire which is a wholesale wire transfer system operated by the Federal Reserve System. About 3,00,000 transfers per day amounting to \$ 1 trillion are made. Large banks in New York operate a private electronic transfer system called CHIPS (The Clearing House Interbank Payments System) which transfers \$1 trillion a day involving international movement of funds.

Finally, Swift (the Society for Worldwide Interbank Financial Telecommunication) based in Brussels is operated by 2000 banks, brokerage firms and non banking financial institutions worldwide.

## **INTERMEDIATION**

Commercial banks are the most important financial intermediaries accounting for about 66% of total assets of financial system. They have a comparative

advantage among other intermediaries in the provision of liquidity and payment services, credit supply and information services. Firstly, they undertake the important process of financial intermediation whereby the funds or savings of the surplus sectors are channeled to deficit sectors. Commercial banks along with other financial institutions channel the funds of surplus economic units to those wanting to spend on real capital investments. Funds are transferred through lending by banks or by creation of financial liabilities such as bonds and equity shares. Banks intermediate by obtaining the funds of savers in exchange for their own liabilities such as entries in a pass book and then in turn make loans to others. Financial intermediaries including banks buy and sell the right to future payments. Banks collect deposits from savers by offering interest and other features that meet customers' needs better than alternative uses of funds. In 2003-04 savings of the households in the form of bank deposits constituted 40.5 percent of gross financial savings. Deposits of commercial banks can be of any denomination which have the characteristics of low risk and high liquidity. The small deposits are put together to lend the funds.

### **Brokerage and Asset Transformation**

Intermediary services are of two kinds: brokerage function and asset transformation activity. Brokerage function as represented by the activities of brokers and market operators, processing and supplying information is a part and parcel of all intermediation by all institutions. Brokerage function brings together lenders and borrowers and reduces market imperfections such as search, information and transaction costs. The asset transformation activity is provided by institutions issuing claims against themselves which differ from the assets they acquire. Mutual funds, insurance companies, banks and depository institutions undertake size transformation by providing many depositors with a share of a large asset or issuing debt type liabilities against equity type assets. While providing asset transformation, financial firms differ in the nature of transformation undertaken and in the nature of protection or guarantees which are offered. Banks and depository institutions offer liquidity, insurance against contingent losses to assets and mutual funds against loss in value of assets.

Through their intermediary activities banks provide a package of information and risk sharing services to their customers. While doing so they take on part of their risk. Banks have to manage the risks through appropriate structuring of their activities and hedge risks through derivative contracts to maximise their profitability.

### **Transformation Services**

Banks combine various types of transformation services with financial intermediation. They provide three transformation services when they undertake intermediation process. Firstly, liability, asset and size transformation consisting

of mobilisation funds and their allocation (provision of large loans on the basis of numerous small deposits). Secondly, maturity transformation by offering the savers, the relatively short-term claim on liquid deposits they prefer and providing borrowers long-term loans which are better matched to the cash flows generated by their investment. Finally, risk transformation by transforming and reducing the risk involved in direct lending by acquiring more diversified portfolios than individual savers can. Commercial banks by effectively appraising credit requests can channel funds into productive uses.

### **Advantages of Financial Intermediaries**

Benefits provided by financial intermediaries consist of reduction of information and transaction costs, grant long-term loans, provide liquid claims and pool risks. Financial intermediaries economize costs of borrowers and lenders. Banks are set up to mobilize savings of many small depositors which are insured. While lending the bank makes a single expert investigation of the credit standing of the borrower saving on several department investigations of amateur.

Financial intermediaries make it possible for borrowers to obtain long-term loans even though the ultimate lenders are making only short-term loans. Borrowers who wish to acquire fixed assets do not want to finance them with short-term loans. Although the bank has used depositors funds to make long-term loans it still promises its depositors that they can withdraw their deposits at any time on the assumption that the law of large numbers will hold. Bank deposits are highly liquid and one can withdraw the deposit any time, though on some kinds of deposits the interest previously earned on it has to be foregone. Finally, banks by pooling the funds of depositors reduce the riskiness of lending. Indirect finance in sum reduces the information and transaction costs of lenders and borrowers, renders deposits liquid and reduces the risk of lending.

### **Distinction between Commercial Banking and Trading Activities: Banking Book and Trading Book**

Regulations make a clear distinction between commercial banking and trading activities with the common segmentation between the banking book and trading book. The banking book groups and records all commercial banking activities consisting of lending, borrowing and overlaps with investment banking operation. The trading book groups all market transactions tradable in the market. The banking book is governed by buy and hold approach while the trading book is governed by capital market practices. Accounting rules differ for the banking portfolio and trading portfolio. Accounting or portfolio rules that govern the banking book follow traditional accrual accounting of interest and costs and rely on book values for assets and liabilities. Asset-liability management applies to banking portfolio and focuses on interest rate and liquidity risks. Traditional commercial banking is local in character.



Trading book is governed by market values of transactions (mark to market) and profit and loss (which are variations of mark to market value of transactions) between two dates. The turnover of tradable positions is faster than that of banking portfolio. Earnings are P-L equal to changes of the market value of traded instruments. The market portfolio generates market risk, subject to liquidity risk. Market transactions include non-tradable instruments or derivatives traded over-the-counter. They trigger credit risk. Off balance sheet transactions which are contingencies given and received generate revenues but not exposures. They however trigger credit risk because of the possible future usage of contingencies given. Off balance sheet lines turn into a balance sheet exposure when exercised. Received contingencies create obligations for counter parties who sold them to the bank.

### **PAYMENT AND SETTLEMENT SYSTEM**

The deployment of funds mobilized through deposits involves banks in financing economic activity and providing the lifeline for the payment system. An integrated payment and settlement system is necessary for improving the conduct of monetary policy in the context of opening up of the economy. In the banking system the payment system floats, delays in processing and settlement system and legal hurdles in settlements enhance transaction costs. Operational efficiency, speed, better accuracy and timeliness of payment transactions as well as containing financial risks in the payment system are sought to be achieved by the establishment of VAST-network. The network which will encompass the entire financial sector would facilitate the movement towards **Real Time Gross Settlement (RTGS)** adopted by major countries of the world. The RTGS system would cover all the banking and financial market transactions, reduce transaction costs and improve efficiency of channels for transmission of monetary policy.

An integrated payment system will result in reduction of transaction costs and delay in settlements, minimise risk and interlink real and financial sectors. The focus of the integrated payment system is on computerisation, establishing connectivity and interface with banks' treasury/funds department, setting up controlling offices and providing connectivity among banks in an on-line and real time environment. Integration will involve interfacing of paper based as well as electronic payment services with securities and funds transactions, across the money and capital markets both national and international through a reliable, secure and speedy communication networks.

### **REAL-TIME GROSS SETTLEMENT**

The Committee on Payment and Settlement System (CPSS) of the Bank for International Settlements published the Report on Real Time Gross Settlement (RTGS) Systems in March 1997.

The timing of the settlement can be immediate which is described as being in real time or on the same day, either in batches at predetermined intervals (discrete) or at the end of the day (deferred). A gross settlement system is one in which both processing and final settlement of funds transfer instructions can take place continuously in real time.

The gridlock in RTGS which arises when a series of interdependent payments are stalled due to insufficient funds to settle the primary transaction, is resolved by providing for intra day liquidity to the participants. The liquidity requirement in RTGS is higher than in the netted system because each transaction has to be settled individually. However, gross settlement reduces the settlement risk, principal (credit) risk and systemic risk. In gross settlement, knock-on or domino effect on the system is avoided. RTGS is critical for an effective risk control strategy. It helps in distinguishing temporary liquidity problems from insolvency which could have helped in averting South Asian Crisis in 1997.

RTGS was implemented by the Reserve Bank on March 20, 2004. The RTGS provides for an electronic-based settlement of interbank and customer-based transactions, with intraday collateralized liquidity support from the Reserve Bank to the participants of the system. The system is enabled for straight through processing (STP) of customer transactions without manual intervention. By the end of 2004, 3000 branches in 275 centres (to go up to 500) are expected to be covered.

RTGS is a single, all India system, with the settlement being effected in Mumbai. The payments are settled transaction by transaction. The settlement of funds is final and irrevocable. The settlement is done in real time and funds settled can be used immediately. The message transmission is safe and secure.

## **OTHER FINANCIAL SERVICES**

Commercial banks provide securities related services. Commercial banks in India have set up subsidiaries to provide capital market related services, advice on portfolio management or investment counselling. In U.S., the Glass-Steagall Act of 1933 restricts the nature of services provided by commercial banks. In US they may offer discount brokerage services but not general purpose brokerage services. US banks facilitate mergers and acquisitions and in trading in currencies and US Government securities.

The Glass-Steagall Banking Act prohibits commercial banks from owning a firm dealing in securities. The Act has been challenged by banks offering money market mutual funds and other investment services. US Federal Reserve Board in January 1997 issued a proposal that would allow bank holding companies and their securities industry affiliates to offer 'one stop shopping' for their customers.

Commercial banks in US in 1990s have become very active in the management and distribution of mutual funds, managing more than 10 percent of the assets of all mutual funds. In India several commercial banks such as Bank of India, Canara Bank, Indian Bank and State Bank of India have set up subsidiaries under the guidelines issued by the Reserve Bank in 1987, followed by guidelines laid down by the Ministry of Finance in 1991.

### **Fiduciary Services**

In US, banks manage employee pension and profit sharing programs that do not show up on banks' balance sheet. In US, banks operate separate trust departments which manage the funds of trust for a fee under the guidance of a trust agreement. The assets held in trust do not show up on banks balance sheet because they do not own the assets held in trust.

### **Off-balance sheet Activities**

Banks assume contingent liabilities such as a guarantee of payment of another party, for a fee. Standby letter of credit is another example whereby a bank agrees to pay specified amount on presentation of evidence of default or non-performance of the party whose obligation is guaranteed.

#### ***The rapid expansion of off-balance sheet activities of banks, consisting of***

- Commitments (unused overdraft facilities and note issuance facilities) which may require banks to advance funds and acquire a credit exposure at some future date.
- Provision of guarantees to borrow in direct financing markets and bankers acceptances of commercial bills or time drafts which substitutes banks credit rating for that of the borrowing firm (which remains an off-balance sheet exposure for the bank as long as the acceptance is not discounted and held by the accepting bank).
- Entry of banks into forward contracts in the markets in foreign exchange, interest rate and stock market.
- Banks engaging in merchant and investment banking activities like securities underwriting have blurred the distinction between business of banks and investment banks and between banking and financial markets generally and are often referred to as marketisation of banking.

In India, the off-balance sheet activities of commercial banks include fees, commissions and brokerage, profit/loss on sale/purchase of investments, forward exchange contracts, guarantees and acceptances and endorsement. The off-balance sheet exposure of scheduled commercial banks was Rs.17,63,283 crores in 2003-04. The off-balance sheet exposure as a proportion of total liabilities was 51.3 percent in 2003-04.

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# *ANALYSIS OF ASSETS AND LIABILITIES OF SCHEDULED COMMERCIAL BANKS*

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# 5

## **ASSETS AND LIABILITIES OF BANKS**

At the end of March 2004 there were 90 Scheduled Commercial Banks (SCBs) comprising 27 Public Sector Banks (PSBs), 30 private sector banks and 33 foreign banks. Nine (8 in the public sector and 1 in the private sector) Indian banks operate 93 branches and 17 representative offices abroad. Indian banks' subsidiaries were 13 and joint ventures 7. The public sector banks (PSBs) dominate the banking system with more than 47% share in the total assets of the banking system.

The assets and liabilities of all scheduled commercial banks. (SCBs) as at end of March 2004 are presented in Table 5.1. Assets of Rs.19,75,206 crores consist of cash in hand and balances with RBI of Rs.1,13,246 crores (5.7% of total assets), assets with banking system of Rs.82,223 crores (4.2%), investments of Rs.8,02,066 crores (40.6%) and bank credit of Rs.8,64,143 crores (43.8%).

Liabilities of all scheduled commercial banks at Rs.19,75,206 crores consist of capital of Rs.22,348 crores (1.1% of liabilities), reserves and surplus of Rs.94,240 crores (4.8%) and deposits from public of Rs.15,75,143 crores (49.8%).

## **LIABILITIES**

### **Paid-up Capital and Reserves**

Paid-up capital of Rs.22,348 crores and reserves of Rs.94,240 crores in 2003-04 together constituted 5.9% of liabilities of scheduled commercial banks.

### **Banking Regulation Act, 1949**

The Banking Regulation Act 1949 stipulates provisions to ensure adequacy of minimum paid-up capital and reserves. For a company incorporated in India a minimum paid-up capital of Rs.5 lakhs is prescribed. In the case of a banking

company incorporated outside India, Rs.15-20 lakhs depending on location is prescribed. It has to deposit further, cash or securities for Rs.15-20 lakhs with the Reserve Bank of India (RBI). Foreign banks are also required to deposit with the RBI, 20 percent of the profit from operations in India every year. They may be exempted for a specified period, if their deposits are adequate in relation to their deposit liabilities. Profits deposited with the RBI are considered an asset of the bank on which the claims of all creditors of the bank in India shall be the first charge. Guidelines for licensing of new banks were issued by RBI in 1993 as a part of reforms process. RBI revised the guidelines again in January 2001 for entry of new private sector banks. The guidelines formulated by the RBI in January 1993 in regard to entry of new banks have stepped up the requirement of capital. Now a bank has to be registered as a public limited company with a paid-up capital of Rs.200 crores, (January 2001); the initial capital should be raised to Rs.300 crores within 3 years; promoters' contribution should be 40% of capital at any point of time; NRI participation limited to 40% of paid-up capital; capital adequacy ratio 10%; NBFCs with good track record and net worth of Rs.200 crores (Rs.300 crores in 3 years) may be converted into a bank; NBFC desiring conversion should have capital adequacy ratio of 12%; and net NPAs not more than 5%.

It has been recognized that the solvency of banks depends not only on the stability of the value of their assets (read performing assets) but also on the size of the capital accounts. On top of the small capital stipulated, banks made highly risky loans. The ratio of capital funds in relation to bank assets is well recognised and is a universally accepted measure of the strength and stability of a bank. Capital means shareholders' equity which represents funds without any conditions. They have been committed to a bank with hopes for success and without any guarantee against risk. It enables a bank to attract the other borrowed funds it needs to support its business capital. Capital is closely tied with leverage and a small amount of capital placed in a bank has an influence magnified many times as noted in the special nature of banks above. Bank capital is the core of a market economy.

**Table 5.1** Assets and Liabilities of Scheduled Commercial Banks as on March 31, 2004.

<b>Liabilities</b>	<b>(Rs. crores)</b>	<b>%</b>	<b>Assets</b>	<b>(Rs. crores)</b>	<b>%</b>
Capital	22,348	1.1	Cash and balances with RBI	1,13,246	5.7
Reserves & Surplus	4,240	4.8	Balances with banks and money at call and short notice	82,223	4.2
Deposits	15,75,1437	9.8	<b>Investments</b>	8,02,066	40.6
Demand	2,03,142	10.3	Government securities	6,39,144	32.4
Savings	3,73,677	18.9	In India	6,36,267	32.2
Term	9,98,324	50.5	Outside India	2,877	0.1
			Other approved	18,100	0.9
Borrowings	96,490	4.9	Non approved	1,44,822	7.3
Other liabilities and provisions (Unclassified liabilities) to banking system and participation certificates issued by SCBs)	1,86,798	9.5	<b>Loans and advances</b>	8,64,143	43.8
			Bills purchased and discounted	67,231	3.4
<b>Total liabilities</b>	<b>19,750,020</b>	<b>100.0</b>	Cash credit and overdrafts	3,17,836	18.8
			Term loans	4,25,076	21.5
			Fixed assets	21,403	1.1
			Other assets	91,940	4.7
			<b>Total Assets</b>	<b>19,75,020</b>	<b>100.0</b>

Source: Reserve Bank of India, Report on Trend and Progress of Banking in India, 2003-04.



## **FUNCTIONS OF BANK CAPITAL**

- Bank capital is the link between financial markets and bank's profitability. By relating banks' operations to financial markets, it indicates how well bank's are performing. A capital shortage of a bank indicates that it should change, among others, its operating policies.
- Bank capital is a source of funds. It helps meet startup costs of investment in land, plant and equipment. Established banks also require capital to finance growth.
- Return on bank capital indicates how well a bank's programmes can be sustained and the capital sum serves as a cushion against temporary losses and as a protection to uninsured depositors and other holders of liabilities in the event of liquidation. Financial markets continuously evaluate the relationship between earnings, assets and capital. The return on assets is measured by the return on capital divided by leverage. Profitability is the cornerstone of the capital policy of banks. Banks with low profitability are regarded as inefficient and may find it difficult to raise capital.
- Bank capital provides a cushion against temporary losses and signals that the bank has a basis of continuity and that its constituents have reason to look at banks' difficulties in a long-term perspective.
- Bank capital is generally less than 10% of assets whereas non-financial firms have capital assets ratios in the range of 40-60%.
- Relatively small unanticipated losses can significantly affect bank capital and threaten bank solvency. In 1990-91 before the advent of banking sector reforms the ratio of paid-up capital and reserves to deposits, the capital base, of public sector banks at 2.85% was quite low by international standards. Ownership of banks by government resulted in complacency about capital ratio. Lack of proper disclosure norms led many banks to keep the problems under cover. Capital is the centrepiece of regulatory policies. Bank regulators stipulate minimum requirements to promote safety and soundness of the banking system. Shareholders are not the concern of regulators. With the progressive privatisation of public sector banks' shareholders with significant stakes in the bank will act to control risk taking to protect their investment. The shareholding of the Government of India and the Reserve Bank constituted 1.8% and 59.7% in the case of State Bank of India. Other banks which are not fully owned by Government of India are Bank of Baroda (66.6%), Bank of India (76.6%), Corporation Bank (68.3%) Dena Bank (71.0%) and Oriental Bank of Commerce (66.5%). Existing norms permit dilution upto 51% through

the issue of fresh capital by public sector banks. There are 14 banks in the public sector which are fully owned by Government of India. The private sector banks can raise capital in the form of equity issues without the approval of the RBI.

### **CAPITAL ADEQUACY**

Financial risk increases the probability of banks' insolvency. Bank regulators are concerned about the downside risk of banks and they focus on lower end of the distribution of bank earnings. The variability of earnings from the regulators' view point should not lead to elimination of capital and insolvency of bank. Shareholders on the other hand are concerned with the expected return and require higher earnings per share as bank profitability becomes more variable. They have to be compensated for the bank risk.

The problem of financial risk is not solved by stipulating high capital requirement. High requirement may inhibit the efficiency and competitiveness of the banking system and may act as a constraint on the lending operations of the bank. Banks may not allocate funds in the most efficient manner. Relatively high capital requirement for banks as compared to other providers of financial services may also constrain the rate at which bank assets may be expanded impairing their competitive strength.

### **CAPITAL STANDARDS IN U.S.A**

Capital is regarded as a buffer against insolvency and to promote safety and soundness of the financial system. In the US the capital adequacy of any individual bank was dependent on the regulatory agency. National banks had to meet Office of the Controller of Currency (OCC) standard; Federal Reserve Board (FRB) standards applied to state member banks and banks affiliated to holding companies; and Federal Deposit Insurance Corporation (FDIC) to state chartered banks. Historically capital standards were changed many times. In the US in the early 1900s when deposit runs were a major threat to bank soundness, the office of the Comptroller of the Currency (OCC) required banks to have capital to deposit ratio of 10% or more. In the 1930s, the Federal Deposit Insurance Corporation (FDIC) began employing capital to asset ratio because risky assets were considered to be the major cause of failure. Regulators adopted a capital to risk assets ratio to let the banks utilise the large amount of default-free government securities accumulated during World War II by defining risk assets as total assets minus cash and government securities.

The Federal Reserve Board in the 1950s required the classification of assets into six different categories and banks were required to hold a different

percentage of capital against each asset category. Smaller banks were required to meet higher capital requirement since their portfolio diversification was less than a larger bank. OCC abandoned the guidelines in 1960s in favour of more subjective evaluations based on management quality, asset liquidity, ownership, operating expenses and deposit composition. Capital standards are enforced under the International Lending Supervision Act of 1983. Under the Act regulator, the requires violating banks to submit a plan to correct the capital shortfall which is enforceable in courts.

Uniform minimum primary capital-to-asset ratio was prescribed in 1981 by federal bank regulator. Primary capital was defined as equity shares, capital surplus, undivided profits, capital reserves and other non-debt instruments. Banks with less than \$1 billion in assets were to satisfy 6% norm and 5% for banks with more than \$1 billion in assets as laid down by FRB and OCC. The FDIC stipulated a minimum ratio of 5% for all banks. The three federal bank regulators in 1985 revised the norm at 5.5% of primary capital for all banks. Zones were established to consider ranges of ratios for primary and total capital (including all debt instruments) as well as asset quality that are relevant to capital risk. If a bank is found to be under capitalised the shortfall had to met under the supervision of the regulatory agency.

### **RISK ADJUSTED CAPITAL REQUIREMENTS**

The Basle Committee on Banking Regulations and Supervisory Practices appointed by the Bank for International Settlements (BIS) has prescribed certain capital standards to be followed by commercial banks. The risk based practices and models are focused on systemic risk the entire banking industry is exposed to on account of the density of the relations among banks. Mutual lending, borrowing and trading creates strong interdependencies between banks. Failure of a large bank might trigger the contagion effect, through which other banks suffer unsustainable losses. The risk of collapse of the entire banking industry is ever present because of dense relationships among banks. The proposal for risk-based capital rules was adopted in 1988 by the Committee. The 1988 Accord requires banks to hold capital equal to at least 8% of weighted assets. This ratio called Cooke ratio addresses credit risk. The rationale for the proposal was that empirical evidence did not disclose any obvious relationship between bank capital and failure risk. The proposed norms apart from being closely related to failure risk, would also promote convergence of supervisory policies on the adequacy of capital among countries with major international banking centres. **The Basle Agreement** was signed in June 1988 by 12 industrialised nations. US banks had to comply with the norms by close of 1992.

***The Cooke ratio while it is simple has several major drawbacks***

- It does not differentiate between the different risks of major corporations. The Accord is not risk sensitive enough.
- The unequal treatment of short and long loans creates artificial arbitrage by banks.
- No provision for recovery is made even where collateral in the form of cash or liquid securities exist.
- Irrespective of the diversification, the same ratio is applied to all portfolios.

The RBI accepted for implementation, the standard of measuring capital as a ratio of risk weighed assets. The Committee on the Financial System (1991) suggested the adoption of capital adequacy norms, prudential norms for income recognition and provision for bad debts. The risk weighed assets ratio approach to capital adequacy is considered to be more equitable as an institution with a higher risk assets profile has to maintain a higher level of capital. Further the integration of on-balance sheet and off-balance sheet exposures into the capital ratio would provide risk sensitivity and skills to manage risk and structure balance sheet in a prudent manner.

**Classification of Capital of Banks**

Capital funds of scheduled commercial banks in India include Tier I or core capital and Tier II or supplemental capital. Tier I capital includes paid-up capital, statutory reserves and other disclosed free reserves and capital reserves representing the surplus arising out of the sale proceeds of assets. In computing Tier I capital, equity investment in subsidiaries, intangible assets and losses are deducted. Tier I capital consists of permanent and readily available support to a bank against expected losses. Tier I capital should not be less than 50 percent of total capital. In the US capital reserves are excluded from equity since loan loss reserves reflect anticipated actual losses.

Tier II capital comprises of less permanent and less readily available elements such as undisclosed reserves and cumulative perpetual preference shares, revaluation reserves, general provisions and loss reserve, hybrid debt, capital instruments and subordinated debt. The total of Tier II elements should be limited to a maximum of 100 percent of total Tier I elements.

**Capital to Risk Assets Ratio (CRAR)**

In April 1992, the RBI introduced a risk assets ratio system for banks (including foreign banks) in India as a capital adequacy measure. Under the system, the balance sheet assets, non-funded items and other off-balance sheet exposures were assigned risk weights according to the prescribed percentages.

### **Risk Adjusted Assets**

They are the weighted aggregate of the degree of credit risk expressed as percentage of the funded and non-funded items. The aggregate is used to determine the minimum capital ratio.

### **Funded Risk Assets**

The percentage weights allotted to the funded risk assets are:

- |  |      |
|--|------|
| (1) Cash, balances with RBI, balances with other banks, money at call and short notice, investment in government and other approved securities | 0%   |
| (2) Claims on commercial banks such as certificate of deposit  | 0%   |
| (3) Other investments  | 100% |
| (4) Loans and advances:  |      |
| a. Loans guaranteed by Government of India   | 0%   |
| b. Loans guaranteed by State Governments   | 0%   |
| c. Loans granted to public sector undertakings of Government of India and State Governments  | 100% |
| d. Premises, furniture and fixtures  | 100% |
| e. Bills purchased and discounted and other credit facilities  | 100% |

### **Off-Balance Sheet Items**

A conversion factor is used to calculate the risk exposure of the off-balance sheet items. The face value of each of the balance sheet item is multiplied by the credit conversion factor which is again multiplied by the weights attributable to the relevant counterparts specified for funded risk assets.

***The credit conversion factor for different instruments in percentage are:***

- |  |      |
|--|------|
| (1) Direct credit substitutes: General guarantee of indebtedness (including standby letters of credit serving as financial guarantees for loans and securities) and acceptance (including endorsement with the character of acceptance); | 100% |
| (2) Transaction related contingent items: Performance bonds, bid bonds, warranties and standby letters of credit related to particular transactions  | 50%  |
| (3) Short-term self-liquidating trade related contingencies: Documentary credits collateralized by the underlying shipments;   | 20%  |
| (4) Sale and repurchase agreement and asset sales with recourse where the credit remains with the bank;  | 100% |

(5) Forward asset purchases, forward deposits and partly paid shares and securities, which represent commitments with certain draw-down;	100%
(6) Note issuance facilities and revolving underwriting facilities;	50%
(7) Other commitments: formal standby facilities and credit lines with a original maturity: less than one year for each additional year or part thereof	0%
(8) Aggregate outstanding foreign exchange contracts of original maturity: less than one year	0%
for each additional year or part thereof	2%
	3%

### Norms for Capital Adequacy

Banks are required to maintain unimpaired minimum capital funds equivalent to the prescribed level of the aggregate of the risk-weighted assets and other exposures on an ongoing basis. All banks with international presence had to achieve the norm of 8 percent as early as possible, and in any case, by March 31, 1994. Foreign banks operating in India had to achieve this norm by March 31, 1993. Other banks will have to achieve a capital adequacy norm of 4 percent by March 31, 1993 (Tier I or core capital having been set at not less than 50 percent of total capital) and the 8 percent norm by March 31, 1996. The total of Tier II elements will be limited to a maximum 100 percent of total Tier I elements for the purpose of compliance with the norms. Banks were advised to review the existing level of capital funds vis-a-vis the prescribed level and plan to increase the capital funds in a phased manner to achieve the prescribed ratio by the end of the period stipulated.

### Market Risk

In 1995-96 the Basle Committee introduced an amendment whereby the notions of banking book and trading book were made explicit, defined capital charges for market risk and allowed banks to use Tire III capital in addition to the previous two tiers. The trading positions in bonds, equities, foreign exchange and commodities were removed form the credit risk framework and given explicit capital charges related to the bank's open position in each instrument. Capital requirement extended explicitly to market risk.

Market risk is the risk of losses in on- and off-balance sheet positions arising from movements in market prices. The requirement covers interest related instruments and equities in the trading book; and foreign exchange risk and commodities risk throughout the bank. Capital charges apply to current market value of open positions in interest related instruments and equities in banks' trading books and to banks total currency and commodities positions. To assess

capital charge two approaches are envisaged: standardized and internal risk management model.

In conformity with the recommendations of the Committee on Banking Sector Reforms 1998 (CBSR), RBI announced a package of reform measures in October 1998 in areas relating to prudential norms. These measures aim at increasing the minimum capital adequacy ratio from 8% to 9% by March 31, 2000; recognising the market risks and prescribing a risk weight of 2.5% in Government approved securities by March 31, 1999; providing 100% risk weight for foreign exchange and gold open position limits from the year ended March 31, 1999; moving towards tighter asset classification, income recognition and provisioning norms; putting in place a formal asset-liability management system with effect from April 1, 1999; and further enhancing transparency in accounting and disclosure practices.

In February 1999, banks were given autonomy to raise rupee denominated subordinated debt as Tier II capital. To restrict cross holdings, an individual bank's investment is restricted at 10 percent. CBSR, 1998 recommended issue of bonds guaranteed by Government to bolster capital adequacy. The bonds according to CBSR would also be eligible for SLR investment by banks and approved instruments for LIC, GIC and provident funds.

In USA capital of banks includes long-term debt of 7 years. In the context of regulatory capital long-term debt only serves to absorb operating losses in the event of bank failure.

### **Capital to Risk-weighted Assets Ratio (CRAR)**

At the end of March 2004, the overall CRAR of SCBs was 12.9%. In 2003-04 only Global Trust Bank and Centurion Bank accounting for 0.5% of total assets of scheduled commercial banks could not comply with the regulatory minimum of 9%. Table 5.2 presents CRAR by Banks-Groupwise. Among the public sector banks nationalized banks had CRAR of 13.2%, old private sector banks 13.7% and foreign banks 15%.

### **New Capital Adequacy Framework, 1999**

The Basle Committee on Banking Supervision (BCBS) has issued in June 1999 a new capital adequacy framework to replace the Capital Accord of 1988. The New Capital Adequacy Framework consists of minimum capital adequacy requirement, supervisory review of an institution's capital adequacy and internal assessment process; and effective use of market discipline as a lever to strengthen disclosure and encourage safe and sound banking.

While the Capital Accord of 1988 has helped strengthen the soundness and stability of the international banking system and enhance competitive equality

**Table 5.2** Distribution of Scheduled Commercial Banks by CRAR (2000-01 and 2003-04)

(No. of banks)

Bank Group	Capital to Risk-weighted Assets Ratio (CRAR)								
	2000-01				2003-04				
	Below 4%	Between 4-9%	Between 9-10%	Above 10%	Below 4%	Between 4-9%	Between 9-10%	Above 10%	
1	2	3	4	5	6	7	8	9	
State Bank Group	–	–	–	8	–	–	1	18	
Nationalized Banks	1*	1	2	15	–	–	–	8	
Old Private Sector Banks	2*	1	4	16	–	–	–	20	
New Private Sector Banks	–	–	1	7	1	1	–	8	
Foreign Banks	–	–	4	38	–	–	–	33	
<b>Total</b>	<b>3</b>	<b>2</b>	<b>11</b>	<b>84</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>87</b>	

Source: RBI, Report on Trend and Progress of Banking, 2001-02 and 2003-04.



among internationally active banks it has become a less accurate indicator of a bank's financial condition in view of the developments in the financial market place. The new framework is designed to better align regulatory capital requirements with underlying risks and to recognise the improvements in risk measurement and control.

### **Minimum Regulatory Capital Requirement**

The objective of minimum regulatory capital requirement is to provide a comprehensive and risk sensitive treatment of credit risk. The coverage of the Accord is expanded to incorporate other major categories of risk such as – market risk, interest rate risk in the banking books and operating risk and develop explicit capital charge.

### **Supervisory Review Process**

The supervisory review of capital adequacy will seek to ensure that a bank's capital position is consistent with its overall risk profile and with its overall strategy and encourage supervisory intervention, if the capital does not provide sufficient buffer against risk. Bank managements can develop an internal capital assessment process and set targets for capital that are commensurate with the bank's specific risk profile and control environment. The internal process would then be subject to supervisory review and intervention where appropriate.

### **Market Discipline**

Market discipline according to CBS is a lever to strengthen the safety and soundness of the banking system.

A close correspondence between the inherent riskiness of assets and the associated capital charge will lead to changes in the assessment of the risk and return characteristics of financial assets. A more precise allocation of banks risk capital could reduce the pricing differential between loans and debt securities.

The proposals are likely to reduce regulatory capital arbitrage. Banks for example have been economising on the relatively high capital cost of corporate loans by securitising their highest quality assets. Existing capital charges have encouraged them to hold a greater proportion of lower quality assets. The existing rules may have created a bias in favour of short-term lending to banks in emerging countries. Lastly the proposals might have an impact on OTC derivatives market since the 50 percent maximum risk weight that has been applied to off-balance sheet credit risk exposures is likely to be replaced by a graduated scale based on credit ratings.

### **Basle II : A Revised Framework**

The Basle Committee on Banking Supervision's proposals for revising the capital adequacy framework in June 1999 was followed by additional proposals for consultation in January 2001 and April 2003. The Committee expects the revised

framework to be implemented at the end of 2006. The main objective for revision of 1988 Accord was to develop a framework that would further strengthen the soundness and stability of the international banking system by promoting adoption of stronger risk management practices by the banking industry.

The revised framework is based on three pillar (minimum capital requirements, supervisory review and market discipline) approach. In the revised framework some of the key elements of the 1988 capital adequacy framework have been retained including the general requirement for banks to hold to total capital equivalent to at least 8% of their risk weighted assets. Internal rating based (IRB) approach is envisaged to arrive at significantly more risk sensitive capital requirements. The New Basle Accord enumerates rules for enhancing credit risk measures, extending the scope of capital requirements to operational risk, providing various enhancements to the existing accord and detailing the supervision and market discipline pillars. The New Accord comprises three pillars:

- Pillar 1 : Minimum capital requirements
- Pillar 2 : Supervisory review process
- Pillar 3 : Market discipline

The three pillars together contribute to a higher level of safety and soundness in the financial system. Basle II would be implemented across regions in 2007-2009. For pillar-I, IRB approach is envisaged to be used for calculating capital requirements for credit risk closely followed by standardized approach. The first pillar is compatible with the credit risk, market risk and operational risk. The regulatory capital will be focused in those three risks. The challenge regarding pillar-II implementation relates to acquiring and upgrading the human and technical resources necessary for the review of banks responsibilities; and co-ordination of home and host supervisions in the cross border implementation. The second pillar gives the bank responsibility to exercise the best ways to manage the risk specific to the bank. It also casts responsibility on the supervisors to review and validate banks' risk measurement models. With regard to pillar-III, the alignment of supervisory disclosures with the domestic and international accounting standards would be the challenge. This would improve transparency in banks and reporting.

The implementation of the advanced approaches prescribed under Basle II is under study by the steering committee constituted by RBI. The Basle II norms for capital charge for market risk are to be implemented over a 2 year period 2007-09. Meanwhile, all banks in India will adopt Standardized Approach (SA) for credit risk and basic indicator approach for operational risk. After development of adequate skills in banks and at supervisory level, some banks may be allowed to migrate to Internal Rating Based (IRB) approach.

## REVIEW OF RISK WEIGHTED APPROACH

The risk weighted asset approach to capital should strengthen the banking system by addition to equity. The question of strengthening capital through accessing domestic capital market is tied up with reduction of Government/RBI ownership and granting autonomy to public sector banks. If the banks are allowed to reduce the public ownership to 30 percent level as suggested by CBSR (through adoption of necessary legislation) autonomy would automatically follow and market discipline would be brought to bear on the banks. Risk can also be addressed by strengthening risk management applying judicial exposure limits and improving internal controls. Further, the capital raised by banks abroad may be allowed to be kept in foreign securities to render the banks acceptable to their counterparts abroad. The risk weighted assets approach however leaves out of the credit risk differences in the default probabilities and potential recovery rates in default. The norms also leave out other kinds of risk such as liquidity risk. Other credit risk issues such as favouring securities over loans in the weighing scheme may lead banks to curtail credit and shift to investment. The allocative efficiency is being traded off for safety and soundness of the banking system. In the risk assessment diversification which decreases risk is left out. Banks are encouraged to purchase low risk liquid securities. Further capital required in the norms does not reflect economic reality because it is based on book values, not market values of assets. The Basle norms could not adequately internalise the differences in credit ratings of dissimilar corporate borrowers. Finally, a more flexible approach has to be adopted to capital adequacy depending on the quality of assets.

### *Implications of Basle II Accord*

- In view of its complexity, the New Accord would require shifting scarce supervisory resources away from direct supervision towards implementation of the proposal.
- Capital requirements will increase.
- Profitability will decrease because of competition for highly rated borrowings and on account of implementation cost.
- The risk management architecture is quite complex.
- Rating penetration is poor in India and rating is however a lagging indicator of credit risk.
- The likelihood of IRB approach becoming the dominant one may result in the system as a whole maintaining lower capital than warranted and become more vulnerable.
- Building historical database for computation of probability of default is time consuming.
- Rating may be avoided by counterparties which anticipate lower rating.
- Bank capital may be seen as a panacea for the prevention of bank failure.

- National accounting and auditing standards, in line with best international best practices are required.

## **INTER BANK BORROWING**

In the assets and liabilities of SCBs presented in Table 5.1 interbank borrowing shown under item 4 'Borrowings' stand at Rs.96,490 crores at the end of March 2004 constituting 4.9% of total liabilities. The interbank liabilities consist of demand and time liabilities and borrowings from banks.

Interbank indebtedness is cleared through the clearing house. Interbank indebtedness arising out of transfer of deposits from one person to another is offset in the clearing house and any remaining balances are covered by the transfer of bankers' deposits with the central bank. The settlement of interbank indebtedness does not affect the level of aggregate deposits of the banking system or the aggregate of cash balances or bankers deposits with the central bank. The settlement has no monetary significance.

### **Call Money Market**

The call money market, which deals in overnight funds is a key segment of the money market in India. Funds for 2-14 days are termed as notice money. Various reform measures since May 2001 have rendered the call money market into a pure interbank market closing the access of the other participants, PDs, mutual funds, corporates through primary dealers, financial institutions and non-bank finance companies. To modulate short-term liquidity, Liquidity Adjustment Facility was introduced in June 2000. It has emerged as an effective instrument to provide a corridor for the overnight call rate movement. This has resulted in stability and orderly market conditions through clear signaling.

The core of interbank borrowing is the call money market or money at call and short notice where funds are borrowed and lent by banks to each other for one day and short notice for a period up to 14 days. The interbank overnight money rate is referred to as call rate. Besides the call rate there are a number of rates such as yields on treasury bills, rates of commercial paper and certificates of deposit. Such markets operate in Mumbai, Kolkata, Delhi, Bangalore, Ahmedabad and Chennai. The transactions in these markets fluctuate widely and the daily average turnover during the fortnight ended on April 1, 2005 was Rs.18,843 crores. The participant-wise turnover indicates that SCBs account for Rs.15,800 crores (83.8% of total turnover). However, the interbank call money market is the most sensitive part of the Indian money market and is an important general indicator. The characteristic feature of lending in this market is that loans are given without security. This enables the banks to replenish their resources without disturbing their other assets. Generally the peaks and troughs in this market come during the busy and slack seasons. RBI is an important constituent of the money market since it is the residual source of

funds. Money market obtains funds from central bank either by borrowing or sale of securities. RBI changes liquidity availability through sale and purchase of government securities and repo operations, thereby influencing the cost of credit as well. The interest rate varied between 0.6% and 6.25% in 2004-05. There is an informal corridor for the call rates given by the fixed repo (injection) rate (6%) and the refinance rate (5%). The fixed repo rate acts as a floor for call rate while the refinance/reverse repo (absorption) with PDs at the Bank rate provides a ceiling. Earlier high volatility characterised call loan market on account of the mobilisation of extra short-term funds at the end of the financial year by commercial banks to window dress their balance sheets, high credit deposit ratio, maturity mismatch of assets and liabilities, periodical tax payments, large external payments on the oil import account, floatation of government loans and absence of forecasting techniques for CRAR purposes. A few banks tended to be overly exposed to the call/notice money market. They carried out banking operations and long-term asset creation with the help of call money market. The CBSR recommended that there must be clearly defined prudent limits beyond which banks should not be allowed to rely on call money market and that access to this market should essentially be for meeting unforeseen mismatches and not as regular means of financing banks' lending operation. After asset-liability management system was put in place, the mismatches in cash flows in the 1-28 days bucket were kept under check. Participants operate now within limits on both lending and borrowing operations. The call money market is now an interbank market with ALM discipline for participants and prudential limits for borrowing and lending. Non-bank participants except PDs are phased out of the call money market.

In 2003-04, volatility in the call money market declined along with turnover (Rs.9,809 crores in February 2004 and Rs.23,998 crores in October 2003). The call money rates were in the range of 4.33-4.91%. A part of the market activity migrated to the repo market (outside LAF) and Collateralised Borrowing and Lending Obligation (CBLO) segment on account of cheaper availability of funds vis-à-vis call money market.

### **Collateralised Borrowing and Lending Obligation**

Collateralized borrowing and lending obligation (CBLO) is a money market instrument with a original maturity between one day and upto one year. The Clearing Corporation of India Limited (CCIL) (2003) operates the CCIL's, CBLO segment which has 79 members in October 2004. Banks borrowing through CBLO were exempted from CRR, if they maintain a minimum CRR of 3%. The daily turnover in 2003-04 was Rs. 4,508 crores and weighted average rate 3.96%. An automated value-free transfer of securities between market participants and CCIL was effected by RBI.

## **RELATIONSHIP BETWEEN MONEY AND FOREIGN EXCHANGE MARKET**

The money markets for short-term deposits and loans for the home and foreign currencies are linked to the foreign exchange market. The link between these markets is the forward margin which is the difference between the spot and forward rates. Margin is a function of interest rate differentials. For the determination of forward rates through the operation of interest parity principle the prerequisites are the existence of a term inter bank money market locally and the freedom to banks to borrow or deposit funds abroad.

In India, the domestic money market is distinct from the the foreign exchange market. Foreign exchange has been kept in a separate watertight compartment from the rupee. The forward margin instead of being determined by interest rate differentials, in the Indian forex market, is a function of demand and supply.

### **Integration of Different Segments of Money Market**

While the Discount and Finance House of India was set up on 1988 to promote secondary market activity in money market instruments, the post reform period witnessed the building of institutional infrastructure for the money market. They have helped to integrate the various segments. In 1996, the system of primary dealers was introduced to develop gilt market. Repos with RBI, (1992) Market Repos, Forward Agreements/Interest Rate Swaps (1999) and Collateralised Borrowing and Lending Operation (CBLO) (2003). The development of the payment system infrastructure was strengthened with the formation of the Clearing Corporation of India Ltd. (CCIL) in April 2002, introduction of Negotiated Dealing System (NDS) in February 2002 and the implementation of Real Time Gross Settlement (RTGS) system from April 2004.

The introduction of LAF has further improved the integration of various segments of the money market. The correlation coefficient between interest rates of CDS, CPS, 91 day Treasury Bills and repo rate with the call money rate improved steadily during the period April 1993 to May 2000 to June 2000 – June 2004. The integration of money market segments was further validated by existence of cointegrated relationships among money market rates and their further strengthening between June 2000 to June 2004.

## **CRR AND SLR ON INTER BANK DEPOSITS**

The Sodhani Group (1995)<sup>1</sup> identified the reserve requirement as the major impediment for the development of the term interbank money market and

<sup>1</sup> Reserve Bank of India, The Report of the Expert Group on Foreign Exchange Markets in India, June 1995.



recommended that it should be lifted. The Group has also suggested that commercial banks should be permitted to deposit/borrow short-term dollars abroad, upto the limits specified by the RBI.

The Reserve Bank of India, through its slack season credit policy announced on April 15, 1997 has removed CRR and SLR on interbank liabilities. A term money market among banks, besides engendering a rupee yield curve, is likely to emerge. Banks will no longer be forced to square off their borrowing from other banks within the same fortnight. The interbank market which was restricted to call and 14-day deposits/borrowing can now extend to 1-6 months term money which will have beneficial impact on the availability and cost; and volatility would be reduced. Further the freedom given to banks to borrow and invest funds in overseas money market instruments up to \$10 million through the credit policy announced on April 15, 1997 (raised to 15% of Tier I capital in October 1997) will not only link the money and exchange markets but will augment the supply and demand for funds and relate interest to the forward margin.

### **Control of Banks over Deposits**

The two distinguishing characteristics of commercial banks are first that their liabilities serve as means of payment and count as money along with the coin and currency; and secondly the preferences of public do not normally determine the volume of deposits and quantity of money. Since commercial banks possess the ability to create means of payment they have to be restrained by reserve requirements. Monetary policy controls the supply of deposits by controlling the reserves of banks.

Even in a regime of reserve requirements the multiple expansion of credit and deposits on a given reserve base is misleading. "There is more to the determination of volume of bank deposits than the arithmetic of reserve supplies and reserve ratios. The use to which commercial banks put the reserves made available to the system is an economic variable depending on lending opportunities and interest rates"<sup>2</sup>.

The demand deposits are created by banks by acquiring more assets. Bank created money is a liability which must be matched by the other side of the balancesheet.

Banks undertake multiple credit creation. When someone deposits rupees in currency it results in several rupees of deposits. A deposit is a property right evidenced by an entry in the banks' books. When a deposit or part of it is withdrawn the right to receive payment is withdrawn from the bank in future. It is exchanged for currency right now. Multiple deposit creation occurs because the funds withdrawn from one bank when it makes a loan or buys a security are received by another one which expands its loan or security holding. The required

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2 Tobin, James "Commercial Banks as Creators of Money" in D. Carson (ed) *Banking and Monetary Studies*, Richard D. Irwin, Inc.

reserve, say 20% are the only leakage that absorbs reserves. However the deposits created by various banks in the chain show a decreasing series. The deposit multiplier is the change in deposits per rupee change in reserves. The deposit multiplier permits one to calculate money multiplier. The deposit multiplier

relates reserves to the deposits. The sum of the series is  $D = \frac{1}{rr}R$  where  $D$

stands for deposit,  $rr$  is the reserve ratio and  $R$  is the initial increase in reserves that occurred with the first deposit made out of sale of a security.

Assuming an initial deposit of Rs.10,000, 20% reserve ratio the total of deposit creation amounts to  $(1/.2)$  10,000, that is Rs.50,000. The deposit multiplier is  $(1/rr)$  of 5. Multiple deposits creation is governed by the same process as deposit expansion. If bank deposits are excessive relative to public preferences they will tend to decline. Otherwise banks will lose income. Apart from the required reserves excess reserves are another leakage that absorbs the reserves. A bank frequently holds excess reserves to avoid borrowing from RBI or in the call money market. Normally they are small and constitute about 2% of total reserves. If the required ratio is 20% and the bank holds 2% excess reserves, the deposit multiplier is  $2/.20 + .02$  or 5.02. The excess reserve ratio depends on the interest rate that banks can earn by investing them and the benefits expected out of holding them. Other leakages are the flows into currency and time deposits. The exchange of deposits for currency constitute a loss to the deposit creation process just as the required reserve is. The proportion of currency of checkable deposits that the public withdrawal would entail has to be allowed for. The public's desired currency ratio depends on the opportunity cost of holding currency, yields on deposits and interest on securities. A term has to be added to the denominator as was done for excess reserves.

Finally, if there is a diversion of demand deposits into time deposits, the reserves if any to be held against time deposits are lost to the deposit creation process. The time deposit ratio depends on the interest rate on time deposits compared to yields on checkable deposits and securities. To adjust the checkable deposits multiplier, we have added to the denominator the *leakage* into time deposits per rupee of demand deposit times the reserve ratio against time deposits, if any.

Income, wealth and interest rates are factors which determine excess reserve ratio, currency ratio and time deposit ratio and hence the money multiplier. Deposit multiplier is partly endogenous and behaves procyclically.

The money multiplier approach is considered by New View as too mechanistic, that one must look at the profit maximising behaviour of banks and bring in demand for deposits. First, deposits radically differ from other goods and an increase in their supply, after some time raises demand for them. When banks supply more deposits after sometime the demand for deposits



increases too. The money supply theory presented here allows leakage coefficients to be determined by economic conditions. Finally since the observed changes in the money stock are due to changes in the volume of bank reserves rather than in the money multiplier then the relatively limited analysis of fluctuations in the money multiplier the money supply theory gives is adequate.

### **Credit Creation in Indian Banking System**

Banks capacity to provide credit depends on their cash reserve (cash in hand) and balance with RBI. Credit creation is passive when deposits are created against the receipt of value. Banks create active credit through the process of lending when money lent out by banks re-enters the banking system as deposits. Under the fractional reserve system banks can create deposits by a multiple of reserves since the payments made with the proceeds of the bank loans are eventually deposited with banks leading to additional reserve funds. However, banks have to conform to the ratio of cash reserve to deposits laid down by the RBI. Bank's credit is constrained by the holding of and access to cash reserves including borrowings from the RBI and the Discount and Finance House of India. High powered money consisting of currency with the public and cash with the banks together determine the overall supply of money through the money multiplier. The proportion of deposits to currency helps determine the value of the multiplier. The average broad money multiplier is 4.58 and currency to aggregate deposits (C/AD) ratio is around 0.1890. At the end of 2004, reserve money amounted to Rs.4,36,512 crores consisting of currency with public Rs.3,15,493 crores (72.5%) and bankers' deposits Rs.96,490 crores (22.1%).

### **Deposits from Public**

Bank liabilities consist primarily of various types of deposit accounts that are used by the bank to fund its lending and investment activities. Table 5.1 presents the total outstanding deposits from public with scheduled commercial banks at the end of March 2004 at Rs.15,75,143 crores consisting of current or demand deposits at Rs.203,142 crores (12.9% of total deposit), savings deposits, Rs.373,677 crores (23.1%) and term deposits, Rs. 998,324 crores (63.4%). Deposits constituted 79.8 percent of total liabilities of scheduled commercial banks.

### **Deposits and GNP**

As a proportion of GNP aggregate deposits have gone up from 9.2 percent in 1950-51, 15 percent in 1970-71, 38.3 percent in 1990-91 to 60.6% in 2003-04. (Table 5.3)

## **TYPES OF DEPOSITS**

The deposit accounts with the banks vary in terms of maturity, interest payments, check writing facilities and insurability. Commercial banks accept

**Table 5.3** Aggregate Deposits of Commercial Banks and GNP in Select Years

Year	(Rs. crores)		
	Aggregate deposits	GNP at current prices	Col.2 as % of Col.3
1950-51	820	8,398	9.2
1960-61	1,745	15,812	11.5
1970-71	5,906	39,424	15.0
1980-81	37,988	1,22,772	30.9
1990-91	1,80,281	4,70,269	38.3
1995-96	4,33,819	9,67,763	44.8
2000-01	10,55,386	16,87,818	62.6
2003-04 (Adv.)	13,55,880	22,38,246	60.6

Source: Reserve Bank of India, *Report on Currency and Finance 1989-90, 1995-96, Vol.II, and Trend and Progress of Banking in India, 1998-99 and Handbook of Statistics on the Indian Economy, 2003-04*. Government of India, *Economic Survey, 1999-2000 and 2003-04*.

two types of deposits demand and time deposits (Table 5.4). Demand deposits are transaction accounts that are payable to the depositor on demand and carry no interest. Demand or current deposits or cash deposits are used by industry and traders to settle debts and cheques are issued by them against the accounts kept with the bank. Demand deposits formed 17.2% in 1990-91, 18.6% in 1995-96 and 15.0% in 2003-04 of aggregate deposits.

Time deposits (see Table 5.4) consist of savings accounts and term or fixed deposits with maturity varying from 14 days to 10 years.

Savings accounts are used by households to deposit their income and banks allow the accounts to be used to settle household's obligations through issue of cheques. By and large monthly salaries in the public and private sectors are paid through credit to the savings accounts of the employees. Savings deposits at Rs.3,73,677 crores in 2003-04 constituted 23.7% of aggregate deposits and 18.9% of total liabilities of the banking system. Savings accounts earn interest on the monthly outstanding balance although the account holder enjoys the cheque facility against savings accounts to make payments. The interest rate on savings account offered by banks was reduced to 3.5 p.a. with effect from March 1, 2003.

Term or fixed deposits with banks more or less represent savings or investment to earn interest. The rate of interest on term deposits depends on the length of the maturity. They accounted for 63.38% of aggregate deposits and 50.5% of the liabilities of the banking system in 2003-04.

**Table 5.4** *Distribution of Deposits of Scheduled Commercial Banks<sup>3</sup>*  
(1990-91 – 1998-99 and 2003-04)

(Rs. crores)

Year (outstanding in March)	Time deposits amount	% to aggregate deposits	Demand deposits amount	% to aggregate deposits	Deposits aggregate
1990-91	159349	82.8	33192	17.2	19241
1991-92	185670	80.5	45088	19.5	230758
1992-93	222111	82.7	46461	17.3	268572
1993-94	258560	82.1	56572	17.9	315132
1994-95	309956	80.1	76903	19.9	386859
1995-96	353205	81.4	80614	18.6	433819
1996-97	414989	82.1	90610	17.9	505599
1997-98	502897	83.1	102513	16.9	605410
1998-99	596602	83.6	117423	16.4	714025
2003-04	1279394	85.0	225022	15.0	1504416

Source: Reserve Bank of India, *Handbook of Statistics on Indian Economy*, 1999, p.259 and 2003-04.

### Interest on Bank Deposits

**Table 5.5** *Interest on Term Deposits*  
(15-07-2005)

Resident term deposits	%
15-45 days	4.75
46-179 days	5.0
180 days to below 1 year	5.6
Above 1 year and below 2 years	5.75
2 – 5 years	5.8
Above 5 years	6.25
Senior citizens 0.75% additional on deposits above one year.	

Bank deposits are safe, liquid and earn interest in the case of time deposits. They accounted for 42.9% of financial assets (gross) of households in 2003-04. The rate of interest on savings accounts is 3.5%. The rates of interest paid on term deposits by one of the public sector

<sup>3</sup> Includes term or fixed deposits and saving deposits.

banks is presented in Table 5.5. Effective from 21.10.1997 public sector banks were given freedom to fix their own interest rates on domestic term deposits and from 29.4.1998 the minimum period of maturity was reduced to 15 days. On short term deposits of 15-45 days, interest at 4.75% is paid, and on deposits between 180 days and 1 year 5.6%. Rate of interest of 6.25 percent is paid on deposits for above 5 years. Senior citizens are paid 0.75% additional interest on deposits above one year.

### Maturity Pattern of Bank Deposits

The maturity pattern of term deposits presented in Table 5.6 reveals that term deposits above 1 year constitute the bulk. Deposits above 1 year accounted for 87.2 percent of term deposits at end March 1990-91, 74.0% of term deposits at end March 1995, 71.1% at end March 2000 and 64.9% in 2003; and term deposits of less than one year were 12.8% of term deposits in 1990-91, 26.0% in 1995, 28.9% in 2000 and 35.1% in 2003. Since 1990 short term deposits of up to one year have grown although interest rates on deposits across the board have been cut. The consideration of liquidity has become prominent.

**Table 5.6 Maturity Pattern of Term Deposits**  
(March 1990, 1995, 2000 and 2003-04)

(Rs. crores)

Period of maturity	1990	%	1995	%	2000	%	2003	%
Upto 90 days	2,969	4.2	31,375	14.1	49,069	9.5	1,04,112	12.7
6 month or less	2,945	4.2	10,026	4.5	33,157	6.4	7,41,888	9.1
6 month to 1 year	3,088	4.4	16,452	7.4	67,078	13.0	1,08,560	13.3
1 to 2 years	10,912	15.6	66,452	29.8	1,16,663	22.6	1,85,760	22.7
2 to 3 years	22,140	31.6	34,404	15.5	80,565	15.6	1,49,055	18.2
3 to 5 years	11,834	16.9	38,530	17.3	1,13,892	22.0	1,21,620	14.9
5 years and above	16,188	23.1	25,384	11.4	55,803	10.9	74,004	9.1

Source: Reserve Bank of India, *Report on Currency and Finance 1991-92*, Vol.II, p.78, 1995-96, Vol.II, p.86, 1997-98, Vol.II p.84. and *Handbook of Statistics on Indian Economy*, 1999, p. 66 and 2003-04, p.86.

**Deposit Insurance**

Deposit Insurance Corporation was set up in 1962 for the purpose of providing insurance cover to the depositors particularly small depositors against the risk of loss arising out of bank failures. Deposits are protected upto Rs.1 lakh per account by the Deposit Insurance and Credit Guarantee Corporation. In 2002-03, the number of fully protected accounts (with balances not exceeding Rs.1,00,000) was 1,519 million with total amount of insured deposits of Rs.8,70,940 crores. Insured deposits formed 66% of total amount of assessable deposits (entire deposits including those not covered by insurance).

The system of fixed rate deposit in insurance (set up first in US in 1930s) with a deregulated banking system in terms of price, activity and geography creates an incentive for bank managers to take excessive risk. It was identified as one of the major causes (regulatory forbearance is another) of bank failures in US in 1980s. Bank managers take excessive risks as losses are paid by insurance agency. Earnings of bank can be increased by taking more risk since asset risk can be increased without adding to deposit costs. The incompatibility between the fixed rate deposit insurance system and a deregulated banking system creates a moral hazard problem in which bank managers have an incentive to engage in excessive risk. The problem can be dealt by establishing market discipline in terms of depositors withdrawing funds or by requiring higher rates of return when banks take excessive risk. If a large proportion of deposits are uninsured, market discipline can be created. Regulatory discipline can also be established by assessing risk based deposit insurance or risk based capital requirements.

In depository institutions insured depositors are indifferent to risk so that risk must be monitored by regulators. In non-financial firms, creditors monitor asset and other risks and constrain borrowing. Consequently capital is becoming a centerpiece of regulatory policy. The basic idea is that shareholders with significant stakes in the institutions will act to control risk-taking to protect their investment. Thus greater capital requirements are being imposed on depository institutions. Long-term bonds which banks are being encouraged to issue would also improve market discipline from the standpoint of credit monitoring. The moral hazard problem can be diminished via equity and debt investment in the banking industry.

The Working Group on Deposit Insurance set up as a crucial component of financial sector reforms recommended in its Report in October 1999,

- Retention of the present deposit coverage at Rs.1 lakh.

- Limited coinsurance or deposits between Rs.90,000 and Rs.1 lakh.
- Introduction of two deposit insurance funds one each for commercial banks and cooperative banks at 2% of the insured deposits.
- Risk based pricing of deposit insurance premium in place of the existing flat rate system.
- Assignment of the role of liquidator and receiver to the deposit Insurance Corporation.
- Setting up of Deposit Insurance Corporation with a capital of Rs.500 crores to be fully contributed by RBI.
- Exclusion of banks which have not complied with capital adequacy requirements, entities with a CAMEL rating of 'C' or below for three years and DFIs.

### **OWNERSHIP OF BANK DEPOSITS**

Data pertaining to ownership of bank deposits for March 1990, 1999 and 2003 are presented in Table 5.7. The significant feature is that individuals own the largest proportion of the deposits, 72.8 percent in 1990, 75.8% in 1999 and 68.0% in 2003. Bank deposits formed 40.9 percent of gross savings of the household sector in financial assets in 2002-03. Among individuals, non residents account for 9.2 percent and residents 63.6 percent of deposits in 1990, 10.5%, 65.3% in 1999 and 9.6% and 68% in 2003, respectively.

In 1990 among residents, farmers accounted for 12%, businessmen and traders 17.8% and wage and salary earners 16.6% of bank deposits. Among other sectors which accounted for 27.2 percent of deposits in 1990, the Government and corporate sector accounted for 6.8% and 6.1% respectively in 1990; 10.2% and 4.1% respectively in 1999 and 14.5% and 7.9% respectively in 2003-04. As compared to the corporate sector's deposits of 6.1% in 1990, 4.1% in 1999 and 7.9% in 2003 the deposits of business and traders were quite high at 17.8% in 1990, 12.0% in 1999 and 11.5% in 2003 reflecting their poor cash management. In 2003, deposits of government and corporate sector rose while share of farmers, banks and non-residents declined.

**Table 5.7 Ownership Pattern of Bank Deposits**  
(March 1990, 1999 and 2003)

Sector	Percent		
	1990	1999	2003
Government	6.8	10.2	14.5
Corporate sector — non-financial	6.1	4.1	7.9
Corporate sector — financial of which:			
(a) banks	3.7	5.9	8.5
(b) other institutions	8.0	2.9	4.7
Individuals/Households	72.8	75.8	68.0
(i) non-residents	9.2	10.5	9.6
(ii) residents	63.6	65.3	58.4
(a) Business and traders	17.8	12.1	9.6
(b) Farmers	12.0	10.7	6.6
(c) Wage and Salary Earners	16.6	14.5	11.5
(d) Others	17.2	28.0	29.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: RBI Report on Currency and Finance, 1991-92, Vol.I, p. 166, *Bulletin*, April 2000, pp. 295-298 and September 2005, pp.776-777.

### **Certificates of Deposits (CDs)**

Banks meet the spurt in the demand for credit by the issue of certificates of deposit of maturities of 7 days to 1 year. Since October 1993, bank-wise limits stipulated for issue of CDs were withdrawn leaving the banks free to issue CDs depending on their requirement. At the end of March 19, 2004 the total amount outstanding was Rs. 4,461 crores and the rate of discount ranged from 3.87%–5.16%. Banks also raise non-deposit resources such as floating rate notes from Euro currency market.

### **Borrowings from RBI**

Except for export credit refinance all other specific refinance facilities were withdrawn effective October 9, 1991. While the share of export credit of Rs.84 in net bank credit was 7.6% in 2003-04. The refinance limit was Rs.5,064.08 crores and no refinance was availed.

### **Liquidity Adjustment Facility**

The Committee for Banking Sector Reforms, 1998 recommended that the RBI's support to the market should be through a Liquidity Adjustment Facility (LAF) operated by way of repo and reverse repo providing a reasonable corridor to market players. The monthly average volume of repo transactions was Rs.79,628 in 2003-04. Apart from banks, mutual funds and financial institutions were the main participants in the repo market. The repo rates ranged between 3% and 5.05% during the year.



The LAF is the RBI's primary instrument for modulating liquidity and transmitting interest rate signals to the market. The scope of LAF was progressively enlarged to price the primary liquidity at the reverse repo rate. The ratio of normal standing facility available at the bank rate and the "back stop" standing facility linked to the reverse repo rate was modified to one-third and two-third from one-half each from December 27, 2003. The repo rate was 4.5% from August 25, 2003. The maturity period of repos was increased to 7 days. Overnight fixed rate repos at 4.5% under the LAF was introduced from August 16, 2004 while continuing with 7 day and 14 day repos and overnight fixed rate reverse repos<sup>4</sup>.

### **OTHER LIABILITIES**

Other liabilities and provisions consist of unclassified liabilities to banking system and participation certificates issued by SCBs. These liabilities and provisions at Rs.1,86,798 crores constitute 9.5 percent of total liabilities.

### **ASSETS OF COMMERCIAL BANKS**

The statement of liabilities and assets of the scheduled commercial banks in 2003-04, presented in Table 5.1 shows that they have in main four types of assets: cash and balances with the RBI (Rs.1,13,246 crores or 5.7%); assets with the banking system (Rs.82,223 crores or 4.2%) investments in government and other approved securities (Rs.6,57,244 crores or 33.3%); and loans and advances (Rs.8,64,143 crores or 43.8 percent). The liquidity requirements are met by cash and investment in securities which are determined by the Banking Regulation Act and the credit policy announcements of the RBI twice a year, the Annual Policy Statement (May) and Mid-term review (October). The monetary and credit policy for 2005-06 retained the level of CRR at 5.00 percent.

Bank assets in the form of loans and advances and holding of government securities accounted for 84.4 percent of their assets in 2003-04.

### **INVESTMENT IN GOVERNMENT AND OTHER SECURITIES**

Investment in government and other approved and unapproved securities at Rs.8,02,066 crores constituted 50.92 percent of total demand and time liabilities of Rs.15,75,143 crores in 2003-04. Apart from the cash reserve requirement every commercial bank has to maintain under Section 24 of the Banking Regulation Act, a minimum liquidity requirement of 25 percent in cash, gold or approved securities. This can be varied to require commercial banks to maintain higher minimum liquid assets. This was used to mobilise subscription to government securities. The pre-emption of bank funds along with interest rate regulation ensured a cheap supply of savings to the government. Statutory liquidity ratio reached a level of 38.5 percent in April 1992.

<sup>4</sup> Repo denotes injection of liquidity by the central bank against eligible collateral, reverse repo denotes absorption of liquidity by the central bank against such collateral.



The Committee on the Financial System (1991) was of the view that the statutory liquidity ratio (SLR) instrument should be deployed in conformity with the original intention regarding it as a prudential requirement and should not be viewed as a major instrument for financing the public sector. In line with the government's decision to reduce the fiscal deficit to a level consistent with macro-economic stability, the Committee has recommended that the SLR be brought down in a phased manner to 25 percent over a period of about 5 years. Consistent with the anticipated decline in the monetised deficit of the centre, and the reduction in the centre's borrowing programme and the need for gradual promotion of a Government securities market, the SLR has been reduced to 30 percent on an incremental basis. Further reduction in SLR may be implemented in stages.

SLR was 31.5 percent of net demand and time liabilities (NDTL) as on September 31, 1994; and for any increase in domestic NDTL over the level as on September 30, 1994, the SLR was fixed at 25 percent. The overall effective SLR is 33.0 percent at the end of March 1999 as against the statutory requirement of 25% indicating an excess holding of about Rs. 56,000 crores which is equivalent to the net borrowing budgeted for 1999-2000. Interbank deposits have been excluded from the application of SLR since April 1, 1997. The consolidated balance sheet for 2003-04 shows investments in government securities at 32.2% of total assets and 40.39% of deposit liabilities. SLR at 25% would require an investment of Rs.3,93,785 crores as against total investment of Rs.6,36,267 crores, an excess of Rs.2,42,482 crores.

Of the total outstanding Central and State Government securities at the end of March 2003, 58.6% was held by commercial banks.

### **Cash Reserve Ratio**

The liquidity rules governing cash reserves are laid down by the Reserve Bank of India Act at 3% minimum of net demand and time liabilities. In view of the fairly stable demand function RBI has been announcing an indicative group in broad money (M3) since the late 1980s. Bank reserves (CRR) was the principal operating instrument for the broad money (M3) growth in line with the expected growth in output and a tolerable level of inflation. However, the growing financial deepening and greater degree of openness have imparted some degree of endogeneity to income velocity of broad money and M3 multiplier the critical parameter. The Committee on the Financial System (1991) had observed that the Reserve Bank should have the flexibility to operate this instrument to serve its monetary policy objectives and that, given the Government's resolve to reduce the fiscal deficit, the occasion for its use to control the secondary expansion of credit should be less; the Committee had, therefore, recommended that the RBI should consider progressively reducing the CRR from its high level. Weighing the liquidity situation and the monetary policy considerations, and the need to reduce pre-emption of banks' resources, the RBI has discontinued the 10 percent incremental CRR. The CRR has been reduced to 10 percent in January 1997 from a level of 15 percent before reforms in 1992-93. In view of exemption of interbank liabilities from maintenance of CRR

from April 1997 effective CRR became 9.75%. Currently (2005) CRR of scheduled banks is 5.0%. Cash and balances with the RBI at the end of March 2004 at Rs. 1,13,246 crores, constituted 7.2 percent of total deposit liabilities of Rs. 15,75,143 crores. Interest at 4% per annum is paid on cash balances over the minimum of 3%.

Under RBI (Amendment) Act, 2006, no ceiling or floor rate exists. The bank cannot also pay interest on any portion of CRR balances.

### **Accounting Standards for Investment**

The revised guidelines effective from September 30, 2000 requires banks to classify their inter investment portfolio under three categories, held to maturity (HTM), available for sale (AFS) and held for trading (HFT). Scheduled commercial banks' investments classified as available for sale (AFS) category accounted for the largest share of 62%, followed by securities in held for trading (HFT) category with a share of 23.3% while the remaining 14.7% was classified as held to maturity (HTM) category at end of March 2004. The investments under the AFS and HFT categories should e-marked to market. Banks should decide the category of investment at the time of acquisition. The investments include under HTM should not exceed 25% of the banks total investments. Banks can decide and the extent, if holdings under available for sale (AFS) and held for trading (HFT) categories.

Securities in the HFT category are to be sold within 90 days or else shifted to the AFS category. Banks may shift investments to and from HTM category once at the beginning of the accounting year. Transfer of scrips from one category to another should be done at the acquisition cost/book value/market value on the date of transfer whichever is the least.

### **Investment Fluctuation Reserve (IFR)**

Investment fluctuation reserve of a minimum of 5% of banks' investment portfolio under held for trading (HFT) and available for sale (AFS) categories has to be built up by banks by transferring the gains realised on sale of investments within a period of 5 years. As at end-February 2005 banks have built up IFR upto 3.9%.

### **Maturity Classification of Investments in Government Securities**

Table 5.8 presents the maturity wise classification of investments of scheduled commercial banks in government securities for the years, 1998 and 2003 under old and new loans. Of the old loans of Rs.3,93,25,866 crores in 2003, 17% fell due within one year (in 2003-04); 15.2% within 2 years; a large proportion of 34.9% falls due within 5 years; 25.9%, in 10 years; and 6.9% above 10 years. About 40% of the investments of banks in government securities are really long-term. A major portion 32.2 percent matures within 5 years. In 2003-04 of new loans of Rs. 6,70,262 to Rs. 65 lakhs matured within three years; 66.1% fall due in within 10 years; and 33.4% are of 12 years maturity and fall due in 2010 to 2015. The 7 to 12 year maturity (2006-2010) was 24.5% in 1998; and the maturities of 12 years and above increased to 33.4%.

**Table 5.8** Maturity Classification of Investments of Scheduled Commercial Banks in Government Securities @ (1998 and 2003)

(Rs. lakhs)

Year/maturity during (April-March)	All scheduled commercial banks			
	1998		2003	
	Old loans	New loans	Old loans	New loans
1997-1998	—	—	—	—
1998-1999	(15.0)	24,52,317	—	—
1999-2000	13,38,220 (8.2)	—	—	—
2000-2001	13,24,541 (8.1)	2,45,314 (9.3)	—	—
2001-2002	10,69,009 (6.5)	3,64,924 (13.8)	—	—
2003-2004	—	—	68,90,898 (17.0)	—
2004-2005	—	—	30,86,463 (7.8)	—
2005-2006	—	—	29,29,146 (7.4)	—
2002-2007	50,50,437 (24.5)	12,81,946 (48.5)	—	—
2006-2010	—	—	1,37,21,484 (34.0)	6,70,262 (6.5)
2007-2012	40,02,718 (24.5)	7,49,814 (28.4)	—	—
2010-2015	—	—	1,01,75,928 (25.9)	61,73,405 (60.1)
2012-2015	4,18,587 (2.5)	—	—	—
2015 & above	6,67,790 (4.1)	—	27,22,067 (6.9)	34,29,193 (33.4)
Total	1,63,23,619 (100.0)	26,41,998 (100.0)	3,93,25,986 (100.0)	1,02,72,860 (100.0)

Note: Figures in figures indicate percentages to total.

@ Excluding postal savings and other obligations (Treasury bills are included)

‘-’ Nil or Negligible

Source: “Investments of Scheduled Commercial Banks”, RBI *Bulletin*, July 2000, p. 743, and March 2004, p. 279.

### Investment in Shares and Debentures

Banks are allowed to subscribe to shares and debentures in the primary market inclusive of underwriting devolvement and investment in mutual funds upto 5 percent of incremental deposits of the previous year. Since October 1996, they have also been allowed to trade in shares and debentures in the secondary market upto 5 percent of their previous year's incremental deposits. The credit policy announcement in April 1997 excludes banks' investment in preference shares/debentures/bonds of private corporate bodies from the limit (of 5 percent of their incremental deposits in the previous year). The ceiling of 5 percent is applicable only for investment in ordinary shares of corporates including PSUs in the primary and secondary markets. To encourage the flow of finance for venture capital, the overall ceiling for investment by banks in ordinary shares, convertible debentures and units of mutual funds, the Monetary and Credit Policy Statement for the year 1999-2000 enhanced it by such investment. It was also indicated that investments in venture capital will be treated as priority sector lending.

Table 5.9 presents investments of SCBs in shares and debentures (market value), certificates of deposit and commercial paper and mutual funds. In 2003-04, the investment in shares and debentures of joint stock companies was Rs. 1,03,47,037 crores units of UTI, Rs.28,307 crores, certificates of deposit and commercial paper Rs.2,94,010 crores, mutual funds Rs.5,24,522 crores and others (including bonds of quasi government bodies and venture capital funds) Rs.9,02,682 crores. Together these investments amount to Rs.1,23,74,096 crores and constitute 6.3% of total assets of SCBs and 7.8% of deposits in March 2004.

**Table 5.9** Investments of Scheduled Commercial Banks in Capital Market Instruments (1997-1999 and 2003)

(Rs. lakhs)

Category	1997	1998	1999	2003
Shares and Debentures of Joint Stock companies (Market value)	27,36,680	38,60,416	52,46,321	1,03,47,037
Initial Contribution to share Capital of UTI	1,024	568	4,828	7,043
Unit of UTI	44,510	41,218	61,690	28,307
Certificate of Deposits and Commercial Paper	2,72,307	3,67,745	3,66,164	2,94,010
Mutual Funds	59,358	1,48,072	1,99,375	5,24,522
Others	1,20,049	3,29,620	6,03,339	9,02,682

Source: Reserve Bank of India, "Investments of Scheduled Commercial Banks 1998-1999", *Bulletin*, July, 2000, p. 731 and March 2004.

## LOANS AND ADVANCES

Loans and advances of SCBs presented in Table 5.1 at the end of March 2004 were Rs.8,64,143 crores of which public sector banks accounted for Rs.6,32,740 crores (73.2%).

**Table 5.10: Development of Gross Bank Credit in Select Years**  
(Rs. crores)

Year	Food credit	Non-food credit										Gross bank credit	
		Priority sector					Other					Non food bank credit (9+10)	Total (2+11)
		Agriculture	Small scale industries	Other	Total (3+4+5)	Industries	Whole sale trade	Other sector	Total (7+8+9)				
1	2	3	4	5	6	7	8	9	10	11	12		
1972	545 (9.9)	597 (10.9)	439 (8.0)	172 (3.1)	1,208 (22.0)	3,730 (68.1)	N.A	N.A	N.A	3,730 (68.1)	4,938 (90.1)	5,480 (100.0)	
1975	564 (6.4)	785 (8.9)	1,043 (11.9)	322 (3.7)	2,150 (24.5)	6,072 (69.1)	N.A	N.A	N.A	6,072 (69.1)	8,222 (93.6)	8,786 (100.0)	
1980	2,100 (9.9)	2,767 (13.0)	1,328 (11.9)	1,328 (11.9)	6,730 (31.7)	8,269 (38.9)	1,915 (9.0)	2,221 (10.5)	2,221 (10.5)	12,405 (58.4)	19,135 (90.1)	21,235 (100.0)	
1985	5,665 (11.8)	7,660 (16.0)	4,137 (8.6)	18,409 (38.4)	15,939 (33.2)	2,649 (5.5)	5,879 (5.7)	16,149 (15.7)	23,882 (49.8)	42,291 (88.2)	47,956 (100.0)		
1990	2,006 (2.0)	16,612 (16.2)	8,248 (8.0)	40,475 (39.4)	38,274 (37.2)	5,879 (5.7)	16,149 (15.7)	60,302 (58.7)	1,00,777 (98.0)	1,02,783 (100.0)			
1995	9,791 (14.2)	27,044 (11.7)	14,401 (6.2)	73,329 (31.6)	93,053 (40.1)	11,980 (5.2)	43,067 (18.6)	1,48,740 (64.1)	2,22,069 (95.8)	2,31,860 (100.0)			
2000	39,991 (8.5)	51,922 (11.1)	56,002 (11.9)	46,490 (9.9)	1,54,414 (32.9)	1,62,837 (34.7)	17,845 (3.8)	2,34,757 (50.0)	4,29,162 (91.5)	4,69,153 (100.0)			
2003	35,961 (4.1)	90,541 (11.8)	65,855 (8.6)	1,07,438 (14.0)	2,63,834 (34.5)	2,47,210 (32.3)	24,867 (3.2)	4,15,538 (54.3)	6,37,881 (83.3)	7,28,422 (95.3)	7,64,383 (100.0)		

Source: Reserve Bank of India, Report on Currency and Finance, 1998-99 and Trend and Progress of Banking in India, 2002-03 and 2003-04.

Table 5.10 represents the deployment of gross bank credit in select years between 1972 and 2003. There has been an improvement in the sectoral spread of credit, and directed credit; and credit planning played an important role. The share of industry came down from 68.1% in 1972 to 32.3% in 2003-04 while the share of the priority sector increased from 22% in 1972 to 34.5% in 2003-04.

Although the relative share of industry in total credit declined, there is a significant increase in absolute terms from Rs.3,730 crores in 1972 to Rs.2,47,210 crores in 2003-04.

### Retail Banking

Retail loans comprise consumer credit for specific purpose as well as credit for general use. They consist of housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans. The loan values of these retail lending typically range between Rs.20,000 to Rs.100 lakhs. The loans are generally for duration of five to seven years with housing loans granted for a longer duration of 15 years. The growth of retail lending is attributable to the rapid advances in information technology, the evolving macro economic environment owing to financial market reform and several macro level demand and supply side factors. Retail portfolio accounts for 21.5% of outstanding advance as on March 31, 2004. The overall impairment of the retail loan portfolio worked out to 2.5% which is much less than the 7.4% for the entire loan portfolio (Table 5.11).

Within the retail segment, the housing loans which formed 48% of the portfolio had the least gross asset impairment of 1.9%. Banks lending to the retail sector has been influenced by falling interest rates, fiscal incentives repeal of Urban Land Ceiling Act, rationalization of stamp duty structure and low credit offtake from the commercial and corporate sectors. ICICI in the private sector and SBI in the public sector have garnered a large slice of the retail market.

RBI has put in place risk containment measures and increased the risk weight from 100% to 125% in the case of consumer credit.

**Table 5.11 Retail Portfolio of Banks (March 31, 2004)**

Items	Amount outstanding loan (Rs. crores)	Impaired credit as % of outstanding loan	Net NPAs as % of outstanding
(i) Housing	89,449	1.9	1.4
(ii) Consumer durable	6,256	6.6	4.0
(iii) Credit card receivables	6,167	6.3	2.4
(iv) Other personal loans	87,170	2.6	1.6
(v) Total retail loans (i ... + iv)	1,89,041	2.5	1.6
(vi) Total loans & advances	8,59,092	7.4	2.8

Source: RBI Report on Trend and Progress of Banking in India 2003-04, p.59.

**Housing Finance**

Fiscal incentives and supporting policy measures have influenced the growth of housing finance. Apart from deductibility of interest, advances to housing sector up to Rs.15 lakhs are considered as priority sector lending. During the period 1993-2004 outstanding housing loans by SCBS and housing finance companies grew at 23%, higher than the 14.8% growth in non-food credit. The share of housing loans in total non-food credit increased from 3% in 1992-93 to 7% in 2003-04. RBI has stipulated risk weight of 75% in the case of housing loans. Growth of housing in rural areas is constrained by non availability of clear land titles and irregular income behaviour in rural areas.

**Risky Loans (Non-performing Assets)**

The level of non performing loans is recognized as a critical indicator for assessing banks' credit risk, asset quality and efficiency in the allocation of resources to productive sectors. Public sector banks have made highly risky loans. The portfolios of a wide cross-section of public sector banks carry non-performing assets (NPAs) which are defined as a credit facility in respect of which interest has remained unpaid for a period of two quarters. The emergence of non-performing assets is to be traced to the grant of advances under peer pressure, political influence and connections and clout of borrowers rather than evaluation and appraisal of factors and economic considerations. Banks were saddled with implementation of various social objectives without ever considering whether credit (the amount and cost) is the appropriate instrument to set right inequalities of income and wealth especially when such loans are not for viable projects. A large collection of such loans turned into non-performing assets along with those granted on account of extra economic considerations. The growth of NPAs is also attributable to regulatory forbearance in terms of keeping insolvent institutions open and able to incur further losses. Gross NPAs of public sector banks at Rs. 54,090 crores in March 2004 constituted 7.8% of gross advances and 3.7% of total assets. Gross NPA ratio of public sector banks declined from 23% in 1992-93 to 7.8% in 2003-04.

There has been a deterioration in the financial health of the banking system over time. Apart from NPAs the viability of especially public sector banks was adversely affected by the large branch expansion undertaken to provide adequate banking facilities. All these factors led to the emergence of banks especially in the public sector which were unmanageable by any standards of management quality, structure and extant labour laws. The



recognition of banking as an industry brought in collective bargaining of wages leaving little maneuverability to control costs. Wages are related to prices only and productivity has no role. Today, the bargained wages in the banking industry are trend setters for other service industries as well as the rest of the economy. The wage bill of the public sector banks at Rs. 22,390 crores in 2003-04 constituted 16.3 percent of income whereas it absorbed only 7.7 percent of the income of private sector banks (old and new combined) and 9.2 per cent of foreign banks.

### **Level and Proportion of NPAs to Loan Assets**

Table 5.12 presents the classification of loan assets of public sector banks in 1995, 2000 and 2004. Non-performing assets of 27 public sector banks at Rs.38,385 crores at the end of March 1995 formed 19.4 per cent of their total loan assets of Rs.1,97,402 crores; in 2000 while the total NPA rose to Rs.53,294 crores as a proportion of total loan assets NPAs declined to 14.0%; and in 2004 NPAs declined to Rs.51,541 crores and as a proportion of loan assets declined further to 7.8% the lowest yet. In 2004 of the NPAs of Rs.51,541 crores substandard assets accounted for 2.6%, doubtful assets 4.3% and loss assets 0.9%. The gross NPAs to total assets of scheduled commercial banks was 7.2% and net NPAs to net total assets were 1.2% in 2003-04.

NPAs of old private sector banks (Rs.4,392 crores) were 7.6 of total advances in 2004. As a percent of total assets NPAs of private sector banks were 1.8% in 2004.

In the case of foreign banks gross NPAs at Rs.3,013 crores in 2004 were 4.8 percent of total advances; and gross NPAs as a percentage of total assets were 2.1%.

Sector-wise analysis of NPAs of PSBs indicates that the share of priority sector in total NPAs as on 2004 was 47.5%, public sector 1.22% and nonpriority sector 51.24%.

## **RESOLUTION OF NPAs**

### **SARFAESI Act, 2002**

ARCS have been established for resolving NPAs. Guidelines have been prescribed by RBI for the formation and functioning of securitization companies (SC) and reconstruction companies (RC) under Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act 2002. Guidelines were also provided to banks/DFIs to facilitate sale of NPAs to SCs/RCs. An Asset Reconstruction Company of India Ltd. (ARCIL) was set up during 2003-04. Banks and FIs sold assets worth Rs.7,099 crores to ARCIL.



**Recovery of Debts due to Banks and Financial Institutions Act, 1993**

The process of debt restructuring gained momentum during 2003-04 after RBI issued revised guidelines in June 2004. The amendment of Recovery of Debts due to Banks and Financial Institutions Act, 1993 streamlined the functioning of Debt Recovery Tribunals (DRTs). Out of 61,301 cases (involving Rs.88,876 crores) filed with DRTs by banks as on December 31, 2003, 25,510 cases (involving Rs.23,273 crores) were adjudicated with recovery amounting to 29.5%.

*Chronic NPAs up to Rs.10 crores:* A scheme was introduced in January 2003 for settlement of their outstanding dues. As on March 31, 2004, 2,12,370 cases amounting to Rs.1,977 crores were decided by banks and recovery was effected in 1,80,117 cases aggregating Rs.1,095 crores.

*SARFAESI Act 2002:* The Act provides for enforcement of security interest for realization of dues without the intervention of courts or tribunals. Up to December 31, 2003, 27 public sector banks issued 49,169 notices involving an amount of Rs.16,318 crores. Recovery was 6.3% from 16,490 cases.

**Moral Hazard and Adverse Selection**

While the proportion of NPAs to total advances had declined, there has not been any corresponding reduction in the volume although banks have made vigorous efforts towards recovery and upgradation of loans. This implies that the banks are incurring NPAs from a part of their incremental lending. Banks in their anxiety to earn high returns may charge high interest rates on loans which encourages risk-taking behaviour of the borrowers. If borrowers are unable to repay, it results in an increase in nonperforming assets.

The assets and other risks banks take are not monitored in the absence of market discipline. In non-financial firms creditors monitor and constrain borrowing. The moral hazard problem in which bank managers have an incentive to engage in excessive risk can be dealt in a number of ways. The issue of long-term bonds by banks would improve market discipline from the view point of creditor monitoring. The privatisation of banks would significantly increase the stake of shareholders in the banks who will act to control risk to protect their investment. The moral hazard problem can be diminished via equity and debt investment in the banking industry. Finally the establishment of risk based capital requirement CRAR would certainly reinforce the discipline of the market by permitting debt and equity investment in banks.

**Table 5.12** Classification of Loan Assets of Public Sector Banks  
(1995, 2000 and 2003)

(Rs. crores)

	1995 Amount	%	2000 Amount	%	2003 Amount	%
<b>1. Standard assets</b>	<b>1,59,017</b>	<b>80.6</b>	<b>3,26,783</b>	<b>86.0</b>	<b>6,10,435</b>	<b>92.2</b>
<b>2. Non-performing assets</b>	<b>38,385</b>	<b>19.4</b>	<b>53,294</b>	<b>14.0</b>	<b>51,541</b>	<b>7.8</b>
(a+b+c+d)						
a. Substandard	77,58	3.9	16,361	4.3	16,909	2.6
b. Doubtful assets	22,913	11.6	30,535	8.0	28,756	4.3
c. Loss assets	3,732	1.9	6,398	1.7	5,876	0.9
d. Advances with balances of less than Rs.25,000 classified as NPA.	3,982	2.0	—	—	—	—
<b>Total loan assets (1+2)</b>	<b>1,97,402</b>	<b>100.0</b>	<b>2,23,80,077</b>	<b>100.0</b>	<b>6,61,975</b>	<b>100.0</b>

Source: Reserve Bank of India, *Report on Trend and Progress of Banking in India*, 1995-96, 2002-03 and 2003-04.

The concept of moral hazard and adverse selection explains the increase in NPAs. The relationship between the interest rate charged and the expected receipts may not be monotonic because of adverse selection effects and adverse incentive effects<sup>5</sup>. In the case of adverse selection effect, safe borrowers drop out when bank advance rate is relatively high and borrowers with riskier projects remain, thereby lowering bank's profits. In the case of adverse incentive effects or moral hazard behaviour, borrowers tend to undertake riskier projects with increase in interest rates. Adverse selection is avoided if banks can increase their share of loans in favour of risk averse borrowers. Banks' expected return depends not only on the lending rate but also on the proportion of recovery of loans. It is likely that lower rates of interest not only improve the risk profile of banks but also raise the offtake of credit, increasing their profitability on both counts.

The Committee on Financial System (Appendix - 5.1) had recommended that a policy of income recognition should be objective and based on record of recovery rather than on any subjective considerations, that classification of assets of banks should be done on the basis of objective criteria which would ensure a uniform and consistent application of the norms, and that provisioning should be made on the basis of classification of assets into different categories. In April 1992, it was decided to implement the Committee's recommendations,

5 RBI, *Annual Report*, 1996-97, p. 57.

with certain modifications, in a phased manner over a three-year period commencing from the accounting year beginning April 1, 1992. Banks have been instructed to treat the amount in respect of term loans, overdrafts and cash credit accounts, bills purchased and discounted and other accounts, as “past due” when it has not been paid 30 days beyond the due date.

### **CLASSIFICATION OF ASSETS**

Banks have been instructed that they should not charge and take interest on non-performing assets to the income account. As compared with the existing 8 health codes (i) satisfactory (ii) irregular (iii) sick viable/under nursing (iv) sick non-viable/sticky (v) advances recalled (vi) suit filed accounts (vii) decreed debts and (viii) debt classified by the bank as bad/doubtful, banks are required to classify their advances into four broad groups:

- (i) standard assets
- (ii) sub-standard assets
- (iii) doubtful assets, and
- (iv) loss assets

Broadly, classification of assets into these categories had to be done taking into account the degree of well-defined credit weaknesses and extent of dependence on collateral security for realisation of dues. The health code system of classification of assets would, however continue as a management information tool.

Taking into account the time-lag between an account becoming doubtful of recovery, its recognition as such, the realisation of the security and the erosion over time in the value of security charged to the banks, banks are required to make provision against sub-standard assets, doubtful assets and loss assets.

### **MICRO PRUDENTIAL NORMS**

The main elements of prudential norms are income recognition, assets classification, provisioning for loans and advances and capital adequacy. According to international practice, commercial banks do not recognise income from non-performing assets on an accrual basis. Such incomes are booked only when they are actually received. If the balance sheet of a bank is to reflect actual financial health of that bank, there has to be proper system of recognition of income, classification of assets and provisioning for bad debts on a prudential basis.

The prudential accounting norms introduced since 1992-93 were further strengthened over time. In respect of accounts where there are potential threats of recovery on account of erosion in the value of security or absence of security and of other factors such as frauds committed by borrowers exist, such accounts

are to be classified as doubtful or loss assets, irrespective of the period to which they remained non-performing. All member banks in a consortium are required to classify their advances according to each bank's own record of recovery. Depreciation on securities transferred from the current category to the permanent category has to be immediately provided for. Banks should value the specified government securities under ready forward transactions at market rates on the balance sheet date and in the absence of market rates at yield to maturity (YTM). The resultant loss should be provided for.

### **COMMITTEE ON BANKING SECTOR REFORMS (CBSR) 1998**

Consequent to the Report of the Committee on Banking Sector Reforms (See Appendix IV:2) in April 1998 the Reserve Bank proposed to further strengthen the prudential accounting norms by advising the banks in October 1998 to make a general provision on standard assets of a minimum of 0.25 percent from the year ending March 31, 2000; besides an asset was required to be classified as doubtful, if it has remained in the Substandard Category for 18 months instead of 24 months by March 2001. Provisioning norm in respect of advances guaranteed by state governments where guarantee has been invoked and has remained in default for more than two quarters was introduced effective April 1, 2000. Banks were advised in December 1998 to treat agricultural advances as NPAs, if interest and/or installment of principal remained unpaid after it has become past due for 2 harvest seasons which should not exceed 2 half years.

As prudential measures against credit and market risks a risk weight of 2.5% in Government/approved securities was prescribed by March 31,2000; and providing 100 percent risk weight for foreign exchange and gold open position lines from March 31,1999. Disclosure norms as recommended by CBSR in regard to maturity pattern of loans and advances, investment in securities, foreign currency assets and liabilities, movements in NPAs and lending to sensitive sectors were announced in October, 1998.

### **MARK TO MARKET**

In order to progressively move towards the international practice of valuing all investments of banks on a mark to market basis and to facilitate the development of an active and healthy secondary market, banks are required to raise the proportion of current investments to 60 percent by the end of March 1998. New banks in the private sector were advised to mark to market their entire investments in approved securities from 1996-97.

The mark to market proportion of the approved securities was enhanced to 70% in 1998-99 and would be raised progressively to 100 percent over the next 3 years with a view to moving towards the international best practice of marking all investments to the market. It was enhanced further to 75% in 1998-2000.

## BANK CREDIT AND GNP

Gross bank (outstanding) as a proportion of GNP has gone up from 6.5 percent in 1950-51 to 11.9 percent in 1970-71, 20.7 percent in 1980-81, 25.1 percent in 1990-91 mainly credit outstanding on account of the bank nationalisation, the policy of directed bank credit and expansion in branch network (Table 5.13). It was 25.4 percent in 2000-01 and rose to 32.5 percent in 2003-04.

**Table 5.13** Bank Credit and GNP in Select Years

(Rs. crores)

Year	Outstanding gross bank credit (GBC)	Gross national product at current prices	GBC as percent to GNP
1950-51	580	8938	6.5
1960-61	1320	15182	8.7
1970-71	4685	39424	11.9
1980-81	25370	122772	20.7
1990-91	118019	470269	25.1
1995-96	231697	967763	23.9
2000-01	429162	1687818	25.4
2003-04 (Adv.)	728422	2238246	32.5

Source: Reserve Bank of India, *Report on Currency and Finance*, Vol.II, 1989-90, 1991-92, 1995-96, *Trend and Progress of Banking in India*, 1998-99 and 2003-04, Government of India, *Economic Survey*, 2003-04.

## CREDIT REPRESSION

For a better appreciation of the adequacy of credit in relation to GDP an international comparison would be revealing. While bank assets (outstanding credit) as a percent of GDP is estimated at 32.5 percent in India in 2003-04, they constituted in 2002-03, 136.6% in China, 90.7% in Korea, 180.9% in Japan and 131.5% internationally. Even in US which has a vibrant equity market, bank assets were 190.6% of GDP. Credit to commercial sector in India has always been restricted resulting in credit repression. Commercial sector is the residuary recipient of credit from banks after meeting the liquidity requirements stipulated to meet borrowing requirements to finance revenue/fiscal deficit of central government. This is in stark contrast to the share of public and private sectors in GDP of 25% and 75% respectively.

**Financial Exclusion<sup>6</sup>**

RBI has found that bank practices tend to exclude rather than attract vast sections of populations in particular pensioners, self employed and those employed in unorganized sector. Banks are now urged to align their policies with the objective of financial inclusion. Reinforcement of such behaviour is contemplated. Reward banks which provide extensive services and disincentivising those banks which are not responsive. Monitoring to assess whether there is explicit or implicit denial of basic banking services is proposed.

The argument for financial inclusion is based on the privilege bestowed on banks to seek public deposits on a highly leveraged basis.

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**APPENDIX 5.1**

**MAJOR RECOMMENDATIONS OF COMMITTEE ON THE  
FINANCIAL SYSTEM (CFS), NOVEMBER 1991**

The Committee on the Financial System (CFS) with Shri M. Narasimhan as Chairman, has made wide ranging recommendations with a view to ensuring that the financial sector operates on the basis of operational flexibility and functional autonomy thereby enhancing efficiency, productivity and profitability.

The Committee was of the view that the Statutory Liquidity Ratio (SLR) instrument should be deployed in conformity with the original intention regarding it as a prudential requirement and should not be viewed as a major instrument for financing the public sector. In line with Government's decision to reduce the fiscal deficit to a level consistent with macro-economic stability, the Committee has recommended that the SLR be brought down in a phased manner to 25 percent over a period of about 5 years. Consistent with the anticipated decline in the monetised deficit of the Centre, and the reduction in the Centre's borrowing programmes and the need for the gradual promotion of a Government securities market, the SLR on an incremental basis has been reduced to 30 percent. Further reduction in SLR may be thought of in stages.

As regards the Cash Reserve Ratio (CRR), the Committee had observed that the Reserve Bank should have the flexibility to operate this instrument to serve its monetary policy objectives and that, given Government's resolve to reduce the fiscal deficit, the occasion for its use to control the secondary expansion of credit should be less; and the Committee had, therefore, recommended that the Reserve Bank should consider progressively reducing the cash reserve ratio from its high level. Weighing the liquidity situation and the monetary policy considerations, and the need to reduce pre-emptions of banks' resources, the Reserve Bank has discontinued the 10 percent incremental CRR. Further reduction in CRR is possible once an enduring adjustment in the monetised deficit is attained and open market operations in Government securities with market-related rates of interest become an effective instrument of monetary control.

The Committee had proposed that the interest rate paid to banks on their SLR investments and on CRR respect of impounded deposits above the basic minimum should be increased. The Government has recognised the need to move towards market-related interest rates on Government borrowing. The cash reserve ratio is essentially a monetary instrument for impounding liquidity. The payment of higher interest on CRR by reducing the amount impounded



dilutes the very purpose of imposing a CRR. From the view point of monetary control it is preferable to have a lower CRR with less or no interest paid rather than to have high CRR and pay a high rate of interest.

Identifying the causes for the deterioration in the financial health of the banking system over time, the Committee recommended various remedial measures which include inter alia capital adequacy norms, prudential norms for income recognition and provisioning for bad debts.

If the balance sheet of a bank is to reflect actual financial health of that bank, there has to be a proper system of recognition of income, classification of assets and provisioning for bad debts on a prudential basis. The Committee had recommended that a policy of income recognition should be objective and based on record of recovery rather than on any subjective considerations, that classification of assets of banks should be done on the basis of objective criteria which would ensure a uniform and consistent application of the norms, and that provisioning should be made on the basis of classification of assets into different categories.

As compared with the existing 8 health codes, banks are required to classify their advances into 4 broad groups: (i) standard assets, (ii) sub-standard assets, (iii) doubtful assets, and (iv) loss assets. Broadly, classification of assets into these categories has to be done taking into account the degree of well-defined credit weaknesses and extent of dependence on collateral security for realisation of dues. The health code system of classification of assets would, however, continue as a management information tool.

Taking into account the time-lag between an account becoming doubtful of recovery, its recognition as such, the realisation of the security and the erosion over time in the value of security charged to the banks, banks are required to make provision against sub-standard assets, doubtful assets and loss assets.

As regards accounting standards for investments, investments in approved securities have to be bifurcated into 'permanent' and 'current' investments. 'Permanent' investments are those which banks intend to hold till maturity and 'current' investments are those which banks intend to deal in, i.e., buy and sell on a day-to-day basis. To begin with, banks would have to keep not more than 70% of their investments in the permanent category from the accounting year 1992-93 but this will have to be brought down to 50% in due course. While the depreciation in respect of 'permanent' investments could be valued at cost unless it is more than face value, in which case the premium has to be amortised over the period remaining for maturity of the security. Banks are not expected to sell securities in the 'permanent' category freely, but if they do so, any loss on such transactions in securities in this category has to be written off. Besides, any gain should be taken to capital reserve account.

The Committee suggested the abolition of branch licensing policy.

**APPENDIX 5.2****MAJOR RECOMMENDATIONS OF THE COMMITTEE ON BANKING SECTOR REFORMS (1998)**

The Committee on Banking Sector Reforms with Mr.M.Narasimhan as Chairman was constituted on December 26,1997 to review the record of financial sector reforms of the Committee on Financial System (1991) which was also chaired by Narasimhan and to suggest remedial measures for strengthening the banking system, covering areas of banking policy, institutional structure, supervisory system, legislative and technological changes. The major recommendations of the Committee are summarised below:

**STRENGTHENING THE BANKING SYSTEM**

To strengthen the banking system, the Committee recommended an increase in the minimum capital adequacy ratio (CRAR) to 10 percent by 2002. Besides, the entire portfolio of Government securities should be marked to market in 3 years. Also, a 5 percent weightage is to be assigned for government and other approved securities to hedge against market risk. Net NPAs have to be brought down to below 5 percent by 2000 and to 3 percent by 2002. However, banks with international presence should reduce gross NPA to 5 percent by 2000 and to 3 percent by 2002, respectively. The Committee proposed Asset Reconstruction Company (ARC) to tide over the backlog of NPAs. In case of prudential norms relating to income recognition, the present norm of 180 days should be brought down to 90 days in a phased manner by 2002. As regards asset classification, an asset may be classified as 'doubtful', if it is in the substandard category for 18 months in the first instance and eventually for 12 months and 'loss', if it has been so identified but not written off. These norms which should be regarded as the minimum, may be brought into force in a phased manner.

**SYSTEMS AND METHODS IN BANKS**

To bring about efficiency in banks, the Committee recommended a number of measures. These include, revision of operational manual and its regular updation, simplification of documentation systems, introduction of computer audit, and evolving of a filtering mechanism to reduce concentration of exposures in lending and drawing geographical/industry/sectoral exposure norms with the Board's concurrence. Besides, the Committee has suggested induction of one more whole time director in nationalised banks in view of changing environment.

As outsourcing of services would improve productivity, it suggested the same may be introduced in the fields of building maintenance, cleaning, security, dispatch of mail, computer-related work, subject to relevant laws.

The Committee suggested a reduction in the minimum stipulated holdings of the Government/Reserve Bank in the equity of nationalised banks/State Bank of India to 33%.

In regard to tenure of a Chief Executive of a bank, the Committee indicated a minimum period of 3 years but the reasonable length of tenure to be not less than 5 years.

### **STRUCTURAL ISSUES**

The Committee recommended that after the convergence of activities between DFIs and banks over a period of time, they should get converted into banks, resulting in the existence of only 2 intermediaries viz. banks and non-banks. While mergers between strong financial institutions would make sense, the weak banks in the system will have to be given a revival package subject to a set of criteria.

The licensing of new private sector banks needs a review for their enhancement, while foreign banks will have to be encouraged to extend their operations on certain norms.

All appointments of chairmen, managing directors and executive directors of public sector banks and financial institutions, should be determined by an Appointments Board. The Committee felt the urgent need to raise the competency levels in public sector banks by resorting to a lateral induction of talented personnel. It also felt that the remuneration structure should be flexible and market driven.

The Committee recommended the corporatisation of IDBI. It also desired that the minimum net worth of NBFCs should at the same time be raised to Rs.2 crores progressively. For purposes of registration with the Reserve Bank, however, the minimum limit for net worth has been doubled to Rs.50 lakhs. Besides, no deposit insurance corporation for NBFCs was proposed.

The Committee proposed prudential and regulatory standards besides new capital norms for Urban Co-operative Banks (UCBs).

### **INTEGRATION OF FINANCIAL MARKETS**

The Committee recommended that banks and primary dealers alone should be allowed in the inter-bank call and notice money markets. Non-bank financial institutions would get access to other forms of instruments in money market like bill rediscounting, CPs, Treasury Bills. It also suggested opening the Treasury Bill market to foreign institutional investors for broadening its base.

## **RURAL AND SMALL INDUSTRIAL CREDIT**

The Committee proposed review and strengthening of the operation of Rural Financial Institutions (RFIs) in terms of appraisal, supervision and follow-up, loan recovery strategies and development of bank-client relationships in view of higher NPAs in public sector banks due to directed lending. In regard to capital adequacy requirements, RRBs and co-operative banks should reach a minimum of 8 percent capital to risk weighted assets ratio over a period of 5 years. It also proposed that all regulatory and supervisory functions over rural credit institutions should rest with the Board for Financial Regulation and Supervision (BFRS).

## **REGULATION AND SUPERVISION**

The Committee made a suggestion that the 'Basle Core Principles of Effective Bank Supervision' should be regarded as the minimum to be attained. It should be made obligatory for banks to take into account risk weights for market risks to facilitate soundness and stability of the system.

For effective conduct of monetary policy by the Reserve Bank, delineation of supervision/regulation from monetary policy is required implying that the Executive associated with monetary authority should not be in the Supervisory Board, to avoid weakening of monetary policy or banking regulation and supervision. The process of separating BSF from the Reserve Bank would need to be initiated and to supervise the activities of banks, financial institutions and NBFCs, a new agency in the name of BFRS would need to be initiated and to supervise the activities of banks, financial institutions and NBFCs, a new agency in the name of BFRS would have to be formed. With a view to achieving an integrated system of supervision over the financial system, the Committee recommended bringing urban co-operative banks within the ambit of the BFS.

## **LEGAL AND LEGISLATIVE FRAMEWORK**

The Committee recommended the amendment to RBI Act and Banking Regulation Act with regard to the formation of BFRS. It also gives more autonomy and powers to public sector banks (Nationalisation Act). As wide ranging changes in the legal framework affecting the working of the financial sector are sought by the Committee, an expert Committee could be constituted comprising representatives from the Ministry of Law, Banking Division, Ministry of Finance, the Reserve Bank of India and some outside experts.

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# *EFFICIENCY OF THE BANKING SYSTEM*

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# 6

## **INTRODUCTION**

Bank deposits are merely IOUs written in the books of banks which are generally accepted as money. Their general acceptability depends on the ability of the bank to produce cash on demand for deposits. This ability is called *liquidity* of the bank. The liquidity will be large if the bank maintains all the assets in cash but cash does not earn any income. Banks prefer to earn a return as well as maintain the assets in as readily transferable form as possible. Such a distribution of assets would reduce the cost of maintaining liquidity. A bank is judged efficient, if it maintains liquidity at a low cost. The acceptability of deposits as money also implies that the bank has to avoid losses which depreciate its assets, destroy public confidence and impair the general acceptability of deposits.

Banks in India long shielded from the forces of competition by restrictions on entry, have not been performing their basic function of intermediation of keeping transaction costs to minimum. The market imperfection has led to operational inefficiency as under the administered interest regime they could earn adequate spreads to cover high operation costs. After liberalization since 1992, banks had to face competition from private and foreign banks armed with latest technology and best business and marketing practices. The prolific growth of NBFCs also made a dent into the banks' assured clientele. Margins on traditional banking business declined.

Deregulation of banking industry through abolition of administered rates of interest on deposits and loans and permitting banks to undertake merchant banking activities, securities trading and continuing development of innovative ways to provide financial services have facilitated the creation of competitive environment. While undertaking fee-based activities, banks had to simultaneously initiate steps to improve operational efficiency in order to minimize their transaction costs. Public sector banks were permitted to raise

equity up to 49% and new banks, Indian as well as foreign were allowed to be set up. Along with the deregulation prudential norms were instituted to improve the system and soundness of the banking system. The contemporary competitive banking environment is causing banking institutions to evaluate carefully the risks and returns involved in serving the needs of the public.

### **Efficiency**

Efficiency may be viewed from the technical, economical or empirical considerations. Technical efficiency according to Koopman<sup>1</sup> is measured by the increase in any output which requires a reduction in at least one other output or an increase in at least one input and vice versa. Since identification of suitable indicators for banks inputs, and outputs is a major issue, certain ratios of costs to assets or operating revenues are used to measure a bank's efficiency.

Inefficiency may emanate from either technical or allocative reasons. Technical inefficiency results in sizeable under-utilization or wastage of resources; and allocative inefficiency impairs the choice of correct input combinations in terms of their price. Inefficiency in banks accounts for considerable portion of costs and constitutes the source of performance problems than either scale or product mix inefficiencies and could lead to failure. Internationally, the annual average efficiency of banks is placed at 77% keeping enough room to augment output with the same level of inputs.

Economic efficiency is measured by comparing actual and optimum costs, revenue or profits. Efficiency differences in empirical studies are explained by bank specific, market specific and regulatory characteristics. The empirical studies do not indicate any consistent relationship between asset size, organizational form, market concentration and efficiency. The studies however show that well capitalized banks were efficient and had lower levels of poor quality loans.

### **Ownership and Efficiency**

In the Indian context where the public sector banks account for a major portion of banking assets it is relevant to consider whether the public sector character impinges on the efficiency of the banking system. Further the interrelationship among credit risk capital and efficiency has to be considered.

A study of RBI comparing operating expenses, spread, net profit, asset quality and capital adequacy of old private sector banks, partially government

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1 Koopman, "T.C., An Analysis of Production as an Efficient Combination of Activities" in T.C Koopman (Ed). Activity Analysis of Production and Allocation. (1951) originally quoted in RBI, *Trend and Progress of Banking in India*, 1998-99.

owned public sector banks and wholly owned government banks during 1995-96 to 2001-02 revealed that,

- Old private sector banks performed better than partially government owned public sector banks which in turn performed better than the wholly government owned public sector banks.
- 100 percent government owned banks had higher ratio of operating expenses to total assets in comparison with those of public sector banks which have divested their equity as well as old private sector banks.
- Interest spread of 100 percent government owned public sector banks were lower in comparison with divested public sector banks during each of the 7 years due to their lower efficiency of raising resources.
- Profitability on an average of both old private sector banks and government owned banks which divested their equity was about the same and their profitability was higher than fully government owned public sector banks.
- Asset impairment (ratio of gross NPA's to gross advances) during each of the years under reference in respect of 100% government owned banks was much higher in comparison with public sector banks which divested their equity and old private sector banks.
- Capital adequacy ratio on an average in fully owned public sector banks was lower than those public sector banks which divested their equity as well as old private sector banks.
- New private sector banks outperformed all other groups under all five heads.

### **Need for Evaluation of Bank Performance**

Shareholders of a bank, bank management, regulators, depositors and tax payers (in the case of public sector banks) are particularly interested in the evaluation of the performance of a bank. Data on bank performance is used to forecast future performance that can be used to price securities appropriately that may be issued to public by the bank. Bank management is traditionally evaluated on a relative basis over the previous year as well as similar banks. Performance of the bank affects its standing among the banks and ability to access funds to meet its requirement at a reasonable cost. Unless the standing of the bank is good even accessing capital market at going rates would be difficult. Regulators are concerned about the safety and soundness of the bank and preservation of public confidence. For this purpose banks are monitored offsite as well as through onsite inspections. Depositors, business community and the tax payers are concerned about a bank's performance since their prosperity as well as tax burden to finance write offs and restructuring is linked to the success or sickness of their bank.



*Maximisation of Value of Shares:* The ultimate measure of a bank's performance is the value of its shares. As a part of financial sector reforms, private sector is encouraged to set up banking companies and government owned public sector banks are being allowed to diversify their activities and raise equity in the capital market to strengthen their capital base. Eight public sector banks raised funds; and nine new private sector banks have been set up. As at the end of March 1999, on the National Stock Exchange the shares of 8 public sector banks (State Bank of India, State Bank of Bikaner and Jaipur, Oriental Bank of commerce, Dena Bank, Bank of Baroda, Bank of India, Corporation Bank and State Bank of Travancore) and 17 private sector banks were listed for trading. Shares of foreign banks are not permitted to be listed.

During 1998-99, there was a decline in the value of the listed shares of a few public sector banks (Bank of Baroda - 54.5%, State Bank of Travancore-54.4%, Bank of India-52.4%, State Bank of India-23.6%) as well as in private sector (Bank of Rajasthan Ltd.-63.8%, Federal Bank-52.9%, HDFC Bank-1.0%). The decline was mainly attributed to the poor performance of banks and the concern of the market over the NPAs of banks during 1998-99. The general stock market index measured, by S & P CNX Nifty index for select traded scrips declined by 3.5 percent. Since 2001-02 banking sector scrips have been in the limelight. The banking sector stocks displayed buoyancy along with the uptrend in market during 2003-04. In April 2004, Bankex outstripped BSE Sensex. Relaxation of FDI norms for private sector banks in May 2001, improved financial performance of banks, sharp fall in interest rates which boosted the value of banks investment in government securities and banks trading profits influenced banks' share prices. In 2003-04, all public sector banks which are listed in NSE recorded gains. SBI, Syndicate Bank, ICICI Bank, Bank of Baroda and Bank of India scrips were actively traded.

Maximisation of shareholder wealth involves both internal and external factors. Internal factors consist of areas of bank management that the personnel of the bank have under their immediate control. While external factors are environmental aspects of the bank's market over which bank management has no direct control. Bank has to allocate its scarce resources for performance of different functions which may conflict with each other to maximize the total value of the bank. Pursuit of enlargement of bank's market share and competitiveness may lead to higher operating expenses and result in deterioration of bank's financial condition. Regulatory compliance and public confidence may be affected by deterioration in financial condition. The environment of bank in terms of economic conditions and market demand affect internal performance. On the other hand environment in terms of political setting and legal setting affect external performance.

### Bank Concentration Ratio

Measures of credit market concentration have been used for gauging the competitive efficiency of the credit delivery system. Concentration ratio is measured in terms of share of top 5 banks in assets, deposits or profits. The share of top 5 banks in total assets declined from 51.7% in 1991-92 to 43.5% by 2001-02. Table 6.1 presents the trends between 1991-92 and 2003-04.

Table 6.1 *Share of Top Five Banks in Assets, Deposits and Profit (select years)*

Year	Assets	Deposits	Profit
1991-92	51.7	49.0	54.5
1995-96	45.9	45.0	190.7
1998-99	44.7	44.4	49.1
2001-02	43.5	43.3	41.4
2003-04	44.0	41.0	—

Source: RBI, *Report on Currency and Finance*, 2001-02, p.VI-7 and *Trend and Progress of Banking in India*, 2003-04, p.65.

Five largest banks in India in 2003–2004 accounted for about 41 percent of banks' deposits and 44% of assets. India's position is better than that of Brazil, Chile, Mexico and France. The competitive nature of the banking sector has improved because of participation of domestic private sector banks and foreign banks. Constituents of banks benefited from greater competition offering wider range of options in terms of parking funds and borrowing in a cost effective manner.

## INTERNAL PERFORMANCE

Internal performance consists of bank planning, personnel development and bank condition.

### BANK PLANNING

Enunciation of objectives to achieve the goal of maximization of shareholders wealth is necessary. These include the increase in size and diversification of deposit base by offering financial services to retail customers; improvement of quality of human resource by upgrading the quality of management expertise in the area of high technology, lending and employee training; implementation of automated delivery system for payment services; and participation in local community improvement. These goals have to be translated into specific quantifiable goals. The planning process assumes a committed and formal shape when reasonable goals are set with the participation of all levels of management leading to position benefits such as improvement of morale, better internal communication and coordination of bank operations.

These objectives have to be embodied in budgets or profit plans which define the results expected of each department. The focus is on cost efficiency. Budgets enable monitoring of progress towards goals and help improve internal control.

Budget has to be supplemented by strategic planning which anticipates emerging external and internal conditions that affect achievement of goals. Strategic planning is creative in nature and concerned with effectiveness in achieving goals. Its content provides guidance for the future and steps to manage bank's environment. Strategic planning however has to be dovetailed into the bank's annual budget. The planning procedures in terms of budget and strategic planning are the cornerstones for planning wealth maximization and avoidance of risk of failure.

### **Technology**

Technology improves the competitiveness of the bank by widening its reach and enhancing the convenience of using bank's services. Adoption of new technology improves the image of the bank that it is modern and progressive. Investment in technology in terms of automation of operations improve productivity. New products such as direct deposit and automatic bill paying can be offered. Computerisation of operations and installation of ATMs are likely to lead to increase in the intermediation cost in the short run as in the case of foreign banks in India (2.75% as compared to 2.2% for all SCBs in 2003-04). However, investment in technology is likely to reduce operating costs by reducing the wage bill. The new private sector banks (23% of operating costs) and foreign banks (31.9%) have very low wage bills. The intermediation cost of SCBs as well as PSBs, measured in terms of the ratio of operating expenses to total assets was 2.2% in 2003-04; nationalized banks 2.19%; old private sector banks 1.97%; and foreign banks 2.75%.

The wage bill of new private sector banks was 23.3% of operating costs as against 28.8% for old private sector banks, 69.5% for nationalized banks and 31.9% for foreign banks in 2003-04.

### **PERSONNEL DEVELOPMENT**

Continuous training in the latest banking operations and techniques and changes in bank regulations and environment are critical for effective pursuit of goals and objectives of the bank. Markets of bank products demand skills in sales and marketing techniques. Opportunities for self-advancement within the bank have also to be provided. Finally the compensation package, monetary and non monetary should be sufficient, flexible and consistent with maximizing job performance.

**External Performance**

Banks face customers, competitors, regulators and the public and the external performance of the bank is reflected in the ability of the bank to cope with them. Market shares, earnings, regulatory compliance and public confidence influence external performance. By adopting latest technology the competitiveness of the bank and convenience of using bank's services is enhanced. Finally, banks have to conform to the laws and regulations and failure will prompt supervisory action.

Market share depends on the ability to meet market demands and is measured by the proportion of assets, deposits and loans of a bank in the total for all SCBs. Market share influences earnings of the bank and market share goals should be consistent with the internal performance of the bank. Further, public confidence which is a function of the market's perception of the bank's safety is a prerequisite for bank solvency.

**APPRAISING BANK'S CONDITION**

Appraising bank's condition is a matter of internal performance. It is done on the basis of capitalization, asset quality, liquidity, operating efficiency, profitability and tax minimization and interest sensitivity.

*Balance Sheet:* The two basic documents to appraise the financial condition are the balance sheet and the income and expenditure statement. Balance sheet is a picture of the financial condition at a single point of time. The accounting year is more or less uniform for the entire economy including banks which is April 1 to March 31. The annual balance sheet is prepared as on March 31 every year. The combined balance sheet for all scheduled banks was analysed in Chapter 5. It was noted that liabilities consist of capital, reserves and surplus, deposits, borrowings and other liabilities and provisions; and assets consist of cash and balances with Reserve Bank, balances with banks and money at call and short notice, investments, loans and advances, fixed assets and other assets.

**Income Statement**

The income statement of a bank presents the financial performance of the bank in the financial year and shows all major categories of income and expenditure, the operating profit and net profit. The balance sheet and income statement are integrally related and they have to be evaluated together to assess the performance of the bank.

Income includes interest income and other income from fees. The net interest income referred to as spread was 2.9% for all SCBs in 2003-04 (see Table 6.2). Expenditure consists of interest expended and provisions, contingencies and operating expenses. The income statement presents the operating profit and net

profit. Financial ratios relating items in income statement to total assets in the balance sheet are calculated. About 11 ratios are used to appraise the performance of a bank.

**Table 6.2** *Financial Performance of Scheduled Commercial Banks (2003-04)*

<i>(Rs. crores)</i>	
<b>Item</b>	<b>2003-04</b>
Income (i+ii)	1,83,767
(i) Interest income	1,44,028
(ii) Other income of which:	39,739
Trading income	19,532
Forex income	3,754
<b>Expenditure (i+ii+iii)</b>	<b>1,61,496</b>
(i) Interest expended	87,567
(ii) Provisions and contingencies	30,400
(iii) Operating expenses of which:	43,530
Wage bill	26,164
<b>Profit</b>	
(i) Operating profit	52,671
(ii) Net profit	22,271
<b>Total assets</b>	<b>19,75,020</b>
Financial ratios (percent) \$	
(i) Operating profit	2.7
(ii) Net profit	1.1
(iii) Income	9.3
(iv) Interest income	7.3
(v) Other income	2.0
(vi) Expenditure	8.2
(vii) Interest expended	4.4
(viii) Operating expenses (intermediation costs)	2.2
(ix) Wage bill	1.3
(x) Provisions and contingencies	1.5
(xi) Spread (Net interest income)	2.9

Notes: \$ Ratios to Total Assets.

Source: Reserve Bank of India, *Report on Trend and Progress of Banking in India, 2003-04*.

### Financial Ratios

The financial ratios are calculated as a percent to total assets.

- Operating profit
- Net profit
- Income
- Interest income
- Other income
- Expenditure
- Interest expended
- Operating expenses (intermediation cost)
- Wage bill
- Provisions and contingencies
- Spread (net interest income)

Table 6.2 presents the eleven ratios for all scheduled commercial banks in 2003-04.

In addition, wage bill as a proportion of operating expenses and off balance sheet activities relating to forward exchange contracts, guarantees and acceptances and endorsements as a proportion to total liabilities and non-performing assets (gross and net) to total assets are relevant.

Other key ratios commonly used by bank analysts evaluate different dimensions of financial performance including profitability, capitalization, asset quality, operating efficiency, liquidity and interest sensitivity.

### Profit Ratios

Return on Equity (ROE), Return on Assets (ROA), profit margin, asset utilization and net interest margin are profit ratios.

ROE indicates the rate of return on equity capital and is particularly on equity capital significant in the context of objective of maximization of share value. Equity is the sum of share capital, preferred shares, paid-in surplus, retained earnings and reserves for future contingencies.

$$\text{Rate of Return Equity \%} = \frac{\text{Net income}}{\text{Total equity capital}} \times 100$$

Return on Assets (ROA) measures the ability of management to utilize the real and financial resources of the bank to generate income and is used to evaluate management.

$$\text{Rate of Return Assets \%} = \frac{\text{Net income}}{\text{Total assets}} \times 100$$

The relationship between ROE and ROA is,

ROE = ROA × Equity multiplier (financial leverage)

$$\frac{\text{Net income}}{\text{Total equity}} = \frac{\text{Net income}}{\text{Total assets}} \times \frac{\text{Net assets}}{\text{Total equity}}$$

Return on equity is a product of ROA and equity or leverage multiplier. A high equity multiplier can increase both ROE and the growth rate of the bank as long as ROA is positive. ROA is the product of profit margin and asset utilization.

ROE = Profit margin × asset utilization × equity multiplier.

$$\frac{\text{Net income}}{\text{Total equity}} = \frac{\text{Net income}}{\text{Operating income}} \times \frac{\text{Operating income}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Total equity}}$$

Return on assets is also a product of profit margin and asset utilization ratio. Profit margin is determined given the operating income by the ability to control expenses; and asset utilization ratio on the effective employment of assets to generate revenues.

Net Interest Margin (NIM) gives an insight into the bank's financial performance because interest income and expenses absorb a major share of total operating income and expenses.

$$\text{Net interest margin \%} = \frac{\text{Total interest income} - \text{Total interest expense}}{\text{Average earning assets}} \times 100$$

### Asset Quality

Financial ratios can only assess indirectly the quality of assets. The ratios provide an historical account of the creditworthiness of a bank's loan portfolio. Provision for loan losses, loan ratio, charge offs and non-performing assets indicate the quality of a bank's loan portfolio.

Provision for future loan losses may be related to the volume of loans.

$$\text{Provision for loss ratio (\%)} = \frac{\text{Provision for loan losses}}{\text{Total loan}} \times 100$$

Loan ratio reveals the proportion of assets devoted to loans which is calculated as,

$$\text{Loan ratio} = \frac{\text{Net loans}}{\text{Assets}} \times 100$$

Charge offs are the last leg in the deterioration of credit quality of a loan. They are a lagging indicator of credit quality. When a loan is uncollectable it is charged off the books of the bank and no longer appears as an asset. It reduces

the reserve for loan losses and may signal increase in provision for loan losses, if the provision becomes inadequate by charge offs. The reserve can of course be augmented by recovery of provisions by charged off loans.

### **Non-performing Assets**

Non-performing assets are a leading indicator of credit quality. Non-performing assets equal the sum of non-accrual loans and restructured loans. Non-accrual loans are those whose cash flows stream is so uncertain that the bank does not recognize income until cash is received, and restructured loans are those whose interest rate has been lowered on the maturity increased because of problem with borrower. The level of non-performing advances to a great extent distinguish a good bank from a bad one.

The non-performing nature of loans was identified in the Indian banking system even before the introduction of prudential norms in 1992-93. Data pertaining NPAs in the banking systems abroad show that it ranged from 1% to 8.1% during 1993-94, 0.9% to 5.5% during 1994-95 and 0.85% to 3.9% during 1995-96 as against 23.6%, 19.5% and 17.3% respectively for Indian banks during these years. A study of the problem (sticky) loan figures of 33 banks as on March 31, 1997 conducted by RBI revealed that the proportion of problem loans in the Indian banking system was always high. The sticky accounts formed 17.91% of gross advances on March 31, 1989. The bulk of gross non-performing loans are due to historical reasons. The dues to the banking sector are found to be generally related to the performance of the unit/industrial segment. Management inefficiency of borrower unit, obsolescence, lack of demand, non-availability of inputs and environmental factors adversely affect the performance of the unit.

The ratio of gross non-performing loans (NPL) to total loans which was at a high of 15.7% for scheduled commercial banks in March 1997 declined to 7.2% in March 2004. Net NPLs have also declined an account of improvements in loan loss provisioning which constitutes over half of the total provisioning and contingencies.

Basically the non-performing assets are a result of the compromise of the objectivity of credit appraisal and assessment. The problem is aggravated by the weaknesses in the accounting, disclosure and legal frameworks. "Ever greening" consisting of grant of additional loans to make bad loans look good is resorted since accounting conventions are not rigorous. In the assessment of the status of current loans, the borrower's creditworthiness and the market value of collateral are not taken account rendering it difficult to spot bad loans. Investors or supervisors are denied the information to monitor and discipline



errant banks. The understatement of NPAs also results in inadequate loan loss provisions and overstatement of bank's net income and capital.

It may be noticed that most emerging markets with high quantum of sticky assets also have coverage (provisions/NPL). Despite the improvements in coverage by Indian banks over the last few years it remains low compared to international standards.

#### **International Comparison (1999)**

- Spreads in India were marginally higher than those in East Asian countries and major developed economies.
- Profitability in India is higher than East Asia and advanced countries.
- The level of competition as measured by concentration ratio in India compared favourably with several Asian and Latin American countries.
- Overall asset impairment in India was at a much higher level in comparison with several other countries.

#### **RBI study of Top 30 NPAs in 33 Banks (1997)<sup>2</sup>**

A study of top 30 NPAs of 33 banks by RBI as on March 31, 1997 revealed the reasons for NPAs are:

- Diversion of funds for expansion/modernization, setting up new projects.
- Cost overruns during implementation.
- External factors such as non availability of raw materials and power.
- Business failure.
- Failure, non-payment/overdues in other countries.
- Government policies.
- Deficiencies on the part of the bank.

These factors were cross checked and ranked by the study of 800 top NPA accounts in 17 banks from the records available. The factors in the order of prominence are:

- Diversion of funds.
- Internal factors of business failure.
- External factors comprising input/power storage. Time/cost overrun during project implementation stage.
- Other factors such as government policies, willful defaults.

The internal factors outweighed the external factors in contributing to the NPAs.

<sup>2</sup> "Some Aspects and Issues Relating to NPAs in Commercial Banks", RBI Bulletin, July 1999.

**Impact of Priority Sector Advances on NPAs**

The study of the RBI revealed that the incidence of NPAs in priority sector is much higher since they constituted to 30 to 32% of gross bank credit during the period. Higher NPAs in priority sector advances have pushed up the overall proportion of NPAs by about 3% to 4%.

As was pointed out earlier the major reason for sickness in SSI sector was finance. The NPAs in SSI advances were largely due to inadequate working capital to operate at breakeven point. The extant appraisal techniques emphasized credit restriction without reckoning the total requirement to operate at breakeven point and making sure that adequate resources exist. The credit appraisal never emphasized this aspect. On the other hand, the approach was negative in order to restrict access to bank funds leaving the unit to operate at below breakeven point. In stages, overtime, equity is eroded, dues pile up and the breakeven point recedes. The threshold for breakeven goes up requiring larger volumes of output which cannot be financed in terms of working capital. A large number of entrepreneurs lost their and their family's and friends' savings in units set up by them. It was estimated that the savings lost in the one lakh sick SSI units is about Rs.20,000 crores. The appraisal techniques are squarely to be faulted because the aspect pertaining to breakeven and the adverse impact of arrears on breakeven point in terms of larger output and higher working capital requirements have never been reckoned.

**International Practice**

Non-performing assets in India are defined as an advance that has not been serviced as a result of past dues accumulating for 180 days (now 90 days) and over. On account of the time lag involved in the process of recovery and the detailed safeguards/procedures involved before writeoffs could be effected, banks, even after making provisions for the advances considered irrecoverable continue to hold such advances in their books. In several countries all or bulk of banks' provisions are general provisions and identified losses are written off at an early stage. The balance sheets of banks in those countries carry little of NPAs. The recovery measures are also expeditious in view of stringent bankruptcy and foreclosure laws. The concept of gross NPA and net NPA is not in vogue in those countries. NPAs in India are gross NPAs. To obtain net NPA provisions have to be adjusted.

It may be noted that in many respects asset classification norms are considerably tighter in India than the international best practices. In certain countries, an advance is considered as uncollectable and classified as loss asset only after it has remained past due or doubtful for a considerable length of time, whereas in India an advance is to be classified as loss the moment it is

considered uncollectable. Provision has to be made in full for doubtful advances without deducting available securities, whereas doubtful advances are arrived at on a net basis after deducting securities in other countries. Provision is 100 percent in India in respect of the portion not covered by the realizable value of securities whereas it is 50-75% in other countries. Finally, the concept collateral is narrow in India since security of standby nature like guarantee of the promoter/guarantor is not considered security. For these reasons, prudential norms in India are in several respects stricter than the international best practices and the provisions made are significantly above the requirement of prudence.

### **Bank Restructuring in Asian Crisis (1997) Economies**

Banks in Korea, Indonesia, Malaysia and Thailand entered the crisis with weak balance sheets and substantial off-balance sheet exposures. The scale of the banking crisis and the government guarantee of deposits is reflected in the cost of recapitalising the banking systems to GDP in those 4 countries: Indonesia 50-60%, Thailand 40%, Korea 15% and Malaysia 12%.

The approaches to bank restructuring were either interventionist or leave the resolution to banks themselves. In Korea and Malaysia asset management companies (AMCs) owned and financed by government were established to buy non-performing loans (NPLs) from distressed banks or non-bank financial institutions. NPLs were sold at large discounts of about 50%. Government capital was injected into weak but still viable banks. Depositors were protected under both approaches as banks were closed, merged or nationalised. The Indonesian agency had taken control of 48 failed banks (May 1999). In Thailand the government formed two agencies for the non-bank financial sector, first affected by the crisis to buy and liquidate bad assets which were sold by the agencies at 25% of face value. Commercial banks in Thailand were left to deal with their NPLs on their own.

### **Shortcomings of AMC Approach**

The AMC approach had led to widespread solvency problems since losses realised on the sale of loans to the AMCs forced shareholders to write down their equity and raise additional capital. Since sufficient capital was not forthcoming governments intervened through closures, forced mergers and nationalisation. Government in Thailand closed 53 finance companies and one bank, in Indonesia 67 banks and Korea 5 commercial banks and 17 merchant banks. In Malaysia, 10 anchor banking groups were formed as a part of nationwide merger programme. In all countries a large number of mergers were undertaken. In Indonesia, Korea and Thailand foreign ownership of local banks was allowed by requiring local banks to raise foreign capital. Foreign financial institutions have acquired in full or part 18 Asian banks since January 1998.

*Recapitalisation:* The activities of AMCs were complemented by public capital injections. Korea issued government bonds worth \$13 billions to recapitalize banking institutions; Malaysia injected fresh capital into 11 banks that account for 20% of the assets of the banking system; and Indonesia recapitalized eight private banks.

**Table 6.3** Indicators of Bank Performance in Asian Crisis Countries

	Korea		Thailand		Malaysia		Indonesia	
	1996	1999	1997	1999	1997	1999	1997	1999
(at end-year, in percentages and percentages points)								
Non-performing loans <sup>1</sup>	4.1	6.2 <sup>2</sup>	22.5	38.6	3.2	9.0	7.1	37.0
Return on assets	0.3	3.3 <sup>2</sup>	-0.1	-2.5 <sup>3</sup>	0.6	0.2 <sup>3</sup>	-0.1	-17.4 <sup>3</sup>
Intermediation spread <sup>4</sup>	3.6	2.2	3.8	4.8	2.5	4.4	1.5	7.7
Capital/asset ratio <sup>5</sup>	9.1	9.8 <sup>6</sup>	9.3	12.4	10.3	12.5	4.6	-18.2 <sup>2</sup>

*Note:* <sup>1</sup>As a percentage of total loans of commercial banks; national definitions. NPLs do not include loans transferred to AMCs. <sup>2</sup>September. <sup>3</sup>December 1998. <sup>4</sup>Short-term lending rate minus short-term deposit rate. <sup>5</sup>Risk-weighted. <sup>6</sup>June.

*Source:* BIS, *Annual Report*, June 2000.

China established four AMCs in 1999 which would use bonds to buy at face value the bulk of NPLs accumulated before 1997. Asset recovery is proposed by selling collateral backing the loans and securitising and auctioning NPLs including foreign investors.

Table 6.3 presents the indicators of bank performance in the Asian crisis countries. The transfer of NPLs to AMCs resulted in strengthening the balance sheets in Korea and Malaysia. In Thailand where banks had to work out the loans on their own, NPLs declined from 48% of total loans in May 1999 to 38% in January 2000. Operating costs were cut by branch closures. In Korea employment in banks fell by 25% and remaining employees had to accept salary reductions.

### Operating Efficiency

Operating efficiency deals with the delivery of products such as deposit and loan accounts at minimum cost. Information on cost control can be obtained by dividing various expense categories by total operating expenses, wage bill and fixed expenses (occupancy expense ratio).

### Liquidity

Liquidity is the ability of the bank to meet cash demands for loans and deposit withdrawal. Banks however, no longer hold liquid assets for the purpose. Liquidity needs are now funded by liability management. Banks use deposit and non-deposit sources of funds by paying market rates of interest. The shift from asset management to liability management has increased gross rates of return on assets because longer term assets have higher rates of return than short-term assets; and credit risk in many banks has increased because of substitution of loans for liquid assets.

Asset liquidity is still important because it is a reserve the bank can draw on in the event its access to market and other banks is reduced. Liquid assets can also be used to fund loans when interest rates are relatively high.

Liquidity is measured by temporary investments ratio and volatile liability dependency ratio. Since temporary investments are highly liquid, the higher the ratio of temporary investments to total assets the greater the liquidity. Temporary investments include investment securities with maturities of one year or less and inter-bank lending. Volatile liabilities include brokered deposits and CDs. The volatile liability dependency ratio is calculated as volatile liabilities less temporary investment divided by net loans plus long-term securities. The ratio varies inversely with liquidity. The ratio measures the proportion of riskiest assets funded by unstable or hot money that can disappear from the bank overnight.

$$\text{Temporary investment ratio} = \frac{\text{Investment securities with maturities of less than one year} + \text{due from banks}}{\text{Total assets}}$$

$$\text{The volatile liability} = \frac{\text{Total volatile liabilities} - \text{Temporary investment dependency ratio}}{\text{Total assets}}$$

Interest sensitivity is the response of liability costs and asset returns to changes in interest rates. Dollar Gap Ratio (DGR) which is the difference between the quantities of interest sensitive assets and liabilities is calculated to compare the interest sensitivity of different banks.

$$\text{DGP}\% = \frac{\text{Interest rate sensitive assets} - \text{Interest rate sensitive liability}}{\text{Total assets}} \times 100$$

Interest rate sensitivity relates to short-term assets and liabilities of less than one year. The effect of change in interest rates on bank profitability can be calculated by structuring assets and liabilities in terms of maturity ranges or buckets. Positive gap ratios increase bank profitability and negative gap ratios would reduce bank's profitability.

**Table 6.4** Profitability of Major Banks, (2001-2003); International Comparison As a Percentage of Average Total Assets

	Pre-tax profit (Return on assets <sup>1</sup> )			Provisioning expenses			Net interest margin			Operating costs		
	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003
United States(11)	1.52	1.71	2.04	0.69	0.69	0.44	3.11	3.11	2.99	4.03	3.54	3.41
Japan (11)	-0.69	-0.45	0.07	1.15	0.64	0.20	1.01	1.00	0.55	1.01	1.01	0.80
Austria (2)	0.44	0.46	0.53	0.39	0.39	0.36	1.66	1.80	1.72	1.76	1.92	1.85
France (3)	0.67	0.46	0.58	0.16	0.17	0.18	0.65	0.75	0.91	1.50	1.48	1.55
Germany (4)	0.14	0.05	0.20	0.24	0.39	0.28	0.90	0.82	0.79	1.77	1.68	1.66
Italy (5)	0.90	0.53	0.81	0.53	0.63	0.51	2.21	2.25	2.05	2.42	2.44	2.52
Netherlands (3)	0.62	0.46	0.65	0.20	0.26	0.20	1.57	1.62	1.63	2.08	1.95	1.86
Spain (3)	1.20	1.06	1.27	0.56	0.55	0.44	2.92	2.72	2.38	2.61	2.37	2.12
Sweden (4)	0.83	0.69	0.77	0.10	0.09	0.10	1.50	1.48	1.44	1.53	1.44	1.37
Switzerland (2)	0.41	0.06	0.63	0.10	0.14	0.03	0.68	0.84	0.88	2.83	2.40	2.03
United Kingdom(5)	1.24	1.08	1.22	0.32	0.36	0.32	2.04	1.96	1.82	2.38	2.40	2.12
Canada (5)	0.91	0.61	1.00	0.41	0.58	0.23	1.96	2.07	1.99	2.84	2.75	2.78
Australia (4)	1.47	1.49	1.49	0.27	0.26	0.21	2.22	2.16	2.13	2.15	2.04	2.30
India (SCBS)	0.75	1.01	1.13	1.19	1.39	1.54	2.57	2.77	2.86	2.19	2.24	2.20

Note: The figures in brackets in the first column denote the number of banks.

<sup>1</sup>Pre-tax profit; <sup>2</sup>Fiscal year; <sup>3</sup>Data relate to 27 public sector banks.

Sources: BIS, 74th Annual Report, 2003-2004, p.123, and RBI, Report on Currency and Finance, 2003-04, p.216.

*Profitability of Banks* : International comparison Table 6.4 presents an international comparison of the profitability of banks during 2003-04.

### **Return on Assets**

The return on assets of banks in India is lower than United States, Spain, U.K. and Australia. In 2003, the 3 American banks which occupy the top 3 positions among 20 biggest banks in the world ranked by core capital (Tier I), had return on assets of 2.04%. Banks in Australia had the second higher return on assets of 1.49% in 2003. SCBs in India had return an assets of 1.13%.

### **Loan Loss Provision**

In regard to loan loss provision PSBs had higher provision because of high NPAs.

### **Net Interest Margin**

Net interest margin of Indian SCBs is next only to that US banks. It is higher than Australian banks.

### **Operating Costs**

Operating costs again are fifth highest for Indian SCBs among the countries presented in the Table 6.4. US, Canada, Italy and Australia are the other four countries which have higher operating costs. All the other countries (13) have lower operating costs.

The banking system in India has a relatively high operating cost rendering it uneconomical. The high intermediation cost has to be met by relatively high interest income spread and a high real lending rate. An international comparison reveals that while the average operating cost of banks as a percentage of assets was about 2.3% in India during 1990-91 to 1995-96, (2.65 in 1998-99) it was low at 1.1% in China, 1.6% in Malaysia, 1.9% in Thailand, 1.0% in Japan and 2.1% in G10 Europe.<sup>3</sup> In 2003-04, it was 2.2% for SCBs in India.

### **Credit Risk, Capital and Efficiency<sup>4</sup>**

The empirical findings suggest that capital, credit risk and efficiency are interlinked and to a certain extent they reinforce and complement one another. Higher capital position was found to result in improvement in efficiency, particularly in the case of small banks. The interrelationship between asset quality and efficiency was not found to be mutually reinforcing. It was also noted that adequately capitalized banks in the small and medium categories are less prone to credit risk. Improvements in credit risk management in medium category banks improve capital position.

3 Jalan, Bimal, "Towards a More Vibrant Banking System", RBI *Bulletin*, January, 1999.

4 RBI, *Report on Currency and Finance*, 2001-02, pp.VI 12-17.

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## *MANAGEMENT OF CAPITAL*

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### **DEFINITION OF BANK CAPITAL**

Banks hold capital to provide protection against unexpected losses. Traditionally capital of a bank constitutes a very small fraction of its total assets. The leverage ratio of banks is very small when compared to similar ratios of non-financial institutions. Even the 8% ratio of capital to risk weighted assets does not aim at protecting banks against losses. Provisions and reserves should take care of them. The minimum capital ratio aims at protection from deviations from average losses. Bank capital like capital of new financial firms includes equity and long-term debt. It also includes reserves that are provided to meet anticipated operating losses. Equity comprises shares, preferred shares, surplus and undivided or retained profits. The accounting value of equity (shares + preferred shares) is equal to the number of shares outstanding multiplied by their value per share. Par value is no longer fixed by law but left to the discretion of the firm. Surplus is the paid-in capital in excess of par value realized by the bank on the initial sale of shares. Finally, retained earnings which are the cumulative net profits that are not distributed as dividends. The sum of these components is the book value of equity.

Value of equity and preferred shares can also be measured in terms of market value. Market values reflect the expected future income stream. Share holders are concerned about future earnings and the associated risks of those earnings. Book value and market value differ. Market value is a more accurate measure than the historical book value.

### **LONG-TERM DEBT**

Debentures and subordinated debt are sources of external funds. Debt is “subordinated” because debt is second in priority to depositor claims in the event of liquidation. Bank debt by and large is in the form of short and intermediate - term deposit and non-deposit funds derived from money market.

Long-term debt increased substantially among large banks abroad since 1960s in view of the change in regulatory requirements that allowed notes and debentures with maturities of at least 7 years to be used to meet capital standards. In India, the regulatory provisions permit among others hybrid debt and subordinated debt to be included under Tier II capital. It is believed that issue of long-term debt would increase market discipline whereby creditors monitor bank safety and soundness and reflect their views in security prices. However, long-term debt only serves to meet operating losses in the event of failure. It should be noted that interest on debt capital is tax deductible and debt is a less expensive after tax source of external capital than equity.

### **LOSS RESERVES**

There are two reserves that banks set aside. Loan loss reserve is set up to meet anticipated loan losses. Earnings are set aside towards the provision for loan loss (PLL). Tax burden is reduced when expensing PLL. When a loan defaults the loss is deducted from the reserve account. PLL is calculated in US for example as an average of loan losses over previous six years or as a percentage (0.6%) of eligible loans. To discourage banks from overstating loss reserves with a view to reduce taxes, banks with more than a \$500 million in assets are allowed to expense actual losses from pre-tax income.

Reserve for loan losses or allowance for loan losses is calculated as the cumulative PLL minus net loan charge offs and reported on the assets side of balance sheet. The reserve for loan losses is deducted from total loans to get net loans. Part of the reserve for loan losses is counted as capital reserve on the right side of balance sheet which is included in measures of capital adequacy. Capital reserves comprise then funds set aside to pay dividend or buyback (retire) shares and bonds outstanding as well as funds held for unexpected losses.

### **CORRECTION OF CAPITAL DEFICIENCY**

Capital requirements are used by regulators to control risk taking by bank. A bank with abnormal risk level has to have capital in excess of minimum requirements. Banks judged to be capital deficient need to take corrective action by

- Change in the assets to capital ratio.
- Change in the dividend payout ratio.
- Change in profitability.
- Employee stock ownership.
- Raising funds from capital market.
- Recapitalisation.
- Mergers.

**Change in Assets**

Change in assets is the major factor of change in capital ratio although it can be altered by changes in shareholders' equity. Assets have been permitted by banks to increase in line with efforts to increase the size and earnings letting the capital ratio drop. Capital has been regarded as a separate consideration.

**Change in Dividend Payout Ratio**

Retention of a high proportion of earnings is a convenient method to build up equity capital because it does not create new shares that would dilute earnings of the existing shareholders. The cost of retained earnings is not, however any less than a new issue. The cost of retained earnings is closely linked to the cost of equity in the long-run. Over the long-term the question of the level of dividend payments makes little difference to capital policy.

**Employee Stock Ownership**

In the employee stock ownership plan a trust is sponsored by a bank which borrows funds to buy further issue or existing equity shares of the bank for ultimate distribution to the employees who are the beneficiaries of the trust. The bank uses debt funds to expand equity. Debt is retired over the long-term and the shares are held in trust and allotted to employees on retirement or after a specified period following termination of employment. The employee stock option plan promotes equity cult by widening capital ownership.

**Change in Profitability**

Improving profitability is the most effective way of managing capital ratio. Growth in earnings provides the basis for increase in shareholders' equity. A correspondingly less rapid growth in assets enables a bank to strengthen its capital ratio.

Table 7.1 presents financial performance of scheduled commercial banks (SCBs), public sector banks, nationalised banks, private sector banks (old and new) and foreign banks in 2003-04 in terms of financial ratios computed by RBI from the income and expenditure and balance sheet statements of the banks. The operating profit of SCBs in 2003-04 constituted 2.67% of total assets. Net profit of Rs.22,271 crores at 1.13 percent of total assets include higher provisions and contingencies which was 1.53% of total assets. Pre-tax profits at 1.13% is much lower than the return on assets of 2.04% of banks in USA in 2003 (see Table 6.4). The ratio of operating expenses to total assets, intermediation cost, was 2.2% and net interest income was 2.86% in India in 2003-04. Operating costs in US banks at 3.41% in 2003 were much higher than India (2.2%) while the spread is higher at 3.46% in Indian SCBs (in Table 6.4 it is 2.86 which is an average for 2001-03) than in US where it is 2.99 in 2003.

**Table 7.1** Financial Performance of Scheduled Commercial Banks, Public Sector Banks, Nationalized Banks, Private Sector (old and new) Banks and Foreign Banks (2003-04)

(Rs. crores)

Item	Scheduled commercial banks	Public sector banks	Nationalized banks	Old private sector banks	New private sector banks	Foreign banks
<b>Income (i+ii)</b>	1,83,767 (100.00)	1,37,602 (100.00)	85,712 (100.00)	11,551 (100.00)	21,602 (100.00)	1,3012 (100.00)
(i) Interest income	1,44028 (78.38)	1,09,496 (79.57)	68,540 (80.0)	9,120 (79.0)	16,421 (76.0)	8,990 (69.09)
(ii) Other income	39,739 (21.62)	28,106 (20.43)	17,172 (20.03)	2,431 (21.04)	5,181 (23.98)	4,022 (30.90)
<b>Expenditure (i+ii+iii)</b>	1,61,496 (100.00)	1,21,055 (100.00)	74,784 (100.00)	10,105 (100.00)	19,567 (100.00)	10,769 (100.00)
(i) Interest expended	87,567 (54.22)	65,764 (54.33)	40,369 (53.98)	5,982 (59.20)	11,548 (59.02)	4,272 (39.68)
(ii) Provisions and contingencies	30,400 (18.8)	22,928 (18.94)	14,184 (18.97)	1,749 (17.3)	2,978 (15.22)	2,744,32 (25.48)
(iii) Operating expenses of which:	43,530 (26.95)	32,362 (26.75)	20,231 (27.05)	2,374 (23.49)	5,041 (25.76)	3,752 (37.84)
Wage bill	26,164 (16.2)	22,390 (22.39)	14,068 (18.8)	13,916 (13.75)	1,748 (8.93)	1,200 (11.14)
<b>Profit</b>						
(i) Operating profit	52,671	39,475	25,111	3,196	5,013	4,987
(ii) Net profit	22,271	16,546	10,928	1,446	2,035	2,243
Spread	56,462	43,732	28,170	3,138	4,873	4,718
Total assets	19,75,020	14,71,428	9,22,170	1,20,700	2,46,576	1,36,316

Contd...

<b>Financial ratios (percent) \$</b>						
(i) Operating profit	2.67	2.68	2.72	2.65	2.03	3.66
(ii) Net profit	1.13	1.12	1.18	1.19	0.82	1.65
(iii) Income	9.30	9.35	9.29	9.57	8.76	9.54
(iv) Interest income	7.29	7.44	7.43	7.56	6.66	6.59
(v) Other income	2.01	1.91	1.86	2.01	2.10	0.34
(vi) Expenditure	8.18	8.22	8.11	8.37	7.93	10.77
(vii) Interest expended	4.43	4.46	4.38	4.96	4.68	3.13
(viii) Operating expenses	2.20	2.20	2.19	1.97	2.04	2.75
(ix) Wage bill	1.32	1.52	1.52	1.16	0.71	0.89
(x) Provisions and contingencies	1.53	1.55	0.65	1.45	1.20	2.01
(xi) Spread (Net interest income)	2.85	2.97	3.05	2.60	1.98	3.46

- Notes: 1. \$ Ratios to Total Assets.  
2. Figures in brackets are percentage shares to the respective total.  
3. + Inclusive of income from recapitalisation banks.

Source: Reserve Bank of India, *Report on Trend and Progress of Banking in India*, 2003-04.

The operating profits of public sector banks of Rs.39,475 crores in 2003-04 constituted 2.68% (for SCBs 2.67%) of total assets; and the ratio of net profits to total assets of PSBs was 1.12%, (1.13% for SCBs); the ratio of intermediation cost (operating expenses) was 2.2% (which was the same for SCBs); and the spread 2.97% was higher than SCBs of 2.85%.

The nationalized banks (19) had a operating profit ratio of 2.72% against 2.67% for SCBs; a net profit ratio 1.18% (1.13% for SCBs); intermediation cost 2.19% (2.2% for SCBs); and the spread 3.05% (2.85% fo SCBs).

Old private sector banks had a operating profit ratio of 2.65% which was slightly lower than 2.67% of SCBs; intermediation cost 1.97% (2.20% for SCBs); and spread 2.6% (2.85% for SCBs). New private sector banks had an operating profit ratio of 2.03% (2.67% for SCBs); and intermediation cost 2.04% (2.2% for SCBs). The wage bill at 34.7% of operating costs of new private sector banks is in sharp contrast to the share of 58.0% for old private sector banks and 69.5% for nationalized banks. The spread of new private sector banks was 1.98% (2.85% for SCBs).

Foreign banks had an operating profits to total assets ratio of 3.66% in 2003-04. It is higher than the ratio of 2.67% for SCBs. Net profits to total assets were 1.65%, (1.13% for SCBs); and intermediation cost 2.75% which was higher than SCBs (2.2%). Automation expenses have contributed to the high ratio.

### **Capital Issues**

Banks may raise capital by issuing new securities, either equity or debentures. Prior to July 1998, banks in private sector had to obtain prior approval of the Reserve Bank for issue of all types of shares, public, preferential, rights/special allotment to employees and bonus shares. After July 1998, private sector banks whose shares are already listed can make further issues. The issue of bonus shares requires prior approval.

Bank equity capital or primary capital is the shareholders' equity in the bank. Banks can count as part of their long-term capital, funds they obtain by sale of debentures of at least 7 years (in USA). It is secondary/supplementary capital which is used by large banks in U.S.A. and in India it is termed Tier II capital against specified assets.

Certain cushion of equity capital protects the bank's shareholders as well as reassures business borrowers and depositors. The proportion of equity capital of a bank to its assets has implications for earnings. The more equity capital a bank has per rupee of assets the greater is the amount of capital over which

earnings have to be spread. Each bank has an optimal ratio of capital to assets or optimal amount of risk. Since a bank does not take account the external cost of loss of faith in the banking and financial system, it takes more risk than is socially optimal. The central bank limits the amount of risk a bank can take by regulating the riskiness of banks loans and investments and by requiring the bank to hold adequate capital. The amount of capital a bank should have depends on size since a large bank holds more diversified assets and can predict losses better. Long-term borrowing is counted as part of capital ratio because bond holders' claims are subordinated to depositors claims and to the Deposit Insurance Contingent liability. But debt is inferior to equity because bank has to pay interest even if it makes losses. Large banks are also unlikely to be bankrupted by fraud. Capital required by a bank is also influenced by asset diversification. Finally, the amount of capital a bank holds is dependent on the riskiness of assets. The concept of narrow bank which holds mainly government securities and has no risky business loans is advocated to protect the erosion of capital of weak banks.

Public sector banks were also allowed private shareholding (SBI in 1993 and others in 1994). The amounts raised were: SBI Rs.3,212.18 crores through equity-cum-bond issue; Oriental Bank of Commerce Rs.384.24 crores in 1974; Dena Bank Rs.180 crores; Bank of Baroda Rs.850 crores and Bank of India Rs. 675 crores in 1996-97. During 1997-98, three PSBs accessed the capital market for Rs.467.40 crores. The details of public issues by PSBs during 1993-02 are presented in Table 7.2. The total amount raised from the market by nine PSBs amounts to Rs.8,224 crores. Over the period 1993-2004 as many as 17 public sector banks have accessed the capital market. Their divestment presently ranges from 57 to 75 percent.

**Refund of capital:** The reduction in capital results in an improvement in earnings per share and helps the concerned banks in better pricing of their share at the time of public issue. Between 1995-96 and 2003-04, public sector banks have returned to Government of India, paid-up capital aggregating Rs.1,303 crores.

**Write off:** Write off of accumulated losses against paid-up capital would enable public sector banks to have Earning Per Share (EPS) at a higher level for public issues. Public sector banks have been provided to write off losses of Rs.8,680 crores.

## **RECAPITALISATION**

Recapitalisation involves a fundamental change in the ownership position of shareholders. Through a large stock offering, or merger into another bank or



withdrawal of shares to reduce shareholders' equity, a bank in difficulties is recapitalised. Liquidation represents a final recapitalisation of a bank. Accessing capital market is difficult when confidence about the bank is in doubt. Withdrawal of capital may be interpreted as return of equity since there is no market. Difficulties of confidence can best be handled by merger with a larger, stronger organization.

Given that a high level of NPAs acts as a major hindrance to the profitability of banks, the Government has resorted to recapitalisation of banks in order to strengthen their capital adequacy ratio. Recapitalisation of 19 nationalized banks was made in January, 1994 subjecting the banks to 'time bound' performance obligations. The budget for 1993-94 made a provision of Rs. 5,700 crores for recapitalisation of nationalized banks. The recipient banks were required to invest the Government's capitalization subscription in special 10 percent Recapitalisation Bonds 2006. Indian banks having branches abroad were given one-year extension to achieve the capital adequacy norm of 8 percent; i.e., by March 31, 1995.

In 1994-95, the budget provided Rs. 5,287.12 crores towards recapitalisation of nationalized banks. Out of the amount a sum of Rs. 4,362.54 crores was allocated to 13 nationalised banks and Rs. 924.58 crores passed on as Tier II capital to six nationalized banks against the World Bank assistance.

In 1995-96, government released a sum of Rs. 850 crores towards recapitalisation of nationalized banks; in 1996-97 Rs. 1509 crores to 6 banks; in 1997-98 Rs. 2,700 crores to 3 banks; in 1998-99 Rs. 400 crores to 3 banks; and in 1999-2000 Rs.1,070 crores. The total contribution of the government towards recapitalisation till March 2004 amounted to Rs. 25,516 crores.

Apart from contributing to recapitalisation, the government provided Rs. 3978.52 crores in 1995-96 and 1996-97 towards writing down the capital base of 5 banks for adjustment of their losses; and a sum of Rs. 2066.64 crores was provided to write off losses of banks in 1998-99. The total amount written off up to the end of March 2004 was Rs. 8,680 crores.

**Table 7.2 Capital Raised by Public Sector Banks (1993-02)**

(Rs. crores)

Name of the bank/date of issue	Equity capital before public issue	Size of the public issue			Equity after public issue	Post-issue shareholding	
		Equity	Premium	Total		Gol/RBI	Others
1	2	3	4	5	6	7	8
State Bank of India December 1993	200.00	274.00	1,938.17 (Rs. 90 per share)	2,212.17	474.00	314.34 (66.3)	1.59.67 (43.7)
State Bank of India (GDR) October 1996	474.00	52.28	1,218.12 (Rs. 233 per share)	1,270.40	526.23	314.34 (59.7)	211.94 (40.3)
State Bank of Bikaner & Jaipur November, 1997	36.40	13.60	59.84 (Rs. 440 per share)	73.44	50.00	37.50 (75.0)	12.50 (25.0)
Oriental Bank of Commerce October 1994	128.00	60.00	300.00 (Rs. 50 per share)	360.00	192.54	128.00 (66.5)	64.54 (33.5)
Dena Bank December, 1996	146.82	60.00	120.01 (Rs. 20 per share)	130.01	206.82	146.82 (71.0)	60.00 (29.0)
Bank of Baroda December 1996	196.00	100.00	750.00 (Rs. 75 per share)	850.00	296.00	196.00 (66.2)	100.00 (33.8)
Bank of India February 1997	489.00	150.00	525.00 (Rs. 35 per share)	675.00	639.00	489.00 (77.0) (69.3)*	150.00(23.0)(30.7)*
Corporation Bank October 1997	82.00	38.00	266.00 (Rs. 70 per share)	304.00	120.00	82.00 (68.3)(57.2)**	38.00(81.7)(42.8)**
State Bank of Travancore January 1998	35.00	15.00	75.00 (Rs. 500 per share)	90.00	50.00	37.50(75.0)	12.50 (25.0)
Syndicate Bank October 1999	346.97	125.00	At par (Rs. 10 per share)	125.00	471.97	346.97 (73.5)	125.00 (26.5)
Vijaya Bank December 2000	259.24	100.00	At par (Rs. 10 per share)	100.00	359.24	259.24 (72.2) (70.0)*	100.00(27.8)(30.0)*
Andhra Bank February 2001	347.95	150.00	At par (Rs. 10 per share)	150.00	450.00	299.98(66.6)	150.03 (33.4)
Indian Overseas Bank	333.60	111.20	At par	111.20	444.80	333.60(75.0)	111.20 (25.0)

\* Indicates shareholding post return of capital to government. Gol = Government of India

\*\* Subsequent upon allotment of equity shares on preferential basis to 'Others'.

Note: Figures in brackets in columns 7 and 8 indicate percentage shareholding.

Source: RBI, *Trend and Progress of Banking in India*, 2001-02, p. 69.

Table 7.3 presents amounts recapitalized, returned to government, written off and raised from capital market.

**Table 7.3** *Recapitalization and Return of Capital by Nationalized Banks (1992-04) 3*

(Rs. crores)

Year	Amount recapitalized	Amount returned to the government	Amount written off	Amount raised from the capital market
1	2	3	4	5
UP to 1992-93	4,000	—	—	—
1993-94 to 1994-95	10,987	—	—	2,472
1995-96 to 003-04	7,529	1,303	8,680	5,752
<b>Total</b>	<b>22,516</b>	<b>1,303</b>	<b>8,680</b>	<b>8,224</b>

Source: RBI, *Report on Currency and Finance*, 2003-04, p.278.

## MERGERS AMONG BANKS

As in the case of other industries mergers have been considered in banking industry to improve the structure and efficiency. The motivations for banking mergers are:

- cost benefits in terms of economies of scale, organizational efficiency, funding costs and risk diversification,
- revenue benefits (economies of scope, enhancing monopoly rents)
- economic conditions (mergers after upswing of business cycle)
- other motives such as takeover defence and private managerial benefits.

Mergers in banking industry is a relatively recent phenomenon. Table 7.4 presents the mergers between 1969 to 2004. Several of them are initiated to bail out ailing banks. CBSR suggested mergers among strong banks and with financial institutions and NBFCs.

**Table 7.4** *Mergers of Banks (1969-2004)*

Year	Merged Bank	Acquiring Bank
1969	Bank of Bihar	State Bank of India
1970	National Bank of Lahore	State Bank of India
1974	Hindustan Mercantile Bank	United Bank of India
1975	Gauhati Bank	Porbandhar Bank

contd...

1976	Belgaum Bank	United Bank of India
1976	Jharia Industrial Bank	United Commercial bank
1985	Lakshmi Bank	Canara bank
1988	Traders Bank	Bank of Baroda
1993	New Bank of India	Punjab National Bank
1994	Bank of Karad	Bank of India
1996	Kashinath Seth Bank	State Bank of India
1997	Baari Doab Bank	Oriental Bank of Commerce
1998	20th Century Finance	Centurion Bank
1999	Bareilly Corporation Bank	Bank of Baroda
1999	Sikkim Bank	Union Bank of India
2000	Times Bank	HDFC Bank
2001	Bank of Madura	ICICI Bank
2003	Nedunaadi Bank Ltd.	Punjab National Bank
2004	South Gujarat	Bank of Baroda

## WEAK PUBLIC SECTOR BANKS

### Report of CBSR (1998)

Weak public sector banks are grappling with problems of achieving profitability and ensuring compliance with prescribed norms. The report of the Committee on Banking Sector Reforms (1998) had underlined the need to reduce the average level of net NPAs for all banks to 3% by 2002 and to zero for banks with international presence. A weak bank according to the Committee on Banking Sector Reforms (1998) is one whose accumulated losses and net NPAs exceed its net worth or one whose operating profits less its income on recapitalisation bonds is negative for 3 consecutive years. The Committee suggested that among weak banks, the ones that are potentially revivable with a programme of financial and operational restructuring may be taken up. Merger should be considered only after cleaning up their balance sheets and interests of depositors and employees should be safeguarded. The ARF suggested by CBSR will buy off NPAs and turn them over to a professional asset management company in the private sector.

### Report of Working Group (1999)

In view of the adverse potential of weak bank on the stability of the banking system a Working Group under the Chairmanship of Shri M.S. Verma was set up in 1998 by RBI as announced in the Central Budget 1999-2000 to suggest measures for revival of weak public sector banks including their NPAs. The Working Group observed that efforts at restructuring weak banks cannot be confined to merely to infusion of capital and giving targets for improving

performance. The Group recommended that the problem of NPAs in Indian bank, UCO Bank and United Bank should be tackled on a one-time basis by setting up a government sponsored Asset Reconstruction Fund (ARF) capitalized at Rs.1,000 crores. The ARF will be owned by a Financial Reconstruction Authority (FRM).

Name of the bank	Net profit 31.3.98 (Rs.crores)	CRAR 31.3.98	% of NPAs to net advances 31.3.98	Net owned funds (Rs.crores)
<b>Weak banks:</b>				
Indian Bank	-301	1.41	26.01	400
UCO Bank	-96	9.07	11.14	723
United Bank	10	8.41	14.10	452
<b>In Distress:</b>				
Allahabad Bank	129	11.64	15.09	751
Central Bank	175	10.40	12.21	1622
Indian Overseas Bank	113	9.34	6.26	671
Punjab & Sind Bank	65	11.39	10.84	326
Union Bank	250	10.86	7.66	1577
Vijaya Bank	23	10.30	7.50	397

**Table 7.5** Weak Banks and Banks in Distress (1997-98)

Source: Report of the Working Group on Restructuring Weak Private Sector Banks, October 1999.

Earlier the Committee on the Financial System (1991) suggested the setting up of an Asset Reconstruction Fund which was not implemented. Reiterating this arrangement the Committee on Banking Sector Reform in 1998 suggested the setting up of an Asset Reconstruction Company (ARC). The ARC which would takeover all loan assets in the doubtful and loss categories would issue to the banks, NPA swap bonds representing the realizable value of the assets transferred, provided the stamp duties are not excessive. Until debt recovery systems are improved to ensure efficiency of the financial sector, ARCs could engender moral hazard problems.

**Criteria for Evaluation:** According to the Working Group the criteria for evaluation of a bank are,

- Capital adequacy ratio.
- Coverage ratio.
- Return on assets (ROA).
- Net interest margin.
- Ratio of operating profit to average working funds.

- Ratio of cost to income.
- Ratio of staff cost to the net interest income plus all other income.

These parameters indicate solvency, earning capacity and profitability of banks. The Group has categorized public sector banks into 3 categories according to their meeting the 7 criteria.

**Category-I:** Banks in this category do not meet any of the 7 criteria and are identified as weak banks.

- UCO Bank
- United Bank
- Indian Bank

**Category-II:** Banks in this category meet all 7 criteria.

- Oriental Bank of Commerce
- State Bank of Patiala

**Category-III:** The banks in Category-III A fail to meet 1 or 2 criteria.

*Category-III A:*

- Bank of Baroda
- Canara bank
- Punjab National Bank
- Corporation Bank
- State Bank of Hyderabad
- State Bank of Indore
- State Bank of Saurashtra

*Category-III B:* Banks in Category-III B fail to meet with 3 or 4 criteria.

- Andhra Bank
- Bank of India
- Bank of Maharashtra
- Dena Bank
- State Bank of Bikaner and Jaipur
- State Bank of India
- State Bank of Mysore
- State Bank of Travancore

*Category-III C:* Banks in Category-III C fail to meet 5 or 6 criteria.

- Allahabad Bank
- Central Bank of India
- Indian Overseas Bank

- Punjab and Sind Bank
- Union Bank
- Vijaya Bank

### **Crisis Management Pattern**

The Group observed that poor quality of regulatory control which did not ensure conformity to internationally accepted accounting and provisioning norms, lax capital standards and generous exposure limits resulted in banks building up large liquidity mismatches especially in their foreign exchange portfolio. The three weak banks in Category-I, Indian Bank, UCO Bank and United Bank of India had not worked to improve their product lines and were over dependent on interest income.

It may be noted that the government spent Rs.6,700 crores on the three banks since 1994. The three banks continue to depend on government for further recapitalisation, and Indian Bank alone will need Rs.1,000 crores urgently to gain prescribed minimum capital adequacy.

The Group observed that 6 more banks show strong distress and could become weak any time. These banks are Allahabad Bank, Central Bank of India, Indian Overseas Bank, Punjab and Sind Bank, Union Bank of India and Vijaya Bank.

The Group observed that SBI Act and Nationalisation Act methodology should be amended to enable the banks to dilute their RBI or government holdings below 55% and 51% respectively. Holding on to the banks through recapitalisation is not the answer.

The Group felt that the main causes of weakness in the three banks were severe shortcomings in the areas of operations, human resources and management. Their non-fund based income was not rising and their treasury incomes especially from the foreign exchange operations were wiped out.

#### ***The other recommendations are:***

- Voluntary retirement scheme to reduce 25% of the total workforce which is estimated to cost Rs.1200 crores.
- To improve capital adequacy Rs.3,000 crores to be invested by the government.
- Technology upgradation estimated to cost Rs.300-400 crores.
- Operational restructuring.
- UCO Bank and Indian Bank urged to sell foreign branches and subsidiaries.

- Identifying niche areas by each bank for itself instead of trying to be all-India bank.
- Wage freeze for five years in weak banks.

The total cost of restructuring the three banks is estimated at Rs.5,500 crores which is in addition to Rs.6,700 crores spent on them by the government since 1994.

### **Systemic and Micro Level Issues in Restructuring**

Restructuring of banking system has to address macro system issues pertaining to factors responsible for ensuring banking soundness and tackling micro level individual bank problems. Macro issues may include availability of a proper operating environment including legal and other institutional support, procedures, effective external and internal controls as well as regulation and supervision. Micro-level issues include resolving the bank's problems at the financial and operational level to successfully restore solvency and ensure sustained profitability.

### **Restructuring of Banking Systems Abroad**

The transformation of the global financial industry by deregulation and innovation has exposed the banking systems abroad to highly competitive environment forcing them into major restructuring and consolidation.

Banking industry faces structural challenges. Profit margins have tended to decline since mid-1980s and bank share prices outside the English speaking countries have lagged behind the general equity indices. The narrowing of net interest margin underscores the long-term loss of profitability on traditional intermediation activities. Further, the fairly widespread decline in the individual credit ratings since the late 1980s highlights the deterioration in the risk profile of banks.

Powerful forces are operating at both firm and the macro level that are inducing a restructuring and consolidation in the banking industry abroad. At the micro level, deregulation in the functional, geographical, price and balance sheet dimensions of the operation of banks together with the technological advances in the production and delivery of financial services have vastly increased potential output and reduced marginal costs. At the same time financial capital has become more expensive as the cost of retail and wholesale funding has increased and demand for appropriate returns by shareholders on their investments.



Regulators have become more alert to the need for banks to operate with adequate capital level and public sector is withdrawing support as owner and provider of emergency assistance. This factor is reflected in decline in legal ratings which assess the likelihood of support in the event of difficulties.

### **Macro Level**

Relaxation of credit constraint and heightened competitive pressures contributed to financial distress by supporting vicious circles in credit expansion and asset price misalignment. The consequent crisis has acted as a major catalyst for restructuring and consolidation.

The development of new delivery and payment channels especially in the retail sector such as electronic banking have increased the contestability of the market for distribution of financial services as a new set of potential competitors, such as software houses and computer network providers put pressure on networks of bricks-and-mortar branches of banks.

While the demand for financial services and prospects for asset management services in the wake of increasing demand for private pensions are bright, the ability of the banking system to take advantage of new opportunities depends on achieving cost effectiveness and deployment of resources towards more profitable activities while avoiding the temptation to take excessive risks in the restructuring process.

### **Features of Restructuring**

There is excess capacity in financial industry which is difficult to measure. A synthetic indicator of the excess capacity is the gap between a cyclically adjusted return on equity capital and the corresponding ex ante rate of return required by the market (cost of equity capital) applied either to institutions or particular lines of business. The number of institutions has decreased and size has increased leading to a rise in concentration. Reduction of excess capacity would help counterbalance rising competitive pressures and provide a critical size for the necessary expenditures on infrastructure and efficient production and distribution. Banks have to economise expensive capital.

Minimum size is important in wholesale segments such as investment banking and processing business (global custodians). Endeavour has however to be made to cut costs. A potential candidate is branch network. They should shrink and be converted to providers of higher value added services. Employment should fall and skills upgraded. In the new environment an increasing proportion of income is likely to come from non-interest sources by

meeting the demand for capital market related services such as securities underwriting and above all asset management.

Review of restructuring process abroad reveals a generalized tendency for number of deposit taking institutions to decline, concentration to rise, for employment and staff costs to fall and for branch networks to shrink. The strength of the obstacles to the required adjustment has to be reckoned. An important factor influencing the pace of consolidation is the ability to effect the necessary cuts in employment and staff costs.

The fruits of these efforts have enabled the financial sector to tide over the economic downturn since 2000. Internal cost containment was achieved by reductions in staff costs. Increased recourse to IT and outsourcing has enabled banks to take advantage of scale economies and focus operations on core functions of intermediation and distribution of financial products. Branch networks under the intensified focus on retail banking market has been transformed into important sales outlets for financial services.

Restructuring is not without risks. Stubborn cost structures and heightened incentives for risk taking are very relevant in finance in general and banking in particular. In banking excess capacity is not self correcting as it does not immediately reduce profitability. The combination of poor corrective mechanism with exit problem has biased the industry towards a permanent state of excess capacity even in the absence of technological pressures. On the other hand, it tends to increase it for a time as in the case of excessive lending to the emerging market countries in 1990s where a credit expansion which facilitated economic activity and boom in asset prices generated a positive feedback on the condition of participants. Government intervention, explicit or implicit form of protection designed to limit the consequences of financial disruption weaken discipline. Further extensive public ownership has shielded parts of the banking industry from the full impact of competitive pressures.

Table 7.6 presents the merger and acquisition activity in the banking industry abroad in select years between 1991-92 and 1997-98. The number of merger transactions abroad was 2098 in 1991-92 with U.S. accounting for 1354 (64.5%); 2032 in 1993-94 with U.S. accounting for 1477 (72.7%); 2362 in 1995-96 with U.S. accounting for 1803 (83.4%); and 1360 in 1997-98 with U.S. accounting for 1052 (77.3%). Euro area accounted for about 10-20% of mergers during the period. The pace of merger activity except for the two large deals in US in 2003 which created the second and third largest banking organizations has considerably slowed down since 2000 compared to the late 1990s.

The wave of mergers and acquisitions sweeping the banking industry abroad has heightened shareholder expectations. The current wave is more defensive with retrenchment and cost cutting receiving high priority. Mergers in retail sector can reap clear gains through rationalization of cost structures e.g., consolidation of overlapping branch networks. The objective of new Capital Accord (1999) is to shift the corporate governance balance away from management towards shareholders in order to counteract the pursuit of growth and size regardless of profitability and risk. It is however claimed that shareholders' demands are excessive and insensitive to underlying risks. However, orderly restructuring of the financial industry has to be facilitated by strengthening and complementing the market mechanism that disciplines individual institutions while improving safeguards against systemic risk.

#### **Policies for Orderly Restructuring**

Global banking industry faces the challenge of the need to encourage a structure of ownership that is more sensitive to market forces. Since banking industry is characterized by exit problem the obstacles to the adjustment of labour have to be eliminated and the inflexibilities in the labour market reduced. Banks should also have the freedom to reallocate capital through M& A activity according to perceived gains and strict economic criteria. Policies should be consistent with the restructuring needs such as strengthening the market disciplining mechanism. Decisions regarding M & A deals in banks should be more sensitive to the interests of the shareholders of the acquiring as opposed to acquired institution. Improvement of disclosure of the risk profile of banks is likely to exercise greater discipline on the part of creditors and counter parties and correct excessive claims shareholders make. Restricting the provisions of various implicit or explicit guarantees is likely to lessen moral hazard problem. It is rendered difficult because banks are large and M & A deals are huge. Banks are too big to fail and the disparity between the size of banks and markets in emerging economies exacerbates the problem. The linkages between banks and insurance companies is biased by perceptions of implicit guarantee with the authorities subsidizing concentration and contributing to the increase in excess capacity.

**Table 7.6 Merger and Acquisition Activity in the Banking Industry Abroad**

(Select Years)

	Number of transactions in billion of US dollars				Values of transactions				As a % of all sectors			
	1991-92	1993-94	1995-96	1997-98 <sup>3</sup>	1991-92	1993-94	1995-96	1997-98 <sup>3</sup>	1991-92	1993-94	1995-96	1997-98 <sup>2</sup>
United States	1,354	1,477	1,803	1,052	56.3	55.3	114.9	365.4	18.7	9.0	10.6	18.2
Japan	22	8	14	28	0.0	2.2	34.0	1.1	0.3	18.8	21.6	4.1
Euro area <sup>3</sup>	495	350	241	203	17.5	14.6	19.1	100.4	8.3	9.3	11.2	27.1
Belgium	22	18	20	21	1.0	0.6	0.5	32.5	14.0	7.0	4.9	34.8
Finland	51	16	7	7	0.9	1.0	1.2	4.3	22.3	21.7	7.5	77.5
France	133	71	50	36	2.2	0.5	6.5	4.0	4.3	1.0	9.8	4.1
Germany	71	83	36	45	3.5	1.9	1.0	23.2	6.5	77.6	3.7	45.5
Italy	122	1.05	93	55	5.3	6.1	5.3	30.1	15.6	17.7	24.9	63.3
Netherlands	20	13	8	9	0.1	0.1	2.2	0.4	0.2	0.5	17.5	0.8
Spain	76	44	27	30	4.3	4.5	2.3	5.9	13.5	21.5	14.1	26.6
Norway	23	24	9	5	0.1	0.2	1.0	1.5	1.2	5.7	8.0	20.0
Sweden	38	23	8	8	1.1	0.4	0.1	2.1	3.8	2.0	0.3	7.1
Switzerland	47	59	28	22	0.2	3.9	1.0	24.3	9.5	43.4	2.4	78.3
United Kingdom	71	40	25	17	7.5	3.3	22.6	11.0	6.5	3.4	10.4	4.0
Australia	19	20	18	14	0.9	1.5	7.3	2.3	3.6	5.7	14.3	4.9
Canada	29	31	16	11	0.5	1.8	0.1	29.1	1.9	4.1	1.6	34.4
<i>Total banks</i>	2,098	2,032	2,162	1,360	84.7	83.2	200.8	534.2	11.7	8.5	11.0	18.9
<i>Memo-item:</i>												
<i>Total non-bank Financial</i>	2,723	32,67	3,973	51,561	63.7	122.2	189.9	534.2	8.8	125	10.4	19.4

Source: BIS, *International Banking and Financial Market Developments*, August 1999, p. 40.

1. Of mergers and acquisitions in all industries.
2. As at 30 October, 1998.
3. Excluding Austria, Ireland, Luxembourg and Portugal.

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# *RISKS IN COMMERCIAL BANKING*

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# 8

## **NATURE AND NEED**

Risk denotes uncertainty that might trigger losses. A market-based financial system requires an effective framework for managing risks. Risks in financial markets have changed in the past three decades reflecting the changing nature of financial intermediation. Commercial banks undertake the important process of financial intermediation whereby the funds or savings of the surplus sector are channeled to deficit sector. Financial intermediation can enhance growth by pooling funds of the small and scattered savers and allocating them for investment in an efficient manner by using their informational advantage in the loan market.

Commercial banks ought to implement a risk management policy to create shareholder wealth/net value and because RBI guidelines for risk measurement and for defining risk-based capital require. Risk management creates shareholder wealth by avoiding indirect or deadweight costs. They consist of bankruptcy and distress costs, difficulties of raising funds, disturbing relationships with stake holders (customers and workers) leverage and managerial incentives. The proper implementation of a well designed risk management strategy increases shareholder wealth because banks can pursue their overall business strategy more effectively.

## **TRANSFORMATION SERVICES AND RISKS**

Financial institutions provide three transformation services. Firstly, liability, asset and size transformation consisting of mobilisation of funds and their allocation, (provision of large loans on the basis of numerous small or retail deposits). Secondly, maturity transformation by offering the savers the relatively short-term claim or liquid deposit they prefer and providing borrowers long-term loans which are better matched to the cash flows generated by their

investment. Finally, risk transformation by transforming and reducing the risk involved in direct lending by acquiring more diversified portfolios than individual savers can. While undertaking these transformation services banks incur risks, transform and embed them in banking products and services. Banks also assumed new roles and accepted new forms of financial intermediation in the past three decades by undertaking currency and interest rate swaps and of dealing in financial futures, options and forward agreements. These new instruments provide considerable flexibility in responding to market situations and adjusting continually assets and liabilities both on and off balance sheet, while enhancing profitability.

### **Risk Management: Basic Function of Bank**

Risk is inherent in banking and is unavoidable. The basic function of bank management is risk management. Risk-based policies and practices enhance risk return profile of the bank portfolio. In the words of Alan Greenspan, Chairman of the Federal Reserve Board of U.S. (Conference at Federal Reserve Bank of Chicago, May 12, 1994), “traditional banking can be viewed at an elemental level as simply the measurement, management and acceptance of risk” and “banking involves understanding, processing and using massive amounts of information regarding the credit risks, market risks and other risks inherent in a vast array of products, and services, many of which do not involve traditional lending, deposit taking and payment services”.

### **Mismatch, Source of Risk**

If banks had balance sheets where all assets are exactly matched by liabilities of the same maturity, the same interest rate conditions and the same currency, then the only balance sheet risk would be credit risk. Such exact matching does not obtain in practice and even if we assume that it does it would offer reduced profit opportunities. Mismatching within limits is an inherent feature of banking. Risks arise from the common cause of mismatching. When maturities of assets exceed those of liabilities there is inevitably liquidity risk; when interest rate terms differ there is inevitably interest rate risk; and when currency denomination of assets and liabilities differ there is inevitably currency risk. When transactions are undertaken for settlement at a later date counter party risk of the other party to a transaction will not complete as agreed exists. Banks should have the capacity to anticipate change and to act so as to structure and restructure bank’s business to profit from it or minimise losses.

### **Credit Analysis: Traditional Technique**

For banks the traditional activity was balance sheet lending and the risk management technique was credit analysis. Banks always managed assets and liabilities and took decisions on liabilities they were able to create and the

assets they would acquire. These decisions reflected long-run choices and relatively stable roles and did not require management in the near term. Variations in interest rate usually followed changes in the discount rate of the Central Bank and the type and terms of loans were subject to official constraints, notably on pricing. The source of funds was core deposits which were not sensitive to interest rates but increased with national income. They were also stable. Since interest rates were regulated banks concentrated on asset management.

Banks in the process of providing financial services assume various kinds of risks, credit, interest rate, currency, liquidity and operational risks. To some extent these risks could be managed through sound business practices and the others through a combination of product design and pricing. In the past banks concentrated on asset management with liquidity and profitability being regarded as two opposing considerations. As a result banks ended up distributing assets in such a way that for given liquidity level the return was the maximum.

### **Marketisation of Banking**

The situation changed in late 1950s abroad when banks ceased to be passive takers of deposits and had to compete actively for deposits. Large deposits from non bank sources with rates varying continually were the object of competition. In the United States, where there had been no administrative control on credit, when the loan demand grew in 1960s and 1970s banks with no surplus liquidity began to bid for funds from banks and later through negotiable certificates of deposit aimed mainly at the corporate sector. In Europe, banks accepted short-term deposits and made dollar denominated loans. The increased reliance on funds obtained from financial markets where rates of interest were set by reference to market determined rates led to marketisation of banking.

### **Liability Management**

The significant increase in demand for bank credit in 1960s and 1970s taxed the ability of banks to fund the loans from existing deposit sources. The acquisition of funds at lowest possible cost became an important aspect of the financial management of a bank. Banks met the loan demand, purchase of securities or to replace reduction in other sources by acquiring additional funds at higher cost, creating liability management. Liability management became the dominant method of funding assets/liabilities needs of large banks.

Banks can purchase funds that it wants, if it is willing to pay market determined rates. Purchased funds are short-term, often overnight. Bank has become a price taker in the purchased funds market whereas it was a price setter in the core deposit market. However, on purchased funds interest rate is volatile and availability depends on the bank's standing. Banks began dealing



in a wide range of financial instruments, both as assets and liabilities to meet the demands of heterogeneous clientele and as a means of earning profits.

Banking was asset driven throughout the 1960s and early 1970s to support growth of assets. Bank liquidity was no longer to be reckoned in terms of a portfolio of liquid assets including cash and balances with central bank but assessed in terms of its access to and position in financial markets.

The initial impetus for the development of liability management was the need to mobilise funds to satisfy high demand for bank credit. Liability management meant that a bank could obtain cash by selling its own liabilities. The spread of liability management and the related growth of financial markets resulted in not only in greater diversity of liabilities but also in bank assets, which increased the risks banks were exposed. Without active management banks assets and liabilities would be seriously mismatched. While mismatching of maturities is inherent in banking it is invariably risky. Maturity mismatch, with short-term liabilities financing long-term assets, could render a bank illiquid.

Traditionally banks have engaged in maturity transformation, making loans with maturities exceeding those of deposits. Some degree of mismatching was inevitable in banking. But deposits although normally short-term were highly stable in the aggregate. A core of short-term deposits could be regarded as being *de facto* long-term. Liability management changed the character of deposits which are negotiated in wholesale markets for fixed periods which were short. They had to be renegotiated or replaced. Such deposits began to account for a large proportion of total liabilities. The risk of illiquidity assumed new significance. Maturity mismatching increased as the banks made medium and long-term loans with short-term liabilities negotiated in financial markets.

## **ROLLOVER LOANS AND FLEXI RATES**

To avoid interest rate risk in variability of future funding costs and loans at fixed rate, the syndicated international loans were made at variable rates of interest linked invariably to LIBOR and adoption of rollover loans. Rollover lending involved the adjustment of assets in accordance with potential liabilities. Rollover lending however, resulted in a shifting of risk to bank borrower who faced additional uncertainty in managing cash flow and impairing his ability to service the debt. While avoiding interest rate risk credit risk is created.

The spread of liability management, the growth in the number and depth of financial markets, a greater variety of both marketable and non-marketable liabilities and an increase in the range and variety of bank assets have changed the nature of liquidity and have greatly increased each bank's influence over

the size and composition of its own balance sheet. While this has imparted much greater short-term flexibility it has significantly complicated the function of bank management. The rapid increase in off balance sheet transactions of various sorts has added to the complexity.

Liability management became the dominant method of funding asset/liabilities needs of large banks abroad in 1960s. However, the volatility of interest rates in 1980s caused banks to move away from exclusive reliance in liability management. The management of bank's portfolio now involves managing both assets and liabilities in the balance sheet.

## **INTERNATIONALISATION OF BANKING**

Liability management which involved reliance for part of bank funding on short-term borrowing in financial markets is an important factor in the internationalisation of banking. New financial centres emerged and banks established offices to enhance their funding capabilities and to foster contacts with other banks. Liability management helped banks to actively pursue balance sheet growth.

The internationalisation of finance facilitated by telecommunications and computer technology while increasing the range of activities of banks, are likely to render the tasks of monitoring and controlling the business both on and off balance sheet more complex. The efficient use of asset and liability management should help a bank to control risk. However, the increased interdependence of banks carries systemic risk that if one bank defaults on its commitment, others may be forced to default. Serious liquidity problems may develop fast and the risks of contagion are among the reasons for increased banking supervision and international co-ordination for restricting the spread of contagion. Asset and liability management benefited the customers, in terms of better interest rates on deposits and availability of funds for borrower at the going rate and allowing option, such as choice of currency and reference rate of interest in the case of large borrowers.

### **Asset-Liability Management**

During the 70s while gross interest margins declined, business volumes increased resulting in a rise in bank profits absolutely. Since capital funds did not however, keep pace with the growth of total liabilities, profits related to capital appeared satisfactory. The surge in problem loans in early 80s revealed that the growth of profits in earlier years did not reflect the risks involved. Large volumes of fixed interest assets caused widespread losses when interest rates rose steeply in 1979. Short-term funding costs were in excess of asset yields. These events turned the attention of banks to profitability, risk and capital adequacy. Banks became concerned about the need to boost profits to make provision for bad debts and

generate new capital along with the identification of risks of different types of business which could produce serious losses. Asset quality became a crucial consideration which cannot be judged in isolation, but in relation to the structure of bank business both on and off balance sheet to see how the assets and liabilities relate to each other and assess the returns and risks.

In addition, off balance sheet business involving varied contingent liabilities has grown significantly, these changes brought many special and additional risks. Unless assets and liabilities are well adjusted, a bank may find itself without adequate liquidity or may incur losses due to changes in interest rates or exchange rates. The structured approach the banks adopted to manage their balance sheet and their off balance sheet business came to be known as asset liability management.

Asset liability management is only an approach not a precise technique and its detailed formulation varies from bank to bank. It is an integral part of planning process of commercial banks and may be considered as one of the three principal components of a planning system. It is short-term in nature focussing day to day, week to week balance sheet management to achieve near term financial goals. It has to operate in a framework set by annual profit planning and control and strategic planning dealing with long-run financial and non-financial dimensions of the bank performance. It involves continually monitoring the existing position of a bank assessing how it deviates from near term goals and undertaking transactions to sustain and enhance profitability while controlling and limiting the different risks inherent in banking. Banks have to continually adjust assets and liabilities both by varying the terms they offer to constituents and trading in financial markets.

The spread of asset liability management practices and the associated marketisation of banking have reduced the role of control and increased the use of market determined rates in the allocation of credit which should result in better allocation of resources. However, modern bank behaviour is somewhat speculative in character with emphasis on short-term trading.

The management of both assets and liabilities is pursued not merely for growth but with greater concern for asset quality, profitability and capital ratios. The approach to assets has changed to treat them as marketable. Loans are packaged and resold. Banks provide funds against negotiable paper. They earn fees by providing irrevocable commitments to enable such paper to be sold to third parties. The earlier marketisation of banking has been followed by securitisation of banking.

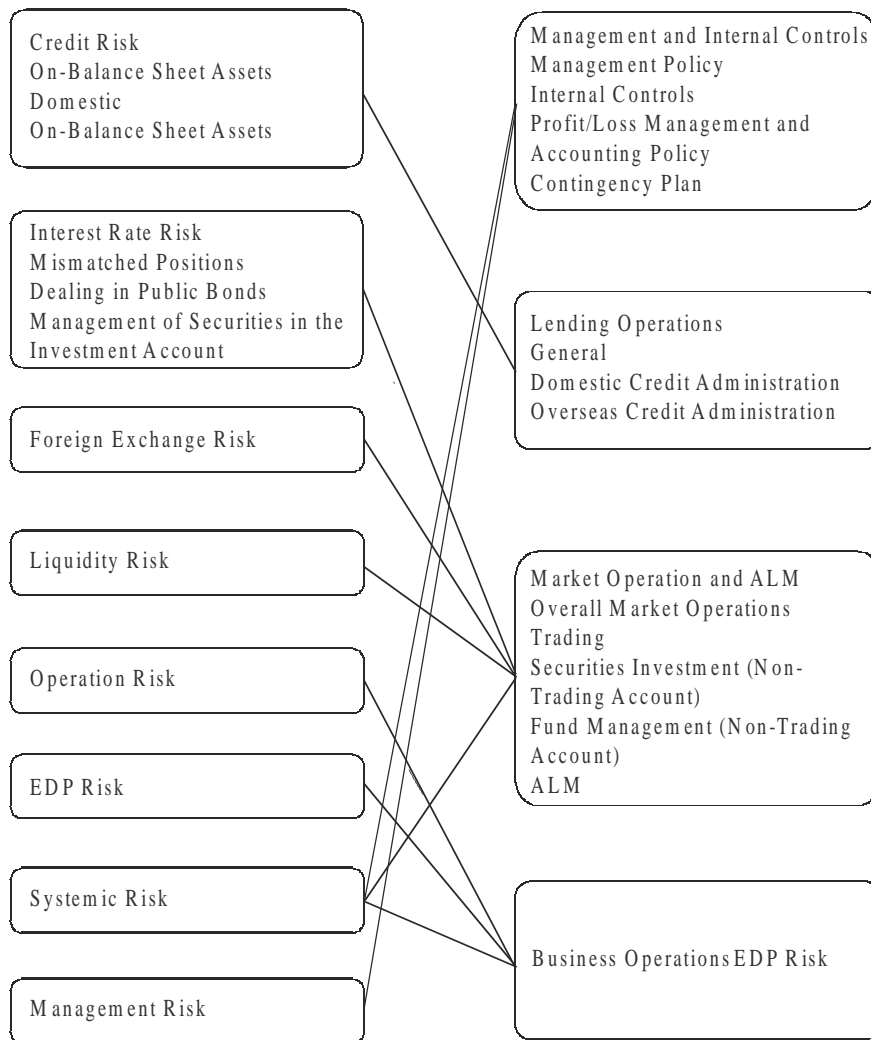
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1 Reserve Bank of India, *Report of Trend and Progress of Banking in India*, 1998-99, p.99.

### OVERALL RISK OF A BANK

A bank’s overall risk can be defined as the probability of failure to achieve an expected value and can be measured by the standard deviation of the value<sup>1</sup>. Banks that manage their risks have a competitive advantage. They take risks consciously, anticipate adverse changes and protect themselves from such changes.

The chart of check list for risk management compiled by Bank of Japan and quoted by RBI in the Report on Trend and Progress of Banking in India, 1996-97 which is quite comprehensive is presented in Fig.8.1.



**Fig. 8.1** Check List of Risk Management

Source: RBI, Report of Trend and Averages of Banking in India, 1996-97.

**Types of Risk**

Banks have to manage four types of risk to earn profits for maximizing shareholder wealth. These are credit risk, interest rate risk, liquidity risk operational risk. In addition, there is a systemic risk arising due to various disruptions in the working of a major bank which in no time could spread to other banks or the whole financial system. Credit risk arises when a bank cannot get back the money from loan or investment. Interest rate risk arises when the market value of a bank asset, loan or security falls when interest rates rise. The solvency of the bank would be threatened when the bank cannot fulfill its promise to pay a fixed amount to depositors because of the decline in the value of the assets caused by increase in interest rate. Liquidity risk arises when the bank is unable to meet the demands of depositors and needs of borrowers by turning assets into cash or borrow funds when needed with minimal loss. Finally, operational risk arises out of inability to control operating expenses, especially non-interest expenses such as salaries and wages. In a competitive environment high operational expenses would jeopardise the bank's prospects to survive. Empirical analysis reveals that banks risk exposure depends upon volatility of interest rates and asset prices in the financial market, the bank's maturity gaps, the duration and interest elasticity of its assets and liabilities and the ability of the management to measure and control the exposure.

**INTEREST SENSITIVE ASSETS**

These risks are a part of either assets or liabilities or both of a bank. Assets are managed through money market instruments such as inter bank lending, treasury bills, and repos. Shortening the maturity of these assets makes them interest sensitive. Shifting liabilities such as inter bank borrowing, issue of CDs while shortening the maturity of the liabilities side of the balance sheet makes liabilities more interest sensitive and increases the risk of bank's portfolio.

**Credit Risk**

The assets of a bank whether a loan or investment carries credit risk. Credit risk is the risk of losing money when loans default. Credit risk or default risk gives rise to problems to bank management. The principal reason for bank failures is bad loans. Banks can raise their credit standards to avoid high risk loans. Guarantees and collateral can reduce risk. After the loan is made compliance can be ensured by monitoring the behaviour of the borrower which reduces risk. Credit risk can be transferred by selling standardised loans. Loans portfolio can be diversified by making loans to a variety of firms whose returns are not perfectly and positively correlated.

RBI guidelines envisage that banks should put in place the loan policy covering the methodology for measurement, monitoring and control of credit

risk. Banks are also expected to evolve comprehensive credit rating system that serves as a single point indicator of diverse risk factors of counter parties in relation to credit and investment decisions.

### **Interest Rate Risk**

Interest rate risk management may be approached either by on balance adjustment or off-balance sheet adjustment or a combination of both. On-balance sheet adjustment involves changes in banks portfolio of assets and liabilities as interest rates change. When medium or long-term loans are funded by short-term deposits, a rise in the rate of interest will increase the cost of funds but the earnings on the assets will not, thereby reducing the margin or spread on the assets. The problem could be resolved by adopting adjustable interest rate on loans on the assets side of the balance sheet and increasing the maturity pattern of deposits on the liabilities side of balance sheet. These decisions relating to banks' portfolio of assets and liabilities represent on balance sheet adjustments.

The interest rate risk position can also be adjusted by the bank by making off balance sheet adjustments which involve the use of various non-traditional financial instruments referred to as derivatives such as futures, options, swaps or creation of synthetic loans through use of futures.

### **Liquidity Risk**

Liquidity risk refers to the bank's ability to meet its cash obligations to depositors and borrowers. A liability sensitive position than to assets of interest rates reduces the liquidity position of a bank. The mismatch between short-term liabilities and long-term assets creates a severe funding problem as the liabilities mature. Again if the duration of assets exceeds the duration of liabilities the ability to realize liquidity from the assets of the bank is reduced. Liquidity needs are increasingly met by deposit and non-deposit sources of funds paying market rates of interest. Banks have decreased the quantity of liquid assets they hold for the purpose of deposits withdrawal and loan demand. Liability management has replaced asset management as a method to fund liquidity needs. The effect of replacement of asset management by liability management would be enhancement of credit risk since liquid assets have been replaced by loans. The replacement of short-term assets by long-term assets would also require an increase in gross rates of return since upward sloping yield curves require higher rate of return on long-term assets than on short-term assets.

Asset liquidity is a reserve that a bank can fall back upon when bank's access to funds is reduced. Liquid assets can also be used to fund loans when interest rates are relatively high. Short-term assets are a less expensive source of funds than relatively high interest rate deposits.

**Operational Risk**

Basle Committee defines operational risk as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems from external events. Operational risks include,

- Information technology risk
- Human resources risk
- Loss to assets risk
- Relationship risk

The capital requirements to cover operational risk are: (i) Basic Indicator Approach, (ii) Standardised Approach and (iii) Internal Measurement Approach. The basic indicator approach uses gross income as the indicator and a fixed percentage is to be held to cover operational risk. In the standardized approach a fixed percentage of gross income or asset size of the business line is taken as the capital charge. Under the internal measurement approach bank's internal loss data are used and the supervisors calculate the required capital. RBI is of the view that a capital charge of 15% of gross income or 10% of current capital requirement to align capital to the underlying risk profile.

**Foreign Exchange Risk**

Foreign exchange risk arises out of the fluctuations in value of assets, liabilities, income or expenditure when unanticipated changes in exchange rates occur. An open foreign exchange position implies a foreign exchange risk. When a bank owns an uncovered claim in foreign currency it is said to be long and when it has uncovered liability in foreign currency it is said to be short. There are several techniques available to hedge or cover exposure to foreign exchange risk. These techniques help in arranging off-setting commitments in order to minimize the impact of unfavourable potential outcomes. Forward contracts, money market alternative, foreign currency futures, currency swaps and foreign currency options are used to cover exposure to foreign exchange risk.

**Derivatives**

Derivatives are used by banks to hedge risks, to gain access to cheaper money and to make profits. Banks undertake fee generating activities that include a variety of commitments, and contingent claims that corporations demand such as financial guarantees, securitisation. Banks also help customers to cope with financial market volatility by offering various derivative securities services such as forward contracts, futures, swaps and options. These activities do not appear on the balancesheet of banks. The capital requirement for off-balancesheet activities is comparatively low. Mismatch of interest rate terms can result in large losses when market rates change. Mismatch of currency denomination of assets and liabilities can result in large losses when exchange rates vary.



**Treasury Function**

To take advantage of the opportunities provided by development of new financial markets, and the internationalisation of banking, a new area known as treasury function has emerged to manage risks within a bank. The role of new treasury department is to manage a wide range of short-term assets and liabilities. The dealers employed in treasury department are constantly trading in wholesale deposits, inter bank deposits, certificates of deposit, foreign exchange, repurchase agreements, securities, financial futures and options. Profits from the securities trading for SCBs went up to Rs.13,425 crores in 2002-03. Trading profits accounted for 7.7% of the total income of banks and 33% of their operating profits during 2002-03. Apart from trading in short-term assets and liabilities, the treasury department monitors the banks position with respect to earnings and risks due to maturity gaps and interest rate or foreign currency exposures. The treasury department usually reports to a high level treasury or asset and liability management committee. The committee after taking into account the entire balance sheet of the bank as well as off balance sheet liabilities decides treasury policy.

**Monitoring Risks**

To monitor risks various techniques, maturity profile, rate of interest ladder and concept of duration have been developed. A maturity profile shows all assets and all liabilities by maturities to enable the calculation of mismatches within each period. Rate-of-interest ladder classifies all assets and liabilities by repricing dates and allows the calculation of rate of interest risk for each period. Duration presents the interest exposure.

Asset and liability management is not a static technique but a dynamic approach to deal with the problem banks face and changes in bank's goals. Frozen lending was offset by increasing flexibility by making new loans against the provision of tradable assets which could be sold before expiry in case of need. Against a background of rapid growth in banking business an integrated approach to managing all assets and all liabilities evolved as balance sheets became more complex and as the volatility of interest rates and exchange rates increased. In the 80s the rescheduling of debt of developing countries on account of their serious payments difficulties involved conversion of short-term and medium-term assets as long-term and became frozen. Banks met the problem by raising long-term funds including capital liabilities. In the process banks could meet the rise in capital adequacy norms stipulated by bank supervisors. Banks shifted their focus from growth to profitability and asset quality. Banks also started lending against negotiable assets and to the packaging for resale of conventional bank loans. Borrowers were encouraged to raise funds directly through issue of negotiable short-term paper by providing guarantees, standby



and back up facilities. Banks benefited from fee income without expanding balance sheet which would worsen capital ratios. Of course off-balance sheet contingent liabilities went up.

There was a deliberate attempt to extend asset liability management beyond the range of on balance sheet assets and liabilities which arises from the bank acting as principal in direct transactions with borrowers and lenders of money. Asset and liability management has helped to bring about securitisation of banking blurring the distinction between commercial banking and investment banking.

### **RBI GUIDELINES FOR RISK MANAGEMENT**

Consequent to the liberalization of domestic market in India the volatility in interest/exchange rates would be transmitted to the financial sector as a whole. To address these risks, banks have to undertake a comprehensive asset liability management (ALM) strategy. The objectives of ALM are to control volatility of net interest income and net economic value of a bank.

RBI issued guidelines on October 21, 1999 for risk management in banks which broadly cover credit, market and operational risks. Earlier guidelines were issued on 10-2-1999 on asset-liability management system which covered management of liquidity and interest rate risks. Together they are purported to serve as benchmark to banks.

#### **Credit Risk**

Banks should put in place the loan policy covering the methodologies for measurement, monitoring and control of credit risk. Banks should also evolve comprehensive credit rating system that serves as a single point indicator of diverse risk factors of counter parties in relation to credit and investment decisions.

Proposals for investment should be subjected to the same degree of credit risk analysis as loan proposals. Portfolio quality should be evaluated on an ongoing basis rather than near about balance sheet date. Risk evaluation should be on the basis of total exposure, credit and investment decisions combined.

As regards off-balance sheet exposures the current and potential credit exposures may be measured on a daily basis. A suitable framework to provide a centralised overview of the aggregate exposure on other banks is to be evolved. The banks should also develop an internal matrix that reckons the counter party and country risk.

#### **Liquidity Risk**

Banks should put in place prudential limits on inter bank borrowings, especially call fundings, purchased funds, core deposits to core assets, off balance sheet commitments and swapped funds. Liquidity profile should be evaluated under bank specific and market crisis scenarios. Contingency plans should be prepared

to measure the ability to withstand sudden adverse swings in liquidity conditions.

**Interest Rate Risk**

A time frame should be fixed for moving over to value at risk (VAR) and duration approaches for measurement of interest rate risk.

**Market Risk**

Explicit capital cushion based on international standards should be provided for the market risks to which banks are exposed.

**Operational Risk**

In view of the phenomenal increase in the volume of financial transactions, proper systems for measurement, monitoring and control of operational risk should be set up. Suitable methodologies for estimating and maintaining economic capital should be developed.

The design of the risk management should be oriented towards the bank's own requirement dictated by the size and complexity of business risk philosophy, market perception and the existing level of capital. Banks can evolve their own systems compatible with the type and size of operations as well as risk perception. It is neither possible nor necessary to adopt uniform risk management system in all banks on account of the diversity and varying size of balance sheet items.

The success of ALM depends on the effective existence of (1) Information and policies and (2) Risk management system. There should be asset-liability managers and an asset liability committee (ALCO) that manages the bank's balance sheet in such a manner so as to minimize the volatility in its earnings, liquidity and equity to changes in market conditions. The successful pursuit of the objective would manifest in stable net interest margins, optimal earnings, adequate liquidity and effective control of financial risk. For this purpose, the information base in a bank must be sound and strong. ALCO must be aware of policies which would address asset liability management goals and risk limits and by information that relates directly to its asset-liability position.

**Risk Management Systems**

Measurement, control and monitoring of risk will help banks to attain the objectives. Techniques such as gap, duration and value at risk are suggested to analyse risk. Strengthening of information technology in commercial banks is a prerequisite to implement effectively ALM system. The role of a broad-based ALCO in advising boards of banks is emphasised.

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# *DERIVATIVES FOR RISK MANAGEMENT*

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# 9

## **NATURE OF DERIVATIVES**

Derivatives are financial instruments which are derived from bank loans, bonds, currencies, money market instruments, equities and commodities. Futures, options, swaps, warrants, swaptions, collars, caps, floors, circuses and scores of other products are collectively known as *derivatives*. All these constitute tools for the management of risk. Hedging strategies depend on the use of derivatives. Derivatives are used by banks to hedge risks, to gain access to cheaper money and to make profits. Banks undertake fee generating activities that include a variety of commitments and contingent claims that corporations demand. Banks also help customers to cope with financial market volatility by offering various derivative securities services such as forward contracts, futures, swaps and options. These activities do not appear on the balance sheet of banks. The capital requirements for off balance sheet activities are lower.

Financial regulators around the world are worried about derivatives since the biggest traders and counterparties are banks. Trading in derivatives often exceeds transactions in the markets for underlying securities or currencies. Derivatives are likely to grow even at a faster rate in future. They are first of all cheaper to trade than the underlying securities, be they bonds, currencies, equities or commodities. Exchanges around the world have met the demand by designing new standardized contracts. With the increasing volume of products tailored to the needs of particular customers, trading in derivatives has increased even in the over-the-counter markets in the past decade. The popularity of derivatives is also to be traced to simple familiarity and more *sophisticated* ways of pricing and managing business risks. Finally, the growth of derivatives was influenced by the easing of legal, fiscal and regulatory restrictions on the

use of derivatives. In Britain, Unit Trusts are allowed to invest in futures and options. The capital adequacy norms for banks in the European Economic Community demand less capital to hedge or speculate through derivatives than to carry underlying assets. Derivatives are weighted lightly than other assets that appear on banks' balance sheets. The size of these off-balance sheet assets which include derivatives is more than 7 times as large as balance sheet items at some American banks causing concern to regulators.

### **Characteristics of Derivatives**

The three-key characteristics of financial derivatives are:

- Their value is derived from an underlying instrument such as stock index (futures and options based on them), currency or interest rates.
- They are vehicles for transferring risk.
- They are leveraged instruments.

### **Growth of Derivatives**

The growth in financial markets, globalisation of the major stock exchanges, increase in the number of players in the markets and the creation of new financial opportunities led to the creation of a wide array of instruments tailor made to manage the evolving risk return profile. A major portion of international financial activity is a response to regulations and taxes. Interest rate futures and options, currency futures and options on stock indexes are being traded in exchanges on a worldwide basis.

Over-The-Counter (OTC) instruments consist of interest rate swaps, currency swaps and other swap related derivatives such as caps, collars, floors and swaptions. These investment vehicles are designed to hedge against the fluctuations in various markets. While they are enormously profitable they also make trading more volatile. In 2004, the outstanding value of exchange traded instruments was \$46,592.1 billion and over-the-counter instruments was \$182,592 billion (see Table 9.1). Of the exchange traded instruments interest rate futures account for 38.9 percent, interest rate options 52.8 percent, currency futures 0.2 percent, currency options 0.1 per cent, stock market index futures 1.7 percent and stock market index options 6.5%. Over-the-counter instruments at \$182,652 billion mainly consist of interest rate swaps (80.7%) currency swaps 4.5% and interest rate options (14.8%).

**Table 9.1** Market for Selected Derivative Instruments in Select Years  
(US \$ billion)

Instruments	Outstandings			
	1990	1994	1999	2004
<b>Exchange Traded Instruments</b>	2,292	8,862.5	13,521.6	46,592.1
Interest rate futures	1,454	577.6	7,913.9	18,165.0
Interest rate options	600	2,623.6	3,755.5	24,604.0
Currency futures	16	40.1	36.7	104.2
Currency options	56	55.6	22.4	60.7
Stock market index futures	70	127.3	334.3	634.3
Stock market index options	96	228.3	1,458.8	3,024.0
<b>Over-The-Counter Instruments</b>	<b>3,450</b>	<b>11,302.2</b>	<b>55,760.0</b>	<b>182,652.0</b>
Interest rate swaps	2,312	8,815.6	43,936.0	147,366.0
Currency swaps	577	914.8	2,444.0	8,217.0
Interest rate options	561	1,572.8	9,380.0	27,169.0

Note: Caps, collars, floors, swaptions.

Source: Bank for International Settlements, 64th Annual Report, June 1994; June 1996; June 1998, p. 155 and *International Banking and Financial Market Development*, June 2000 and June 2005, Basle, Switzerland.

The OTC and exchange traded derivative markets have distinct functions and characteristics. A basic function of exchange traded derivatives market is the provision of liquidity, achieved by the attraction of significant trading volumes through standardized contracts, price transparency and the interposition of the clearing house as a central counter party. OTC markets, on the other hand, provide users with contracts whose terms and conditions can be tailored to individual requirements. Actually liquidity and customization, complement one another and expansion in one market supports that in the other.

The explosive growth in organized and over-the-counter (OTC) derivatives market was supported by a number of secular factors, such as globalization of investments, the proliferation of new exchanges and products, deepening of the user base and expansion of securitisation and structured transactions. Derivative exchanges have expanded the list of contracts and extended their maturity. Further, they adopted multifaceted strategies involving the introduction of new instruments and specialized services, the rationalization of existing activities to reduce operating costs and the establishment of new cross-market links. Diversification encompassed moves into emerging markets of financial assets, credit risk, insurance, real estate and pollution.

Competition between derivative exchanges is intense. In Europe the inexorable advance of automated exchanges challenged the dominance of

established marketplaces. Moreover, exchanges faced competition from the rapidly growing over-the-counter markets, forcing them to offer a wider range of services.

The CBOT remains the largest exchange in the world owing to the sharp rise in turnover of US Treasury contracts and growth of new equity index products. The CME and CBOE are the next largest exchanges. In Europe, EUREX Germany (formerly the DTB) overtook LIFFE as the third busiest market place in the world.

Exchanges based on open outcry such as LIFFE and MATIF have shifted to screen-based trading. Supremacy is sought not on the basis of listing of new contracts but on technology. The proprietary systems of core electronic exchanges are being challenged by new generation trading systems that permit the interconnection of different exchange-traded and OTC facilities via the internet. The screen-based facilities cut across product and market segments. Ensuring soundness and transparency of such system pose a challenge to regulators.

Growth on OTC market continued unabated and market participants continued to work on new structures and procedures aimed at reducing counter party risks. The upsurge in OTC market (see Table- 9.1) took place in the swap and swap related instruments in the interest rate sector. The rise in notional amounts was inflated by the increase in the number of reporting dealers. Although OTC currency swaps constitute only 4.5 percent of total outstandings in 2004 OTC dominates the business of management of currency risk.

### **Uses of Derivatives**

Companies use derivatives to hedge against changes in interest rates, foreign exchange rates and commodities prices. They are used by individual investors for speculation, hedging and yield enhancement. Mutual funds and pension funds use them to protect their stock and bond investments, asset allocation, yield enhancement and to avail arbitrage opportunities. International banks, brokerage firms and insurance companies write them for customers inventing such exotic names as caps, collars, floors and swaptions. Banks, market makers and securities firms use them for hedging, position taking, exploiting inefficiencies (arbitrage) and earning dealers spreads. While they are created to diminish risk, they can introduce more because of sheer volume of money that rides on them. These side bets pull with them a real world of securities worth 30 times their value. The entire complex of financial institutions around the world are making these side bets which are off balance sheet transactions and involve inter-locking commitments. They are rushing headlong into financial cyber space which has not been chartered yet.

**The Central Bank Survey of Derivatives Market Activity, 1995**

The central banks and monetary authorities of 26 countries conducted a survey of derivatives market activity in 1995 in conjunction with the triennial foreign exchange market survey coordinated by the Bank for International Settlements. The survey aimed to shed light on the size and structure of the global OTC derivatives market outstanding at the end of March 1995 and covered the four main categories of market risk: foreign exchange, interest rate, equity and commodity.

The survey found that the notional value of daily turnover in the OTC contracts amounted to \$839 billion in April 1995, while value of outstanding contracts stood at \$40.6 trillion at the end of March 1995. Of the outstanding contracts foreign exchange market risk accounted 32.2 percent, interest rates market risk 65.6 percent, equity and stock indices market risk 1.4 percent and commodities market risk 0.8 per cent. The survey showed that, while interest rate products accounted for the largest proportion of both OTC and exchange traded markets, exchanges were more heavily dependent upon interest rate products (96 percent of total amount outstanding) than OTC markets, (66 percent). The interest rate and foreign exchange markets were also found to be the preserve of financial sector entities. The OTC interest rate and foreign exchange markets have become global in nature in view of the high proportion (55 percent) involving foreign counter parties. The same trends were observed in exchange traded markets with the rapid multiplication of trading links.

The OTC interest rate contracts were much larger than exchange traded contracts because of the inherent way risk is traded and the competitive advantages of OTC instruments. They can be structured to meet a wide variety of timing and exposure requirements. Further, the progressive development of risk reduction techniques such as collateral arrangements and the standardization of market practices especially relating to documentation have strengthened the competitive edge already provided by the OTC market's wholesale nature. The versatility of interest rate swaps has made them popular with both financial and non-financial users. The active use of swaps by financial institutions to hedge and trade exposures provide liquidity to the market. OTC swaps are also well suited to the overall asset and liability management strategies of a broader spectrum of users, encompassing larger individual amounts, longer maturities and a greater number of reference rates than exchange traded instruments. For non-financial users OTC swaps require less administration than transactions on exchanges. Finally, the cash and OTC markets are preferred in short-term interest rate products because of the liquidity of the well established forward rate agreements (FRA) market and the availability of a wide range of hedging strategies through the inter bank deposit market. The exchange traded markets



are increasingly used at the margin to hedge the net overall residual positions of intermediaries. The economic significance of OTC contracts is measured by their gross market value which represents the cost incurred had contracts been replaced at prices prevailing at the end of March 1995, \$1.8 trillion or 4 percent of the outstanding amount. Foreign exchange contracts accounted for 59 percent of total gross market value, interest rate contracts, 36 percent and equity and commodity contracts for 3 percent and 2 percent respectively.

### **The Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity, 1998**

The total estimated notional amount of outstanding OTC contracts stood at \$70 trillion at end June 1998 which was 47 percent higher than the estimate for end-March 1995. If adjustments are made for differences in exchange rates and the change from locational to consolidated reporting, the increase between the two dates was about 130%.

The 1998 survey data also confirm the predominance of the OTC market over-organized exchanges in financial derivatives business. Interest rate instruments remained the largest OTC component (67% mainly swaps), followed by foreign exchange products (30% mostly outright forward and forex swaps) and those based on equities and commodities (with 2% and 1%, respectively). Interest rate instruments involve less exposure to market and credit risk than foreign exchange transactions, which generally include the exchange of principal and are therefore highly sensitive to price changes in underlying markets. Further, the maturity of currency related contracts is shorter (87% expiring within a year) than in the interest rate market (41%). A breakdown by type of counter party shows that the share of business with financial institutions was highest in the interest rate market (87% compared with 77% in the foreign exchange market). Lastly, while the dollar is the counterpart to most foreign exchange transactions (86%) only 31% of interest related positions are denominated in US dollars which confirms other evidence of the expansion of the swap market outside US dollar sector in particular in European currencies.

### **Central Bank Survey of Foreign Exchange and Derivatives Market Activity (2001)**

The Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity covers data to turnover in traditional foreign exchange markets – spot, outright forwards and foreign exchange swaps – and in over-the-counter (OTC) currency and interest rate derivatives.

The survey shows that in April 2001 foreign exchange market turnover stood at \$1,210 billion, compared to \$1,490 billion in April 1998, a 19% decline at current exchange rates. This contrasts with the findings of previous surveys, which had reported a rapid rise in forex market activity. Among the different

counterparties, trading in the interbank market and between banks and non-financial customers fell markedly, while transactions between banks and financial customers rose.

In the OTC derivatives market, average daily turnover amounted to \$575 billion, exceeding that in April 1998 by 53%. The survey showed a contrast between interest rate and foreign exchange contracts, with the former continuing to grow at a rapid pace (by 85%, to \$489 billion) and the later contracting (by 31%, to \$67 billion). Expansion in the interest rate segment was largely driven by the buoyancy of interest rate swaps, with turnover rising by 114% to \$331 billion. This rapid expansion mainly reflected a deepening of the US dollar- and euro-denominated swap markets.

**Table 9.2** *Global Foreign Exchange and OTC Derivatives Market Turnover<sup>1</sup> Daily averages in April, in select years (in billions of US dollars)*

	1995	1998	2001
A. Foreign exchange turnover	1190	1490	1210
Spot transactions	494	568	387
Outright forwards	97	128	131
Foreign exchange swaps	546	734	656
B. OTC derivatives turnover	200	375	575
Currency swaps	4	10	7
Currency options	41	87	60
FRAs	66	74	129
Interest rate swaps	63	155	331
Interest rate options	21	36	26

<sup>1</sup> Adjusted for local and cross-border, double-counting.

Source: BIS *Quarterly Review*, December 2001, p.38.

### Risks of Derivatives

The seven categories of risks associated with derivatives are<sup>1</sup>:

- Counterparty credit risk of default by counterparty resulting in financial loss to the other party. Credit risk is measured by the cost of replacing cash flows in the market and not by the notional amount of the contract.
- Price risk or market risk is the risk of change in price of derivative which is related to the price risk of the underlying instrument.

<sup>1</sup> The Federal Reserve, Comptroller of the Currency and FIDC have cited seven key categories associated with derivatives.

- Settlement risk involves payment of funds by one party in a financial transaction to the other party before receiving its own cash or asset.
- Liquidity risk is the risk of default by counter party and resulting loss.
- Operating risk is the risk of operating a commercial bank which arises an account of inadequate internal controls by management of derivatives which are quite complex; difficulty of valuation of derivatives which rely on sophisticated mathematical models and regulatory risk in terms of changes in accounting procedures, capital adequacy, restrictions on banking practices that may be imposed by regulators in view of the explosive growth of derivatives.
- Legal risk especially in over the counter instruments since rights and duties are not clearly defined. While the International Swap Dealers Association has prescribed some rules, the differences in national bankruptcy laws raises legal concerns about the risks in international deals.
- Aggregation risk occurs in derivative instruments in view of the number of markets and instruments and their interconnections. The risk to individual parties in such transactions is difficult to assess.

## **REGULATION OF RISKS**

The recognition of the benefits offered by derivatives markets led primarily to encouraging improvements in internal risk management, transparency and the infrastructure of markets. The revised Basle Capital Accord allows banks that meet certain standards to use internal 'Value-at-risk' measurement systems for capital adequacy purpose supplemented by model validation and stress testing exercises. New official initiatives were undertaken to promote transparency at both the micro and macro levels. The G-10 Euro-currency Standing Committee is considering ways of implementing a regular globally consistent reporting system for derivatives.

As a sequel to the collapse of Barings in February 1995, steps were taken to strengthen infrastructure of markets by addressing issues related to co-operation between market authorities, the protection of customer funds, default procedures and regulatory co-ordination in emergencies. Information is now to be shared between exchanges and supervisory authorities about common members whose exposures are excessive.

A revised version (1998) of the supervisory information framework for the derivative activities of banks and securities firms originally published in May 1995 was released by the Basle Committee on Banking Supervision (Basle Committee) and the Technical Committee of the International Organizations of Securities Commissions (IOSCO). While the 1995 framework concentrated on derivatives, the 1998 update addresses more broadly the market risk exposure arising from trading in both cash and derivatives activities particularly with

regard to market risk. The first part of the report, an information framework is a catalogue of data that the Committee have identified as important for an evaluation of the risks present in trading and the derivatives activities; and the second part of the report is a common minimum framework of internationally harmonized baseline information about the derivatives activities that the two Committees recommended for supervisors.

A report on settlement procedure and counter party risk management in OTC derivatives was published in September 1998 by the Committee on Payment and Settlement Systems and the Euro Currency Standing Committee of the central banks of G-10 countries. The three sets of issues of the Committee raised concern the implications for counter party and systematic risks of: (1) delays in completing master agreements and confirming transactions; (2) the rapidly expanding use of collateral; and (3) the potential expansion of clearing houses for OTC derivatives. In regard to the first the Committee found significant backlog of unsigned master agreements and confirming transactions which could jeopardize a dealer's ability to perform closeout netting. The report found that the use of collateral could significantly reduce counter party credit risk but could introduce additional risks such as liquidity, legal, custody and operational that counter parties had to manage effectively. Finally the Committee found that the use of clearing houses in the OTC market had the potential to mitigate risks which is dependent upon the effectiveness of the clearing house's risk management procedures. The recommendations for action by market participants and national authorities would mitigate risks to counter parties and enhance the stability of global financial markets.

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## *INTEREST RATE RISK*

### **NET INTEREST INCOME**

Net interest income which is the difference between interest income and interest expense is the principal determinant of the profitability of banks. Net interest income is determined by interest rates on assets and paid for funds, volume of funds and mix of funds (portfolio composition). Changes in interest rate affect the net interest income. Whenever rate of interest conditions attaching to assets and liabilities diverge, then changes in market interest rates will affect bank earning. If a bank attempts to structure its assets and liabilities to eliminate interest rate risk, the profitability of the bank would be impaired.

### **Mismatch of Assets and Liabilities**

A bank may borrow short and lend long. The mismatch of assets and liabilities gives rise to interest rate risk. In such a case a rise in interest rates can result in losses for the bank. A bank has also to take into account the preferences of its constituents. They may want long-term deposits when the bank wants to issue short-term deposits; and loan customers may want fixed interest loans when the bank wants to increase the amount of interest sensitive assets.

### **Variable Interest Rate**

Each bank through its choice from different types of assets and liabilities can alter the structure of its balance sheet in order to increase or decrease interest rate exposure. In order to limit interest rate risk banks in US and Eurodollar market have substituted during the last three decades variable interest rates for fixed interest rates across much of their lending. Lending at variable rates such as LIBOR which varies in line with short-term market rate helped in aligning them closely with rates paid by the bank on the bulk of liabilities. The objective of interest rate risk management is to insulate net interest margin (interest income

divided by average interest earning assets). Interest rate risk can be analysed by maturity or funding gap analysis, duration analysis and value at risk.

### **Yield Curve**

Yield curve plays an important role in interest rate risk management. Banks accept interest rate risk and maintain a slight liability sensitive position (rate sensitive assets less than rate sensitive liabilities).

### **Maturity or Funding Gap**

The interest sensitivity position of a bank is usually measured by its gap, which is defined as the difference between the volume of interest sensitive assets and liabilities. Interest sensitive assets and liabilities are those whose earnings or costs change with the general movement of interest rates within a predetermined period. The analysis emphasizes profitability and costs of assets and liabilities rather than the value of those assets and liabilities. Gap analysis measures the difference between bank's assets and liabilities and off balance sheet positions which will be repriced or will mature within some planning horizon. Gap analysis is the most important basic technique used in analyzing interest rate risk.

To manage interest rate risk through the maturity or funding gap the direction of future interest rates has to be forecast and assets and liabilities have to be shifted. A defensive strategy would balance the amount of interest rate sensitive assets with interest rate sensitive liabilities. Interest income and interest expense are expected to rise and fall together with changing interest rates. In an aggressive strategy, a bank would establish a positive gap (rate sensitive assets greater than rate sensitive liabilities) when interest rates are expected to rise; and a negative gap when interest rates are expected to fall.

The gap approach involves the selection of appropriate time horizon or planning horizon into which assets and liabilities have to be separated in rate sensitive and non-rate sensitive ones. It ignores the time at which the interest rate sensitive assets and liabilities reprice. Even when the bank has a zero gap (rate sensitive assets equal rate sensitive liabilities) interest rate changes can affect net interest income. When maturity of assets is one day, liabilities 30 days and planning horizon 30 days an increase in interest rates would lead to repricing of assets but liabilities would reprice only after 30 days. Conversely, a decrease in interest rate would result in an immediate decrease in earnings on assets but the cost of funds would decrease only after a time lag.

The gap analysis also assumes a one-to-one relationship between general market interest rates and in the interest revenue and cost for the portfolio. This assumption is not well founded because variable rate assets do not adjust quickly and fully to changes in market interest rates.

The standardised gap which adjusts for the different interest volatility of various asset and liability items is used to alter the maturity and therefore the interest sensitivity of the portfolio items.

Finally, the traditional gap analysis focusses on accounting income rather than the value of the firm. The preoccupation with net interest margin rather than shareholder wealth may increase the risk of variability of the earnings and reduction of the value of the company.

### **Duration**

Duration measures the interest rate risk of a financial instrument. It shows the relationship between the change in value of a financial instrument and change in the general level of interest rates. The average amount of time required by an asset holder for recovering the discounted value or present value of all cash flows (principal and interest) can be estimated with the help of duration analysis. Duration gap analysis emphasises the balance between the duration of assets and liabilities with a view to avoid the effect of interest rate changes on the value of the firm.

Duration of an asset is the weighted value of all of the cash flows that it will produce with each cash flow weighted by the time at which it occurs. It is weighted average maturity of an instrument's cash flows where the present value of the cash flow serves as the weight.

The duration of the assets and liabilities of the bank are calculated in order to estimate the effects of changing interest rates on the market value of assets and liabilities. Duration is measured in units of time. If the duration is specified the effect of changing interest rates on the market value of the equity may be measured by the sum of the changes in the market value of assets and liabilities. Duration gap is measured by,

$$D_{\text{gap}} = D_a - W D_L$$

where  $D_{\text{gap}}$  = duration gap,  $D_a$  = average duration of assets,  $D_L$  = duration of liabilities and  $W$  = ratio of total liabilities to total assets. If the duration of the financial instrument is known, the price of the instrument in response to a given change in interest rate can be calculated. Since duration is additive, the average duration of all assets and of all liabilities and thereby the duration of the entire portfolio can be calculated. Interest exposures across highly diversified balance sheets can be estimated. But duration does not take into account of the effects of relative interest rate changes.

### **Modified Duration**

Modified duration provides a standard measure of price sensitivity to calculate the duration of the portfolio as the weighted average of the duration of its



individual components. The duration of a bank's net worth is the weighted average of the durations of its assets and liabilities. By weighing assets, liabilities and off-balance sheet position by their estimated durations, a single measure of interest rate exposure can be calculated.

The management of the composition of assets and liabilities over the business cycle in order to increase the net interest income and/or the market value of equity requires highly flexible balance sheet. Large banks meet the problem by making adjustments off balance sheet through futures, options and swaps. Excessive interest rate risk can be offset by taking an appropriate position off-balance sheet through derivative instruments so that the total risk position is appropriate. The transactions in derivatives create new or synthetic assets and liabilities with interest sensitivity positions different from those currently held in the balance sheet. The adjustments to a bank's portfolio through gap analysis and or duration involve alterations in the current cash (spot) market position of the portfolio of assets and liabilities.

## **FUTURES, OPTIONS AND SWAPS**

These derivative instruments allow a bank to alter interest rate exposure and each has advantages and disadvantages compared with the other. When taken together they give a bank enormous flexibility in managing interest rate risk.

### **Committee on Rupee Interest Rate Derivatives**

The Reserve Bank set up an Internal Working Group on Derivatives in September 2003 which recommended, *inter alia*, (i) harmonization of regulations between OTC interest rate derivatives and exchange traded interest rate derivatives; and (ii) permission to those banks to hold trading positions in IRF market which have adequate internal risk management and control systems and robust operational framework subject to certain conditions.

### **Futures**

A futures contract is a standardized agreement to buy or sell an asset on a specified date in future for a specified price. The buyer agrees to take delivery at a future date at today's determined price; and the seller agrees to make delivery at a future date at today's established price. The buyer establishes a long position and will benefit, if the price of contract rises; and the seller establishes a short position and will benefit, if the price of the contract falls. In the futures market pricing and delivery occur at different points of time whereas in the cash or spot market pricing and delivery occur at the same time.

Futures contracts generally are available only for delivery dates at 3 month intervals that can extend only up to short time in future. They can not be used to hedge interest rate risk over a long-term. The two largest exchanges on which

futures contracts are traded are Chicago Board of Trade (CBOT) and International Monetary Market (IMM). The total amount of interest rate futures outstanding at the end of 2004 on organised exchanges was \$18.2 trillion and the turnover \$783 trillion. The futures contracts differ by type of financial instrument traded and by exchange. The instruments include treasury bills, notes and bonds, CDs and Euro dollar time deposits. The futures contract specifies the financial instrument (Treasury bill par value \$ 1 million) to be delivered at the maturity of the contract (13 weeks). The characteristics of interest rate futures contracts are identical (amount and delivery date). The futures exchange is the guarantor of the contract eliminating the risk of default. The futures contracts are bought and sold through a margin. Margin constitutes a small proportion of the total value of the contract which creates great leverage, magnifying the potential gain or loss from a futures contract. Since the futures contracts are marked to market daily cash flows to some (gains on outstanding futures positions) and additions (losses on outstanding futures positions) to others result. The contract is marked to market as long as the buyer holds the contract or until final maturity of the contracts whichever comes first. Futures contracts rarely lead to delivery.

Although futures contract may be used to speculate on future interest rate movements regulatory policies abroad limit bank use to a hedging role. A long or buy hedge may be used to protect the bank against falling interest rates. When a bank has a positive dollar gap (more interest sensitive assets than liabilities) a long or buy hedge by buying treasury bill contracts for future delivery can offset by the gain from the fall in interest rates, the reduction in the net interest margin. If interest rates increase the gain in net interest margin than would be offset by the loss on the futures transaction. A negative dollar gap may be hedged by the sale of a futures contract or a short hedge. An increase in interest rates, which reduces the net interest margin can be offset by the gain from the futures hedge. If interest rates fall, the gain in net interest margin would be offset by a loss on the futures contract. Interest futures can be used to hedge positive or negative duration gaps.

### **Interest Rate Futures (IRFs)**

In order to enable banks to hedge their interest rate risk, the Reserve Bank allowed banks and primary dealers to transact in exchange traded interest rate futures in June 2003. While PDs were allowed to hold trading as well as hedging positions in Interest Rate Futures (IRFs), banks were allowed only to hedge their underlying Government securities in AFS and HFT categories. Accordingly, the National Stock Exchange (NSE) introduced futures on notional 10-year Government security, 3-month Treasury Bill and 10-year Government zero coupon in June 2003. Activity in the IRF market, however, has not picked up mostly because of valuation problems and subdued activity of banks in the IRF market.

The SEBI reviewed issues pertaining to introduction of new futures contracts in consultation with the Fixed Income Money Market and Derivatives Association of India (FIMMDAI). On January 5, 2004, the SEBI permitted trading of IRFs contract on an underlying 10-year coupon-bearing notional bond which would be priced on the basis of the yield-to-maturity (YTM) of a basket comprising bonds with maturity ranging from 9 to 11 years.

### **Options on Futures Contracts**

Interest rate risk may also be hedged through options on futures contracts. An option provides the buyer with the right, but not the obligation, to buy or sell an agreed amount of an underlying instrument (such as a T-bill futures contract) at an agreed price. A call option gives the buyer the right but not the obligation to buy an underlying instrument at a specified price, called exercise or strike price. A put option gives the buyer the right (and not the obligation) to sell a specified underlying security at the agreed price. A call premium by the buyer and seller which is determined by market options on futures are used like the futures themselves in order to hedge interest rate exposure, but options have the advantage of smaller initial outlay for interest rate risk management.

Options on futures are standardized contracts that trade an organized exchanges which guarantee the fulfillment of the contract. Call and put options on Treasury bill and Euro dollar futures are traded on International Monetary Market to hedge a mismatch in the duration of a bank's assets and liabilities. The outstanding amount of options on interest rates at end 2004 was \$24.6 trillion and turnover \$260 trillion on organised exchanges. If a bank has a negative duration gap (the duration of assets is less than the duration of liabilities) it could extend the duration of its assets or reduce the duration of its liabilities or establish a long position in the financial futures market. In the case of positive duration a bank could reduce the duration of assets, increase the duration of liabilities or execute a short or sell position in financial futures.

A major limitation on the use of futures contract to hedge interest rate risk is basis risk. Basis refers to the difference the cash and future price of the instrument used for a hedge. Risk reduction through hedging is feasible only when the cash and futures price of the instrument move together or correlated. Changes in basis during the period of hedge limit the efficacy of futures contract. Interest rate risk may be eliminated only, if basis does not change.

**Contract Specifications:** Treasury bill futures options were first listed for trading in April 1986. The underlying instrument for these options is the IMM 3 month Treasury bill futures contract. Expiration date for options fall approximately 3 to 4 weeks before the underlying futures contract matures. IMM futures options can be exercised any time up to the expiration date.

IMM index price forms the basis for strike prices as well as premium quotations. Strike price intervals are 25 basis points for IMM index prices above 91.00 and 50 basis points below 91. Strike prices are quoted in terms of basis points 90.50 or 92.25. The minimum price fluctuation for put and call premium is one basis point and each basis point is equal to \$25. A quote 0.40 represent an options premium of \$ 1,000 ( $40 \times \$25$ ). There is no upper limit to daily fluctuation.

A negative dollar gap would result in a decline in interest income, if interest rates rise. With the sale of a futures call option, a bank can lock in higher price and set off the profit on the call option against the loss from the negative gap. In the case of a positive gap a bank can buy call options in order to hedge against interest rate risk. The loss arising from the fall in interest rates in the cash or spot market portfolio would be offset by the gain from its options position.

**Caps and Floors:** Caps and floors are versions of options used to transfer interest rate risk. An interest rate cap reduces the exposure of a floating rate borrower or a liability sensitive bank to increases in interest rates. A cap is a series of interest rate call options in which the writer guarantees the buyer that the writer will pay the additional interest amount resulting from rising interest rates. A floor limits the exposure of the buyer to downwards movements in interest rates. An interest rate floor is a series of put options by which the writer guarantees the buyer that the writer will pay the amount that increases as the level of interest rates fall.

## SWAPS

Swaps came into vogue in 1981. They are used widely by banks. At the end of 2004 outstanding (OTC) amount of interest rate swaps was \$147 trillions. Swaps are private arrangements to exchange cash flow in future according to a prearranged formula.

### Interest Rate Swaps

A swap position can be interpreted either as a package of forward/futures contracts or a package of cash flows from buying and selling cash market instruments. As compared to forward contracts or futures, maturities of interest rate swaps extend to 15 years or beyond. It is also transactionally more efficient. In one swap transaction, an entity can effectively establish a pay off equivalent to a package of forward contracts whereas each forward contract has to be negotiated separately. Interest rate swaps provide more liquidity than forward contracts, particularly long dated.

In an interest swap two parties, called *counter parties*, agree to exchange periodic interest payments. The amount of interest payments exchanged is based

on some predetermined principal which is called the *notional principal amount*. The parties exchange fixed interest payments for floating interest payments or vice-versa. The reference rate for floating rate on an interest rate swap is the rate on money market instruments, Treasury bills, CP or BA or London Inter Bank Offered Rate (LIBOR) or prime rate. The principal purpose is to reduce the degree of interest rate risk by more closely synchronizing the interest sensitivity of cash inflows and outflows.

Interest rate swaps are over-the-counter instruments. They are not traded on an exchange. An institutional investor can enter into a swap transaction through a securities firm or a bank that transacts in swaps. They arrange or broker a swap between two parties that want to enter into an interest rate swap. In this case the securities firm or commercial bank is acting in brokerage capacity. The second way a securities firm or commercial bank arranges the swap is by taking the other side of the swap. This means that the securities firm or the commercial bank is a dealer rather than a broker in the transaction. The securities firm or commercial bank must hedge its swap position when acting as a dealer. The dealer is the counter party to the transaction. Swaps are customized to meet the exact needs of the bank. There is also an attempt to standardize the contract terms such as the type of floating rate interest, the repricing dates and collateral requirements.

Interest rate swaps are very useful in medium and long-term financing. Swaps provide a way of hedging against interest rate risk. As compared to other hedging instruments they allow hedging much farther into the future. Swaps of 15 years maturity are not unusual. In an interest rate swap two parties exchange fixed rate interest payments for floating rate interest payments on a notional amount. The swap is a good hedge only as long as the promised payments will actually be made. Interest rate swaps in the Euro currency market have counter parties from different countries or foreign arranging banks.

In an interest rate swap there is an exchange of the service payment on two distinct loans. The loans differ according to method used to determine the interest payment, floating vs fixed. Since the loans are in the same currency, there is no initial exchange of principals and no final amortization. In that sense the two loans are 'notional' or 'fictitious'. The only remaining cash flows to be swapped are interest payments on each of the notional loans.

Financial institutions, corporations and governments account for major portion of interest rate swaps outstanding as well as new swaps. At the end of 2004 financial institutions accounted for 46.9% of swaps outstanding; corporations make wide use of swaps to speculate as well as hedge against interest rate risk, and accounted for 43.9%; and governments 9.1%.

## TYPES OF INTEREST RATE SWAPS

### Fixed-for-Floating

The fixed-for-floating swap called *plain vanilla swap* is one in which both interest payments are denominated in the same currency and are based on a notional principal. Floating rate is normally LIBOR and fixed rate, the US Treasury bill rate. The counterparties make simultaneous and offsetting periodic interest payments to each other so that only the net difference is paid. The firm may have a preference for financing at a fixed rate but the risk spread in a floating rate market may be lower. The firm can take advantage of a lower spread in the floating rate market by borrowing at floating rate and swap the loan into a fixed rate loan using a fixed-for-floating swap. Since the swap contract is almost risk free, the interest rate used in the swap contract is risk free rate.

### Base Swaps (Floating-to-Floating Swaps)

If two streams of floating rate interest payments, each determined by a different base rate are swapped it is called a *base swap*. An example of base swap is swapping a LIBOR based revolving loan with a US treasury bill based revolving loan.

### Zero Coupon for Floating Swaps

In the zero coupon for floating swap, the floating rate payer makes periodic interest payments, but the fixed rate payer makes only a single payment at the swap's termination. Parties who hold zero coupon assets desirous of avoiding cash outlays for interest payments during the lives of those assets use this particular type of swap.

### Forward Swaps (or Delayed Rate Setting Swaps)

They postpone the beginning of a swap or the determination of the applicable interest rates. This swap meets the requirement of one of the parties to use an interest rate swap in the near future but not immediately.

### Rate Capped Swaps

Ceilings are set on the floating rate or rates in interest rate swaps. Mini Max swap sets a ceiling and a floor on the floating rate used. Roller-coaster swaps limit the increase in the notional principal to some maximum figure and then amortises to zero over a swap's remaining life. Asset-based swaps are used to create synthetic securities. Such swaps may duplicate existing assets or create new ones. Finally, the terminable swap allows the fixed rate payer to cancel a swap agreement before its maturity date.

### Uses of Swaps

Swaps are highly useful when a borrower with an outstanding bond issue wishes to alter the liability without retiring and issuing a new one. If the firm wants to

shift from an outstanding floating rate bond issue, say, with 4 years to maturity to a fixed rate, the firm can enter into a 4 year interest rate swap accepting floating rate interest payments and paying fixed rate interest. The swap would allow the firm to hedge the outstanding bond issue and lock-in a fixed interest rate which it expects to be lower than future interest rate. The cost would be 5 to 10 basis points per year.

Portfolio managers can protect their assets with swaps. A firm with fixed rate bonds denominated in one currency can enter into a interest rate swap in which it would accept floating rate interest payments and make fixed rate interest payments.

Interest rate swaps can be used for arbitrage between markets with different interest rates. Examples of such difference is Euro dollar market and market for US treasury securities.

Swaps can be used for speculation. One can take a 'naked' position as a floating rate payer. If the speculator believes that interest rates are going to fall, contrary to the view of the market, he may enter into a swap agreement without having any future interest payments to swap. If the interest rates fall the same fixed payments are received but paying less for them, making a gain.

### **Swaps and Hedge Funds**

It is estimated that there were 1200 hedge funds with own assets of over \$150 billion. They operate offshore for the benefit of a small number of wealthy investors. The hedge funds are speculative funds that sidestep certain disclosure and leverage regulations. The Long Term Capital Management (LTCM) hedge fund (1994) pursued high returns by making directional judgements on interest rate spreads and the volatility of market prices. The fund relied on very high level of leverage (capital \$4.8 billion and assets \$125 billion) to achieve above normal returns of 40% in 1995 and 1996 and 20% in 1997. LTCM whose strategy consisted in exploiting price differentials between a wide variety of financial market assets was the world's single most active user of interest rate swaps. In August 1998, \$750 billion of its notional derivatives exposure of more than \$ one trillion was in swaps with about 50 counterparties with none being aware of LTCM's exposure. The swap exposure represented 5% of total exposure reported to central banks.

### **Comparative Advantages of Swaps**

Swaps are popular because there is a comparative advantage. Swaps allow a company to borrow in the market where it can obtain the lowest spread and exchange the loan's service payments for another loan whose currency of



denomination or interest payments (fixed or floating) are more suitable. Given the risk premium, a swap enables each of the two parties to borrow more cheaply. For instance, a multinational corporation which is well known, can borrow at a very good rate both in direct and indirect markets, say 0.5 percent over the treasury bill rate and 0.25 percent over LIBOR on its bank loans. The other company which is less known has to pay more to borrow in both the markets, may be 2.5 percent over treasury bill rate on its bonds and 1.0 percent over LIBOR on its bank loan.

Banks and financial markets have different perceptions in making loans. Banks have often better information on small firms and can distinguish better between risks than can the bond market. They are also better at monitoring loan performance and more flexible in dealing with repayment problems. Consequently, banks lend to riskier borrowers at a lower risk premium than the bond market would demand.

### **Separation of Interest Rate Risk and Credit Risk**

Banks do not want to make long-term loans at fixed rates of interest because of the interest rate risk. Banks prefer the floating rate loan. With a swap, the borrower can transform the floating rate loan to fixed rate and thus avoid the interest rate risk. The swap allows the separation of interest rate risk from credit risk. The bond market carries the former and the bank carries the later.

In pure interest rate swaps there is no exchange of notional or actual principal. If the times of reciprocal interest payments coincide only the net difference is paid.

### **Pricing Interest Rate Swaps**

Pricing covers relevant interest rates and interest payment schedules and fees for swap dealer's services. The interest rates are set to provide a spread which runs from 5 to 10 basis points. Interest rate swaps are standardised and do not generate fee income.

Spreads on interest rate swaps are quite narrow reflecting low risks and the huge and liquid financial markets. Narrow spreads provide an incentive to use interest rate swaps.

### **Features of Swaps**

The important features of interest rate swaps are summarised in Statement 10.1.



**Statement 10.1** *Important Features of Interest Rate Swaps (OTC)*

<b>Liquidity</b>	Liquidity varies. Swaps are all OTC products and liquidity depends on the structure of swap.
<b>Maximum maturity</b>	Varies. Brokers quote on maturities up to 10 years. Even longer maturities are traded between top quality counterparties.
<b>Deal size</b>	Varies.
<b>Trading costs</b>	Market maker bid offer spread plus brokerage if via broker. Agreed between counter parties to the trade.
<b>Price quote</b>	None.
<b>Margins</b>	Very high.
<b>Leverage</b>	Risk limited to replacement cost with no principal risk. Marginal credit risk for interest differential. Default cancels future obligation.
<b>Credit risk</b>	Risk to fixed rate payer either way, whether rates fall or rise.
<b>Market risk</b>	Equivalent to bond of equal duration on fixed side.
<b>Documentation</b>	Standard agreement of International Swap Dealers Association.

**Swap Related Instruments**

Swap related instruments consist of caps, floors, collars and swaptions that allow the counter parties to a transaction to hedge against or speculate on movements in interest rates. The purchase of “caps” allows borrowers to protect themselves against increases in interest rates in exchange for the payment of a premium. By contrast, the purchase of “floors” ensures lenders that the interest rates which they receive will not fall below a specified level. Buying a “collar” involves the simultaneous purchase of a cap and sale of a floor, thereby limiting the potential exposure to interest rate movements to a specified band. A “swaption” is an agreement which entitles, but does not oblige, the buyer to undertake a swap at a future date on terms specified at the time of agreement.

Swaptions became popular because of interest rate uncertainty. Other factors which contributed to their large increase was the large volume of structured Euro bond and EMTN issues and development of more complex risk management structures. Market makers in Germany had to fall back on swaps especially in 1998 as a cheaper alternative to futures with hedging costs soaring as a result of the widening of spreads and declining bond yields. The swap market as a consequence experienced a contagion effect as the concomitant sales of swaps depressed their prices, thus putting pressure on their fixed rates.

## **FORWARD RATE AGREEMENTS AND INTEREST RATE SWAPS<sup>1</sup>**

### **Introduction**

Forward Rate Agreements (FRA) and Interest Rate Swaps (IRS) provide effective hedge against interest rate risks arising on account of lendings or borrowings made at fixed/variable interest rates. Deregulation of interest rates in India has brought to the fore a wide array of risks faced by market participants such as commercial banks, primary dealers and all India financial institutions, FRAs and IRSs help manage and control risks. Reserve Bank of India has allowed in 1999 the market participants to undertake FRAs and IRSs as a product for their own balance sheet management and for market making purposes. At the international level, the amount of outstanding forward rate agreements was \$12.8 trillion in 2004.

The number of contracts and notional amount of both FRAs/IRSs has been growing. The notional amount increased to Rs. 11,08,036 crores in March 2005 and the benchmark rates used in these contracts were NSE-Mumbai Interbank Offered Rate (MIBOR) and Mumbai Interbank Forward Offered Rate (MIFOR). The other benchmark rates used included secondary market yields of Government of India securities with residual maturity of one year and the primary cut off rate on 364 day Treasury Bills. The market for FRAs and IRSs is getting enlarged with the participation of select public sector banks, PDs and foreign and private sector banks.

### **Forward Rate Agreement**

A Forward Rate Agreement (FRA) is a financial contract between two parties to exchange interest payments for a 'notional principal' amount on settlement date for a specified period from start date to maturity date. Accordingly, on the settlement date, cash payments based on contract (fixed) and the settlement rate are made by the parties to one another. The settlement rate is the agreed benchmark/reference rate prevailing on the settlement date.

### **Interest Rate Swap**

An Interest Rate Swap (IRS) is a financial contract between two parties exchanging or swapping a stream of interest payments for a 'notional principal' amount on multiple occasions during a specified period. Such contracts generally involve exchange of a 'fixed to floating' or 'floating to floating'

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1 RBI guidelines for Forward Rate Agreements and Interest Rate Swaps, *Bulletin*, August 1999.

rates of interest. Accordingly, on each payment date - that occurs during the swap period - cash payments based during the swap period — cash payments based on fixed/floating and floating rates, are made by the parties to one another.

Participants apart from undertaking FRAs/IRSs as a product for their own balancesheet management or for market making can also offer these products to corporates for hedging their (corporates) own balance sheet exposure. Participants when they undertake such transactions have to inform Reserve Bank of India and abide by such reporting requirements as prescribed by the Reserve Bank from time to time.

Before undertaking market making activity in FRAs/IRS, participants should ensure that appropriate infrastructure and risk management systems such as ability to price the product and mark to market their positions, monitor and limit exposures on an ongoing basis are put in place.

### **Types of FRAs/IRS**

Banks/PDs/FII can undertake different types of plain vanilla FRAs/IRS. Swaps having explicit/implicit option features such as caps/floors/collars are not permitted.

### **Bench Mark Rate**

Any domestic money or debt market rate may be used as benchmark rate for entering into FRAs/IRS, provided the methodology of computing the rate is objective, transparent and mutually acceptable to counterparties.

### **Size**

There is no restriction on the minimum or maximum size of ‘notional principal’ amounts of FRAs/IRS.

### **Tenor**

There is no restriction on the minimum tenor of the FRAs/IRS.

### **Capital Adequacy For Banks and FIs**

Banks and financial institutions are required to maintain capital for FRAs/IRS.

For reckoning the minimum capital ratio, the computation of risk weighted assets on account of FRAs/IRS should be done as per the two steps procedure set out below.

#### ***Step 1***

The notional principal amount of each instrument is to be multiplied by the conversion factor given below:

Original maturity	Conversion factor
Less than one year	0.5 percent

One year and less than two years	1.0 percent
For each additional year	1.0 percent

**Step 2**

The adjusted value thus obtained shall be multiplied by the risk weightage allotted to the relevant counterparty as specified below:

Banks/All India Financial Institutions	20 percent
All others (except governments)	100 percent

**For Primary Dealers**

Primary dealers undertaking Forward Rate Agreements and Interest Rate Swaps, will be required to fulfill the following minimum capital/capital adequacy requirements.

Over and above the minimum net owned funds, as defined under paragraph 4 of the 'Guidelines for Primary Dealers in the Government Securities Market'. Primary Dealers will have to maintain additional capital at 12 percent of Risk Weighted Assets (RWA) towards credit risk on Interest Rate Contracts. The methodology for these off-balance sheet items will be as under, notwithstanding what is stated in paragraph 6(iii) of the 'Guidelines for Primary Dealers in the Government Securities Market':

- The notional principal amount will be multiplied by the conversion factors given below to arrive at the adjusted value.
  - @ 0.5 percent of notional principal value for original maturity of less than one year.
  - @ 1.0 percent for original maturity of one year and less than two years.
  - @ 1.0 percent for each additional year.
- The adjusted value thus obtained shall be multiplied by the risk weight applicable to the counter party as specified below:
 

Banks/Financial Institutions	20 percent
All others (except Government)	100 percent

**Exposure Limits**

Banks, FIs and PDs have to arrive at the credit equivalent amount for the purposes of reckoning exposure to a counter party. For this purpose, participants may apply the conversion factors to notional principal amounts as per the original exposure methods. The exposure should be within sub-limit to the fixed for FRAs/IRS to corporates/banks/FIs/PDs by the participants concerned. In case of banks and FIs, the exposure on account of FRAs/IRS together with other credit exposures should be within single/group borrower limits as prescribed by RBI.

Further, while dealing with corporates, banks/FIs/PDs should exercise due diligence to ensure that they (corporates) are undertaking FRAs/IRS only for their own rupee balance sheet exposures.

### **Swap Position**

Ideally, participants should undertake FRAs/IRS only for hedging underlying genuine exposures. However, market making activity would involve at times dealing in the market without underlying exposure. To ensure that market makers do not overextend themselves, market makers are required to place prudential limits on swap positions, which may arise on account of market making activity.

Scheduled commercial banks, should place various components of assets, liabilities and off-balance sheet positions (including FRAs, IRS) in different time buckets and fix prudential limits on individual gaps as per the procedure laid down on the Reserve Bank of India on February 10, 1999, on ALM system. The FRAs/IRS, undertaken by banks will have to be within the prudential limits for different time buckets, approved by Boards/Management Committees of banks.

Primary dealers/financial institutions should identify swap positions in each maturity bucket and place prudential limits with the approval of their respective boards.

The prudential limits on swap positions, have to be vetted by the Reserve Bank after approval of respective boards. Participants who can employ more sophisticated methods such as Value at Risk (VaR) and Potential Credit Exposure (PCE) may do so. They have to report the methods followed for VaR/PCE to RBI.

### **Accounting and Valuation**

Transactions for hedging and market making purposes should be recorded separately. While transactions for market making purposes should be marked to market (at least at fortnightly intervals), those for hedging purposes could be accounted for on accrual basis. For valuation purposes, the respective boards should lay down an appropriate policy to reflect the fair value of the outstanding contracts.

### **Documentation**

For the sake of uniformity and standardisation, participants may use ISDA documentation, as suitably modified to comply with RBI guidelines for undertaking FRAs/IRS transactions. Institutions should further evaluate whether the counterparty has the legal capacity, power and authority to enter into FRAs/IRS transactions.

**Internal Control**

Participants should setup sound internal control systems. They should provide for a clear functional separation of front and back offices relating to hedging and market making activities. Similarly, functional separation of trading, settlement, monitoring and control and accounting activities should also be provided.

**Reporting**

Participants are required to report their FRAs/IRS operations on a fortnightly basis to Reserve Bank of India.

**Interest Rate Derivatives (Exchange Traded)**

Banks and primary dealers were permitted to undertake transactions in exchange traded interest rate derivatives in June 2003. Trading in future contracts in notional 10 year Government of India Bonds, national 91 day Treasury Bills and 10 year zero coupon bonds commenced at the Notional Stock Exchange on June 24, 2003. In the first phase only interest rate futures have been introduced and banks were allowed to hedge interest rate risk inherent in the government securities portfolio. Primary dealers were allowed to take hedging as well as trading positions.

Since June 3, 2003 banks were allowed to deal in exchange traded interest rate derivatives in a phased manner with a view to enabling them to manage their exposure to the interest rate risk.

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Banks are in the business of maturity transformation, lending long and borrowing short. Banks expect a mismatched balance sheet with liabilities greater than assets at short-term and with assets greater than liabilities at medium and long-term. Lenders prefer short maturities and borrowers require long-term funds. This results in long-term interest rates exceeding short-term rates and maturity transformation is on average a measure of increasing interest margin.

### **DEFINITION OF LIQUIDITY**

Liquidity of bank may be defined as the ability to meet anticipated and contingent cash needs. Cash needs arise from withdrawal of deposits, liability maturities and loan disbursements. The requirement for cash is met by increase in deposits and borrowings, loan repayments, investment maturities and the sale of assets. A minimum criterion of liquidity is the ability both to meet commitments when due and to undertake new transactions when desirable. The need for liquidity arises from

- Need to replace outflows of funds giving rise to funding risk.
- Need to compensate for the non-receipt of expected inflows of funds giving rise to time risk.
- Need to find new funds when contingent liabilities become due.
- Need to undertake new transactions when desirable giving rise to call risk.

Inadequate liquidity can lead to unexpected cash shortfalls that must be covered at inordinate cost which reduces profitability. It can lead to liquidity insolvency of the bank without being capital insolvent (negative net worth). A bank has also to avoid excessive liquidity since it results in low asset yields and poor earnings.



## **SOURCES OF LIQUIDITY**

The sources of liquidity are the maturity structure of the balance sheet (expected outflows of funds matched by expected inflows of funds) on the assets side, to sell, discount or pledge assets at short notice at minimum cost; and on the liabilities side ability to raise new money at short notice. The ability to maintain adequate liquidity often depends on the market's perception of the financial strength of a bank.

## **CENTRAL BANK**

An important source of short-term liquidity in domestic currency is the central bank. Certain assets can be rediscounted or used as collateral for short-term loans. Refinance from RBI at 0.25% of each bank's fortnightly average outstanding deposits introduced in January 17, 1998 was withdrawn on April 21, 1999 with introduction of Collateralized Lending Facility (CLF).

## **COLLATERALIZED LENDING FACILITY**

Under collateralized lending facility the scheduled commercial banks are provided refinance to the extent of 0.25% of their fortnightly average outstanding aggregate deposits in 1997-98 and such refinance is available for two weeks at the Bank Rate (7% p.a. in April 2000). An Additional Collateralized Lending Facility (ACLF) for an equivalent amount of CLF is also available at the Bank Rate plus two percentage points. Both CLF and ACLK can be availed of for a further period of two weeks at interest rates higher by two percentage points as compared to those applicable for the first two weeks. From the third week onwards CLF and ALF (effective from October 6, 1999) to banks would be at Bank Rate plus two percentage points and Bank Rate plus 4 percentage points, respectively. The amount drawn under CLF and ACLK will have to be paid off within 90 days. The entitlement of the banking system under CLF and ACLK is of the order of Rs.1,314 crores each or a total of Rs.2,628 crores. The average daily utilization of liquidity support under CLF to SCBs ranged between Rs.30 and Rs.170 crores during April-May 2002 and was virtually vacated when it was withdrawn in October 2002. The Collateralized Lending Facility (LCF) has been withdrawn effective from October 5, 2002.

## **FOREIGN CURRENCIES**

With foreign currency business (where convertibility exists on current and capital accounts) banks cannot depend on central bank for liquidity. In a system of floating exchange rates, central banks are not obliged to exchange foreign currencies for domestic currency at fixed rates or as required by banks. Banks have to provide liquidity entirely from their ability to deal in financial market and from lines of credit established with other banks.

Small banks operating domestically can meet their need for liquidity by holding a portfolio of short-term assets backed by established facilities for borrowing, whether from central banks or other banks. Small banks have the advantage of the law of averages in their favour and in normal times they are unlikely to suffer large outflows of money. Large banks also enjoy the stability provided by large volume of retail deposits a core of which may be regarded as stable.

Large banks derive liquidity from both sides of the balance sheet. They have an active presence in the inter bank as well as wholesales markets which are good sources of short-term funds. The short-term assets they hold can be sold in case of need and provide reassurance to lenders, enhancing their borrowing ability.

## **MEASURING LIQUIDITY**

The known and potential cash needs have to be quantified. Measurement of liquidity is based on a cash flow analysis designed to identify the timing and size of potential funding requirements. The inflows and outflows on account of retail deposits and retail lending and likely outflows have to be assessed on a probabilistic basis on the basis of past experience whereas in the case of large volumes of wholesale funds of fixed duration liquidity can be ensured by maturity matching.

Maturity profiles are essential for asset and liability (AL) management. They are a useful way of tabulating information on maturities which give an insight into liquidity. But they are dependable only at the moment of compilation and need to be continually updated. They can help bank plan future borrowing and avoid excessive bunching of calls upon the financial market. While the borrowing ability in the short-term money markets is influenced by reputation, profitability, known capital resources, a bank's peer group and country of origin, it is also related to maturity profile. A crucial element of liquidity is the ability to borrow new funds. The ability or the standing of a bank is related to maturity profile. While excessive mismatch impairs borrowing ability, adequate asset based liquidity will help it. If the maturity mismatch is too great, AL managers have to deal in financial markets to lengthen the average term of liabilities and/or shorten the average term of assets. A bank can lengthen inter-bank borrowing, substitute 3 month or 6 month CD for short-term inter bank borrowing, issue floating rate notes, improve the terms offered on medium term time deposits and bank bonds and concentrate new asset purchases on assets of very short maturity. New long-term liabilities, an equity or bond issue may be raised. Mobilization of core deposits from clients by the offer of better terms or through the creation of new financial instruments may be attempted.

The quality of the measurement of liquidity depends on the quality of the timeliness of information on maturities of existing assets and liabilities and on

the quality of the banks analyses of past and projected loan and deposit trends. The first step in improving liquidity management is to ensure accuracy and timeliness of maturity information available from a bank's accounting and processing systems. Liquidity management focuses on the effects of alternative portfolio strategies on the bank's ability to meet its cash obligations to depositors and borrowers.

### **LIQUIDITY RISK**

Liquidity risk covers all risks associated with a bank finding itself unable to meet its commitments on time or only being able to do so by emergency borrowing at high cost. The 3 facets of liquidity risk are inability to raise funds at normal cost, market liquidity risk and asset liquidity risk. *Funding* risk depends on the perception of the market of the credit standing of the bank. A bank approaching the market with unexpected and frequent needs for funds would have adverse affect on the willingness of the market to lend and raises the cost of funds which is the prime driver of profitability. *Liquidity of the market* depends on adequate volumes being present. Lack of volume which is an external factor arising out of unwillingness of counter parties to trade makes prices volatile and sale can take place at high discount. Finally *asset liquidity risk* arises when the asset is not readily tradeable. Actually the rationale of liquidity ratio is to make banks hold more short-term assets than short-term liabilities. Liquid assets should however mature in the short-term because market prices of long-term assets are more volatile and can be sold only at a loss. Liquidity risk arises when maturities of assets exceed those of liabilities. The maintenance of adequate liquidity is the *sine qua non* of banking. Liquidity risk can be fatal leaving the bank bankrupt.

### **LIQUIDITY RISK AND INTEREST RATE RISK**

Liquidity risk is closely related to interest rate risk. If a bank desires to have more interest sensitive liabilities than assets (liability sensitive position), it reduces the liquidity position of the bank. When a bank structures its portfolio in order to achieve a positive duration gap (the duration of assets exceeds the duration of liabilities) the liquidity of the assets is reduced. If interest rates increase the value of long-duration assets will decline more than short-duration assets and asset sales would involve losses.

### **THEORIES OF LIQUIDITY MANAGEMENT**

Theories of bank liquidity management are based either on management of assets or liabilities. There are three theories based on management of assets; commercial loan, shiftability and anticipated income; and the one based on liabilities is called the liability management.

**Commercial-Loan Theory**

Commercial loan theory was based on an 18th century British banking practice and influenced US banking also from colonial times through the 1930s. The theory maintained that a commercial bank's liquidity would be assured as long as assets were held in short-term loans that would be liquidated in the normal course of business. Banks were expected to finance the movement of goods through the successive stages of production to consumption or what would be called today inventory or working capital loans. Even the rules of eligibility for rediscount of notes stipulated a maturity of not more than 90 days. The theory was designed to finance trade. The theory failed to take into account the credit needs of the economy. In US rigid adherence to the theory prohibited banks from financing expansion of plant and equipment, house purchases, livestock acquisition and land purchases. Failure to meet such credit needs gave birth in US to competing financial institutions such as mutual savings banks, savings and loan associations, consumer finance companies and credit unions.

The theory did not also take into account the relative stability of bank deposits, especially the portion called *core deposits*. The core deposits enable a bank to extend loans for a reasonably long period without becoming illiquid. However, the assumption that all loans would be liquidated in the normal course of business is unlikely to be fulfilled in times of business slow down or recession.

**The Shiftability Theory**

Shiftability theory is based on the proposition that the assets the bank holds could either be sold to other lenders or investors or shifted to the Central Bank which stands ready to purchase assets offered for discount. A commercial bank would be able to meet its liquidity needs, if it has assets to sell.

Liquidity problems could however arise as in 1920s and 1930s, if the market price of securities falls and loans can be liquidated only at a loss. Access to Central Bank can be had only, if the loans satisfy eligibility rules, such as self-liquidating commercial loans. Banks now hold highly marketable government securities to meet liquidity needs.

**The Anticipated-Income Theory**

The anticipated-income theory holds that liquidity can be ensured, if scheduled loan payments are based on the future income of the borrower. The theory relates loan repayment to income than rely on collateral. The theory also holds that a bank's liability can be influenced by the maturity pattern of the loan and investment portfolios. The theory recognised that certain types of loans have more liquidity than others. On the basis of the theory bank managements adopted the ladder

effect in the investment portfolio. Banks ensured a certain amount of securities maturing annually and at times when funds might be demanded for lending or withdrawal. However, there was no clue about the future income of the borrower.

### **The Liability Management Theory**

The liability management theory holds that banks can meet their liquidity requirements by bidding in the market for additional funds to meet loan demand and deposit withdrawal. The large money market banks started the practice which later spread throughout US. The roots of the theory may be traced to the rejuvenation of the federal funds market in 1950s and development of negotiable time certificates of deposit as a major money market instrument. Banks in US rely for liquidity on federal funds market, Eurodollar market or sale of loan participation certificates. Such borrowing came to be known as liability management.

## **MANAGEMENT OF LIQUIDITY**

In the context of increased competition and decreased profit margin, the need to improve efficiency of operation through competent liquidity management has become imperative. Liquidity management consists of estimating the requirement for funds and meeting them. Funds requirement depends on deposit inflows and outflows and loan commitments. The potential requirement for funds can be met by asset liquidity and liability liquidity. Asset liquidity depends on near cash assets including funds lent to other banks, interbank deposits, money market securities and securitisation of loans. It should be noted that cash and balances with the Central Bank are frozen assets which are not available for purchase of assets or reduce liabilities.

Liability liquidity involves discretionary funds, interbank borrowing, discount window borrowings, repurchase agreements, certificates of deposit and other borrowing. A bank should enjoy good standing to access these funds.

A bank should devise a liquidity plan or strategy that balances risks and returns. While liquid assets carry less risk, their yield is correspondingly lower. It does not however have the freedom to reduce deposit rates to match lower returns without losing deposits.

Liquidity needs arising from deposit withdrawals and loan demands can be estimated by preparing a sources and uses of funds statement. The sources and uses approach can be used to evaluate the effects of deposit inflows and outflows and changing loan demands on bank liquidity. The structure of deposits method consisting of a list of different types of deposits and the probability of their withdrawal within a specific planning horizon is another way to estimate liquidity needs. The method focuses on the stability of deposits as a source of funds.

**Asset Liquidity**

Traditionally, banks met the cash demand through asset liquidity. The assets consisted of inter bank lending, treasury bills and repos which can be realized with minimum loss of capital. Large deposit withdrawals and loan demand were met by liquidating near money instruments and this approach was called *asset management*. It was the dominant method of bank management until 1960s when liability management became popular as a measure of meeting cash needs. Asset liquidity was the traditional approach whereas liability liquidity is the modern approach. Liability management involves the mobilization of external funds from deposit and non-deposit sources as liquidity needs arise. Liability management changed the nature of liquidity management.

Asset liquidity is not only an alternative source of funds for the bank but also a reserve depending on the relative costs of funds to forestall problems of solvency. Money market instruments help in avoiding transaction costs as well as price risk while maximizing interest income. Secondary reserves of money market instruments that may be quickly converted to cash with little capital loss to meet cash needs does not affect the capital position of a bank. On the other hand, liability liquidity can affect the bank's capital position, which must be sufficient to meet the regulatory requirements.

**Liability Liquidity**

Liability management is based on the purchase of funds necessary to meet deposit withdrawals and loan demands. It enables the bank to shift funds from lower earning short-term money market instruments to higher earning loans and longer-term securities. Liability liquidity increases the financial flexibility of the bank in dealing with liquidity needs. It might be cheaper to acquire funds than liquidate assets. Liability management by increasing debt interest obligations as a percentage of total assets however increases the interest rate risk as well as the financial risk.

**Evaluation of Bank Liquidity**

The ratio measures used to evaluate bank liquidity are,

- Loans to deposits.
- Loans to non-deposit liabilities.
- Unencumbered liquid assets/non-deposit liabilities.
- Near cash assets/large denomination liabilities.

If loans/deposits ratio is high the bank either has a large loan portfolio or using non-deposit or purchased funds to finance assets. When the ratio is relatively high banks would be less inclined to lend and to invest. Banks become selective and as standards are increased and credits more strictly allocated,

interest rates tend to rise. The loan deposit ratio has increased over the years in US for instance which is explained primarily by the ability and willingness of large banks to solve their liquidity problem by liability management or borrowing in the market rather than rely on asset adjustments.

If the loans-non deposit liabilities ratio is high the bank relies heavily on non deposit funds.

If the unencumbered liquid asset non deposit ratio is relatively high the bank has considerable secondary reserves (money market instruments). If it is low the bank is borrowing funds to finance loans and investments.

Near cash assets/large denomination liabilities ratio measures the ability of the bank to use liquid assets to cover wholesale funds.

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Banks assume credit risk when they act as intermediaries of funds and credit risk management lies at the heart of commercial banking. The business of banking is credit and credit is the primary basis on which a bank's quality and performance are judged. Studies of banking crises show that the most frequent factor in the failure of banks has been poor loan quality. The credit risk management process of a bank is believed to be a good indicator of the quality of the bank's loan portfolio.

### **NATURE OF CREDIT RISK**

Among the transactions risk the most important are liquidity risk (discussed in Chapter 11) and credit risk. Credit risk is inherent in banking. Banks are successful when the risks they take are reasonable, controlled and within their financial resources and competence.

Credit risk covers all risks related to a borrower not fulfilling his obligations on time. Even where assets are exactly matched by liabilities of same maturity, the same interest rate conditions and the same currency, the only on balance sheet risk remaining would be credit risk. Credit risk exposure is measured by the current mark to market value. The magnitude of credit risk depends on the likelihood of default by the counter party, the potential value of outstanding contracts, the extent to which legally enforceable netting arrangements allow the value of offsetting contracts with that counter party to be netted against each other or the value of the collateral held against the contracts.

### **Obstacles to Credit Risk Management**

The task of management of credit risk is rendered difficult in developing markets by government controls, political pressures, production difficulties, financial restrictions, market disruptions, delays in production schedules and frequent instability in the business environment undermining the financial



condition of the borrowers. Further, financial information is unreliable and the legal framework does not support debt recovery. The difficult external context is reinforced by internal weakness of banks further undermining the asset quality.

### **Deficiencies in Credit Risk Management**

The common deficiencies observed in credit risk management in banks are:

- Absence of written policies.
- Absence of portfolio concentration limits.
- Poor industry analysis.
- Inadequate financial analysis of borrowers.
- Credit rationing contributing to deterioration of loan quality.
- Excessive reliance on collateral.
- Concentration of lending authority.
- Inadequate checks and balances in the credit process.
- Absence of loan supervision.
- Failure to control and audit the credit process effectively.

Banks should maintain a desirable relationship among loans, deposits and other liabilities and capital. Loan quality is fostered by sound credit policy. A bank's credit policy objectives should encompass the regulatory environment, the availability of funds, the selection of risk, loan portfolio balance and the term structure of liabilities.

### **Overview of Credit Risk Management**

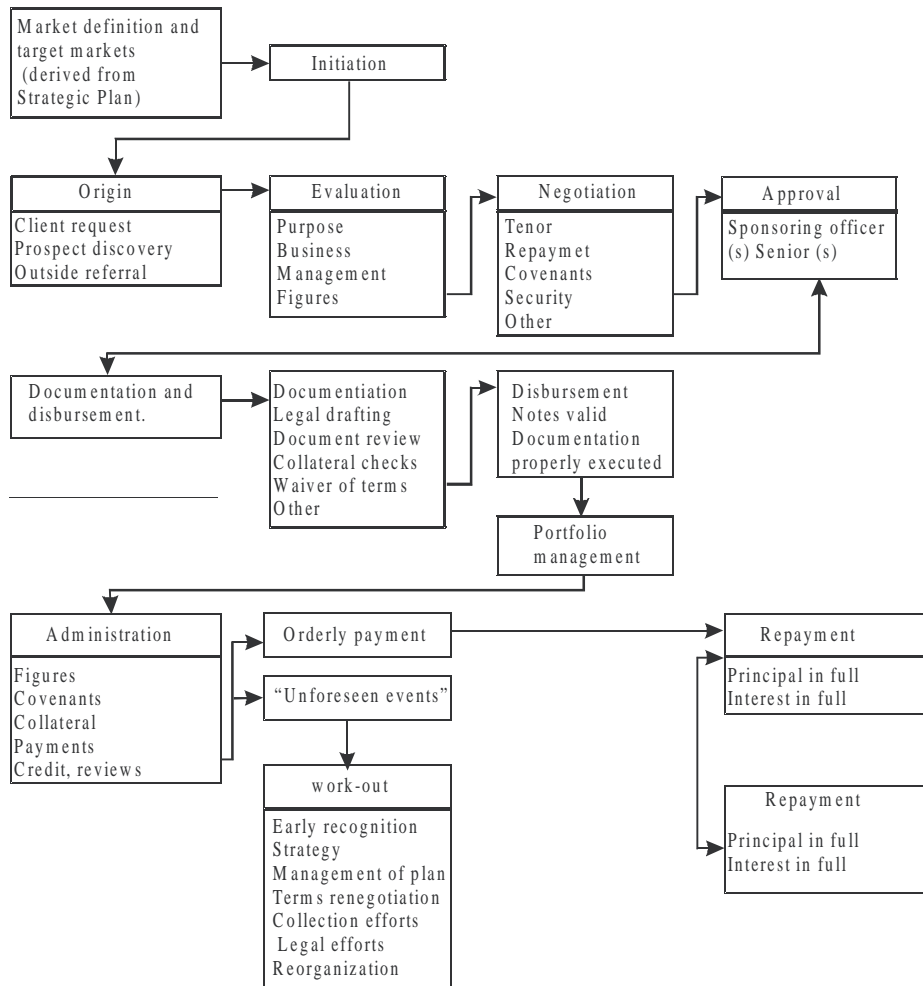
The components of the credit risk management process which begins with identifying the lending markets and proceeds through a series of stages to loan repayment are presented in the Chart 12.1.

### **Principles in Credit Risk Management**

A bank has to follow three key principles in its credit risk management which are selection, limitation and diversification.

## **SELECTION**

The first requirement is to whom to lend. This is usually based on customers request. A model loan request would be in terms of filing all the information required in a printed loan application form which elicit information an amount of loan, purpose of loan, repayment and collateral. Information on the organization of the business (proprietorship, partnership, company (private or public)), trade/industry area and other banking relationships would be required.

**Chart 12.1** Chart for Credit Risk Management

Source: McNaughton, Diana, *Banking Institutions in Developing Markets*, Vol. I, 1992, World Bank, Washington.

### The 6 C's of Credit

The evaluation of the loan request by the bank involves the 6 C's of credit.

- Character (borrowers personal characteristics such as honesty, attitudes about willingness and commitment to pay debts).
- Capacity (the success of business).
- Capital (financial condition).
- Collateral.

- Conditions (economic).
- Compliance (laws and regulations).

### **LIMITATION**

In view of the unforeseen changes in the financial conditions of companies, industries, geographical areas or whole countries, a system of limits for different types and categories of lending have to be set. While banks could adopt credit limits in different ways and at different levels the essential requirement is to establish maximum amount that may be loaned to any one borrower or group of connected borrowers and to any one industry or type of economic activity. Loans may be classified by size and limits put on large loans in terms of their proportion to total lending. The rationale of these limits is to limit the bank exposure to losses from loans to any one borrower or to a group whose financial conditions are interrelated. A system of credit limits, restricts losses to a level which does not compromise bank's solvency. Lending limits have to be set taking into account bank capital and resources. Any limit on credit has to be accompanied by a general limit on all risk assets. This would enable the bank to hold a minimum proportion of assets such as cash and government securities whose risk of default is zero.

### **Diversification**

Diversification involves the spread of lending over different types of borrowers, different economic sectors and different geographical regions. To a certain extent credit limits which help avoid concentration of lending ensures minimum diversification. The spread of lending is likely to reduce serious credit problems. Size however confers an advantage in diversification because large banks can diversify by industry as well as region.

Lending to foreign governments, their agencies or to foreign private sector companies has added a new dimension to credit risk. Country risk involving the assessment of the present and future economic performance of countries and the stability and character of the government has to supplement credit risk assessment or the creditworthiness of individual borrower. In line with the basic principles of limitation and diversification of credit risk management, credit limit have to be set for individual countries and particular regions of the world. Chapter-16 presents the country risk analysis.

### **Methods for Reduction of Credit Risk**

Banks can reduce credit risk by

- Raising credit standards to reject risky loans.
- Obtain collateral and guarantees.

- Ensure compliance with loan agreement.
- Transfer credit risk by selling standardized loans.
- Transfer risk of changing interest rates by hedging in financial futures, options or by using swaps.
- Create synthetic loans through a hedge and interest rate futures to convert a floating rate loan into a fixed rate loan.
- Make loans to a variety of firms whose returns are not perfectly positively correlated.

### **Collateral**

Collateral is an asset normally movable property pledged against the performance of an obligation. (Pledge is mortgage of movable property which requires delivery of possession whereas hypothecation does not require delivery). Examples of collateral are accounts receivable, inventory, bankers acceptance, time draft like post-dated cheque accepted by importer's bank (used in foreign trade to make payments) buildings, marketable securities and third party guarantee. Bank can sell the collateral if the borrower defaults. While collateral reduces bank's risk it enhances costs in terms of documentation and monitoring the collateral.

The factors that determine suitability of collateral are standardization, durability, identification, marketability and stability of value. Standardization helps in identifying the nature of asset that is being used as collateral. Durability refers to useful life or ability to withstand wear and tear. Durable assets make better collateral. Identification is possible, if the collateral has definite characteristics like a building or a serial number (motor vehicle). Marketable collateral alone is of value to the bank if it has to sell it. Marketability must be distinguished from liquidity. Liquidity refers to quick sale with little or no loss from current value. Finally the value of collateral should remain stable during the currency of the loan.

### **Relationship of Credit Risk to Asset Liability Management**

Asset Liability (AL) management relies upon the asset being of good quality. AL management influences credit risk. It is in turn influenced by the presence of NPAs. The most direct influence of AL management on credit risk has been the switch to variable rate lending. The change while reducing the interest rate risk involved in maturity transformation by the banks has shifted the interest rate risk to the borrower. Rising interest rates lead to higher payments for borrower especially, if the loans are long-term. The borrowers cash flows would become less predictable and render him a worse credit risk producing a greater number of defaults in the bank's loan portfolio especially when interest rates rise. A borrower on variable interest rate terms could also benefit when interest rates fall.

If the AL management strategy emphasized fixed rate loans and interest rates fall the incidence of defaults would increase substantially. Unless the borrowers are able to refinance these loans at acceptable costs the default rate would not be reduced. The bank would find that assets considered fixed rate would in fact be interest sensitive. Changes in interest rates may affect the degree of credit risk. Loans at variable rates with no cap on interest rate charged may result in default when interest rate on borrowed funds goes up but the borrowers cash flow does not increase commensurately.

NPAs affect AL management adversely. They effectively freeze assets and convert short-term claims into long-term. Cash flows are reduced impacting on bank liquidity. NPAs also affect the outsiders perception of the bank and reduce its credit worthiness which affects its access as well as cost of raising funds and even its ability to manage liabilities.

The measures taken to contain NPAs of banks (IRAC norms and SARIAESI Act) had salutary effect in reducing NPL from 14% of gross advances in 1999-2000 to 9.4% in 2002-03.

### **CREDIT RISK OF OFF-BALANCE SHEET EXPOSURE**

Credit risk also arises from contingent liabilities and off-balance sheet exposure banks assume such as derivative securities services to assist customers in coping with the greater volatility that exists in today's financial markets. Frequent valuation of portfolio and marking to market yields information about market and credit risks taken in the past.

Credit risk is managed by operational limits on credit lines, loan provisioning, portfolio diversification and collateralization, loan securitization, separately capitalized derivatives vehicles and credit derivatives. The use of these methods should lead to greater efficiency in portfolio management, more refined pricing of credit and a better allocation of capital. J.P. Morgan's Credit Metrics model for evaluating credit risk enables a bank to consolidate credit risk across its entire organization and provides a statement of Value-At-Risk (VAR) due to credit caused by upgrades, downgrades and default.

Credit metrics evaluates the VAR resulting from credit exposure to a broad range of individual and derivative assets. Modifications in credit quality caused by changes in credit ratings, defaults and credit concentration are assessed by constructing a transition matrix giving the probability of change in credit ratings over a certain period. The change in market value is estimated from the change in ratings followed by aggregation of individual value distributions, taking into account the correlation between credits to obtain a distribution of potential losses for the whole portfolio of assets.

Credit Risk launched by Credit Suisse Financial Products bases its analysis on the volatility of default rates associated with particular rating levels. A default rate is allocated to each risk category and the volatility of default rate is estimated. Given that default rates tend to be correlated across assets, the model attempts to capture it without calculating it explicitly. Finally, these variables are related to the various credits in the portfolio. The model requires 4 types of variables, exposures, recovery rates, default rates and default rate volatilities.

Major difficulties in making these methods operational are limited availability of historical and cross-sectional data. Internal data on loan defaults and recovery are not shared by banks.

## CREDIT DERIVATIVES

Credit derivatives provide banks and financial institutions a systematic way of evaluating and transferring credit risk. A small group of North American commercial and investment banks deal in credit derivatives and the size of the transactions was estimated at \$40 millions in 1998. Unofficial estimate is that worldwide the total value of credit derivatives exceeds \$17 trillion in 2005 exceeding stock of corporate bonds and loans. "Credit derivative is a customized agreement between two counter parties in which the pay out is linked solely to some measure of creditworthiness of a particular reference credit and is thus largely independent of the market or other risks attached to the underlying"<sup>1</sup>. It must be noted that the isolation of risk is never complete. Changes in market risks, such as increases in interest rates impact on credit quality.

Credit derivatives long existed in the form of loan insurance. The typical buyer of a credit derivative is a commercial bank that has made a loan to a corporate client. Since loans attract capital reserve requirement and profits earned from loan attract higher rate of tax than bonds, banks buy a credit derivative on a given loan making it a guaranteed asset.

The most common type of derivative contract is where the seller agrees to pay the difference between the full face value and the current resale value of a particular bank loan. Credit derivative contracts specify an exchange of payments in which at least one of the two legs is determined by the performance of the reference credit. The conditions that would trigger a payout are default or other related credit events such as bankruptcy, insolvency or a failure to meet payment obligation, a rating down grade or a stipulated change in the credit spread of the reference asset. The International Swaps and Derivatives Association (ISDA) defines 8 different types of credit events: bankruptcy, credit event upon merger, cross acceleration, cross default, downgrade, failure to

<sup>1</sup> BIS, "The Market for Credit Derivatives", *International Banking and Financial Market Developments*, August 1996.

pay, repudiation and restructuring. Traditional banking and securities market instrument provide for payments in the event of default or a deterioration in credit quality. Contingent third party default payments such as stand by letters of credit, revolving credits bond insurance and financial guarantees have been in vogue. Credit derivatives however, constitute a systematic attempt to quantify such risk.

### **Uses of Credit Derivatives**

Credit derivatives are a new tool for management and optimization of asset risk profiles. An active market would allow users to dynamically manage credit risk exposure to specific counterparties. They can be used to reduce concentration in particular credits or to diversify exposure enabling financial institutions to make more efficient use of their balance sheet as listed.

- Credit derivatives can be used to lock in returns ahead of planned investments in non-government securities or to fix the cost of future borrowing.
- Credit derivatives can be used to modify exposure. They can be used to avoid the disadvantages of cash market transactions such as transaction cost, unfavourable tax treatment or the costly unwinding of associated market risk exposure. Commercial banks can adjust their credit risk profiles to particular borrowers or counterparties without transferring the ownership of underlying assets and endangering business relationships.
- Credit derivatives can enable users to gain access to market segments owing to structural or market impediments.
- Credit derivatives can increase the ability of market participants to arbitrage the differences in pricing of credit risk between various underlying asset classes (loans vs. bonds) and investment horizons. They can be used to reduce sectoral and maturity gaps in the availability of credit by financial institutions of different credit quality.
- The transfer of credit risk enables market participants to concentrate more on the management of risks. Credit derivatives by unbundling and hedging credit risk reduce the risk associated with extension of credit which can lower borrowing costs.

### **Types of Credit Derivatives**

Credit derivatives can be divided into forward (including swaps) and option type contracts. Credit spread forwards and options allow users to take positions on the future spread between two financial assets. One of the reference rates is that of an inter bank or government liability. In the case of a credit spread forward, cash payment at maturity is to be made. The payment depends on the spread agreed at the initiation of contract and that prevailing at settlement.

**Credit Spread Options**

They allow the taking of positions on a given spread/strike price. The option is exercised by the buyer in the event of a negative credit event who is compensated by the seller. An investor seeking protection against a decline in the creditworthiness of a corporate bond can purchase a credit spread one year put option on the bond at a strike level of 200 basis points (its spread over the relevant benchmark rate). If the spread widens beyond this level, the option seller would pay. The difference between the seller's payment and the premium paid for the option is the net payout to the buyer. If the option is not exercised the premium paid would be lost.

**Credit Event/Default Swaps**

In the credit event swaps the holder of a given risk exposure exchanges periodic fee expressed in basis points on the notional amount for a payment contingent on a default event or any other agreed change in the credit quality of the reference asset. Payment arrangements include par and recovery rates, predetermined cash amount, a formula for a payout based on current market price of reference liabilities issued by defaulted entity or physical delivery of the reference liabilities against receipt of a payment equal to their par amount. Credit swap could be referenced on a loan of a company providing for payment based on the difference between par and asset recovery rate in the event of bankruptcy.

**Total Return Swaps**

Total return swaps involve exchange of total returns by a buyer from a financial asset for a given period for a floating rate. The total return includes all cash flows associated with the asset, fees, any capital appreciation or loss; and the floating rate is usually LIBOR plus a spread reflecting the creditworthiness of counter party as well as the credit rating and liquidity of the underlying asset. The swap is settled at predetermined intervals on the basis of the market value of the financial asset. Cash flows/outflows to the buyer and the counter party could occur.

**Credit Linked Notes**

They are issued by intermediaries combining the features of standard income security with a credit option. Interest and principal are paid on credit linked notes but the credit option allows the issuer to reduce interest payments if any condition specified in the note deteriorates.

Credit derivatives are yet to be introduced in India because the credit market lagged in development. The impetus can be given only by deepening of the bond market, adoption of risk weightage commensurate with credit ratings and further consolidation of the banking system.



## **BANK LENDING**

Banks make generally commercial loans designed to meet the specific needs of a borrower. They also make standardized loans as in the case of mortgage and credit card loans which can be packaged into securitised loans and sold in pools in the secondary markets. Banks which are uniquely qualified to make, monitor and collect commercial loans as well as standardized loans however face competition from insurance companies, Unit Trust and non-bank finance companies. Borrowers especially large corporates also have choice to raise funds directly in the primary market by issue of shares and debentures and public fixed deposits and in the money market through issue of commercial paper. The competition from other types of lenders and direct financing by prospective borrowers has reduced the profitability of banks. To offset lower profits banks abroad have shifted some of their loans to higher yielding and higher risk real estate loans and loans to emerging countries. The crash in real estate values and large scale defaults on LDCs debts in 1980s and 1990s have highlighted the trade off between risk and return.

Banks earlier made self-liquidating loans to business which are used to buy say inventory and loan is repaid out of the proceeds of the sale of inventory. Banks engage now in a wide variety of short-term and long-term lending activities. Credit extended by commercial banks could be in terms of any or combination of cash credit, overdrafts, demand loans, purchase or discounting of commercial bills and installment or hire purchase credit. The major type of commercial loan and industrial loans are for working capital and term loans for projects. A firm's temporary assets should be financed by temporary loans and permanent assets with term loans. A safe lending strategy is to match the maturity of the asset being financed with the maturity of the funds used to finance it.

### **Infrastructure Projects**

According to operational guidelines issued on April 23, 1999 by RBI on financing of infrastructure projects to banks, they are free to sanction term loans for technically feasible, financially viable and bankable projects undertaken by both public and private sector undertakings subject to prescribed criteria. In this context, four broad modes of financing were identified. These are: (i) financing through funds raised by way of subordinated debt, (ii) entering into take out financing<sup>2</sup>, (iii) direct financing through rupee term loans, deferred payment guarantees and foreign currency loans and (iv) investment in

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2 Take out finance is an arrangement through which a bank which financed an infrastructure project can transfer to another financial institution the outstanding in respect of such financing in their books as a predetermined basis. Take out finance

infrastructure bonds issued by project promoters/FIs. Banks can also issue inter-institutional guarantee subject to certain norms.

### **Advances Against Shares and Debentures**

Banks grant loans to individuals against shares and debentures. The ceiling for bank's advances against shares and debentures to individuals is Rs.20 lakhs (April 29,1999), if the advances are secured by dematerialised shares. Minimum margin is 25% against dematerialised shares.

### **Bridge Loans**

Banks can extend bridge loans, besides loans against expected equity flows/ issues, proceeds of non-convertible debentures, external commercial borrowings, global depository receipts and/or funds in the nature of FDI, within the ceiling of 5% of incremental deposits of the previous year (January 29, 1999).

### **Loans for Working Capital**

Banks in India constitute the major supplier of working capital credit to any activity. The outstanding gross bank credit to industry (including SSI units) was Rs.1,78,999 crores as on March 26,1999 which constituted 23.2% of deposits. During the year 1998-99 the increase in credit to industry was Rs.17,961 crores which constituted 15.4% of the increase in aggregate deposits in 1998-99. With a view to ensure consistency in the approach of banks in appraising working capital limits, RBI constituted the Tandon Committee in 1974 to lay down guidelines in this regard. The guidelines for bank credit were expected to ensure that units get only need based credit and hold down the credit at a low level in order to leave sufficient funds with commercial banks to cater to the needs of all sectors. Credit delivery was mainly in the form of cash credit for working capital finance. However, the credit policy for the first half of 1997-98 initiated changes in the credit delivery system which have removed all restraint and given banks full operational freedom. The implications of these changes shall be as assessed after noting the credit delivery system in vogue in the form of maximum permissible bank finance (MPFB).

### **Tandon Committee**

The objectives of the Tandon Committee were:

- to make recommendations for obtaining periodical data from borrowers regarding their business, production plans and credit needs

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2 (Contd...)

involves three parties the project company, lending bank and taking over institution. Take out finance is helpful in AL management since infrastructure project loan is long-term against bank's short-term resources. RBI has issued guidelines to banks and financial institutions. Banks have to assign risk weights for calculation of CRAR and application of other prudential norms.

which would enable banks to formulate their own credit plans more meaningfully.

- to suggest norms for inventory holding by industries both in the public and private sector with the use of bank credit.
- to lay down criteria for a satisfactory financial structure of borrowers vis-a-vis their borrowings.
- to indicate the modifications required in the existing pattern of financing the working capital requirements of borrowers by cash credit or overdraft system.

The Committee has considered the inventory level from three angles; first, technological needs which require minimum holding of inventory; secondly, strategic reasons to maintain uninterrupted cycle of production and sales; and finally excessive inventory for stock profit, conservative policy or inefficient management. The Committee suggested only flexible guidelines rather than rigid or mathematical norms.

The norms are to be flexible because of the situations like (a) bunched receipts of raw materials, (b) powercut, strikes and other unavoidable interruptions, (c) transport bottlenecks, (d) accumulations of finished goods due to nonavailability of shipping space for exports or other disruption in sales, (e) build up of stocks of finished goods due to failure on the part of purchasers for whom these were especially manufactured, to take delivery and (f) necessity to cover full requirements of raw materials for specific export contracts or short duration.

The suggested flexible norms cover the working capital finance for inventories and receivables in respect of units in cotton textiles, synthetic textiles, jute textiles, pharmaceuticals, rubber products, fertilizers, vanaspati, paper, light and medium engineering industries.

For these industries the maximum period required for holding the raw materials is individually mentioned. For holding finished goods and for financing the receivables, in some cases combined periods are suggested so that when receivables increase, the finished goods should go down and vice-versa. Raw materials are expressed as so many months consumption. Finished goods and receivables are expressed as so many months sales. The stocks-in-process and stores are outside the norms suggested and it is left to the banker to decide on a unit basis. Excess inventory should be offloaded and excess receivables should be realized.

In the case of a new proposal or renewal or in the case of enhancement, the bank should workout a fresh the level of current assets and accordingly grant limits for inventory and receivables.

The Committee had suggested that in the case of existing borrowers the bank should call for along with stock statements, particulars of sales, production and consumption of raw materials for the last month, the current month and projections for the current year. In the stock statement the borrower should declare his entire stock and not part of it, giving the breakup of raw materials, goods in-process, finished goods, stores and spares and book debts including bills discounted.

As regards industries not covered by norms, it is expected that banks would observe the purpose and spirit behind the norms while dealing with their proposals. It is suggested that bank should apply norms to units having aggregate limits in excess of Rs.10 lakhs.

Based on the objective that unit should reduce their dependence on banks for working capital finance, Tandon Committee recommended three stages of lending which progressively reduce the quantum of bank finance which are presented in Table 12.1.

In actual working it has been observed that even the first method of lending suggested by Tandon Committee does not meet fully the requirements of the units in our country. The Committee was obviously preoccupied with the objective of reducing the dependence of units on banks for working capital. While units in advanced countries carry on with very little bank assistance and major segment of medium and small units in India expect to meet their working capital requirements from banks. There has also been upward revision of the definition of small scale unit in terms of investment in machinery alone which has brought them within the ambit of Tandon Committee norms (the norms were originally envisaged to cover cases of working capital assistance beyond Rs.10 lakhs).

### **Chore Committee**

The Chore Committee which followed the Tandon Committee in 1979 recommended the II method of lending with certain monitoring statements for borrowings beyond Rs.50 lakhs.

### **Loan vs. Cash Credit**

The existing system of cash credit for financing working capital was found, by all the committees appointed by the government, to be against the interest of commercial banks.

**Table 12.1** Tandon Committee Norms for Working Capital Lending

I method	Rs.	II method	Rs.	III method	Rs.
Current assets	20,000	Current assets	20,000	Current assets	20,000
Less:		Less:		Less:	
Current liabilities (other than bank borrowings)	5,000	25% from long- term sources	5,000	Core assets (assumed figure)	2,000
Working capital gap	15,000		---		---
Less:		Less:		Less:	
25% from long-term sources	3,750	Current liabilities (other than bank borrowings)	5,000	25% from long-term sources	4,500
MPBF	11,250	MPBF	10,000	Less:	---
				Current liabilities (other than bank borrowings)	13,500
				MPBF	5,000
Current ratio	1.23		1.33		8,500
					1.48

Note: MPBF: Maximum Permissible Bank Finance.

The Dahejya Committee in 1969, the Chore Committee in 1969, the Tandon Committee in 1975, the Chakravarty Committee in 1985 and the Jilani Committee in 1994 have all called for a transition from cash credit system which allows companies to tap banks for money at will to a loan system where loans are made for a fixed period and are repayable on demand. Such a shift is recommended to help better cash management by banks and strengthen the bottomline of banks. The committees found that the cash credit system is treated by companies as an ever green facility, withdrawing excessively when the money market is tight and not at all when money is easy. The result is idle cash on which the banks lose interest.

The Jilani Committee [1974] suggested the bifurcation of the cash credit limit into a loan component corresponding to a company's core credit requirement [determined by the current ratio] and a fluctuating credit limit. The current ratio [which defines the borrower's contribution towards financing total current assets] is to be raised from 1.33 to 1.5 for existing companies with fund based working capital limits of Rs.10 crores or more. This means that as much as 70-80% of the total bank credit would be taken out of the cash credit system.

The shortfall in net working capital as a result of the rise in current ratio is to be transferred to the loan account repayable after 3 to 5 years.

The current ratio of 1.33 for loans above Rs.50 lakhs implies a borrower's contribution of 25% to total current assets. This norm is referred to as a second method of lending. The raising of the ratio from 1.33 to 1.5 implies that borrowers have to meet as much as 33.33% of their credit needs for financing current assets from long-term sources.

### **Loan System for Delivery of Bank Credit**

A loan system for delivery of bank credit was introduced in April 1995 for imparting discipline in the utilization of credit by large borrowers and enforcing effective control over credit flows in general.

### **Features of Loan System**

For borrowers with assessed maximum permissible bank finance (MPBF) or Rs. 20 crores and above the cash credit component is 20 percent (brought down from 25 percent) and the loan component 80 percent, effective from April 15, 1997. The scheme was extended effective from April 18, 1996 to borrowers with MPBF of less than Rs. 20 crores. The cash credit component was restricted to 25 percent and the loan component to 75 percent effective from April 15, 1997. Besides, banks can renew/roll-over the loan component in the case of all borrowers and to carve the bill limits for inland sales out of the loan component instead of cash credit component. Export credit limits were excluded from the MPBF since November 1996 for the purpose of splitting up of the credit limit into loan and cash components. Bank boards have freedom to exempt borrowers from the loan system of delivery in the case of businesses which are cyclical or seasonal in nature or have inherent volatility.

Keeping in view the convenience of borrowers, the following changes were made effective from April 15, 1997, in the loan system: (a) the minimum period of loan and its spread over various maturities subject to rollover could be fixed by banks; and (b) the financing bank may permit borrowers to invest their short term/temporary surplus in short-term money market instruments like CPs, CDs and in term deposits with banks.

Effective from April 15, 1997 banks are required to assess working capital needs of borrowers on the basis of 20 percent projected turnover of village, tiny and other SSI units having working capital limits up to Rs.2 crores (as against one crore earlier).

Of the funds available to all segments of the small scale industry (SSI) sector, banks should ensure that 40% would be made available for units with investment in plant and machinery up to Rs.5 lakhs, 20% for units with investments between Rs.5 lakhs and Rs.25 lakhs and the remaining 40% for the other SSI units.

Each bank is required to lay down the loan policy in respect of each broad category of industry with the approval of the respective board.

**Consortium Arrangement**

The threshold limit for obligatory consortium arrangement of financing under which two or more banks can jointly finance the borrower with the lead bank as the largest contributor was raised to Rs. 50 crores in October 1993 (as compared to Rs.5 crores earlier).

The lead bank determines MPBF effective from October 19,1996, the ground rules of consortium arrangement namely, the number of participants, the minimum share of each bank, the entry/exit framework in the consortium, the sanction of additional adhoc limit in emergent situations/contingencies by the lead bank/other banks, the fee to be charged by the lead bank for the services rendered and the grant of a facility by a non-member bank will be framed by the participating banks in the consortium themselves to impart higher operational maneuverability to banks in consortia.

Effective from April 15,1997, it is not obligatory on the part of the banks to form a consortium irrespective of credit limit per borrower as against the earlier threshold limit of Rs.50 crores subject to observance of exposure limits. As an alternative to sole/multiple banking/consortium, banks are free to adopt the syndication route irrespective of the quantum of credit involved, if the arrangement suits the borrower and the financing banks.

**Risk Management vs. Maximum Permissible Bank Finance (MPBF)**

The preoccupation in the regulation of bank credit was to restrict it since it was a scarce resource. Credit assessment exercises were used as an instrument to repress credit extension. The elaborate exercises in Tandon Committee Report and others for estimating permissible bank finance, methods of lending, classifying eligible current assets and liabilities was to ensure efficient utilization of bank credit and prevent its use for building up current assets for speculative purposes. The regulations built up on the basis of reports have nothing to do with credit analysis or risk appraisal. Actually the traditional system of commercial bank lending to industry was initially worked out for financing trade. The emphasis there was on security or collateral. In the case of industry income generation or adequacy of cash flows to service the loan should be the criterion. Bank lending has to be based on appraisal of the ability of the unit to run successfully on its own strength. The real security in lending to industry is a well functioning unit which can use bank money productively, generate a surplus and continue to exist as a viable unit. Under the cash credit system of lending for instance even though the loan is repayable on demand, the bank has to restrict itself to what should be permissible level of bank finance.

Maximum permissible bank finance, although it does not assess risk, over the years it became the standard credit appraisal system of banks. It was used



to arrive at the working capital limits in case a decision is taken to sanction the loan. MPBF did not influence the decision to lend but only the quantum.

The micro level credit regulation through MPBF on norm-based estimation of working capital and restricting bank finance to a level arrived at after ensuring sufficient long-term contribution by the borrowers and market credit was expected to result in an efficient use and a wider dispersion of credit. However, liberalization and greater freedom for financial sector have changed the way banks and industry view funding. Bank finance has become just one competing source of finance among several. For the industry, working capital needs are no longer synonymous with demand for bank credit. Demand for bank credit depends on the availability of alternative sources of funding and their cost. Users determine the structure of working capital. Banks have to adopt credit marketing through competitive pricing. They have to explore the scope for maintaining their exposure to the extent they desire. In the liberalized environment the demand for bank credit and its supply are a function of market forces rendering micro level credit regulation inefficient and irrelevant. With reduction in pre-emptions in the form of cash ratio and SLR and freeing interest rates banks have to decide an optimum deployment of resources. Banks have to optimize their risks and return trade off while raising and deploying resources. Lending for working capital will have to compete with other lending avenues subserving risk management objectives.

In the past banks had concentrated solely on asset management with liquidity and profitability being treated as opposing considerations. They distributed assets to ensure that for given liquidity level, the return was the maximum. Consequent to liberalization the volatility in interest/exchange rates would be transmitted to the financial sector as a whole. To address these risks banks have to adopt comprehensive Asset Liability Management strategy. This encompasses of a continuous management in terms of planning, organizing and controlling of asset and liability values, rates and yields and incorporating the maturities of assets and liabilities into consideration as well. Pricing of risk based on technical assessment of risks involved while ensuring transparency has to be adopted in place of pricing of risk based on perception of customer. This approach will improve banks credit management practice and enable them to nurture and develop mutually beneficial relationship with their constituents. By dismantling MPBF banks have been given freedom to fashion their own lending policies and procedures to suit their asset-liability management profiles. In April 1997 banks were given freedom to evolve their own methods of assessing the working capital needs of their borrowers within the prudential guidelines and exposure norms. Consortium arrangement was also dispensed with and banks were permitted to meet the entire credit requirements individually or via syndication route, based on the convenience of borrowers and financing banks.



To enhance the element of discipline in the utilization of bank credit, the proportion of loan component in the working capital (fund based) credit limit of Rs.10 crores and above from the banking system was prescribed at the uniform level 80 percent from October 21, 1997.

The credit policy announced on April 15, 1997 has set the banks free to evolve their own methods of assessing the working capital requirements of borrowers within the prudential guidelines and exposure norms already prescribed and all instructions relating to MPBF were withdrawn. Banks were instructed to evolve their own methods such as the turnover method, the cash budget system, the MPBF system or any other system for assessing working capital requirements.

Banks may follow cash budget system or retain the old system of Maximum Permissible Bank Finance with necessary modifications or adopt any other method for assessing the working capital requirements of borrowers, especially the larger corporate borrowers. For the small borrowers they may continue with the prevailing turnover method.

#### **SSI Working Capital Limits**

The fund based working capital limit for SSIs is Rs.5 crores (March 1, 1999). Banks have to adopt the procedure of sanctioning working capital limits on the basis of 20% of the projected annual turnover to all SSI units.

### **SYNDICATED LOAN**

The other source for raising working capital is syndicated loan. It is available for large established public limited companies. Syndicated loan for working capital is an alternative to the rigid terms of the bank the borrower faces. It offers a good avenue to get the appropriate level of credit as determined by requirements of the unit rather than policy posture and price determined by credit rating of the borrower.

#### **Loan Syndication**

Borrowing for working capital from a single commercial bank or a consortium has restricted fund flows to corporates. Loan syndication, a method used in Euro-dollar market and described in detail in Chapter 16 is an alternative to consortium lending. Major benefits reaped by corporates in syndication are amount, tenor and price. The syndication method reverses the current practice where the corporate borrower faces rigid terms in a take it or leave it situation. The cost of syndication is likely to vary with credit risk. Borrowers of high credit standing are likely to get best terms. Syndications make for efficient pricing and are administratively easier. The State Bank of India and Canara Bank have experience in international loan syndications. Other Indian banks can take their lead and come to terms with structuring a loan syndication. As

long as the banks do not lend below the minimum lending rate and restrict syndications to top grade companies, the loan syndication method should not come into conflict with established banking practices.

### **The Syndication Process**

In loan syndication, the borrower approaches several banks which might be willing to syndicate a loan, specifying the amount and tenor for which the loan is to be syndicated. The syndicated loans are being discussed as an alternative for consortium loans for working capital. But they can be used for project financing as is the practice in the Euro-dollar market. On receiving a query, the syndicator or the lead bank scouts for banks who may be willing to participate in the syndicate. The lead bank/syndicator assembles a management group of other banks to underwrite the loan and to market shares in it to other participating banks. The mandate to organize the loan is awarded by the borrower to one or two major banks after a competitive bidding procedure.

The lead bank or syndicator can underscore his willingness to syndicate the loan on a firm commitment basis or on a best efforts basis. The former is akin to underwriting and will attract capital adequacy norms reducing the bank's flexibility. Once the syndicator/lead bank receives the mandate from the borrower, a placement memorandum is prepared by the lead bank and the loan is marketed to other banks who may be interested in taking up shares. The placement memorandum helps the banks to understand the transaction and provides information about the borrower. On the basis of data in the placement memorandum, banks make a reasonable appraisal of the credit before deciding about the participation in the loan. Once the bank decides to become a member of the syndicate, it indicates the amount and the price it is likely to charge on the loan. Based on the information received from all participating banks, the lead bank/syndicator prepares a common document to be signed by all the members of the syndicate and the borrowing company. The document usually lists out details of the agreement with regard to tenor, interest, loan pre-payment, security, warranties and agency. While the borrower signs only one document, the shares separate contractual relationship with each syndicate member. The agent to the loan who is normally the lead bank/syndicator attends to all administrative work such as collection of interest and amortisation of the loan. Agents' fees is a yearly charge and on large credit in Euro-dollar market it may amount to \$10,000.

A syndicated loan would have a funded component or core component on which interest will be charged on the loan being sanctioned and a standby line of credit which would meet the adhoc increases in credit needs of borrower. Interest on the standby portion will be charged only on the amount withdrawn. However, a commitment fee is charged on unutilized portion.

The total syndicated loan could take care of the requirement for project finance and working capital. The loan could dispense with the restrictions or norms of the working capital assessment. The interest charge can either be floating or fixed. Actually working capital requirements for say a five-year period may be on a floating rate basis pegged to a minimum lending rate plus a spread based on the appraisal/rating of the borrower/unit.

### **Syndication Document**

Documentation for a syndicated loan would include provision on tenor, interest and repayment; prepayment clause specifying the occasions on which it is permitted; representations and warranties about borrower's business health; covenants about compliance with laws, regulations and tax provisions; default which will accelerate repayment of loan; agency clause absolving the agent from any breach of duty to the borrower; charge on assets, fixed as in the case of term loans or floating as in the case of working capital loan; and security, hypothecation of assets for working capital or pledge of assets for term loan.

### **Term Loans<sup>3</sup>**

Commercial banks can sanction term loans. The ceiling of Rs.500 crores (Rs. 1000 crores for infrastructure) for any project has been dispensed with in the mid-term Review of Monetary and Credit & Policy, 1999-2000. Banks are allowed to charge a two tier prime lending rate under the credit policy announced in October 1997, one for working capital and the other for term loans exceeding three years pegged at 375 basis points over the bank rate. Banks can extend term loans subject to prudential exposure norms. By relating gross cash accruals to projects liability in respect of payment of interest and installment towards principal banks ensure that the project has inherent strength. These accruals should be 1.6 to 2 times the liability. Term loans of scheduled banks constitute 30% of their total advances. With the recent relaxation in project financing norms this went upto 15.5% of the total bank credit to industry. Term loans to small-scale industrial sector are refinanced by SIDBI up to Rs.50 lakhs for each individual project. IDBI refinances term loans to large and medium industrial units.

### **Group Exposure Norms**

The term lending institutions can lend up to a maximum of 50% of their total outstanding exposure to a corporate group, 15% to an industry and 25% to a company.

In case of infrastructure project, the group exposure norms can be stretched to 60%, with guarantees by the institutions, accounting for another 10 percent. In case of banks the industry exposure limits are set at 20%.

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3 Please see H.R. Machiraju, *Project Finance*, 2001, Vikas Publishers for appraisal of term loans,

The Reserve Bank of India's internal group reviewing prudential exposure norms of banks and term lending institutions like the IDBI, ICICI and IFCI, has recommended doing away with the existing (1998) group exposure norms.

Instead, it has recommended the company exposure limits, which are now pegged at 25% of the total outstanding of the institution, be retained but be brought down gradually over time to international standard levels.

The international exposure levels of an institutional lender to a company are in the range of 3-4% as against over 20% in India. Existing exposure limits of lenders in India are considered to be a lax, next only to Russia.

A phased reduction in exposure in a company is being recommended on the assumption that the banks and lending institutions themselves would grow larger over time in terms of capitalization. This would enable them to lend more to a company even when the exposure limits have been scaled down.

#### **Selection of Projects: Government Policy**

Banks have to give priority in financing to projects contributing to infrastructural facilities and agriculture and rural development, projects contributing significantly to infrastructural facilities in centrally declared backward areas, projects located in backward areas, generation of employment, export oriented, export intensive and thrust industries for export development, import substitution requiring additional capacity, commercially proven indigenous technology, advanced technology, new material, modernization, upgradation of technology of existing units, involving energy conservation and utilization of non-conventional sources of energy and projects promoted by new entrepreneurs, technocrats and non-resident Indians.

The projects should not fall under negative list which includes, cigarettes, beer and alcohol, toilet and cosmetics preparations, new jute mills, power looms (for manufacture of items reserved for handlooms), LPG cylinders, HDPE, woven socks, bright bars, tin and metal containers, drums and barrels, plywood, commercial and decorative veneers, blackboard and flush doors, calcium carbide, Hamilton poles, tubular poles, AAC/ACSR conductors, hand operated sewing machines and conveyor belting (rubber and PVC based) and fan and V belts.

#### **Security Margin**

The term loan is sanctioned against the security of fixed assets. Security margin represents the excess value of fixed assets over the term loan. Normally, the term loan is 75 percent of the value of fixed assets. The security margin is 25 percent.

**Terms and Conditions of Term Loans**

*Term loans are granted subject to the following terms and conditions:*

- Clean title to land as security.
- Insurance of assets, building and machinery separately.
- Scrutiny of Articles of Association to ensure that it does not contain any restrictive clause against covenants of the financial institutions.
- Lien on all fixed assets.
- Personal and corporate guarantees of major shareholders and associates concerns.
- Undertaking from promoters to finance shortfalls in funds/cost overrun.
- Approval of appointment of managerial personnel by bank.
- Further capital expenditure only on the approval of bank.
- Payment of dividend and issue of bonus shares subject to the approval of financial institution.
- Undertaking for non-disposal of promoters shareholding for a period of 3 years.

*After the loan is sanctioned the requirements to be met are:*

- Acceptance of terms and conditions of loans;
- Deposit of legal charges;
- Details of plot of land for project;
- Search report and title deeds for the land;
- General Body resolutions for creation of charge over assets;
- Pollution clearance;
- Legal documents to create a charge on proposed assets;
- Personal guarantees and undertakings along with income-tax and wealth-tax clearance of the promoters and directors; and
- Architect's and auditor's certificate for civil construction.

Before the loan is disbursed, documents have to be executed and submitted. Stamp duty and registration fees have to be paid, subscribed and paid-up capital to be brought in by the promoters as required by the bank and creation and registration of charge on the present and future assets of the company.

After these requirements are complied, disbursements are made on the basis of assets created at site. There has to be a security matching every disbursement starting with land and buildings. Balance after security margin is paid by the financial institution. As machines arrive term loan is disbursed at

75 percent of their value, the cheque being made in the name of the supplier. In the case of larger projects, disbursements are need based. In such cases, promoters have to bring in their entire contribution first.

In some cases after the term loan is sanctioned a bridge loan is granted against a bank guarantee. The bank in turn disburses the loan in parts ensuring that machines or assets are on site. This is done in special cases where it is physically not possible to inspect each machine as it arrives because of locational factors or to overcome procedural problems such as establishing clean title, pollution clearance, which require time.

### **DIRECTED CREDIT**

The distribution of bank credit has been achieved through fixation of certain specific targets and policy in the case of the priority sector. After bank nationalization in 1969, public sector banks have been required to help various priority sectors in agriculture, small industries, exports, new entrepreneurs, road and water transport operators, retail traders, small businessmen, professionals, self-employed persons and other weaker sections. Public sector banks were expected to advance 33 percent of their funds to the priority sector by 1979. Later, the proportion was raised to 40 percent.

Directed credit to priority sector consisting of agriculture, small industries, new entrepreneurs, road and water transport operators, retail traders, small businessmen, professionals, self-employed persons and other weaker sections is required to be 40 percent of net bank credit.

During 1998-99, the coverage of priority sector credit was widened considerably. Bank credit to NBFCs for on-lending to small road and water transporters, loans to software units having credit limit up to Rs. 1 crore, food and agro-based processing units, lending by banks to NBFCs or other financial institutions for on lending to units in tiny sector and investment in venture capital (ineligible from July, 2005) would be included in priority sector lending. Again in 2003 loans for education and housing were brought under priority sector. In 2004 under the concept of 'financial inclusion' banks have to adopt practices to attract vast sections of population, pensioners, self employed and employed in unorganized sector to provide banking services. RBI will monitor nature, scope and cost of service to determine whether there is any denial, implicit or explicit. To reinforce the practice of inclusion a system of encouragement and disincentives is envisaged.

Table 12.2 presents the data on advances to priority sector in select years, 1990-91, 1995-96, 1999-2000 and 2003-04. Priority sector advances as a proportion of bank credit (gross in 1990-91 and net in 1995-96 and in others)

rose from 36.08% to 44.0 percent and the growth in outstandings advances was 47.2.46 percent during the period 1990-91 -2003-04 and the growth was large at 92.7% between 1999-2000 and 2003-04 mainly on account of inclusion of educational and housing loans under priority sector.

**Table 12.2 Outstanding Advances to Priority Sector and Exports**  
(select years)

(Rs. crores)

Sector	1990-91	1995-96	1999-2000	2003-04
<b>Priority sector</b>	42,915	69,609	1,27,478	2,45,672
Agriculture	16,750	26,351	45,296	86,187
Small industries	17,181	29,482	46,045	58,278
Other priority sectors	8,984	13,751	30,816	94,959
Total priority sector to net bank credit %	36.08+	37.8	40.3	44.0

Note: + Proportion to gross bank credit.

Source: RBI, *Report on Currency and Finance* 1991-92, Vol. I, p. 155 and *Trend and Progress of Banking in India*, 1996-97, 1998-99, 2002-03 and 2003-04.

### Priority Sector and Committee on Financial System (1991)

The Committee on Financial System (1991), with a view to build a prudent, viable, efficient and internationally competitive banking system, observed that while the programmes for the priority sector played a useful role in extending the reach of the banks to cover the sectors which were earlier neglected and outside its purview, fiscal policy rather than credit policy is the appropriate instrument for achieving distributive justice. According to the Committee, the directed credit programme for the priority sector should be viewed as an extraordinary support to correct deficiencies in the credit market and should not be promoted as a regular feature. The Committee recommended the phasing out of the directed credit programme at 10 percent of the bank credit. The Committee suggested a redefinition of the priority sector consisting of small and marginal farms a tiny sector of industry, the small business and transport operators in the villages and the cottage industry, rural artisans and other weaker sections. The concessional interest rate applicable to the redefined priority sector was recommended to be reviewed with a view to eliminate it in about 3 years. Credit for agriculture and small industrial units were suggested to be based on proper techno-economic appraisal. The Committee tried to resolve the conflict between sound banking and social banking by suggesting non-invasive means of credit direction such as preferential refinance from RBI in respect to incremental credit by banks in respect of credit to agriculture and



small-scale industrial units. This would induce the banks to enlarge credit to the priority sector while retaining the decision-making with themselves.

The Committee on Banking Sector Reforms (1998) recommended that given the special needs of this sector the current practice may continue.

## **EXPORT CREDIT**

Commercial banks are required to lend 12% of advance as export credit. Export credit was 10.6% of net bank credit in 1998-99 and the outstanding export credit of SCBs was Rs. 35,891 crores as on March 26, 1999 (see Table 122). The export credit refinance limit was raised to 100% of the increase in export credit eligible for refinance (Rs. 7,269 crores) over the level of such credit as on February 16, 1996. The utilization of export credit refinance facility went up from 0.5% - 8.6% during April 1998 to 70.8% - 97% in August 14, 1999. Subsequently on account of the reduction in interest rate on export credit refinance from 9% to 7% with effect from April 1, 1999 export credit refinance is being provided to SCBs at the bank rate. Utilization of export credit has been found to be linked with interest rates in the call money market, going up when call money rates are high. Since refinance is provided now (2000) at bank rate the limits are likely to be fully utilized. Export credit however, constituted 25.3% of total exports in 1998-99, 20.8% in 1995-96 and 28.2% in 1990-91.

## **LEASING**

Since 1994, the Reserve Bank has been permitting banks to undertake para-banking. In February, 1994, RBI had allowed banks to take direct exposures in areas like equipment leasing, hire purchase and factoring. Prior to that banks were allowed to undertake these activities through their subsidiaries. According to RBI guidelines, bank's exposure to lease financing should not exceed 25 percent of net worth in the case of an individual borrower and 50 percent in the case of a group of borrowers. Banks are also required to maintain a balanced portfolio of equipment leasing, hire purchase and factoring services and their exposure to each of these activities should not exceed 10 percent of total advances.

There was a cap on the period of lease financing. Commercial banks were allowed to take only 5 years exposures in lease financing in normal circumstances and 7 years in "exceptional cases" in respect of lease transactions covering assets of Rs.1 crore and above. A number of banks, led by the State Bank of India had earlier made formal representations to the Reserve Bank seeking the waiver of the stipulation on the period of lease financing.

In August 1998, the Reserve Bank of India waived the cap on the period of lease financing by commercial banks. It has allowed banks to take long-term



exposures in para-banking activities like equipment leasing, hire purchase finance and factoring services.

Para-banking activities are treated as loans and advances and given 100 percent risk weightage for calculation of the capital adequacy ratio. They are also subject to income recognition, asset classification and provisioning norms.

The Reserve Bank has also advised banks to frame an appropriate policy on leasing business with the approval of their boards. However, it has asked banks to also exercise caution by directing them to evolve appropriate safeguards to avoid possible asset-liability mismatch following the waiver of the cap on the duration of lease financing.

Among public sector banks the State Bank of India has the maximum exposure in para-banking activities. The new found freedom will help SBI take a large share in lease financing in the context of the tardy growth in regular bank credit.

The RBI move had an adverse impact on non-banking finance companies (NBFCs) involved in leasing and hire purchase activities. They have so far been enjoying an edge over commercial banks by being able to extend lease finance for longer periods than banks.

While banks possess more experience in credit appraisal, have large resources and can offer package deals such as lease, term loans and hire purchase, leasing companies (NBFCs) have lower overheads, greater efficiency, better credit management skill, flexibility in fund raising and operation.

In view of the large potential for growth of leasing activity from the present 5 percent of annual industrial investment to about 30 percent (the level obtaining in advanced countries) the entry of banks is likely to strengthen competition.

## **TYPES OF LEASES**

There are four kinds of leases. First, sale and lease back arrangements; secondly, operating leases; thirdly, straight financial or capital lease; and finally leveraged leases.

### **Sale and Lease Back**

Under this lease a firm that owns the asset (building, land and equipment) sells the asset and simultaneously executes an agreement to lease the asset back for a specified period on specific terms. The sale and lease back instrument is an alternative to mortgage.

The firm which sells the assets is the lessee which receives the purchase price put by the buyer or the lessor. The seller-lessee retains the use of the assets. The lease payments under sale and lease back are set so as to return the full purchase price to the investor-lessor while providing a specified rate of return on the lessor's outstanding investment.

**Operating Lease**

They are also called service leases and provide for the lessor to maintain and service the leased asset and the cost of such maintenance is built into the lease payment. Operating leases are frequently not fully amortised. The lessor expects to recover the full investment costs through subsequent rental payments, leases or sale of leased equipment. Operating leases frequently contain a cancellation clause which gives the lessee the right to cancel the lease.

**Structuring of the operating lease:** The equipment leased under an operational lease have an established use or an active second hand market. The equipment is leased for relatively short periods of around 6 months to a year or 2 years. Longer durations are adopted for ships and aircraft. In view of these factors, the cost of equipment is not sought to be fully recovered by the lessor through rental from a single lessee. The equipment may be given on lease to a succession of lessors over the economic life of the equipment. The lessor may also sell the equipment in second hand market. Finally, in cases where the lessor's activities are restricted to a given range of equipment, he may be able to offer attractive lease terms reflecting his purchase discounts, lower maintenance cost and expertise in the range of equipment he specializes.

**Financial or Capital Lease**

Financial or capital lease involves a long-term commitment between lessor and lessee. The lease duration is generally equal to half of the expected life of the asset. But financial lease differs from operating lease in three respects: first they do not provide for maintenance service; secondly, they can not be cancelled; and finally they are fully amortised. The equipment is selected by the firm that uses it (lessee) and negotiates the price and delivery terms with the manufacturer. The user firm negotiates with the leasing unit to buy the equipment from the manufacturer or distributor and after purchase the lease agreement is executed by the user.

The lease payment is a fixed obligation of the lessee and apart from amortising the cost of asset, leaves a return to the lessor.

**Financial Lease**

A financial lease is a long-term agreement, generally extending over the estimated economic life of the asset. Under the agreement the lessor agrees to finance the use of the equipment by the lessee over a time period and is generally not subject to cancellation by the lessee before the end of the base lease period. Financial lease is a source of finance for acquisition of equipment. Signing a financial lease contract is like borrowing money. Their effects on cash flows are also similar. Financial leases are also called full pay-out leases as they enable a lessor to recover his investment in the lease and make a profit.

There are three types of financial leases. First, in a direct lease, the lessee identifies the asset it requires and either lease it directly from the manufacturer or else arranges for a leasing company, finance company or bank to buy it from the manufacturer and then enters into a financial lease contract with the lessor. Secondly, in a sale and lease back arrangement, the owner of the asset sells it at market value for cash and agrees to lease it back from the purchaser.

Thirdly, in a leveraged lease, the lessor borrows a substantial portion of the purchase price of the equipment, say up to 80 percent and provides the balance of the purchase price as equity. The equipment is in turn offered as a first charge on the term loan to the lessee by the lessor and assigns the lease contract to the lender.

In a financial lease, the lessor retains ownership of equipment while the lessee enjoys the use. A financial lease in India does not give the lessee the right or option, at the time of signing lease facility, to acquire title to the equipment at a future date. The obsolescence of the equipment is to the lessee's account. The lessee is responsible for the repair, maintenance and the insurance of the equipment. The fixed non-cancellation period of the lease is called *primary lease* period while the renewal period is called the *secondary period*. If a financial lease provides for cancellation by lessee, he has to reimburse the lessor for any losses occasioned by cancellation.

## **HOUSING FINANCE**

To enhance the availability of banking funds to the housing sector the Union Budget for 1999-2000 announced that the Reserve Bank would advise scheduled commercial banks to lend up to 3% of their incremental deposits for housing finance as against 1.5% earlier.

Commercial banks make mortgage loans for land, construction or a completed dwelling unit either a flat in or multistoried building or an independent unit up to Rs.10 lakhs in urban and metropolitan areas and Rs.5 lakhs in other areas. The cost of financing to the borrower depends on the level of interest rates, term to maturity and whether the mortgage is fully amortised and has fixed or variable interest rates (adjustable rate mortgages, ARMs).

Promotion of residential real estate sales through finance from commercial banks promotes savings and employment. Repayment of loan constitutes savings and individuals with skills and stable employment income potential can capitalize their rental payments through the purchase of a dwelling unit. The borrower when he repays the loan overtime acquires or builds equity which can be further used for investment purposes. Building construction constitutes a major trigger for activity in a wide cross-section of industries from cement to electricals. It is also labour intensive in our economy and generates employment.

The development of a secondary mortgage market can improve the liquidity of mortgage loans. Housing loans are eminently suitable for securitisation. Securities that represent claims against a pool of mortgages held in trust are issued. The originator of the loan sells the mortgages to a trust and the trustee issues securities through an underwriter to investors. Banks who may not be originators of loans act as packagers of asset based loans and they assume the risk of an underwriter. They may also collect loan payment. As the principal and loan payments are made on the loan, they are paid out to investors by the trustee or servicer. The cash flows are guaranteed and or enhanced by bank guarantee standby letters of credit, by government guarantee such as National Mortgage Association in USA or by having more loans than necessary, over collateralize, to secure the value of pools. Credit ratings can be arranged. The quantity of the asset backed loan is standardized through credit enhancement, packaging and credit ratings. Institutional participants in the mortgage market can use derivative securities to hedge the variability of their cash flows.

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## **INTRODUCTION**

Investments are the second largest asset (40.6% of total assets in 2004) of scheduled commercial banks. They are securities of the government and other approved securities. Under the Banking Regulation Act, banks are required to hold 25% of net demand and time liabilities in government and other approved securities. The banking system's holding of government securities stood at 40.57% of its net demand and time liabilities as at the end of March 2004 indicating an excess holding (above 25%) of Rs.99,514.7 crores. Investment in securities apart from the return in the form of interest and capital gains meets the need for liquidity. To a certain extent they provide an additional reserve of funds over and above secondary reserves to meet the liquidity needs of banks. They can also be purchased to increase the diversification of the banks asset portfolio or to take advantage of interest rate movements. These are portfolio adjustments that result in increasing return per unit of risk. Securities can also be used to adjust a banks interest rate risk and to help meet risk-based capital standards.

Banks are also allowed to invest 5% of their incremental deposits in bonds, debentures, preference shares of the corporate sector which offer fixed returns. Such investment constituted 8.09% of total assets of SCBs in 2004. SCBs prefer such investment because of certainty of return, relatively low transactions costs of managing portfolio and the sufficiently high positive gain that these investments entail in relation to the inflation rate or the average cost of deposits; with a view to encourage the flow of finance for venture capital, the overall ceiling of 5 percent has been enhanced to the extent of banks' investments in venture capital and such investments are treated as priority sector lending.

Banks have to classify a minimum of 75% of their investments in approved securities as current investments effective the year ending March 31, 2000.

Current investments have to be marked to market. The percentage share of Available For Sale (AFS) and Held For Trading (HFT) categories for Indian bank groups is 83-86% while foreign banks had 93% of their investment portfolio in these categories.

## **PORTFOLIO BEHAVIOUR OF COMMERCIAL BANKS<sup>1</sup>**

The portfolio behaviour of commercial banks is sought to be explained by the accommodation principle, the profit maximizing principle and the stock adjustment principle. The accommodation principle suggests that banks should accommodate the legitimate credit demands of commerce, industry and agriculture. The commercial loan theory is a variant of the accommodation principle.

The profit maximizing principle requires the banks to select their asset attained portfolio to maximize the return from the entire portfolio. The optimum holding of any asset is attained when the marginal return on the same is equal to the marginal cost. Returns consist of interest and other income and return from investments costs consists of interest paid out and the risk associated with the profit. The risk return approach incorporates into the decision-making process the uncertainty that is inherently associated with transactions that extend over a period of time.

The stock adjustment principle suggests that banks have a desired level of each balance sheet item and adjust the stocks of each variable to close the gap between the actual and desired level which is autonomous.

According to empirical research, the composition of the earning asset portfolio is not independent of the size of the non-earning asset portfolio (reserves). This may be due to the fact that reserves are the main portion of the non-earning asset portfolio and the close relationship of the composition and liabilities portfolio.

## **INVESTMENT GOALS**

Banks should seek to maximize the return per unit of risk on the investment portfolio of securities although regulatory requirements, lending needs, tax laws, liquidity sources can limit return/risk performance. Adequate flexibility should exist to shift investment goals in response to changes in financial and economic conditions and competition from rival institutions.

### ***Investment goals may include***

- Income
- Capital gains

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1 RBI, *Report on Currency and Finance*, 1998-99.

- Interest rate risk control
- Liquidity
- Credit risk
- Refinance
- Diversification

## **INCOME**

Purchase of securities (within the approved category) with high coupon rates can help realize maximum income. Capital gains would however be appropriate investment goal if future income is to be maximized. Income as well as capital gains can be influenced by interest rate conditions. If interest rates decline income will also decline. But the loss in revenue can be offset by purchasing long-term securities that will increase in price-yielding capital gains when interest rates decline.

## **INTEREST RATE RISK**

If interest rates are expected to change interest rate risk can be managed by sale and purchase of securities with various maturities to alter the duration gap.

## **LIQUIDITY**

Longer term securities have liquidity in terms of the option the bank enjoys to sell them to meet cash needs. With the requirement that investments have to be marked to market, balance sheet reflects market value of investment eliminating the scope for cherry picking or sale of securities with large gains. Marking to the market could however hamper bank lending, if large unanticipated increases in interest rates occur covering security prices. Market valuation gives investors and depositors a false impression of bank risks.

Financial Accounting Standards Board in U.S. requires banks to classify securities under those held for sale or trading and assets held for maturity. Assets held for maturity can be carried at book value whereas securities held for trading have to be valued at book value or market value whichever is lower. If liquidity is the goal the securities have to be marked to market.

## **REPOs**

REPO and reverse REPO operated by RBI in dated government securities and Treasury bills (except 14 days) help banks to manage their liquidity as well as undertake switch to maximize their return. REPOs are also used to signal changes in interest rates. REPOs bridge securities and banking business.



A REPO is the purchase of one loan against the sale of another. They involve the sale of securities against cash with a future buy back agreement. They are well established in USA and spread to Euro market in the second half of 1980s to meet the trading demand from dealers and smaller commercial banks with limited access to international interbank funding. REPOs are a substitute for traditional interbank credit.

REPOs are part of open market operations. With a view to maintain an orderly pattern of yields and to cater to the varying requirements of investors with respect to maturity distribution policy or to enable them to improve the yields on their investment in securities, RBI engages extensively in switch operations. In a triangular switch, one institution's sale/purchase of security is matched against the purchase/sale transaction of another institution by the approved brokers. In a triangular switch operation, the selling bank's quota (fixed on the basis of time and demand deposit liabilities) is debited (the Reserve Bank being the purchaser). The objective behind fixing a quota for switch deals is to prevent the excessive unloading of low-yielding securities on to the Reserve Bank. The Bank maintains separate lists for purchase and sale transactions with reference to its stock of securities and the dates of maturity of the different loans.

REPO auction was allowed since 1992-93. Particulars of transactions in government securities including treasury bills put through SGL accounts were released to press since September 1, 1994. REPO facility with the RBI in government dated securities was extended to STCI and DFHI to provide liquidity support to their operations. A system of delivery versus payment (DVP) in government securities was introduced in July 1995 to synchronize the transfer of securities with the cash payment thereby reducing the settlement risk in securities transaction and also preventing diversion of funds in the case of transactions through SGL.

## **REPOS AND REVERSE REPOS**

The RBI (Amendment) Act, 2006 enables RBI to undertake REPO and reverse REPO operations as also lending and borrowing of securities including foreign securities.

In order to activate the REPOs market so that it serves as an equilibrating force between the money market and the securities market, REPO and reverse REPO transactions among select institutions have been allowed since April 1997 in respect of all dated Central Government securities besides Treasury Bills of all maturities. A system of announcing a calendar of REPO auctions to enable better treasury management by participants was introduced on January 1997.

Reverse REPO transactions can be entered into by non-bank entities who are holders of SGL accounts with the Reserve Bank (from April 1997) with

banks, primary dealers in Treasury Bills of all maturities and all dated central government securities. The first step of the transaction by non-bank entities should be by way of purchase of securities eligible for REPOs from banks/primary dealers and the second step will be by way of selling back securities to banks/primary dealers. Non-bank entities are however not allowed to enter into REPO transactions with banks/primary dealers. The transactions have to be effected at Mumbai.

It may be noted that according to the international accounting practices, the funds advanced by the purchaser of a security under a firm repurchase agreement are generally treated as collateralised loan and the underlying security is maintained on the balance sheet of the seller.

## **TYPES OF GOVERNMENT SECURITIES: TREASURY BILLS**

### **14 day Auction Treasury Bills**

Introduced on June 6, 1997. Auctions were discontinued with effect from May 14, 2001.

### **91 day Treasury Bills**

Open market operations are conducted by RBI in these bills. These bills are self-financing in character. The notified amount is varied between Rs.500 to Rs.1500 crores depending on liquidity conditions. The implicit yield at cutoff price 4.3672%.

### **182 day Treasury Bills**

The 182 day bills were discontinued effective from May 14, 2001. Total issues were Rs.600 crores. They have been reintroduced from April 6, 2005.

### **364 day Treasury Bills**

The notified amount is Rs.1000 crores. The implicit yield at cutoff price was 4.44% on March 31, 2004.

## **LIQUIDITY ADJUSTMENT FACILITY (LAF)**

Liquidity Adjustment Facility (LAF) is operated by RBI through REPOs and reverse REPOs in order to set a corridor for money market interest rates. This is pursuant to the recommendations of the Committee on Banking Sector Reforms. LAF is introduced in stages. In the first stage with effect from June 5, 2000, RBI introduced variable REPO auctions with same day settlement. The amount of REPO and reverse REPO are changed on a daily basis to manage liquidity. The auctions are held in Government dated securities and treasury

bills of all maturities except 14 days treasury bills for parties holding SGL account and current account with RBI in Mumbai. While liquidity is absorbed by RBI to minimize volatility in the money market, LAF can also augment liquidity through export credit refinance and liquidity support to primary dealers. The fortnightly average utilisation including export credit refinance has ranged between Rs. 4,119 crores and Rs.7,697 crores during April - October 1999.

#### **Reserved Liquidity Adjustment Facility (March 29, 2004)**

LAF is operated with overnight fixed rate repo and reverse repo. Auctions of 7 day and 14 day repo (reverse repo in international parlance) were discontinued from November 1, 2004. Absorption of liquidity by RBI in the LAF window is termed reverse repo and injection of liquidity repo. LAF has emerged as the tool for both liquidity management and signaling device for the interest rates in the overnight market.

### **YIELD TO MATURITY OF CENTRAL GOVERNMENT DATED SECURITIES**

Of the outstanding central and state government securities of Rs.8,07,292.6 crores in 2003 SCBs owned 58.56%; and their ownership of Central government securities was 38.47% (of total Rs.3,74,203 crores) and state governments securities was 58.99% (of total Rs.1,33,089.6 crores). The distribution of their investment in government securities of Rs.5,51,230 crores between centre and states was 85.8% and 14.2% in 2003.

The one year yield rate was 5.66% in March 2005; in the medium term segment, the 5 year yield rate was 6.36% and at the longer end, the 10 year yield rate was 6.65%. The trends in the-yield movement in the government securities market during 2004-05 showed that, while the short-term rates responded quickly to changes in monetary policy, long-term rates exhibited sticky behaviour reflecting the ripple impact of policy changes.

The average yield spread between 1 and 10 year maturity for central government dated securities was 114 basis points in 2003-04; and the average spread between 1 and 20 year maturity was 148 basis points. The components of spread are term risk premia and inflation expectation. The stickiness of long-term rates may be reflecting rigid long-term inflation expectations, relatively higher risk premia arising from uncertainties surrounding the fiscal policy and the government borrowing programme in future and information bottlenecks. Timely and adequate information plays a critical role in drawing long-term contracts, reducing rate volatility, basing investment decision on rational criteria and reacting to market developments in a quick and efficient way.

## **INVESTMENT RISK**

As far as the government securities are concerned they are risk free and the banks are required to invest 25% of their net demand and time liabilities. It is only in regard to the proportion that banks are allowed to invest in “unapproved” securities the question of evaluation of investment risk arises. SCBs invested Rs.82,073.62 crores in unapproved securities. A portion of this relates to investment in corporate securities in the nature of debentures, equity shares and preference shares. Such investments have to be evaluated either on an individual security basis or in the context of total asset portfolio of the bank.

### **Market Risk**

Investments primarily involve market risk due to changes in interest rates and yields. In 1997, Basle Committee on Banking Supervision issued guidelines to provide explicit charge for market risks. Market risks are defined as risk of losses on balance sheet and off balance sheet positions arising from movements in market prices. The market risk positions subject to capital charge requirement are the risks pertaining to interest related instruments and equities in the trading book; and foreign exchange risks throughout the bank (both banking and trading book).

The market risk of banks portfolio emerged as a matter of concern in the wake of soft interest rates in 2002-03 and 2003-04. Capital charge for market risk was required for market risk in respect of their trading book exposures by March 31, 2005 and AFS category by March 31, 2006.

To provide a cushion for managing market risk the system of Investment Fluctuation Reserve (IFR) was introduced in 2002.

### **Investment Fluctuation Reserve**

An Investment Fluctuation Reserve (IFR) of a minimum of 5% of the investment held in the Available for Sale (AFS) and Held for Trading (HFT) categories of the investment portfolio within a period 5 years from March 31, 2002 is to be built. The mandated requirement was raised to 10% on November 3, 2003 to face interest rate risk depending on the size and composition of their portfolio and the concurrence of their boards. The IFR level was 3% for SCBs as at end-March 2004. Against the investment of Rs.6,18,794 crores in AFS and Rs.20,433 crores in HFS, IFR was Rs.18,920 crores(3%).

## **SECURITY SPECIFIC RISK**

Default risk is the probability that promised payment of interest and principal will not be made on time. The credit risk or investment quality of debt instruments are rated by Credit Rating Information Services of India Limited (CRISIL), Investment Information and Credit Rating Agency (IICRA), Credit

Analysis and Research Limited (CARE). CRISIL rating for debentures are AAA (Highest safety), AA (High safety), A (adequate safety); IICRA (for long-term debentures, bonds and preference shares); LAAA and LAA and LA; and CARE, CAREA.

### **RATING OF GOVERNMENT SECURITIES**

Long-term sovereign credit rating is reviewed by world's leading credit rating agency such as Moody's Investor Service. It is done on the basis of the country's economic fundamentals. If the rating is downgraded it raises borrowing costs and dents investor confidence. The rating agency however, serves its one constituent, the market, that is lending to the borrower. The downgrading puts pressure on government to make appropriate policy changes.

### **SECURITY PRICES**

Security prices are inversely related to credit risk. Debentures of lower quality have higher yields on average than do debentures of higher quality. The difference in yields of different quality debentures/securities is called *yield spread* which varies with economic conditions. Lower quality debentures offer relatively favourable yields per unit of risk during recessionary period when loan demand is depressed and the bank has greater excess cash to interest. Debentures purchased during an economic downturn could be timed to mature during the expansionary phase of business cycle to avoid capital losses (increase in interest rates after recession could depress prices) and provide added liquidity. Securities should be timed to mature during anticipated future business cycle periods of increased loan demand.

Price risk is the inverse relationship between changes in the level of interest rates and the price of securities. To evaluate the price risk of a debenture it is necessary to consider not only the expected change in interest rates but also the duration of the debenture which takes into account cash flows. The price risk of high coupon bonds is relatively less because they have shorter durations than low coupon bonds of the same yield and term to maturity. Duration is a valuable price risk measure to gauge exposure to potential future changes in interest rates.

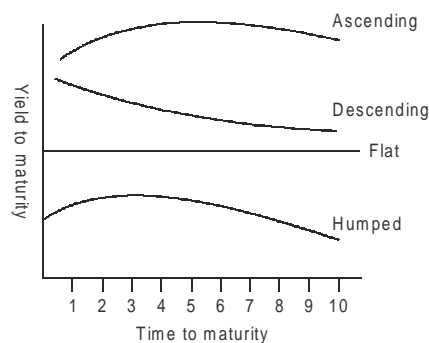
To estimate future changes in interest rates, the yield curve is helpful. It has an upward slope with longer term securities offering higher yields than short-term securities. The level and shape of the yield curve change over the business cycle. During recession the shape is steeply upward sloping because interest rates are low and demand for funds is poor; and the level of yield curve will rise and will gradually flatten in shape but will remain generally upward sloping during expansion. The yield curve will be at its highest level and take on a variety of shapes at the end of an expansion.

## YIELD CURVE

The yield curve is graphic statement of the relationship between time to maturity and yield to maturity for a given risk class of securities. It provides a snapshot of the term structure of interest rates in the market. The yield to maturity is the average annual rate earned by an investor who holds a security until its maturity. Typically yield curves slope upwards with interest rates rising as the tenor of the security increases. The yield curve shifts with a change in generalized perception about interest rates. The slope of the yield curve tends to be influenced by monetary policy action. When monetary policy is eased and the short-term rates are reduced the yield curve gets steeper. If we plot the term structure, the yield to maturity at successive maturities against maturity, four shapes are observed.

The yield curves presented in Fig. 13.1 plot the remaining time to maturity of a security against yield to maturity which have been observed. The unique maturity date of each security is represented by a point on the curve. The ascending yield curve is the most common which describes lower short-term yields relative to long-term yields.

The descending yield curve was observed in USA between 1906 to 1929, in 1960s and early 1970s when the general level of US interest rates was high. Flat yield curves were observed between 1901 to 1905 when interest rates registered extreme fluctuations. The yield curve in India during the period September 2001 to May 2004 was one of the flattest internationally. Humped treasury yield curves were observed during periods of high interest rates in 1960 and 1966-1970.



**Fig. 13.1** *Examples of Yield Curves*

Recent trends in international yield curves reveal that the short-term end of a country's yield curve depends on its monetary policy and the long-term end on its fiscal policy or on inflationary expectations. Yield curves of loans beyond three years for most advanced countries are almost flat, indicating that

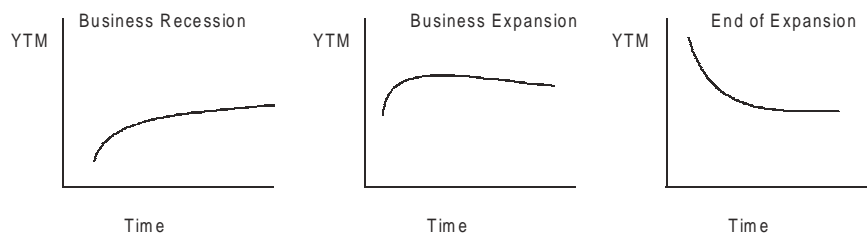
inflationary expectations in the long run are low. The German curve is actually inverted which means the interest burden from German loans will fall over time. The German yield curve is based on low inflationary and even recessionary expectations for its economy in the long run. If recent trends in Federal Reserve rates continue, the US yield curve may also get inverted. In such circumstances it is economic to make loans for a longer period than for a shorter duration. The yield curve in India flattened as the long-term yields fell in the wake of surplus liquidity conditions.

### RELATIONSHIP BETWEEN TIME AND MONEY

Interest rate represents the price of money. It affects the value of money and capital market instruments both domestically and internationally. There are three different approaches to the explanation of the relationship between time and money. They are, market segmentation theory, liquidity preference theory and pure expectations theory. They seek to plain why interest rates have a certain pattern over time. The behaviour of interest rates is important because the value of bonds which are fixed income securities depends on them. Bond prices will equal their par values only when the market rate and bond's coupon rates are equal. Otherwise bond prices move in the opposite direction of market interest rate changes. These theories suggest that current interest rate levels are influenced by expectations of future market conditions, a basic preference to hold liquid assets or particular preference as to length of the investment period, average of markets estimate of future short-term rate or the need for a liquidity premium in the long-term rates or supply and demand for funds in particular maturities. All the theories take into account the fact that inflation reduces the purchasing power of money (which is measured by changes in wholesale price index, consumer prices or national income deflator).

### BEHAVIOUR OF THE YIELD CURVE

The behaviour of the yield curve (presented in Fig.13.2) through the business cycle is sought to be explained by market segmentation theory, unbiased expectations theory and preferred habitat.



**Fig. 13.2** Behaviour of the Yield Curve



**Market Segmentation Theory**

Market segmentation theory suggests that investors and borrowers are concerned with more than price risk. They have strong preferences for certain maturities and are insensitive to interest rate differentials between their preferred maturities and others. Investors according to market segmentation theory operate essentially in one maturity band that is determined by their sources and uses of funds. Investors have preferred habitats dictated by the nature of their liabilities. The shape of the yield curve is determined by supply and demand for securities within each maturity sector.

The theory assumes that neither investors nor borrowers are willing to shift from one maturity to another to take advantage of differences in expectations and forward rates. The theory further assumes the absence of arbitrage across different maturities. The shape of the yield curve is determined by supply of and demand for securities within each maturity sector. Insurance and pension funds need a higher return to service their liabilities. If they invest in short-term asset portfolio, which carry lower price risk, their income would be inadequate. Banks also have to maintain shorter average maturities of assets.

**Unbiased Expectations Theory**

The theory assumes that the shape of the yield curve depends on market's consensus about future interest rates. The theory hypothesizes that one period forward rates represent the market's expectations of future actual rates. The forward rates exclusively represent the expected future rates. At any given time, the term structure reflects the market's current expectations of the family of future short-term rates. Every one in the market accurately predicts interest rate changes. The yield curve is the result of both current and anticipated interest rates. If interest rates are expected to rise, demand for short-term securities will increase bidding up their prices and pushing the yields down. On the other hand, demand for longs will fall creating, the opposite effect on their prices and yields. The net effect will be to make the yield curve slope upward.

The expectations theory suggests that short-term interest rates implied by the yield curve are unbiased estimates of market consensus of future rates. Long-term rate is a geometric average of current and anticipated future short-term rates. The investor should be indifferent according to expectations theory between holding a long-term security and holding a series of one year securities because the terminal value is the same in either case. The theory assumes that all long-term rates are simply averages of short-term rates. But in the real world transaction costs work against indifference between long and short.

The unbiased expectations theory leaves out the risks inherent in investing in bonds and similar instruments. With uncertainty about future interest rates



and prices of bonds these instruments become risky investments whose return over an investment horizon is unknown. The theory does not consider the risks associated with investing in bonds.

### **Liquidity Preference Theory**

According to the theory, investors prefer short-term assets to long-term assets. The speculative and precautionary motives that manifest in an uncertain world give rise to the short-term time preference.

Liquidity preference theory, suggests that investors cannot be absolutely certain about future changes in interest rates. To the extent they hold long-term securities, the risk of loss increases for which they should be compensated. To induce them to lend long, a premium must be paid. On the other hand, borrowers prefer longer-term liabilities to avoid financing short-term debt at unfavourable rates. For this the borrowers are willing to pay a premium. The liquidity premium causes the term structure of interest rates to slope upward.

### **Theory of Preferred Habitat**

Finally, the theory of preferred habitat which is a compromise between market segmentation and unbiased expectations theory assumes that investors operate in the maturity class that is their preferred habitat. Only higher interest rates would induce them to switch to other maturities. According to the theory, the term structure reflects the expectation of the future path of interest rates as well as a risk premium. Risk premium need not rise uniformly with maturity. That would be the case, if all investors intend to liquidate their investment at the shortest possible time while borrowers are anxious to borrow long.

## **PRICING OF BONDS**

The price of any financial instrument is equal to the present value of the expected cash flows from it. To determine price an estimate of the expected cash flows and an estimate of the appropriate required yield are necessary. The cash flow for a bond consists of periodic coupon interest payments to the maturity date and par value at maturity. The required yield reflects the yield for financial instrument with comparable risk. It is typically expressed as an annual interest rate. The market convention is to use one-half of annual interest rate to discount the cash flows. The pricing of bonds assumes that next coupon payment is exactly 6 months away, cash flows are known and a single rate is used to discount all cash flows. Given the cash flow of a bond and the required yield, the price of a bond is determined by adding the present value of semiannual coupon payments and the present value of par or maturity value at the maturity date.

Price of a bond is computed with the formula,

$$P = \frac{C}{(1+r)^1} + \frac{C}{(1+r)^2} + \frac{C}{(1+r)^3} + \dots + \frac{C}{(1+r)^n} + \frac{M}{(1+r)^n}$$

or 
$$P = \sum_{t=1}^n \frac{C}{(1+r)^t} + \frac{M}{(1+r)^t}$$

where  $P =$  price

$p =$  number of periods (years  $\times$  2)

$C =$  semi-annual coupon payment

$r =$  periodic interest rate (required annual yield / 2)

$M =$  maturity value

$t =$  time period when the payment is to be received.

Present value of the coupon payments (since semiannual) coupon payments are equivalent to an ordinary annuity can be determined by the formula.

$$\text{Present value of coupon payment} = C \left[ 1 - \frac{1}{\frac{(1+r)^n}{y}} \right]$$

**Example 1** Consider 10 years 10 percent coupon bond with par value 10,000 and required yield 11 percent. The cash flows from this bond would be,

1. 20 annual coupon payments of Rs.500 each.
2. Rs.10,000 to be received 20 six months periods from now.

The semi-annual periodic interest rates is 5.5 percent  $\left(\frac{11}{2}\%\right)$ .

The present value of 20 semi-annual coupon payments of Rs.500 each discounted at 5.5 per cent is Rs. 490.57; calculated as  $C = 500$ ,  $n = 20$ ,  $r = 0.055$

$$\text{Present value of coupon payment} = 500 \left[ 1 - \frac{1}{\frac{(1.055)^2}{0.55}} \right]$$

$$\left( 1 - \frac{1}{\frac{2.918}{0.055}} \right) = 500 \left( 1 - \frac{1}{53} \right) = 490.57$$

The present value of the par or maturity value of Rs.10,000 received 20 six months periods from now, discounted at 5.5% is

$$\frac{10,000}{(1.055)^{20}} = \frac{10,000}{2.918} = \text{Rs.}3427.00$$

The price of the bond would be equal to the sum of the two present values.

Present value of coupon payments = 490.57

Present value of par (maturity value) = 3427.00

Price = 3917.57

If the required yield is the same as coupon rate of 10 percent the price of the bond would be equal to par value.

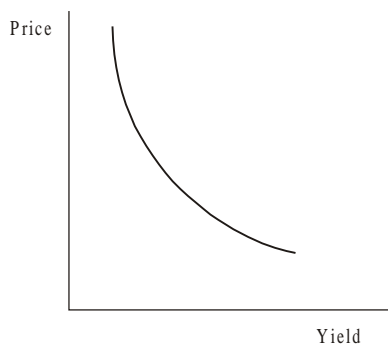
In the case of zero coupon bonds the price is calculated by substituting zero for C in the above equation.

$$P = \frac{M}{(1+t)^n}$$

The price of zero coupon bond is the present value of its maturity value.

### RELATIONSHIP BETWEEN PRICE AND YIELD

A fundamental property of a bond is that its price changes in the opposite direction from the change in required yield. The reason is that the price of the bond is the present value of the cash flow. As the required yield increases, the present value decreases and the price of bond decreases. When the required yield decreases the present value of cash flow increases and the price of bond increases. If we plot the price-required yield relationship it would have convex shape. Figure 13.3 presents the price-yield relationship.



**Fig. 13.3** Price-Yield Relationship

## COUPON RATE, REQUIRED YIELD AND PRICE

When the coupon rate is equal to the required yield, the price of the bond will be equal to its par value. When the yields in the market place rise above coupon rate at a given point in time the price of the bond falls below its par value. The capital appreciation realized by holding the bond to maturity represents a form of interest to the investor to compensate for a coupon rate that is lower than the required rate. When a bond sells below its par value, it is said to be selling at a discount and a bond whose price is above its par value is said to be selling at a premium.

## YIELD MEASURES

While the price of a bond is calculated from the cash flow and required yield, the yield of a bond is calculated from the cash flow and the market price. There are two yield measures commonly quoted by dealers and used by portfolio managers: (1) current yield and (2) yield to maturity.

### Current Yield

Current yield relates the annual coupon interest to the market price. Current yield is calculated by,

$$\text{Current yield} = \frac{\text{Annual coupon interest}}{\text{Price}}$$

Current yield takes into account only the coupon interest and leaves out capital gains or losses that will affect investor's yield. Further, the time value of money is ignored.

### Yield to Maturity

The yield to maturity takes into account the coupon payments, the price appreciation or depreciation, and the period of time over which that appreciation or depreciation takes place. Implicit in the yield calculation is the assumption that all periodic payments are reinvested at the same rate; the yield to maturity represents the rate at which the initial price of the bond would have to grow so that, at maturity, it equaled the sum of the principal repayment and the value of the coupon payments (after reinvestment). In algebraic terms, the yield to maturity is the rate that satisfies the equation:

$$P = \frac{C_1}{(1+r/2)^{2n}} + \frac{C_2}{(1+r/2)^{2n}} + \dots + \frac{C_{2n}}{(1+r/2)^{2n}} + \frac{F}{(1+r/2)^{2n}} \quad \dots(1)$$

$$P = \sum_{i=1}^{2n} \frac{C_i}{(1+r/2)^{2n}} + \frac{F}{(1+r/2)^{2n}} \quad \dots(2)$$

where  $P$  is the initial price of the bond,  $C_1$  is the periodic cash flow,  $F$  is the principal repayment, and  $n$  is the number of years to maturity.

The complexity of equation (1), or (2), does not allow one to solve explicitly for the yield, given specific values for the parameters  $P$ ,  $F$ , and  $C_1$ . Instead, one must resort to a trial and error procedure, where different values of  $r$  are tested to see, if they are consistent with the other given parameters. (A computer simulation program is often used to shorten the time necessary to do all the required calculations.) For example, to calculate the yield to maturity for a 20-years bond with a coupon rate of 14 percent selling at a price of Rs.88.08, one would try different values of  $r$  until the following equation was satisfied:

$$88.08 = \frac{7}{(1+r/2)^1} + \frac{7}{(1+r/2)^2} + \frac{7}{(1+r/2)^3} + \dots$$

$$+ \frac{7}{(1+r/2)^{40}} + \frac{100}{(1+r/2)^{40}} + \dots$$

The yield to maturity for this bond is 16%.

From equations above, it is obvious that, given a yield to maturity, bond face value and term to maturity, the lower the coupon payments, the lower the price at which the bond can be sold; and the borrower must offer some price appreciation in exchange for the lower coupon payments. For example, a 20-years bond with 12% coupons would sell at only Rs. 76.51 to yield 16% to maturity. Furthermore, the longer the period of time investors are to be paid below-market coupons, the lower the price the investor is willing to pay for the bond. Changing the term to maturity in the preceding example to 30 years, for instance, reduces the investor's offering price to Rs. 75.25. Therefore, bonds with the lowest coupons and longest maturities would sell at the deepest discounts and thus would present the most extreme examples of original issue discount bonds.

The yield to maturity calculation takes into account not only the current coupon income but also any capital gain or loss the investor will realize by holding the bond to maturity. Further, the yield to maturity takes into account timing of the cash flows.

The relationship between current yield, yield to maturity and bond price may be summarized:

- (1) If bond is selling at par  
Coupon rate = Current yield = Yield to maturity.
- (2) If selling at discount  
Coupon rate < Current yield < Yield to maturity
- (3) If selling at premium  
Coupon rate > Current yield > Yield to maturity

## PRICE VOLATILITY OF A BOND

The characteristics of a bond determine its price. They are volatility, maturity and coupon and the yield level at which a bond trades. For a given maturity and yield the lower the coupon rate the greater the price volatility of the bond; for a given coupon rate and yield the lower the coupon rate the greater the price volatility; and for a given coupon rate and maturity the higher the price volatility, the lower the yield.

The price volatility of a bond has three properties: First for small changes in required yield, the percentage price change is symmetric; secondly for large changes in required yield the percentage change is asymmetric; and thirdly for large changes in yield, the price appreciation is greater than the price depreciation for a given change in yield. The convex shape of the price/yield relationship curve depends on these three properties of bond price volatility.

### Measures of Bond Price Volatility

The volatility of bond price is measured by price value of a basis point (PVBP) and duration.

**Price Value of Basis Point:** PVBP measures the change in the price of the bond, if the required yield changes by one basis point. PVBP indicates rupee price volatility as opposed to percentage price volatility. If we divide the price value of a basis point by the initial price we can obtain percentage price change for one basis point change in yield.

**Duration:** Duration is the second measure of price volatility. The price of a bond is expressed as a mathematical function of the required yield. The first derivative of the function to calculate price is divided by initial price to obtain Macaulay duration.

$$\text{Macaulay duration} = \frac{1C}{(1+y)^1} + \frac{2C}{(1+y)^2} + \frac{-nc}{(1+y)^n} \frac{1}{P}$$

The ratio of Macaulay duration to  $(1 + y)$  is referred to as modified duration by investors.

Approximate percentage price change is equal to modified duration. Modified duration is the approximate percentage change in price for a 100 basis point change in yield. The longer the maturity, the greater the modified duration. Price volatility increases with modified duration. Finally, price volatility is influenced by yield to maturity. The higher the yield level the lower the price.

**Volatility:** Duration depends on the maturity of the bond, the coupon rate, the price of the bond and its yield to maturity. Duration also expresses the

reaction of the bond's price to changes in the interest rate. Changes in interest rate represent a major source of risk for bondholders.

Duration can be used to estimate change in price of bond for a small change in yield. It is not useful for large changes in yield. We have to supplement it by convexity, the percentage price change due to price/yield relationship of a bond. The convexity property states that as the required yield increases (decreases), the convexity of a bond decreases (increases). It measures the rate of change of duration as market yields change.

A better estimate of interest rate risk can be obtained by including the concept of convexity. Convexity is a purchase signal. If interest rate rises, duration factor causes price depreciation but the convexity term counteracts the duration effect, if it is positive. If interest rates fall duration factor causes price appreciation.

### **MARKETABILITY RISK**

If liquidity demand exceeds secondary or liquid reserve investment securities have to be sold. The sale of investment securities without loss to meet liquidity demands requires the existence of a deep and broad market. Bank has to purchase widely traded issues to reduce marketability risk.

Call risk arises when the borrowing firm has the right to redeem the debenture before maturity. The call risk is the reinvestment of the par value of bonds bearing lower interest yields.

### **PORTFOLIO RISK**

The total risk of a portfolio is reduced by diversification effect. The returns of the assets should follow different patterns over time to obtain diversification effect. The emphasis on interest rate risk and liquidity risk have led banks to ignore the benefits of diversification. Diversification benefits can be reaped by purchasing securities with return patterns that are not perfectly positively correlated with the return patterns of other bank assets.

### **YIELD CURVE STRATEGY**

Investment strategy such as playing the yield curve to take advantage of expected future changes in interest rates by coordinating investment activities with the shape and level of yield curve offers high earnings. When the yield curve is at a relatively low level and upward sloping, short-term securities are purchased. As interest rates rise overtime, the securities are repeatedly rolled over into higher earning securities and provide added liquidity. When the yield curve is at a relatively high level, the bank would switch to longer-term securities

providing higher interest income. When interest rates decline capital gains are earned on long-term securities due to favourable price risk. After the interest rates are believed to have bottomed out the long-term securities are sold and principal and capital gains are invested in short-term securities. The switching strategy should however be tempered by retaining some amount of short-term securities to maintain an element of liquidity.

### **RIDING THE YIELD CURVE**

Another approach to playing the yield curve called *riding the yield curve* requires that the yield curve must be upward sloping and the expected rise in interest rate should be below the shape of the yield curve in the near future. If securities with a longer maturity than the investment horizon of the bank are purchased, with an upward sloping yield curve, the yields will fall in line with the yield curve with the passage of time (and the term of securities declines).

Playing the yield curve involves forecasting changes in interest rates that are not expected by the market as a whole.

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# *FOREIGN CURRENCY DEALING*

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14

## **INTRODUCTION**

Trading in currencies takes place in foreign exchange markets. The primary function of foreign exchange markets is to facilitate trade and investment. There is no one physical location where traders get together to exchange currencies. It is an over-the-counter market. Traders are located in the major international banks around the world. The foreign exchange markets are highly sophisticated and complex forwards and options are now the stock in trade. They are world wide in scope and world's slickest. Foreign exchange markets are screen based, genuinely international and open for business 24 hours a day. There are a large number of buyers and sellers and prices adjust rapidly and smoothly. In the foreign exchange market investors can trade very large amount without moving the price. Foreign exchange markets are the largest component of the financial markets in the world. Foreign exchange markets are relatively free of regulations. Central banks lay down only capital standards and voluntary codes of conduct. There are no regulations for investor protection or transparency.

The turnover in foreign exchange markets (including, derivatives like futures, swaps and options) was \$1.5 trillion on a daily basis in 1998. Leading foreign exchange markets in London, (accounting for a quarter of the business done), Tokyo, New York, Frankfurt, Zurich, Paris, Amsterdam, Toronto and Milan are well connected and exchange rate changes have an immediate impact. However, only a fraction of the turnover in foreign exchange markets reflects customer's foreign exchange needs. About 5 percent relates to underlying trade flows and another 13 percent, capital flows. The rest is the dealing that banks do among themselves. In most foreign exchange transactions, both the buyer and seller are money centre banks. Their operations are heavily oriented towards the specialized activities of the leading financial centres. Their currency

exchanges produce present or future exchanges of deposits. The foreign exchange market is largely a wholesale market accounting for 90% of the total value of foreign exchange transactions.

In addition foreign exchange is being considered as an asset class in itself which encourages a more sophisticated view of the market. Institutional investors' use of currency overlay strategies allow them to take longer term positions on currency exposure. It has increased and rendered the market more medium term and analytical.<sup>1</sup>

## FOREIGN EXCHANGE MARKETS

Every sovereign nation has its own currency. Theoretically, the monetary unit of a country can be exchanged with any other currency of any other country. Most international financial transactions involve an exchange of one currency for another. The ratio in which they are exchanged or prices in terms of each other are known as *exchange rates*.

Countries when they trade with each other require money flows. Foreign exchange markets provide the mechanism for exchanging different monetary units for each other. If the currency is widely accepted as in the case of US \$ it can pay in its own currency. Actually, dollars remain in circulation among international traders for years before they are exchanged for goods or assets. Such currency in circulation with traders constitutes an interest free loan with an unstated time of maturity from the rest of the world to the USA. Sometimes nationals of one country may prefer to hold financial assets in a foreign country or denominated in a foreign currency, because domestic currency may be subject to variable and high inflation rendering it a poor store of value; secondly, foreign currency balance may reduce risks; and finally foreign currency assets help hedge anticipated foreign currency liabilities. Actually, the efficiency of the international financial system and its degree of integration with individual sovereign financial systems depends to a large extent on how cheaply and quickly, foreign exchange transactions can be effected.

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<sup>1</sup> Currency overlay is the separate management of the foreign currency exposure created by international investment decisions. The investment fund's equity exposure by currency is separately offset by hedging position to avoid currency translation loss for the fund. Currency overlay is most advanced in US pension plans whose investment (about one-third) is covered by currency overlay programme. For example, the international equity manager of a US pension fund which has invested heavily in Japanese stock will sell forward yen against US \$, if the outlook for the yen is negative.

## **FOREIGN EXCHANGE MARKET AND EURO-DOLLAR MARKET**

The core of the foreign exchange market is the inter bank market closely linked to the Euro-dollar inter bank market. The link between the foreign exchange market and the Eurodollar market is derived from the interest rate parity hypothesis (which refers to the law of one price in the securities market, that identical securities when quoted in a common currency should have the same price in all markets) that links the spot and forward exchange rates to the interest rate of the two currencies. The law of one price holds when regulations are minimal and the transactions costs are low. The Euro-dollar market has hardly any regulations and transaction costs are negligible. The participants in the foreign exchange market and the Euro-dollar market are the same. The source of funds for financing foreign currency purchases are Euro-dollars; and Euro-dollar markets are a convenient depository for placing the proceeds of foreign currency sales. Finally, the quotes for foreign exchange and Euro-dollar interest rates are carried on the same network. The foreign exchange market and the Euro-dollar market are so thoroughly integrated that forward cross rates can be calculated from the interest differential.

### **PURPOSE AND ORGANISATION**

The foreign exchange market encompasses all transactions involving the exchange of different monetary units for each other. Its purpose is to facilitate transfer of purchasing power denominated in one currency into another that is to trade one currency for another. It acts as an intermediary for individual buyers and sellers. The foreign exchange market links financial activities in different currencies.

The foreign exchange market is not a physical place. It is a network of banks, dealers and brokers who are dispersed throughout the leading financial centres of the world. Currency transactions are channeled through the worldwide inter bank or wholesale market in which banks trade with each other. In the spot market currencies are traded for immediate delivery, two business days, while in the forward market contracts are made to buy and sell currencies for future delivery. Trading is in currencies of high income countries which are in great demand and whose governments impose few restrictions on currency trade. Predominant currency is US dollar. Limit of convertibility inhibits the use of currencies of developing countries.

### **IMPACT OF TECHNOLOGY ON TRADING**

The trading in the foreign exchange markets until April 1995, which was largely telephone trading market was based on the screen quotations supplied by Reuters. In April 1995, Reuters introduced Dealing 2000/2 which adds

automatic execution to the package creating a genuine screen based market. Other automatic systems such as Electronic Broking System (EBS) owned by a consortium of banks and Minex in the yen market are being built. The automated systems will gather information on the prices and quantities of currencies as they are actually dealt like the stock market tickers which reveal details of share trades. The automated trading may boost volume and reduce the cost of trading. By eliminating forex brokers who handle a third of turnover currently considerable savings may be realised. Further the machines will also match orders and offer anonymity that brokers offer. The automated systems however threaten the oligopoly of information that was a major source of profits. But brokers remain a vital source of information for traders about the direction of the market. While a computerized trading system gives a trader the best price, a broker is in touch with a large number of banks.

## **RELATIONSHIP BETWEEN EXCHANGE AND MONEY MARKETS**

The money markets for short-term deposits and loans for the home and foreign currencies are linked to the exchange market. The major players in both markets are commercial banks. The link between the money market and the exchange market is the forward margin which is the difference between the spot and forward rates. Margin is a function of interest rate differentials. For the determination of forward rates through the operation of interest parity principle the prerequisites are the existence of a term inter bank money market locally and the freedom to banks to borrow or deposit funds abroad. In India, the domestic money market is distinct from foreign exchange market. Foreign exchange has been kept in a separate water tight compartment from the rupee. The forward margin instead of being determined by interest differentials, in the Indian forex market, is a function of demand and supply. In the absence of a term inter bank money market (1, 3 and 6 months) in India, the pricing of various short-term instruments in the market like CPS and CD and floating rate bonds has become less than transparent. Further the absence of interbank benchmark rate has rendered it difficult to ascertain the risk premium. Banks did not also have freedom to borrow or deposit dollars abroad until 1997.

The Sodhani Group (1995) identified the reserve requirement as the major impediment for the development of term interbank money market and recommended that it should be lifted<sup>2</sup>. The Group has also suggested that

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<sup>2</sup> Reserve Bank of India, *The Report of the Expert Group on Foreign Exchange Markets in India*, June, 1995.

commercial banks should be permitted to deposit/borrow short-term dollars abroad, up to the limits specified by R.B.I. Unless these prerequisites are met forward exchange rates will not be determined by the operation of the principle of interest rate parity. Consequent to the recommendations of the Sodhani Group, Authorised Dealers (ADs) are allowed to borrow as well as invest in overseas markets in each case upto a maximum extent of 15 % of their unimpaired tier I capital (October 21,1997) as against the earlier uniform ceiling of US \$ 10 million in each case.

### **TERM MONEY MARKET AND INTEREST DIFFERENTIALS BASED FORWARDS**

The slack season credit policy for 1997-98 announced by the Reserve Bank of India on April 15, 1997 has abolished the statutory pre-emptions in terms of 10 percent CRR and 25 percent SLR on inter bank liabilities. Authorized dealers can invest in overseas money market instruments or borrow from their foreign offices or correspondents as noted above. This is likely to facilitate the development of a realistic rupee yield curve and a term money market as recommended by the Sodhani Group.

Till now bankers were forced to square off their borrowing from other banks within the same fortnight because borrowings over this tenor attracted CRR and SLR. Banks can now borrow from one another for the much longer periods provided they have a definite perception of interest rates for the period.

In the last week of April 1997, banks started offering quotes on term basis. With the credit policy permitting banks to invest or borrow abroad, the term money market has enabled banks to extend forward cover based on foreign currency funds. In the case of a three months forward US dollar requirement, banks can borrow the required INR for 3 months, convert it into USD at spot rate and invest the resultant USD for 3 months. When forward discounts reflect interest differentials, term money rates would reflect a realistic rupee yield curve. Forward differentials will constantly adjust to movements in the spot INR exchange rate keeping the interest differential intact.

### **PARTICIPANTS IN FOREIGN EXCHANGE MARKETS**

The major participants in the foreign exchange market are importers who may pay for goods invoiced in foreign currencies, exporters who may have foreign currency sales, portfolio managers who may buy or sell foreign currency assets and receive foreign currency dividends and interest payments, large commercial banks, investors, dealers and brokers, investment banks, arbitrageurs, speculators and central banks.

**Commercial Banks**

Commercial banks borrow in multiple currencies, serving their own or customer needs. Their traders make the foreign exchange market through continual interbank trading. Large money center commercial banks serve as market makers. Only the head or regional offices of the major commercial banks are market makers. They simultaneously quote bid and ask prices standing ready to buy and sell foreign currencies at quoted prices. The difference between the two prices is referred to as bid/ask spread. Traders in major money centre banks around the world who deal in two way prices for the buying and selling are referred to as market makers.

Commercial bank customers buy and sell foreign exchange through their banks. Small banks and local offices of major banks do not deal directly in the interbank market. They have a credit line with a large bank or home office. Transactions with local banks, will involve an extra step.

The purchases and sales of large commercial banks seldom match leading to large variation in their holdings of foreign currencies exposing them to exchange risk. When they assume it deliberately they act as speculators. However, banks prefer to keep their exposure as low as they can without unduly acting as speculators.

**Traders and Investors**

Traders and investors transactions result in commitments to make or receive payments in foreign currency and the need of the group for currency conversion constitutes the foundation for foreign exchange market. Since the banks accommodate their conversion needs they participate in a minority of transactions.

**Dealers and Brokers**

Dealers are mainly money centre banks, buying currencies low and selling them when high to other dealers. The bid-ask spread is very narrow. Dealers 'operations' are wholesale and majority of transactions are interbank in nature although they deal with multinationals and central banks. Thin spreads reflect intense competition among banks, their experience in exchange risk management and low transaction costs. Dealers at the retail level cater to the needs of customers wishing to buy or sell foreign exchange and the spread is wide (below one percent).

Foreign exchange brokers are specialists in matching net supplier and demand banks buy and sell orders from two different parties. A large portion of foreign exchange transactions is conducted through brokers. While they tend to specialize in certain currencies, they handle all major currencies. The brokers exist because they lower the dealers' costs, reduce their risks and provide anonymity. In New York most of the foreign exchange transactions between

local banks and high percentage of other foreign exchange transactions are through brokers. In inter bank trade brokers charge a commission of 0.01 percent of transactions' amount and in illiquid currency they charge costly commissions. Payment of commission is split between trading parties.

Brokers help enlarge customer base by gathering information. Banks avoid undesirable positions with the help of brokers. With the assistance of brokers they can take positions of their choice instead of at the discretion of the customers as when they act as market makers. The launch of anonymous broking systems has not affected the volume of business of brokers who account for 35 percent of the deals in the foreign exchange market.

### **Investment Banks**

Investment banks which are financial intermediaries engage in deposit banking outside the United States because of the complementary nature of investment banking and currency exchange. They find it convenient to deal in currencies involved while marketing Euro-bond issues or arranging a currency swap. As compared to commercial banks they play a limited role as market makers and in foreign exchange dealing.

### **Central Banks**

Central banks intervene in the foreign exchange markets to stabilise the exchange rate or move it to a new level. US dollar is the intervention currency. If their currency exchange value is lower than the desired level, they purchase it with foreign exchange. If it is higher than the desired level they sell foreign currency. While it is easy to lower value, to increase it depends on the ability to supply foreign exchange which is dependent on the holdings of reserve assets or ability to borrow such assets.

### **Arbitrageurs**

They make gains by discovering price discrepancies that allow them to buy cheap and sell dear. Their operations are riskless. They act on their own in undertaking currency arbitrage and interest arbitrage transactions.

Currency arbitrage arises from opportunities to buy currencies more cheaply than can be sold. In a free market, the scope for currency arbitrage tends to be very brief and accessible only to dealer banks.

Interest arbitrage arises from disequilibria between two exchange rate variables. It is often conducted by dealer banks but others have frequent access to it. Interest arbitrage tends to lead to interest rate parity.

## **ELECTRONIC BROKING**

A major structural change affecting the foreign exchange markets in 1998-2000 was the increasing role of electronic broking. Electronic broking expanded



in the spot market to the disadvantage of traditional means of dealing such as voice broking or direct dealing. Between 1995 and 1998, the share of electronic broking in spot foreign exchange activity increased from about 10% to 15%. The share doubled in 1998-2000 and in major currencies electronic brokers covered 50 and 80% of the market.

Electronic broking involves lower costs, higher efficiency and greater transparency compared to traditional means of dealing. Traders operating through electronic brokers can ascertain “best” price available in the market and to them, depending on their and their counter parties credit limits without having to go through an uncertain price discovery process. Electronic broking reduced the number of transactions that were earlier required to obtain information on prices. The same level of market liquidity is compatible with a lower turnover. In 1998-2000 the turnover in foreign exchange markets was reduced by the advance of electronic broking. Bid-ask spreads have also fallen by about two to three hundredths of a US cent on the main exchange rates.

### **SPECULATION**

Speculation exposes the individual to risk. It gives rise to financial transactions that develop when an individual’s expectations differ from the expectations of the market. Speculators transact in foreign exchange primarily because of an anticipated but uncertain gain as a result of an exchange rate change. Speculation is a prominent feature of the operation of the foreign exchange market. Speculators prefer to use the forward market because of low transaction costs, low margin requirements and convenience.

Banks or multinationals, when they accept either a net asset or a net liability in foreign currency they are indulging in speculation. A speculator hopes to profit by taking an open position in the foreign currency. Open position denominated in foreign currency constitutes speculation. Acceptating an open position in a currency particularly overnight is always risky but to avoid such a position would unduly restrict banks’ operations and add substantial hedging cost. To reduce risk of loss, dealers limit the positions that traders can take and adjust their quotation and spread to prevent these limits from being exceeded more than temporarily.

### **BULLS AND BEARS**

Speculators are classified into bulls and bears. A bull expects a currency (spot and forward) to become more expensive in the future. He buys the currency spot or forward today in the belief that he can sell it at a higher price in the future. Bulls take a long position on the particular currency. A bear expects a particular currency to become cheaper in the future. He sells the currency at what he considers to be relatively high price today in the hope of buying it back at a cheaper rate in the future. Bears take a short position on the currency.

## **FOREIGN EXCHANGE RATES**

The foreign exchange rates govern the rate at which one currency can be exchanged for another. An exchange rate may be defined as the amount of currency that one requires to buy one unit of another currency or is the amount of a currency one receives when selling one unit of another currency. There are several different rates between two currencies. First, dealers ask prices differ from bid prices and secondly with the size of the transactions. Further, the rates applicable to spot transfer of demand deposits differ from exchange of bank notes and travelers cheques. Finally, rates for future delivery differ from spot exchange.

## **EXCHANGE QUOTATIONS**

The foreign exchange quotes published daily in financial papers for major currencies comprise four different quotes. One will be the spot price; the others are forward quotes for 30 days, 90 days and 180 days. The prices are for the inter bank market involving trades among dealers. These rates may be direct or European terms or indirect or American terms. The direct quote or European terms takes the value of the currency as unity. If we quote exchange rate as the price in units of our home currency  $\times$  Rupees per unit of foreign currency, it is a direct quote or right quote or European terms. In India direct quote is used. If we say 43 rupees are required to buy 1 dollar it is a direct quote. Exchange rate is the amount of home currency units that one pays or receives per unit of foreign currency bought or sold.

The UK, Ireland and South Africa use the reverse quote viz. how many foreign currency units can be bought with one unit of home currency? This is the indirect, left quote or American terms. In the case of our home currency, we express it as  $\text{Rs.}100 = 2.3 \text{ US dollars}$ .

Inter-bank quotations of US dollar are on European terms. However, US dollars quote British pound, Irish pound and ECU directly. Foreign currencies are quoted against the US dollar on the direct basis at the organized exchanges that trade for ex futures and options. U.S. dollar is used as a dealers numerie and they quote all currencies against the dollar since it is the world's dominant currency and simplifies work.

## **MARKET MAKERS**

Traders in the major money centre banks around the world who deal in two-way prices, for both buying and selling are called market makers. They create the market by quoting bid and ask price and dealing at those prices. Since buy and sell orders do not match in a real world continuous auction market at all points of time, market makers stand ready to take the other side of transaction

and create a continuous auction market. The spread is the compensation for the opportunity cost of market makers time as well as exposure of the bank's capital to exchange rate fluctuations.

Market making banks worldwide run into hundreds in numbers and their trading takes place by direct dealing which accounts for about 85 percent of forex trading. The balance is put through brokers who charge a fee for matching buyers and sellers. The actions and expectations of interbank traders have decisive influence on the day to day exchange rate movements.

## **FOREIGN CURRENCY ACCOUNTS**

### **Nostro Account**

The foreign currency account maintained by banks in India with banks abroad are called a Nostro Account which means our account with you. The currency of the account depends on the currency of the country where the account is maintained. All foreign exchange transactions are routed through Nostro Accounts. The foreign banks pay the demand drafts issued on it by the Indian bank and collect or purchase the bills drawn on London and debits/credits the account of the Indian bank.

### **Vostro Account**

A foreign bank may open rupee account with an Indian Bank and while corresponding with foreign bank Indian bank refers to the account as vostro account or your account with us. When drafts drawn by foreign bank are presented to the Indian bank it would pay to the debit of the foreign bank's account with it. For purposes of exchange control the accounts are known non-resident accounts. Credit to non-resident bank accounts amounts to remittance of foreign currency from India to the country of the bank maintaining the vostro account. Debits to the account amount to inflow of foreign exchange into India.

Third parties when they refer to the account of a bank with a foreign bank refer to it as their account with you or your account.

## **READY EXCHANGE RATES IN INDIA**

In India, the foreign exchange dealing of a bank is known as merchant business and the exchange rate at which the transaction takes place is called the *merchant rate*. The merchant business in which the contract with the customer to buy or sell foreign exchange is agreed and executed the same day is known as ready transaction or cash transaction. In practice the terms ready and spot are used synonymously to refer to transactions concluded and executed the same day. The interbank rate on the basis of which the bank quotes its merchant rate is known as base rate to which it adds a margin to cover transaction costs and

cost of cover for fluctuations in foreign exchange and profit. Depending upon the time taken for realisations of foreign exchange by the bank two types of buying rates are quoted in India — TT Buying Rate and Bill Buying Rate.

TT (Telegraphic Transfer) is the rate applied when the transaction does not involve any delay in realization of the foreign exchange by the bank. Foreign Exchange Dealers Association of India (FEDAI) has laid down the margin that could be built into the TT buying rate as between 0.025 percent and 0.08 percent. TT transaction does not of course imply that the proceeds of the transactions are received through telegraphic transfer. It only refers to the absence of delay in the bank acquiring the foreign exchange as in the case of payment of demand drafts, mail transfers or telegraphic transfers drawn on the bank where the bank's *nostro* account is already credited and foreign bills collected.

Bill buying rate is applied when a foreign bill is purchased. In the case of a sight bill, the transit period could be 15 days and the banks will have access to foreign exchange after this period. The rate quoted has to take the transit period which would be interbank rate for one month forward since there is no rate for 15 days forward. In the case of *usance* bills, the *usance* period plus the transit period has to be reckoned. The bills buying rate is loaded with forward margin which is available for periods in multiples of a month. Further the forward margin may be at a premium or discount. Premium is added to the inter bank rate and discount is deducted. Usually, if the forward margin is at discount the transit period and *usance* period are rounded off to the next higher month and if the forward margin is at premium the forward margin is rounded off to the next lower month.

The monthly merchant turnover in foreign exchange market was in the range of \$52.4 billion (April 2004) to \$76.5 billion (December 2004) and interbank transactions were in the range of \$192.2 billion (April 2004) to \$228.1 billion (April 2004). The ratio of interbank to merchant turnover was in the range of 2.4-3.7 during 2004-05 indicating orderly market activity.

## **EXCHANGE RATE POINTS**

Interbank quotations of foreign exchange are given in points which are the absolute numerical values ignoring decimals that are relevant to exchange rate quotations. Dealers spot quotations are carried to the fourth decimal point such as 0.0001. A point could be one hundredth depending on the currency. When the bid ask price of dollar is DM 1.6895-1.6905 the trader quotes bid ask rates 895-905. The dealer quoting the rate would also indicate that he is prepared to trade at these rates, if the quantity of dollars is three by three i.e., three million to be either brought or sold.

### Spot Exchange Rates

These rates apply to transfer of bank demand deposits occurring within two business days after reaching agreement to exchange currencies. The date on which the exchange actually occurs is known as value date or delivery date.

The traditional means of dealing in spot market is voice broking or direct dealing. Spot foreign exchange markets have traditionally been opaque, given the difficulty of disseminating price information in the absence of centralised exchanges. Dealers typically enter into a number of transactions to obtain information on prices available in the market. The price discovery process was uncertain and involved several transactions.

Quotes are always given in pairs because a dealer would not know whether a prospective customer wants to buy or sell a foreign currency. The first rate is the buy and the second is the sell or ask or offer rate. The rate at which the bank will buy a currency from the customer is called the bid rate and the rate at which the bank will sell a currency to the customer is the ask rate. The difference between the buying and selling rates is called the *spread*. Banks do not charge a commission on their currency transactions but rather profit from the spread between the buying and selling rates.

Bid and ask spreads are very narrow between leading currencies because of large volume of transactions. These low spreads allow market participants to implement sophisticated risk management strategies that require numerous foreign exchange transactions. Width of spread depends on transaction costs and risks which in turn are influenced by size and frequency of transactions. Size affects transaction cost per unit of currency traded while frequency or turnover rate affects both costs and risks by spreading fixed costs of currency trading and reducing the time for something unforeseen to occur.

The spreads on the exchange rate the banks charge their customers are different from the spreads that are found in the interbank market. In the inter bank market spreads depend upon breadth and depth of a market for a given currency as well as on the currency's volatility. Frequency of trading as well as volatility affect spreads. Currencies which are less widely traded or more volatile have higher spreads. In times of financial or economic turbulence also, spreads widen. Spreads to bank customers reflect not only the spreads on interbank market but also a commission.

The market makers' quotes are binding. There are of course limits to their commitment. First, the potential customer must decide immediately whether to buy or sell or not to deal. Secondly, if the intended transaction exceeds US \$ 10 million the size of the deal must be revealed.

### Forward Exchange Rates

Forward exchange market refers to buying and selling currencies to be delivered at a future date. Forward exchange transactions involve an agreement on a price today for settlement at some date in the future. Forward rates apply to transfer of demand deposits with value dates three or more business days in future.

They are always quoted by reference to spot rates because they are always traded at a premium or discount to spot exchange in the interbank market. Forward rates are quoted in terms of the premium or discount to be added to the spot rate which is quoted in two numbers, the bid price and ask price. The bid and ask spread will always widen with the forward horizon.

### Calculation of the Forward Exchange Rate

The forward rate is calculated with the help of covered interest parity condition. The formula to calculate forward exchange rate is,

$$F = \frac{(r^* - r)^s}{(1+r)} + S$$

where  $F$  is the one year forward rate quotation in foreign currency per unit of domestic currency,  $S$  is the spot quotation in foreign currency per unit of domestic currency,  $r$  is one year domestic interest rate and  $r^*$  is one year foreign interest rate.

To obtain 3-months forward rate the annualised 12-months interest rate has to be divided by 4; and to calculate 6-months forward exchange rate, the 6-months interest rate has to be divided by 2.

The forward premium or discount is given by the formula,  $\frac{F-S}{S} r^* - rS$  and the terms are as defined above.

Whether a foreign currency will be quoted at a premium or discount with respect to domestic currency depends on interest rates. According to Covered Interest Parity (CIP), if the domestic interest rate is higher than the foreign interest rate, then the domestic currency will be at a forward discount by an equivalent percentage. If the domestic interest rate is lower than the foreign interest rate the currency will be at a forward premium by an equivalent percentage. According to Grabbe, "The interest parity theorem is an arbitrage condition relating the discount or premium on forward exchange to the term structure of interest rates on financial assets denominated in the two currencies involved in exchange rate"<sup>3</sup>.

3 Grabbe, J. Orilin, *International Financial Market*, p.78.

Value dates are usually in multiples of 30 days; and popular forward periods are 30, 90 and 180 days. Value dates are negotiable for a suitable price. Normally interbank forward contracts maturities are of less than 30 days. At the other end are one year contracts. The advantages of a forward market is that an exchange rate is negotiated and the required currency need not be bought until they are needed, say in 30 days.

The forward transaction is sometimes called outright forward to distinguish it from spot transaction. By contrast, transactions involving forward exchange in the interbank market usually take the form of swap transactions. Market making banks trade among themselves in the form of swaps which involves both a spot and forward contract. A swap is the spot sale of a foreign currency with a simultaneous agreement to repurchase it at some date in the future. The difference between the sale price and repurchase price is the swap rate. There is also a 'forward' swap that involves trading one forward contract for another forward contract of different maturity.<sup>4</sup>

It is estimated that in foreign exchange trading 2/3 of transactions are spot, 1/3 swap and a small percentage, 2 percent outright forwards.

The forward exchanges rate and the volume of forward transaction are determined by the actions of arbitrageurs, traders and speculators. If they believe that the current spot rate is overvalued they may sell spot which results in a depreciation of the currency. If interest rates do not change then both the spot and forward rates depreciate. On the other hand, if there is a belief that the currency is overvalued forward, it will be sold forward leading to depreciation of the forward as well as spot rates. Arbitrage ties the spot and forward rates via the covered interest parity condition (CIP). Statement 14.1 summarises the features of a forward contract.

## **CROSS RATES**

A cross rate is a derived rate. It refers to the exchange rate between two currencies that is derived from the exchange rate of those currencies with a

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4 It may be noted that there are three different kinds of swaps. First in the foreign exchange interbank market a swap contract involves a spot sale or purchase of currency combined with forward purchase or sale of the same currency. Secondly, a currency swap which is simply an exchange of debt or assets denominated in one currency for debt or assets denominated in another currency. Finally, an interest rate swap referred to in Chapter 10 is the exchange of fixed interest rate debt or assets for floating interest rate debt or assets (or floating for fixed). If a swap involves the exchange of fixed rate debt or assets in one currency for floating rate debt or assets in another currency, it is both an interest rate swap and currency swap.



third currency such as dollar which is a numeraire. Cross rate is useful to determine the exchange rate between two currencies that are quoted against the dollar but not against each other.

Almost all trading of convertible currencies takes place with respect to the US dollar. For example, both the pound(\$) and the DM will be traded with prices quoted vis-a-vis the dollar. If a commercial customer asked for a DM price in terms of the \$, cross rate will be determined from the two dollar rates. The major reasons for quoting all exchange rates against a common currency or vehicle currency are information complexity and the desire to avoid triangular arbitrage. For  $n$  currencies, there would be  $n(n-1)/2$  bilateral exchange rates.

**Statement 14.1** *Features of a Forward Contract*

<b>Type of contract</b>	Private contract between two parties. The parties are a forex dealer and a customer. The terms are highly flexible.
<b>Contract size</b>	Average size more than US \$ one million.
<b>Maturity</b>	Multiples of 30 days. Any maturity can be negotiated.
<b>Security</b>	Banks forward customers have to maintain minimum deposit balance.
<b>Cash flow</b>	None until delivery.
<b>Final settlement</b>	Settled at end of contract. Ninety per cent of contracts are settled by delivery.
<b>Default risk</b>	High substantial loss can occur if a party defaults. Banks need high credit ratings to maintain strong positions as forward dealers.
<b>Quotations</b>	Dealers quote prices with bid-ask and price spreads. Quotes against U.S. dollar are on European terms.
<b>Currency</b>	Forward contracts are available in all the currencies of developed countries and in some currencies of developing countries.
<b>Price certainty</b>	The exchange rate is locked in for the duration of the contract.
<b>Commission</b>	Determined by the bid-ask spreads obtained by dealers.
<b>Regulation</b>	Self-regulation subject to government restrictions.

**Example 1** The quotations for US dollar-DM 1.8696, and US \$ and Canadian \$ are 1.4892. The rate for Canadian \$ to DM is required.



The cross rate may be calculated:

$$\frac{\text{US\$}}{\text{DM1.8696}} \times \frac{\text{C\$1.4892}}{\text{US\$}} = \text{C \$0.7965/DM}$$

Cross rate however, suffers from the disadvantage that it involves payment of two bid-ask spread rates instead of one.

### **SPOT CONTRACTS: SETTLEMENT PROCEDURE**

Settlement of a forward or spot contract occurs when a bank deposit denominated in relevant currency is given. The difference in location of banks and the currency they trade can give rise to concepts of settlement location and dealing location. Settlement location refers to currency's home and dealing location to where the banks are situated. The settlement date is two business days after transaction date. In the case of American contract it is one day. Value dates vary more in transactions between dealers and nondealer customers than in wholesale trades. Transfer of funds internationally is done by computerized systems. Cost per dollar traded is quite low. The best known for clearing is Clearing House Inter-bank Payment System(CHIPS). It is operated by New York Clearing House Association in cooperation with Federal Reserve. There were 140 participants in 1990 consisting of New York Banks, U.S. banks and foreign banks with US branches or subsidiaries. Most CHIPS participants are non-settling but about 20 of US participants are settling members.

Society for World Wide Interbank Financial Telecommunication (SWIFT) is based in Brussels and has 2000 members. SWIFT is a national clearing system and ECU clearing system maintained by Bank for International Settlements. It provides an efficient mechanism for bank transfers of demand deposits linked to foreign exchange transactions. Two day settlement for spot transaction requires not only efficient clearing but a fast cost effective system for international transmission of instructions regarding deposit transfer. SWIFT is a well-known message transmission system.

### **CURRENCY ARBITRAGE**

The opportunities for currency arbitrage are restricted to interbank transactions and are available for very brief duration. Currency arbitrage occurs when a price discrepancy exists in the foreign exchange market that permits a gain to be made by a party working against the bid-ask spread.

#### **Two Points Currency Arbitrage**

Two points locational arbitrage occurs when two currencies are involved and a price difference between markets is great enough to provide a gain and arbitrageurs who can respond.

**Example 2** The example illustrates the arbitrage transaction in the spot market.

Spot Rates	Bid	Ask
	\$/£	£/\$
New York	1.3972	1.3982
London	1.3992	1.4002

The quotation shows that pound is cheaper in New York as compared to London and should be bought in New York and sold in London making a gain of 10 points. Buy at 1.3982 in New York and sell at 1.3992 in London. The difference tends to be eliminated by competition between the two centres leaving a small difference to cover transaction costs.

### Triangular Arbitrage

Opportunities for triangular arbitrage arise, if two currencies are quoted against each other at a rate that differs from the cross rate. Since three currencies are involved, it is called three point or triangular arbitrage.

**Example 3** Three currencies are chosen; dollar, DM and Yen. Assume in New York: DM 1.3972-82 per dollar

Y 87.2009-19 per dollar

London Y 62.4096-105 per DM

The mark dollar cross rate that gives the dollar cost of buying marks by buying Yen first is,

$$\frac{\text{Y}87.2009}{\$} \times \frac{\text{DM}}{\text{Y}62.4096} = \text{DM } 1.3972/\text{dollar}.$$

This is better than DM1.3982/dollar if DMs are purchased directly with dollar. The difference between the two rates is 10 points which illustrates how profitable triangular arbitrage can be. The gain per dollar is,

$$\$1 \times \frac{\text{Y}87.2009}{\$} \times \frac{\text{DM}}{\text{Y}62.4062} \times \frac{\$}{\text{DM}1.3982}$$

To seize the gain in the triangular arbitrage, the transactions would have to be in millions of currency units which would have a net effect on the arbitrageur's currency position.

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## *FOREIGN CURRENCY RISK*

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### **DEFINITION OF EXCHANGE RISK**

Foreign exchange risk arises out of the fluctuations in value of assets, liabilities, income or expenditure when unanticipated changes in exchange rates occur. An open foreign exchange position implies a foreign exchange risk. When a firm owns an uncovered claim in foreign currency it is said to be 'long'; and when it has an uncovered liability in foreign currency, it is said to be 'short'. Dealing in foreign exchange exposes banks to four principal types of risk: exchange rate risk, interest rate risk, credit risk and country risk.

### **HEDGING**

Hedging means securing oneself against loss from various risks that arise in international financial markets. The term applies to numerous types of action to offset the various risks encountered. "Applied to exchange risk, hedging means to alter the composition of assets and liabilities so as to fully or partially offset an existing or potential exposure to the exchange risk"<sup>1</sup>. Hedgers avoid exchange risk by matching their assets and liabilities in foreign currencies.

### **Transaction Exposure**

The forward contract has widest use in offsetting the exchange risk on short-term commitments whose amounts are known in advance. This is known as transaction exposure which is the net amount of existing commitments to make or receive outlays in foreign currency. It is a form of economic exposure. Hedging transaction exposure with forward contracts is the most direct way to eliminate it. It is simple, low cost and low risk.

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<sup>1</sup> Evans, John, S., *International Finance*, The Dryden Press, p. 165.

Hedging transaction exposure is always done on the basis of overall exposure and not on the basis of parts. Forward hedging is mainly used to cover short-term transaction exposure. There are other exchange risk concepts like translation and economic exposure which have an impact on hedging instruments.

### **Exposure Concepts and their Impact on Hedging Instruments**

The exposure concepts have a bearing on the hedging instruments used in international financial markets. Forward hedging need not be confined to short-term transactions exposure only. Accountants and economists typically classify foreign currency exposure into three types, transaction, translation and economic. Economists pay most attention to economic exposure, accountants to translation effects and financial officers to translation exposure. Pringle and Connolly argue that in reality there is only one type of foreign exchange exposure and that it results from the interplay of changes in prices and nominal exchange rates which is formally known as economic exposure.<sup>2</sup> Translation is the accountants attempt to measure *ex post* and transaction exposure results from contracting at fixed prices in a world where prices and exchange rates are changing.

### **Translation Exposure**

Translation is the conversion of subsidiary's financial statements from local to home currency. Translation or accounting exposure is the net book value of assets and liabilities denominated in a foreign currency arising out of changes in exchange rates. The exposure relates the changes in the book value of the parent's investment in the subsidiary giving rise to the parent company experience a translation loss. The loss need not correspond to loss in earnings. If investors however, consider translation losses to be meaningful the parent company has an incentive to hedge its translation exposure.

Translation exposure differs significantly from transaction exposure. The transaction exposure of a principal from its investment in a subsidiary can be construed as including the transaction exposure of the subsidiary and the subsidiary's transaction commitments in its home currency but it does not include all the items on the subsidiary's balance sheet such as capital equipment. Translation exposure also excludes scheduled future interest payments on bonds denominated in foreign currency that do not appear on the balance sheet and are therefore excluded from translation exposure. Using forward contracts to hedge translation exposure increases transaction exposure and the attendant cash flows unless the transactions undertaken offset other transactions. A major

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2 Pringle, John J and Connolly, Robert A, "The Nature and Causes of Foreign Currency Exposure", in Kolb, Robert W, *The Corporate Finance Reader*, Second Edition, 1995, Blackwell, USA, pp. 363-374.

issue is the choice of exchange rate to convert each item in the statement. Measurement of forex gains and losses in this process represents the accounting systems attempt to measure economic exposure *ex post*. It fails mainly on account of the use of historical costs. Translated balance sheets provide unreliable measures of true economic position.

### **Economic Exposure**

Economic exposure also known as operating or cash flow exposure is defined in terms of firm's cash flows and hence on its value. It deals with the extent to which the present value of a firm, an asset or a liability may be affected by the exchange rate changes. Economic exposure occurs, if and only if there is a departure from Purchasing Power Parity (PPP). It is much more comprehensive than transaction exposure because the present value depends on the expected outcomes of commitments that have not yet been made. Economic exposure typically is not identified by the accounting system. It also differs from translation exposure because economic exposure depends on future, while translation exposure reflects, what has happened in the past. Economic exposure also differs from transaction and translation exposure because a firm may be exposed to exchange rate changes even if has neither assets nor liabilities denominated in foreign currency.

As compared to shortcomings of hedging transaction exposure or translation exposure, hedging economic exposure has a strong case.

### **Techniques to Cover Exchange Risk**

There are several techniques available to hedge or cover exposure to foreign exchange risk. These techniques help in arranging offsetting commitments in order to minimise the impact of unfavourable potential outcomes. The simplest is the forward contract. The *raison d'être* for the forward market's existence is to provide an efficient means for hedging exchange risk. The forward contracts deal with arrangements that fix the rates at which future exchanges of currencies will occur. The forward contract is widely used to offset the exchange risk on short-term commitments whose amounts are known in advance. A major portion of the forward contracts result from risk management operations of banks and are of interbank in nature.

Traders and investors rely on forward contracts. But the speculative use of forward contracts is quite restricted mainly on account of the fact that large commitments for more than one million dollars are required. Banks regard forward speculation highly risky and set tight limits on the unhedged forward positions that their traders can accept.

Forward contracts are entered into for arbitrage and market intervention. The operation of currency arbitrage is more or less similar in spot and forward

markets. Interest arbitrage has however great influence on the forward market. Central banks intervene with forward contracts to influence not only forward rates but are also spot rates.

Other hedging instruments are money market alternative which is a combination of spot exchange with appropriate money market transaction, foreign currency futures, currency swaps and foreign currency options.

Forward contracts, money market alternative, futures and currency options are primarily short-term in nature.

Authorized dealers permitted to use cross currency options, interest rate and currency swaps, caps/collars and forward rate agreements (FRAs) in the international forex market.

## **HEDGING WITH FORWARD CONTRACTS**

**Hedging a long position:** When a claim in foreign currency is owned as in the case of an export bill in foreign currency, sale of a forward contract can guarantee, what its value will be in its own currency. An Indian company whose exports are designated in dollars and believes that there is a strong chance that the value of dollar will fall should hedge by selling dollars forward. The forward transaction eliminates the foreign exchange risk. Hedging protects the value of receipts in domestic currency. But the disadvantage is that, if the value of dollar goes up the company will not benefit from the appreciation. Further, in case of failure of the contract, the hedging of the foreign exchange risk exposes the exporter to another kind of risk, buying dollars at the going spot rate to honour the forward contract.

### **Hedging a Short Position**

To hedge a short position, foreign exchange has to be bought forward. An Indian importer who has contracted to buy from a supplier abroad and the contract is designated in dollars can hedge against any appreciation of the dollar by buying dollars forward. It would ensure that rupee expenditure would be unchanged irrespective of the value of the dollar. Foreign exchange risk is completely eliminated. If the value of dollar goes up the company does not have to pay more rupees but it would not benefit if the value of dollar goes down.

## **FORWARD PREMIUM AND DISCOUNT**

When we pay more for forward delivery than for spot delivery of a foreign currency, we say that the forward currency is at a premium. When we pay less for a forward delivery than for spot delivery we say that forward currency is at a discount. In the event that the forward and spot rates are equal, we say, that forward currency rate is flat.

It is likely that forward rate would be higher or lower than the current spot rate on account of interest rate differential. The discount or premium affects the cost of hedging.

The spot and forward bid rates are related in the following equation to the bid-ask interest rates of the two currencies.

$$F(\$ / \text{Re})_{\text{bid}} = S(\$ / \text{Re})_{\text{ask}} \frac{(1 + r_{\text{bid}})}{(1 + r_{\text{Re,ask}})}$$

The equation may be generalised for one or more years.

$$Fn(\$ / \text{Re})_{\text{bid}} = S(\$ / \text{Re})_{\text{ask}} \frac{(1 + r_{\text{bid}})^n}{(1 + r_{\text{Re,ask}})^n}$$

where  $r$  and  $r_{\text{Re}}$  represent (interest rates on dollar and rupee) loans. An exact hedge calculation has to take into account cash flows resulting from interest payments at the end of the year. Further the interest liability is also subject to exchange risk. To avoid this exposure, both borrowing and lending operations will have to be undertaken in each of the currencies (instead of borrowing in one currency and lending in another). If interest payments occur during the life of the forward contract the forward rate cannot be determined by the interest rate differential alone.

### **MONEY MARKET ALTERNATIVE**

A viable alternative to the forward contract for hedging is the combination of spot exchange transaction with a money market transaction. The money market transaction consists of raising a loan against an existing position in the same foreign currency. In such circumstances instead of selling the particular foreign currency forward, the firm could arrange a loan for a corresponding period in the same currency whose amount equals the present value of its future receipt, buy the dollar spot and repay the loan with the foreign currency received later. If some one without an existing position in foreign currency wishes to speculate that it will decline that person could borrow that currency, convert the loan proceeds into home currency (say US dollars) at spot rate and pay the loan at maturity by buying foreign currency at the then current spot rate.

Similarly, when an obligation exists to make future payment in foreign currency, the exchange risk can be hedged by calculating the present value of the obligation, borrowing the equivalent amount in home currency, buying the foreign currency spot and holding an interest earning asset until the payment date. For speculation, that a certain currency will rise against say the dollar, borrow dollars, purchase the currency spot and invest the funds for the life of the loan in the expectation of buying dollars spot at a lower rate.



**Comparison of Money Market Alternative and Forward Contract**

Forward market offers a slight advantage over money market alternative in terms of simplicity of transaction costs. A forward hedge requires only one transaction, outright purchase of a currency whereas money market hedge requires three transactions, raise a loan, buy the required currency spot and repay the loan in foreign currency later. Money market spot exchange technique is used for either hedging or speculation in currencies for which forward contracts are not available. It is also used to speculate against depreciating currencies when governments have attempted to maintain domestic interest rates below their equilibrium levels.

Both money market hedge and forward hedge depend on interest rates in two countries and the spot exchange rate between their currencies. Forward hedge avoids commitment of funds that money market hedge entails.

There are instances where money market hedge is preferable. Where market segmentation allows selected borrowers to have access to credit at below market interest rates, raising a loan and using a money market hedge is preferable. It is also preferable when a hedging party can obtain a higher return than what is generally available on short-term assets. Money market hedge is also preferable when bid-ask spread widens in a volatile market. Finally, money market hedge is the only means available in case of currencies in which forward contracts are not available.

**FUTURES**

Currency futures offer advantages over forward contracts in terms of liquidity, transaction size and for speculation. A futures contract is an agreement to buy or sell an asset on a specified date in future for a specified price. They are traded only over organized exchanges. The two largest exchanges on which futures contracts are traded are the Chicago Board of Trade (CBOT) and Chicago Mercantile Exchange (CME). The International Monetary Market (IMM) was formed as a division of Chicago Mercantile Exchange in 1972 for futures trading in foreign currencies. The currency futures traded on IMM now include pound sterling, Canadian dollar, the Japanese yen, the Swiss franc, the German mark and the Australian dollar. The IMM also trades futures contracts in gold, treasury bills and Euro dollars. Other exchanges include London International Financial Futures Exchange (1982), Tokyo International Financial Futures Exchange (TIFFE) and Singapore International Monetary Exchange. US exchanges since 1990 have started offering cross-rate contracts. In 1991 Twin Cities Board of Trade (TCBT) of Minneapolis was set up which offers cross rate futures. While the cross rate contracts of IMM are settled in dollars, in the case of TCBT they are settled in sterling. The outstanding amount

of currency futures contracts in organised exchanges in 2004 was \$104.2 billion; and the turnover \$6.6 trillion.

### **Hedging with Futures**

Short position in foreign currency can be covered with a futures contract with a maturity closest to it. To cover a long position in foreign currency, a futures contract with the maturity closest to the maturity of long position can be sold.

Hedging with currency futures is more complicated than hedging with forward contracts, but currency futures are an effective hedging instrument. Matching the amounts to be hedged with the face values of standardised futures contracts can be a problem in small scale hedging with futures. But small-scale hedging may not be possible with futures contracts.

The vast majority of futures contracts that are entered into do not lead to delivery. Investors prefer to close out their position prior to the specified date and then buy or sell the currency the usual way.

Future currency contracts are similar to forward contracts in that the contracting parties of both arrangements agree to future exchanges of currencies and set the applicable exchange rates in advance.

Futures contracts are traded on organized exchanges using a highly standardised format while forward contracts are informal arrangements that vary according to the needs of the contracting parties.

Forward contracts are quite large compared to futures contracts which have smaller face value.

Currency futures are highly liquid and margins are small.

Statement 15.1 presents a comparison of forward and future contracts.

### **Trading of Futures**

All futures are traded on organized exchanges. The markets are auction markets with a trading floor or pit. Bids/offers are made through an open outcry system that rely on hand signals and shouts. In an auction market any offer to trade must be to public. It must be made openly to all interested parties at a location on the exchange floor known as the *pit* which has been assigned a particular futures contract.

All trades are processed through an exchange clearing house whose basic functions are to confirm trades and guarantee the fulfillment of contracts. The clearing house makes good defaults. It protects itself by requiring that all trades should be formally arranged through clearing members.

Outside U.S.A., trading of currency futures, is conducted electronically. Chicago Mercantile Exchange has developed an electronic trading system, GLOBEX. It is used for trading in the after hours when CME is closed.

**Types of Traders**

On the floor of the exchange there are two types of traders, commission brokers and locals. Commission brokers execute trades for other people and charge a commission for their work. Locals trade on their own account adding liquidity to the market. Some commission brokers represent banks or other firms that use the futures market to complement their forward operations or for arbitrage operation between the forward and futures market. The futures market has wider access and has greater diversity of participants.

**Contract Characteristics**

While forward contracts are flexible in terms of maturity and contract amount, they lack liquidity. They cannot be sold. To cancel they have to be reversed with the same party.

Futures contracts offer greater liquidity because clearing house stands ready to enter into a reversing contract. When a contract is reversed both contracts are cancelled and a cash settlement (delivery) made for the difference. Majority of currency futures contracts are liquidated through reversal rather than through cash settlement (delivery) at maturity. Only 1.5 percent of futures traded in US result in delivery. By contrast, majority of forward contracts (90 percent) are carried to maturity.

Currency futures contracts are for standard amounts of currency. While this limits their use for hedging, it is essential for promoting market liquidity.

Forward contracts can have any maturity while futures can have only a few. Value dates for futures contracts are third Wednesday of March, June, September and December. Initial life of a futures contract is six months.

**Prices and Daily Settlement**

Informality of the forward market permits divergences based on bid-ask spreads, transaction volume, differences in information and other factors.

Futures contract has a single price at a given moment, which is decided by matching the highest bid against the lowest offer so that trading occurs, when they coincide. Brokers obtain commission for their service by charging commission rather than by simultaneously buying and selling foreign exchange at slightly different prices.

The pricing of futures contracts is achieved by reference to an arbitrage portfolio that combines a long position on the security underlying the contract with financing at the risk free rate. In practice the relevant financing rate for arbitrageurs is the repo rate which is slightly higher than the rate on government paper.

**Statement 15.1 Comparison of Forward and Currency Futures**

Features	Forward Contracts	Currency Futures
Nature of contract	Private and informal	Standardised according to specifications of futures exchange
Delivery discretion	None	None
Maturity date	Any date	Third Wednesday of March, June, September or December
Variety of currencies	Currencies of all developed countries	Offerings limited to small numbers of currencies
Maximum length	Several years	12 months
Contracted amount	Any value	\$62,500 pounds or US\$100,000
Quotations prices	Dealers quote prices with a bid-ask spread. Small price discrepancies exist. European terms.	Traders quote bid-ask spreads on the exchange floor but a single price exists at any moment. American terms
Secondary market	Must offset with bank.	Can sell via exchange.
Margin requirement	Informal. Often line of credit or 5-10% on account.	Formal fixed sum per contract, e.g., \$ 2000. Daily marking to market.
Cash flows	No cash flows until delivery	Daily settlement results in cash flow to some parties and additions to margin deposits by others.
Contract variety	Swap or outright	Outright
Price certainty	Exchange rate locked-in	Exchange rate fluctuates according to basis spread.
Guarantor	None	Futures exchange.
Final settlement	Settled at end of contract	Settled daily. Less than 2 percent settled through delivery. Normally settled through contract reversal
Major users	Primarily hedgers	Primarily speculators
Regulation	Self, subject to government restrictions CFTC.	Regulated by US exchanges

Forward contracts and futures contracts have comparable transaction cost *Contractson* trades of comparable size because arbitrage between the markets occurs, if their prices differ significantly. There is a close correlation between forward and futures exchange rates. Since volume of forward exceeds futures, forward rates are important in exchange rate determination. Banks use futures

markets for price discovery. It is an institutional fact that the futures market is generally considered to be an efficient indicator of market opinion.

### **Determining Gains and Losses**

In a futures contract the applicable rate is the current futures rate. In a forward contract it is fixed for the contract. In futures the rate is constantly changing. The initial rate is certain to differ from the rate at which contract is settled. As the rate changes, the resulting difference becomes realised gains or losses through a process known as daily settlement or marking to market. At the end of each trading day, the change in a contract's face value from the previous day's closing (settlement) price is determined. Clearing members with gains receive cash from clearing house and those with losses post additional margins. The members in turn distribute gains or collect additional margins from customers.

The overall gain in a futures contract is the difference between the initial exchange rate and the rate in effect when the contract was closed out.

The net gain or loss from forward contract when it is held until maturity is the difference between forward rate and spot rate at maturity.

Normally futures and forwards produce identical gains or losses.

### **Can Futures and Forward Exchange Rates Differ**

Interest factor is a source of possible difference between forwards and futures exchange rates. There is an interest cost in holding a forward contract. Forward customer has to maintain a minimum deposit balance.

Futures prices tend to diverge from forward prices as a function of the covariance between futures prices and interest rates. Futures prices of a currency should tend to exceed its forward price, if changes in the exchange value of that currency tend to be positively correlated with changes in the interest rate differential between the two relevant countries. If however a negative correlation exists between the exchange rate and the interest rate differential the futures price of the currency should tend to be less than the forward price. The differences are not arbitrageable. Forward and future contract rates remain close enough and the differences are normally not significant.

### **Regulations**

Forward contracts are unregulated while futures contracts are regulated by government agencies and private associations. Regulations encompass contract terms, trading procedures and standards of conduct for exchange members. Regulations envisage that futures should serve an economic purpose. Futures are expected to improve conditions and provide additional hedging opportunities even, if most of the resulting trading is speculative.

## CURRENCY SWAPS

### Definition

Swaps are private arrangements to exchange cash flow in future according to prearranged formula. Currency swaps involve exchange of principal and fixed rate interest payments on a loan in one currency for principal and fixed rate interest payments on approximately equivalent loan in another currency. They may be viewed as a series of forward contracts, one for each cash flow. As compared to interest rate swaps, currency swaps involve larger and more volatile exposure since an exchange of principal is involved. Swaps are usually arranged by banks. With a view to eliminate interest rate or exchange risk a bank enters into off-setting swap arrangements with two parties at the same time. Credit risk is however, involved when bank enters into a pair of off-setting swaps with different counter parties.

### Growth of Swaps

Swaps came into vogue in 1981. In 1985, the International Swap Dealers Association was formed to standardise documentation and procedures. Swaps are widely used by commercial banks and investment banks, securities firms, savings and loan associations, government agencies and corporations. There are three types of contracts traded on OTC foreign exchange derivatives market. At the end of 2004, the value of total OTC contracts outstanding were \$29.5 trillion. Of the total contracts outright forwards and foreign exchange swaps were \$15.2 trillion (51.4%), currency swaps, \$8.2 trillion (27.7%) and options \$6.1 trillion (20.7%). In 2004, on organised exchanges currency futures outstanding were \$104.2 billion, turnover \$6.6 trillion and currency options outstanding \$60.7 billion and turnover \$588.7 billion<sup>3</sup>.

### Uses of Swaps

Currency swaps are useful to banks because they enable them to make loans and to accept deposits in whatever currency their customers want. They also allow banks to hedge any mismatch between forward sales and purchases of foreign currency. The currency swap is a series of future exchange of amounts of one currency for amounts of another.

Currency swaps are used by firms to take out a coupon loan in one currency and change the effective currency of denomination of the loan by another contract. Currency swaps involve a spot buy (sale) of foreign exchange and a

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<sup>3</sup> BIS, *International Banking and Financial Market Developments*, June 2000, p. 81 and 86.

simultaneous offsetting forward sale(buy). A swap is a long position in one bond, combined with a short position in another bond. It may also be considered as a portfolio of forward contracts.

They are used when a firm finds that it has excess in one currency and shortage in another.

Short-term swaps are set up to secure or simultaneously secure two reciprocal loans. Further, transaction costs can be reduced, if an investor intends to reverse the transaction. Finally, saving on tax payments may be the objective for engaging in a swap contract. When income subject to tax excludes capital gains, a sale and buy-back arrangement transforms income into capital gains.

Short-term swaps have zero initial value because spot amounts are exchanged at the current value and the amounts exchanged in future are discounted values.

Secondly, the rates used for settling the forward rate or for discounting are short-term bank rates. In a contract with longer maturity, interest rates may be fixed in advance, in which case they are called *fixed-for-fixed currency swap*. One or both loans could be floating rate loan. They would then be called *fixed for floating* or *floating for floating* currency swap. Fixed-for-fixed currency swap is a long-term swap where two parties exchange two principals denominated in different currencies but with the same market value and return the principals at the expiry of the contract. In a currency swap, principal amounts are exchanged at both the beginning and the end of the life of the swap. Interest is paid periodically to each other. For a party paying interest in the foreign currency the foreign principal is received and the domestic principal is paid at the beginning of the life of the swap. At the end of the life of the swap, the foreign principal is paid and the domestic principal is received. The transaction is covered in a single contract.

The swap ensures that future interest payments and amortization have equal present values. While the swap is a zero value contract, a small commission has to be paid. Inter bank swaps are for a few million and for corporations swaps are above US \$ one million. Interest rate flows of currency swaps can be timed to coincide closely with those being hedged. Flexibility of swaps allows perfect matching of cash flows than can be achieved with forwards or futures.

Fixed for fixed currency swaps have advantages which reflect market imperfection. A currency swap can be used to transform a loan in one currency into a loan in another currency. By swapping a domestic currency loan into a foreign currency loan, a company would pay only risk free rate for foreign currency loan plus the spread it pays at home.

Subsidised loans for encouraging exports may be swapped for desired currency borrowing. In cases of no access or limited access to national capital markets swap is preferred. Avoidance of transaction costs is another reason.



Swaps are off balance sheet items because of their zero initial value and their right of offset clause. Like forward contract this might help in some countries to circumvent regulatory constraints on asset and liability structure.

### **Pricing of Swaps**

Swaps acquire value as soon as interest rates change or as the spot rate changes. Since a swap is a combination of a loan and investment, value of swap is equals to the difference between loan and investment.

Banks quote bid-ask prices which depend upon the length of life of a swap, its complexity, the availability of counter parties with whom the arranging bank can offset position. In a fixed-for-fixed currency swap, the interest payments for each currency are based on currency's swap interest rate for the swaps maturity. The swap rates are just yields at par for riskless bonds with the same maturity as the swap. The swap rates are close to the long-term Euro loans to sovereign borrowers.

Banks that serve as swap dealers prepare indication pricing schedules for internal use in making offers to customers. It matches various possible maturities with their corresponding interest rates, which are mid rates leaving out the spread of about 20 points.

### **Secondary Market Swap Transactions**

In the secondary market for swaps the transactions could take the form of a swap reversal, a swap sale or assignment and a swap buy-back, close out or cancellation.

In a swap reversal a new swap of equal maturity (time remaining to maturity) for the original swap is substituted with same reference rate and notional principal.

In a swap sale or assignment, a new party takes over the obligations of the original party under the swap.

A swap buy-back involves the sale of the swap to the original counterparty.

## **FOREIGN CURRENCY OPTIONS**

### **Introduction**

Options are traded on the organised exchanges as well as on the over-the-counter market. The first exchange to introduce listed options on foreign currencies was the Philadelphia Stock Exchange (PHLX) in 1982. The major currencies based on which options can be bought and sold are Australian dollars, pound sterling, Canadian dollars, Deutsche marks, ECUs, French francs, Japanese yen and Swiss francs. The other major option exchanges are European Options Exchange, Amsterdam; Financial Instrument Exchange (FINEX), New



York; International Monetary Market (IMM) Chicago; New Zealand Futures and Options Exchange, Auckland; Stockholm Options Market; Sydney Futures Exchange (SFE); and Singapore International Monetary Exchange, (SIMEX). PHLX exchange is the largest options exchange in the world. The turnover on organised exchanges in 2004 was \$588.7 billion and the amount outstanding was \$60.7 billion.

The over-the-counter market for options trading has also grown at a very high rate. A significant amount of trading is done outside the organised exchanges. Many banks and financial institutions are prepared to sell or buy foreign currency options that have strike prices and exercise dates tailored to meet the needs of clients. The outstanding OTC currency option value was \$6.1 trillion in 2004.

While the pay off from forward contracts and futures contracts are proportional to the increase or decrease in the underlying exchange rate, many investors prefer to make money when the price of the instrument goes up but avoid loss, if the price goes down. Options permit investors to realize non-symmetric or linear pay off.

### **Definition**

A currency option provides the buyer with the right, but not the obligation, to buy or sell an agreed amount of currency at an agreed exchange rate. This agreed exchange rate is known as the strike price. An option that provides the right to buy is known as a call option and an option that gives the right to sell is known as a put option. A call option on one currency is simultaneously a put option on another. For, if a person has the right to buy DM with US \$ at a given \$ rate, then he also has the right to sell US \$ at a particular DM rate. The person who buys an option is called the buyer or purchaser or holder of the option and the person who sells it is called the *seller* or the writer or the grantor of the option.

The date on which an option contract matures or expires is known as the *expiration date*. It is the last day on which the option may be exercised. The time period between the contract date and the expiration date is the lifetime of an option.

### **American and European Options**

Options are classified into two types based on the time at which they can be exercised. An option that can be exercised at any time up to and including its expiration date is called an *American option*. The European option on the other hand, can be exercised only on its expiration date. A currency option gives the buyer the right to purchase or sell a particular currency at a set price (strike or exercise price). The option seller guarantees the buyer that he will be ready to buy (put) or sell (call) currency, if the buyer chooses to exercise it. The writer

charges a premium (normally paid upfront) in return for the guarantee provided by him. The option buyer may choose to exercise it under favourable circumstances. If, however, the situation is unfavourable then the option may expire without being exercised. In such a case the buyer receives no compensation for the premium paid by him. Thus, the position of an option buyer is similar to the buyer of an insurance.

## FEATURES OF CURRENCY OPTIONS

Currency options are traded on organized exchanges or through the OTC market. An option which is standardized, listed and traded on an organised exchange is called an Exchange Traded Option (ETO). Options that are non-standardized and are designed to suit specific customer needs are called over-the-counter (OTC) options. The features of the two types of options have been listed in Statement 15.2.

**Statement 15.2** *Features of Exchange Traded and OTC Currency Options*

Exchange Traded Options (ETOs)	Over the Counter Options (OTCOs)
Options are traded in standard format called contracts. The contract terms are specified in terms of period, strike price, price and amount. The standardized features are often not suitable for corporate utilization.	Options are non-standardized and are designed to suit specific customer needs. The buyer can choose any business day as expiry date, any exchange rate for the strike price any principal amount for the option value.
These are mostly of the American type	OTC options are generally of the European type.
All situations requiring hedging do not lend themselves to ETOs.	An OTC option can be traded under all circumstances.
Available in other currencies against the US \$.	Available only in major currencies such as the New Zealand \$ and Italian Lira OTC options are also available on cross rates like sterling, Australian \$.
They offer greater liquidity and lesser flexibility.	OTC options are flexible but have less liquidity.

### **In-the-Money (ITM), At-the-Money (ATM) and Out-of-the-money (OTM)**

Whenever the underlying exchange rate is more than the strike price of a call or is less than the strike price of a put, a currency option is said to be in-the-

money. The premium for this option will be higher than that of the at-the-money option, an option for which the strike price is equal to the current exchange rate. However, being in-the-money does not necessarily mean that the exercise of the option will be profitable. The option has to be sufficiently in-the-money to cover fully the option premium that has been paid upfront. An option is said to be out-of-the-money when the strike price of a call is less than or when the strike price of a put is more than the current exchange rate. This situation is less favourable to the customer. The premium for an out-of-the-money option will be lower than that of the at-the-money option.

Statement 15.3 presents the currency options according to classification criterion, type and main features.

**Statement 15.3** *Classification of Currency Options*

<b>Classification criterion</b>	<b>Type</b>	<b>Main features</b>
Right to buy/sell	Call Put	Gives the buyer the right to buy Gives the buyer the right to sell
Time at which	American option can be exercised	Can be exercised at any time during the life of option.
Place of trading	European Exchange	Can be exercised only on option's expiration date. Traded on standardized exchanges
Exchange rate	Over the counter Options on spot  Options on futures	Traded over-the-counter Strike price based on spot current spot price Strike price based on current future price
Relationship between the strike price and current exchange rate.	ITM  ATM  OTM	Strike rate is more favourable than the current market rate for the customer  Strike rate is equal to the current market rate Strike rate is less favourable to the customer than the current market rate.

**Intrinsic Value**

The intrinsic value of an option is the amount by which it is in the money. Only an ITM option can have an intrinsic value. For example, if the spot DM price is \$0.53, a DM 50 call could have an intrinsic value of \$0.03 per DM, and a DM 50 put would have no intrinsic value.

**Time Value**

The time value of an option is the amount by which the price of an option exceeds its intrinsic value. With the spot price of DM at \$0.52, a DM 50 call with three months until expiration may be priced at a premium of \$1700. Of this \$1250 ( $\$0.02 \times 62,500$  DM) is intrinsic value and the remaining \$450 is time value. If the spot price is \$0.52 on the expiration date, the value of option when it is sold or exercised will be its intrinsic value (\$ 1250); and its time value will be zero. If the spot price declines to \$0.50 or lower, the DM 50 call will be worthless.

Thus, an option is a wasting asset. Its only value at expiration, if any, will be its intrinsic value. If it has no intrinsic value, it will expire worthless.

The Table 15.1 shows the comparative conditions for ITM, ATM and OTM options.

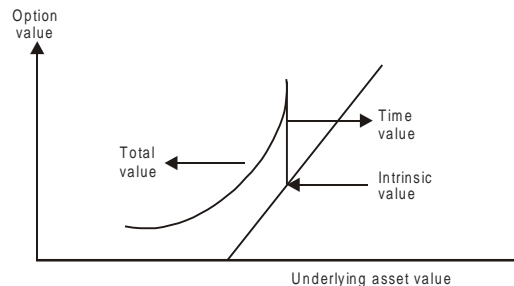
**Table 15.1 Comparative Conditions for Different Options**

S. No.	Option type	Call	Put	Intrinsic value	Total value
1.	ITM	$S > K$	$S < K$	Difference between S and K	IV +TV
2.	ATM	$S = K$	$S = K$	ZERO	TV
3.	OTM	$S < K$	$S > K$	ZERO	TV

where IV = Intrinsic Value, TV = Time Value, S = Spot rate, K = Strike price.

**Total Value, Time Value and Intrinsic Value**

Figure 15.1 presents the relationship between the option value and the underlying asset price.



**Fig. 15.1 Total Value, Time Value and Intrinsic Value**

The total value of the option is shown by the curved line. The straight line shows the intrinsic value. The distance between the total value (curve) and intrinsic value (line) measures the time value. It can be observed that the time value decreases with increase in time. An option's time value is a function of time to expiration and it falls to zero on the expiration date. The time value is greatest when an underlying price is at the strike price.

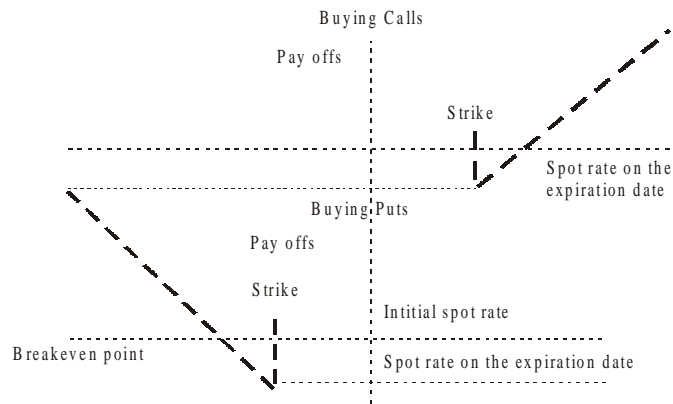


Fig. 15.2 Profitability of Buying Calls and Buying Puts

## HEDGING WITH OPTIONS

In a multiple-currency environment, options can provide an inestimable opportunity for minimizing costs and maximising returns. Options are very effective in ensuring protection of wealth by avoiding a number of wasteful transactions. An optimal strategy using options can be formulated for any type of situation.

### BASIC OPTION STRATEGIES

#### Buying a Call

A call option holder will realise a profit, if the value of the option at expiration is greater than the premium paid to acquire the option. Purchasing a call can be extremely profitable, if the underlying exchange rate undergoes a sharp increase in value before the expiration date (Fig. 15.2).

**Example 1** An investor purchases a DM call option at a strike price \$0.50 for \$750. If the spot price increases to \$0.53 then the investor has the right to purchase DM at 3 cents below the current market value. The investor will realize 18750 DM ( $\$0.03 \times 62500$  DM), if he chooses to exercise it. His profit will be 18750 DM or \$ 1125. This amounts to a 150% return on investment within a short time.

The option would have no value at expiry had the spot price been \$0.50 or less. Even in such a case, the maximum loss for the investor is limited to \$750.

### Buying a Put

Just as a call option holder is benefited by the increase in the value of a currency relative to US \$, a put option holder will be benefited, if there is a decline in the value of a particular currency vis-a-vis the US \$. The options which give the right to sell the underlying currency will be profitable, if the price at the time of expiration is anticipated to be lower (Fig. 15.2).

**Example 2** An investor purchases a Lira put option, strike price \$0.35 for \$800. If the spot price decreases to \$0.32, then the investor has the right to sell Lira at 3 cents above the market value. The investor will realize \$ 1875 ( $0.03 * 62,500$  Lira), if he chooses to exercise it. His profit will be  $\$1875 - \$800$  i.e., \$ 1075. The option will have no value, if the spot price had been \$0.35 or more. However, the maximum loss in any case does not exceed \$800, the premium that has been paid upfront.

### Selling a Call

The writer of an option has the obligation to perform according to the terms of the option contract, if the option is exercised. If the currency option is of the American type, then the investor has the right to exercise it, any time during the life of a option. The option writer cannot liquidate his option position by off-setting a purchase, once he receives the notice to exercise it. The writer of an uncovered call option is exposed to unlimited loss, if there is a substantial increase in the spot price of the underlying currency. This strategy has to be used only when a person expects the exchange rate to fall.

**Example 3** Consider the case when an option writer writes a DM European call for a 3-month period, at a strike price of \$0.50 for 62500 DM. He collects a premium of \$1250. If after 3-months, the exchange rate rises above \$0.540 and if the option is exercised, the writer has to pay the higher spot price to purchase DM from the market and deliver it to the buyer to meet his obligation. The writer will incur a net loss, if the loss exceeds the premium amount he has received earlier.

### Selling a Put

A put option writer, on the other hand should make use of the strategy of writing a put only when he is certain that the exchange rate will rise. He will be exposed to unlimited loss, if the spot rate falls. Further an adverse movement in the spot rate will result in the demand for additional margin money.

## PRICING OF CURRENCY OPTIONS

The profitability of option depends on strike price, time to expiration, the type of option (whether American or European), the interest rate differential between the countries whose currencies are included in the exchange rate and exchange

rate's expected volatility. Table 15.2 presents the impact of all the factors on the value of an option.

**Table 15.2** Factors Affecting Price of a Currency Option

Factor	Call	Put
Strike Price	I	D
Spot Rate	D	I
Time to Expiration	D	D
Foreign Interest Rate	I	D
Domestic Interest Rate	D	I
Volatility	D	D

where D = Direct relationship I = Inverse relationship

### Role of Foreign Exchange Rate Volatility

The price of a call option varies inversely with the strike price. The minimum price of a call option can be given by,

$$\text{Call option price} = \text{Exchange rate} - \text{strike price}$$

**Example 4** Consider the case when a person is buying an American call option in FF at a strike price of \$0.85. If the exchange rate is \$0.86, then he can buy the currency at a lower rate (by exercising the option) and can sell it at a higher rate of \$0.86, thereby gaining \$0.01. This gives rise to arbitrage opportunities. So, call option price has to be atleast \$0.01. It is clear, that as strike price increases, the call option price decreases and vice-versa.

A put option varies directly with the strike price. In the case of a put option, the buyer of the option is benefited by a higher strike price for which he would be willing to pay more.

### Role of Spot Rate

The higher the spot rate, the higher will be the price of a call option and vice-versa. The reverse will hold for a put option. This relationship can be readily observed from the example.

**Example 5** Consider a European call in DM with a strike price of \$0.35. If the current spot rate is \$0.38, then the option buyer will prefer to exercise the option provided the difference is large enough to cover the premium that has been paid upfront. This depends on the value of currency traded because DM can be purchased at a cheaper rate by paying \$0.35 per DM instead of \$0.38. Now, if the spot rate is \$0.42, then it is much more profitable.

**Role of Time to Expiration**

A longer time to expiration implies a greater probability of favourable change. Consider two options having same features except the time to expiration. The option having a longer time to expiration will have higher value than the one with a shorter time to expiration. The higher price is not, however, proportional to the increase in time.

**Interest Rate Differential**

The difference in the risk free interest rates of the home country and the foreign country, plays a very important role in determining the price of a currency option. For example, the higher the US interest rate relative to Indian interest rate, the higher is the price of a call option on Indian rupee, and the lower is the price of a put option on the dollar.

*Example 6* Consider a call option on Indian rupee whose premium is paid in US \$. The option buyer avoids the US \$ interest cost of a spot purchase and sacrifices the interest income earned on Indian rupee. A spot transaction which is undertaken in the same situation would require the investor to borrow US \$ at higher interest rate and to earn a interest income on Indian rupee which is at a lower rate. So, the call option price increases as the US \$ interest rate increases relative to the interest rate on Indian rupee.

**Role of Foreign Exchange Rate Volatility**

Exchange rate volatility is the most crucial factor which determines the option value. Volatility measures the extent by which exchange rates move over a period of time. It is the annualised standard deviation of the current market price. In order to arrive at an estimate of future volatility, two volatility measures are employed to determine option prices. The two measures are historic volatility and implied volatility.

**Historic Volatility:** The standard deviation of the past volatility is computed on the assumption that the immediate future will replicate the past. Probability theory is then applied to estimate the future prices.

**Implied Volatility:** The information on current option prices and exchange rates is combined with the other factors and the option pricing model is used to compute the volatility implied by the current exchange rates. When a volatility factor has been determined the premium for a given option can be determined. Similarly, when the premium for an option is known one can determine the volatility that would be required to generate that premium. The volatility calculated from the premium is called implied volatility and it represents the market's assessment of possible market movements in the relevant future.



An increase in volatility will increase the probability of the underlying currency being unstable. If a person holds currency as such instead of an option then the outcomes will balance each other. In the case of an option buyer, there is no limit to the gain he can make while the loss is limited. Both call and put options will have a higher value with increase in volatility.

### **CROSS CURRENCY OPTIONS TRADING IN INDIA**

Cross currency options, a new hedging instrument for currency risk management was introduced by the Reserve Bank of India in January, 1994. This is a sequel to the Liberalised Exchange Rate Management System (LERMS). With market determined exchange rates, the management of currency risk has gained importance in India. The introduction of rupee options may prove to be a boon for traders in India. The prerequisites for rupee option are:

- i. a stable rupee yield curve
- ii. a liquid rupee-dollar market

Moreover, since this is a new hedging tool, awareness about the instrument is limited. At present, neither the banks nor the customers fully appreciate the implications of these transactions.

#### **RBI Guidelines for Currency Options Trading**

The RBI has issued comprehensive guidelines for options trading in India. More precisely, the International Currency Option Market (ICOM) Master Agreement of 1992 of British Bankers' Association, London has been adopted with minor modifications.

#### **Guidelines**

- (1) Authorised dealers, who propose to write currency options are required to apply to the Reserve Bank of India, Exchange Control Department, Central Office, Bombay for general permission, giving full details regarding internal control systems, documentation and arrangements made with overseas branches/correspondent banks to buy options.
- (2) The foreign currency options have to be written on a fully covered basis i.e., the authorised dealer should buy from the overseas branch/correspondent bank an identical option for the same amount, strike price and maturity date as the one sold to their customers. Option positions should not be left open.
- (3) Only authorised dealers can write options. Customers cannot do so. However, an option purchased can be sold back to the authorised dealer, once in respect of each exposure.

- (4) Currency options can be concluded only over the counter (OTC).
- (5) Authorised dealers may write European or American options (put and call options only).
- (6) The suggested minimum option amount is US \$250,000 or its equivalent.
- (7) Only a resident customer having genuine exposure can book a cross currency option subject to their declaration that they have not booked a forward or an option contract for the same transaction with the same bank or any other bank.
- (8) A customer who desires to hedge his forex exposure should submit a request letter to the authorised dealer. An options contract cannot be booked under telephone instructions from the customer.
- (9) Customers are required to confirm all transactions with the banks. A confirmation has to be exchanged in the similar lines between the authorised dealer and the overseas branch/correspondent bank abroad.
- (10) The authorised dealer should advise the customer of the premium payable.
  - i. The premium may be paid in rupees, US dollars or any other permitted currency.
  - ii. Will include spreads of the authorised dealer, payable upfront both by the customer and by the AD to the overseas branch/correspondent bank.
  - iii. Once collected, is not refundable under any circumstances even if the contract becomes impossible to perform (including Government prohibitory order).
- (11) The customer should communicate his willingness to exercise the option contract, two business days in advance before the delivery date. The notice of exercise should be given by telephone or other electronic means but may not be given by facsimile transmission. The exercise of option should be up to 4.00 pm Indian Standard Time on the exercise date.
- (12) An option has to be exercised in whole and not in parts.
- (13) Options are settled by payment of the put currency amount by the buyer to the seller and by the payment of the call currency amount by the seller to the buyer. Payments have to be made in immediately available and freely transferable funds.
- (14) In the event of default of a contract, the non-defaulting party shall have the right to liquidate outstanding options by notice to the defaulting party. Each party's market damage is computed and are converted to the non defaulting party's base currency, at the appli-

cable spot rate. The net amount shall be paid by one party to the other by the close of business day following the liquidation of the options.

- (15) For option contracts between customers and the authorized dealers, or between two authorised dealers, Indian law is applicable and the Master agreement should be modified suitably.

In the case of option contract between Authorised Dealers and overseas branches/correspondent banks, the jurisdiction shall be determined individually by the parties involved and the Master agreement should be amended.

### **TRADING OF CURRENCY OPTIONS IN INDIA**

Cross currency options trading has not been very successful in India. Within the first week after their introduction, fourteen options were written. The product was new and the bankers and customers were interested in trying it out. Most of the options were call options of the European type. The major currencies in which options were written were Deutschemark, Yen and Pound sterling. The premium for the options have ranged between 1.5 percent and 3 percent for every dollar booked of either the put or the call currency value. The State Bank of India has written most of the options. The other banks that have written are Citi Bank, ANZ Grindlays, Standard & Chartered and Hong Kong Bank.

The State Bank of India sold 12 out of the 14 options in the first week after the introduction on 3rd January, 1994. Subsequently, 9 options were sold in the entire first quarter and 19 were sold in the second quarter. Around 80 percent of the contracts booked were forward contracts and 10-15 percent were cross currency forward contracts. Cross currency options contributed a meager balance in the last few months. The statistics clearly show that the new instrument has not been found viable. In spite of the fact that cross currency option has a lot of flexibility, it has not become popular.

The reasons for failure of cross currency options are, first, every option written by the Authorised Dealer, has to be covered by another option outside India. Pricing of the options is therefore done outside the country. The Authorised Dealers merely deliver the options to investors in our country at a price which is slightly higher than the price which they pay. The spread which the banker makes in the process is as low as 0.06 percent to 0.1 percent which is not very attractive for the bankers.

Secondly, the cost of the option which is the premium has to be paid upfront. This seems to be causing inconvenience for the investors. The cost is also high as compared to a forward contract. In the circumstances, investors prefer to book a series of forward contracts instead of buying an option.

Thirdly, there is no secondary market. An exporter or importer cannot buy and sell options since RBI guidelines do not permit such an activity. The option,

once purchased can be sold back only once for a particular transaction, to the authorised dealer. In the case of forward contract, the investor can cancel the contract without assigning any reason to it and can book fresh contracts for the same exposure. Investors feel that money is blocked in the option.

Fourthly, exporters are sometimes unable to predict the date of shipment and for part deliveries cross currencies are not suitable as cancellation of the contract in parts is not permitted.

From the time the government has introduced a liberalised regime, the rupee has registered a depreciating trend. Higher realisation on export earnings have left exporters in different to the various products available in the currency market, including the conventional forward contract.

Since the instrument is not a rupee option, many traders who have rupees and a foreign currency in their dealings are not using the instrument.

#### **Viability of Currency Options Trading in India**

The trading volume in cross country options is very small on account of the procedural difficulties and lack of awareness among public. Awareness will improve with the proposed introduction of the 91 days futures in the BSE and the subsequent introduction of options. The introduction of the rupee-dollar option would be feasible only, if exchange rates are really market determined. Further, interest rates should move to render options viable. They should be market determined and the link between exchange markets and money markets has to be fostered. The introduction of rupee dollar options under the present circumstances is not viable.

### **RECOMMENDATIONS OF THE SUB-GROUP ON DERIVATIVES (1.6.95)**

The sub-group on derivatives a part of the Sodhani Committee on Foreign Exchange, has made far-reaching recommendations in regard to the derivatives market. The three recommendations made by the sub-group are: permitting the simultaneous use of both forward contracts and options on the same liability; permitting more than one option on the same derivative; and removal of withholding tax on derivatives.

The recommendations aim at bringing down the cost of hedging as well as increasing volumes in the options market.

Permitting corporates to simultaneously use both an option and a forward contract is expected to reduce their risk. While an option hedges against any downside risk in any foreign exchange transaction, a forward cover will provide scope for gains from upward movements in currency.

Currently, corporates are not allowed to book a forward contract to take advantage of an upward movement of currency, since it already has a derivative on the loan.

The corporate could probably cancel its option and book a forward cover. In that case, under the present rules, it will not be allowed to book an option throughout the tenure of the underlying liability. A second option can be bought on any liability only if the first one reaches maturity (without being cancelled).

This prompted the sub-group, composed of by foreign exchange consultants and bankers, to suggest that the RBI should permit corporates to buy more than one option on any underlying transaction. Corporates have been lobbying for this for a long time.

The third recommendation of the sub-group is that of doing away with With Holding Tax (WHT) on all derivatives. At present, WHT is being levied on all foreign currency borrowings sanctioned after April 1,1995. WHT on such borrowings is levied as a percentage of the interest rate payable on the borrowings or derivatives, with the tax varying between 10 and 20 percent, depending on the tax treaty India has with the country where the deal originates.

However, WHT has always been levied on all derivative products, irrespective of whether such a tax is paid on the original loan. Even in the earlier situation, corporates were disinclined to pay a tax on their derivatives.

Others also reasoned that the small benefits that they gained through forward covers and other such derivative instruments would be offset by the outflows on account of WHT on derivatives.

The current policy of levying WHT on both the borrowing and the derivative, has met with strong opposition from corporates, which feel that being taxed more than once on transactions pertaining to the same liability is unfair.

### **BROADENING FOREIGN EXCHANGE DERIVATIVES MARKET**

Concessions were announced by RBI in August and September 1996 for booking forward cover on loan drawdowns and GDR proceeds. A whole host of derivative products no longer require prior approval of either the Ministry of Finance or RBI. RBI has also relaxed guidelines allowing corporates to use improvised derivative like range forwards and ratio range forwards for currencies other than the rupee. Corporates can now freely book and cancel options without prior approval.

A corporate can now hedge itself not only for the loan repayments but also when the loan is being drawn down. Corporates with GDR issues overseas can now book a forward cover once the issue is priced, thereby gaining the benefit of forward premia on their dollar sales. But cancellation of forward contracts on loan drawdowns or GDR proceeds requires prior approval of RBI.

Relaxation of controls for various vanilla derivative products helps the corporates to react proactively to interest rate changes and currency movements. Corporates can also unwind a derivative transaction. However, the genuineness of the underlying transaction rests with banks as well as the corporates. Quarterly returns have to be filed by auditors of the company regarding compliance with the various rules and regulations governing these transactions.

Cross currency options and plain vanilla options were not well received because of the high upfront premium required to be paid while booking them and due to lack of flexibility. Now corporates can reduce the upfront cost substantially by using range for range forwards. By using a range forward option, corporates will be able to book call and put options simultaneously for purchase and sale of currencies, respectively, on a future date at different strike prices. Corporates can choose strike prices so as to make the upfront premium cost zero. Since the corporate exercises the options in an agreed band of strike prices, the bank which is the writer of the option, also, has a limited risk of currency volatility which facilitates the corporate to pay lesser upfront premium while booking the options.

A ratio range forward is a more flexible variation of a range forward. They differ in the amount. The corporates can choose the ratio of the two amounts so as to bring down the upfront fees. New ratio range and ratio range forwards like subsidized collar, zero cost collar and participating zero cost collar can be used. RBI guidelines, however, stipulate that in the case of ratio range forwards, the premium receivable and payable should be equal. This will restrict the corporates from speculation.

The banks while deciding the amount of upfront premium take into account currency volatility, the interest rate risk pertaining to the currencies, maturity period of the option and the difference in the exercise price and the spot rate of the currency. The corporates have also been permitted to cancel the option and book another for the same underlying transaction without prior approval of RBI. Earlier they had to sold back only once during their tenor.

The changes initiated in August-September 1996 were expected to promote the maturity of the forex market. The initiatives will broaden the derivative products base in the foreign exchange market.

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## *INTERNATIONAL BANKING*

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### **ORIGIN**

The origins of international banking are to be found in the Euro-dollar market which originally consisted of U.S. dollar deposits and loans of large U.S. banks in the major financial center in London. The market now is no longer restricted to London or for that matter to Europe or US dollar. The term Euro currency is now used to refer to deposits and loans in a currency other than that of the country in which the bank is located. The Euro currency market has spread to other financial centres around the world, in Europe to Luxembourg, Paris and Rome; in the Carribean, Cayman Islands, Bahamas and Panama; in the Middle East, Bahrain; and in the Far East, Singapore, Hong Kong and Tokyo. On account of the widespread geographical base, Euro markets are often, referred to as 'off-shore' markets. The principal international banking activities are making foreign exchange loans, dealing in foreign exchange, having facilities/offices in international financial centres and financing international trade. Typically in the international banking transactions the borrower may be in one country, the booking of the loan in another country and the funding in yet another country. The players in the market come from all over the world. The banks are no longer American. They represent other advanced countries such as Japan, Germany and Switzerland.

### **Development of International Banking**

The impetus for the development of international banking came initially from the desire to avoid domestic monetary regulations especially in the case of US banks; secondly, growth of international trade; and thirdly globalisation of financial markets. US banks when confronted by rising market interest rates and the restrictions of Regulation Q in 1960's, moved their operations overseas out of reach of US regulators. The dollar banking in London, where banks



accepted dollar deposits (from countries with cold war strained relations with US) and made loans in US dollars to finance international trade offered an immediate and profitable avenue to deploy funds and keep the regulators away. Regulation of Eurodollar banking in London by the Bank of England has been minimal. The absence of reserve requirements, equity ratio and deposit insurance helped in cost saving. As a result, the Eurodollar banks could offer higher rates on deposits and charge lower rates on loans. US banks had a further impetus to move to Europe in 1967 and 1968 when Federal Reserve refused to lift regulation Q ceiling on rates paid on negotiable certificates of deposit. Banks could not compete with the money market for funds and experienced a massive loss of business.

### **Why Engage in International Banking?**

Banks engage in international banking to serve the needs of their customers which generates profits. Banks have customers that export and import goods and services and they need banking services to facilitate trade. Sometimes banks follow domestic customers of banks with foreign operations to provide services. Banks may also want to be closer to their overseas foreign customers in order to provide better service. Profit motive is another reason since international banking opens new markets some of which may have greater profit potential than is available in domestic markets. Sometimes banks engage in international banking even when it has a negative present value because global expansion adds to a bank's prestige. It can advertise that it has offices in London, Frankfurt, Tokyo and other international financial centres. Finally, global diversification is the reason for engaging in international banking. Banks like to take advantage of the opportunities in countries with faster growth rates and different business cycles.

### **Growth in Deposits**

There are three distinct periods in the growth in deposits. In the period upto early 1970s growth in deposits came mainly from large multinational corporations and from US banks. Loans were initially granted to corporate customers that were going multinational. These corporate borrowers were big, well known and of good standing. Loans were also made to governments and government-owned industrial units in the developed countries. As time passed, the range of corporate and government borrowers has spread to a wide variety of virtually unknown firms as a result of massive flow of funds into the market, guarantees provided by foreign banks and familiarity with foreign business systems. The massive flow of funds came with the rise of Organisation of Petroleum Exporting Countries (OPEC) in the early 1970s. The profits of oil exporting nations became the major sources of deposits. Of the total increase

in funds available in the Euro-dollar market of US \$165 billion in 1980 the investible surplus of OPEC countries accounted for \$87 billion or 52 percent. The external investments of OPEC countries were divided equally between short-term investments in bank deposits and money market instruments and longer term placements. A large proportion of investible surplus was recycled directly to balance of payments deficit countries in the industrial West. Actually the share of industrial countries in total OPEC investment rose from 79 percent in 1974 to 86 percent in 1980. The placements by OPEC countries were influenced by interest rate differences, exchange rate expectations and other factors. Other customers were less developed countries who borrowed to pay their increased oil bills.

In December 1981, the Federal Reserve recognising that many US banks have set up off-shore branches to avoid US regulations decided to legalise the International Banking Facilities (IBFs). IBFs essentially permit US banks to conduct Euro banking business, free of regulations in the United States. IBFs can only accept deposits from non-US residents and their loan facilities must be used for overseas purposes. IBFs have to maintain separate books from the parent bank. IBFs have proved to be popular since their inception and business which was carried on at off-shore centres has been relocated back in the US.

After the decline in oil prices in the early 1980s the major source of deposits, petro dollars, shrank and many of the loans including sovereign loans to developing countries in Latin America turned bad, creating what was termed later as sovereign debt problem. In 1980s the main source of new deposits was the foreign exchange reserves of small and medium sized countries in Asia with large surplus in foreign trade. Funds were lent during this period to corporations in the United States and Europe who used the funds to finance mergers and acquisitions. The trend in 1990s has been to rely heavily on the liquidity available within the domestic markets especially non bank sources in Germany. Non bank depositors in the UK and Luxembourg also contributed to the funds flows into the market.

### **Definition and Size**

International banking may be defined as the transactions relating to the acceptance of deposits and loans any where in a currency other than that of the country in which the bank is located. The global banking system is a network of interconnected nodes each representing a hub or particular geographical region.

External claims denominated in foreign currency can arise from traditional banking or Euro-currency market. They generally came from the Euro-currency market which is much larger than the market in traditional international bank credit. While the American banks dominated in the first two decades since 1960s, Japanese banks became number one in the later half of 1980s. Total international claims rose from 10% of world GDP in 1980 to 28% at end 1990. The ratio

which stagnated in 1990s reflecting in part the retrenchment of Japanese banks, has been on the rise since end 1999 reaching 48% by early 2006.

Table 16.1 presents data on estimated net financing in international bank credit between 1987 and 2003. (of reporting banks in the Group of Ten plus Luxembourg, Austria, Denmark, Finland, Ireland, Norway, Spain, the Bahamas, Bahrain, the Cayman Islands, Hong Kong, the Netherlands, Antilles, Singapore and branches of US banks in Panama). The annual average level of US\$ 340 billion in the four year period 1987-90 came down steeply to \$150 billion in the following four year period 1991-1994 to US\$ 150 billion; and in the latest four year period 1995-98 to US\$ 325 billion mainly on account of the Asian crisis in 1997 and decline in credit to emerging countries. It was only in 1998 that total volume declined sharply. Banks reduced their lending commitments to emerging market economies both in Asia and elsewhere. The decline was on account of credit risk concern following developments in the Asian region and reduced participation by Asian banks. To improve capital ratios, disposal of loans on large scale was undertaken. Negotiations for the rolling over of existing Asian debt also slowed down the grant of new facilities. The short-term debt of Korean banks of \$22 billion was exchanged for long-term loans. Banks focussed on the risk and return characteristics of assets. As a result the syndication process lengthened and margins widened. The loan facilities incorporated clauses for repricing or modification of terms bringing practices closer to international bond market. There was clearly a shift in the balance of power away from borrowers by the end of 1997. From the beginning of 1990s (except for crisis years 1997 and 1998) syndicated loans have grown strongly<sup>1</sup>. Corporations in industrialized countries found syndicated loans as a flexible source of funds that could be arranged quickly and relied upon to complement capital market sources.

The development of a secondary market which attracted non bank financial firms such as pension funds and insurance firms rendered the syndicated loan market liquid. Finally, the advent of new risk management techniques, guarantees and unfunded risk transfer (in a credit default swap, the risk taker does not provide upfront funding but faces obligations on the basis of changes in borrower's creditworthiness) enabled a wider circle of financial institutions to lend on the market. Mergers, buyouts, privatizations in emerging markets, banks, utilities, transportation and mining companies account for major borrowing.

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<sup>1</sup> Outstanding loans increased from \$ 684 billion at end 1977 to \$ 8 trillion in the second quarter of 2006. (BIS Quarterly Review, Dec. 2006)

**Table 16.1** Net International Bank Credit (1987-2003)

(US \$ Billion)

Year	New Credit	Outstanding
1987	320.0	1690
1988	260.0	NA
1989	410.0	NA
1990	380.0	NA
1991	80.0	NA
1992	165.8	3660
1993	200.0	3780
1994	190.0	4240
1995	330.0	4645
1996	420.0	5015
1997	465.0	5285
1998	115.0	5485
1999	61.8	5547
2000	490.4	6037
2001	392.9	NA
2002	453.2	NA
2003	399.1	8767

Source: BIS Annual Report, 1991, 1994, 1998 and 1999 and *International Banking and Financial Market Developments*, March 1999, June 2001, June 2004 and December 2004.

### Financial Intermediation by International Banks

Financial intermediation at the international level by a bank involves intermediation of a similar kind undertaken within a country by a wide range of bank and non-bank financial intermediaries. The essence of the Euro-dollar market is external financial intermediation<sup>2</sup>. Every Euro-dollar transaction involves an international credit transaction. The international financial intermediation process is essentially a recycling process and on a global basis one country's surplus is equal to another country's deficit.

International banking intermediates world financial imbalances and maturity preferences. The intermediation has resulted in matching the

<sup>2</sup> Gunter, Dufix and Ian H. Giddy, *The International Money Market*, Prentice Hall, 1978.

preferences of OPEC states for short-term claims with medium term debt offered by countries in current account deficit. The OPEC states had not only their maturity preferences met through this process but also got the risk inherent in lending to sovereign states (sovereign risk) reduced apart from the reduction of risk arising out of a diversified portfolio held by an intermediary.

As in the case of other forms of financial intermediation, the essence of international banking is maturity transformation. This process has been facilitated by the development of roll-over credits in 1970s where by a ten or twelve years syndicated loan may be financed by banks borrowing money with a six month maturity. The interest rate risk inherent in such a maturity mismatch is transferred from the bank to the borrower by the practice whereby interest rate is reset every six months on the basis of interest rate paid by the bank (LIBOR) on six month money.

The recycling process has been greatly facilitated by the abolition of US capital controls at the same time as the first substantial rise in the price of oil, in 1973. After the abolition of capital controls the US banks with whom OPEC states preferred to deposit their surpluses could participate in the international intermediation process and contribute substantially to the recycling mechanism.

The Euro-dollar market has also helped surplus OPEC states to avoid currency mismatch since the desired currency mix of depositors and borrowers might vary. This was taken care of by the international banks. Further, the Euro-dollar market also provides an avenue for banks to adjust their overall liquidity position in both domestic and foreign currencies. The market also enables banks to offer their constituents forward exchange positions without the banks themselves incurring an undesired open forward position.

### **Functions of Euro-dollar Market**

The Euro-dollar market performs three important functions.<sup>3</sup> First it is a great international conduit for funneling short and medium term capital from surplus countries to deficit countries. Secondly, it facilitates cover operations in foreign exchange. Banks by trading with each other in the Euro-dollar market conveniently cover the forward foreign currency obligations undertaken on behalf of their constituents and engage in covered interest arbitrage. These functions have assumed enormous importance with the advent of floating exchange rates. Finally, the Euro-dollar market acts as a financial intermediary within the confines of a single national currency.

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<sup>3</sup> Mckinnon, Ronald I., *Money in International Exchange*, Oxford University Press, 1979, New York.

### Effects of Euro-dollar Market

The effects at international level of Euro-dollar market are similar to those of the non-bank financial intermediaries at domestic level. A transfer of deposits from a bank in the USA to a bank in the Euro-dollar market may induce any of the following four effects<sup>4</sup>. First, an increase in total volume of world credit as the lending capacity of the bank in the Euro-dollar market is increased while that of the New York bank is not decreased; secondly, a multiple increase in credit to the extent that, until interest rate differentials adjust, a proportion of funds loaned by the bank is subsequently redeposited in the Euro-dollar market; thirdly, a change in the location of credit rather than the total in that the borrowing from a bank in the Euro-dollar market may be an alternative to that from a US bank which in turn is unable to extend credit elsewhere; and finally, the intermediation of Euro-dollar market may indirectly decrease the US money supply to the extent that a transfer from a time deposit to the Euro-dollar market (whereby the bank in the Euro-dollar market acquires a demand deposit at the US bank) increases required reserves of the US bank.

International banking is also influenced by domestic monetary policies followed in countries in whose currency loans are denominated. The volume of Euro-dollar market operations is influenced, *inter alia*, by the interest rate differential between the domestic and Euro-dollar markets for assets and liabilities which are close substitutes. Credit conditions in national markets have a direct impact on Euro-dollar markets through the interest rate mechanism. Thus, if credit conditions in national markets ease, *ceteris paribus*, the downward pressure on interest rates will initially lead to a flow of funds to the Euro-dollar market and to the decreased demand for loans. Conversely, a tightening of domestic credit conditions would result in an inflow of funds to the national markets and a larger demand for Euro-dollar loans.

### Effect on Exchange Rate Policies

The Euro-dollar market has influenced to a considerable extent the exchange rate policies of European nations. It has ushered in a system of more flexible exchange rates thereby making its own contribution to the breakdown of Bretton Woods system of fixed exchange rates.

The Euro-dollar market which is based on free mobility of capital across national boundaries and arbitrage could give rise to conflicts with domestic monetary policy. In the past the hike in prime rate in the U.S.A., stringent control over money supply and credit, leading to rise in interest rates as a part

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4 Fraven, Stephen F. (Ed) *A Framework of International Banking*, Guildford Educational Press, 1979.

of anti-inflationary policy have set in motion international arbitrage whereby funds from Europe moved to the United States to take advantage of higher interest rates in the U.S.A. The continued flight of capital from one country to another has implications for exchange rate and has necessitated the intervention of central banks. A desire to influence exchange rate has led to changes in interest rates that countries might not have put into effect for purposes of domestic policy.

### **Effect on Foreign Currency Assets and Liabilities**

Instability in the exchange markets affects international banks assets and liabilities in foreign currencies. Instability increases leads and lags generating need for additional financing requirement. It also increases the supply of forward currencies by customers wishing either to sell future receipts in a currency or to take positions against a currency which the banks would have normally covered spot by borrowing a currency and switching it into the currencies that they had sold forward. This would be reflected in inter bank transactions. Currency instability also may lead non-banks to borrow the particular currency and sell it spot to build up deposits in strong currencies. Such transactions take time to be fully unwound in a year and may meantime increase international bank's Euro-dollar assets and liabilities.

### **Euro Currency Multiplier**

A major concern about Euro currency market is that they have the potential to create credit and yet remain unregulated. The rapid growth in Euro currency markets in 1960s and 1970s coincided with rapid rise in inflation rates of the developed countries. The growth of Euro currency market had an expansionary effect on national money supplies to fuel inflation rates. In deciding whether Euro banks are responsible for credit creation, we should see whether their operations result in a net addition to the supply of dollars. The Euro-dollar market has the effect of raising the base multiplier since a proportion of the newly created base gets deposited with the Euro currency markets which have a greater liquidity effect than the domestic banking system.

Ronald Mckinnon (1979)<sup>5</sup> has estimated the Euro currency multiplier at 1.24 which means that a switch of one dollar from the US banking system to the Euro currency markets increases the global supply of dollars by 24 percent more than would have been the case, if the dollar was left in the US banking system. The relatively weak effect shows that growth of Euro-dollar market is responsible for the rise in inflation in developed countries. Further the additional liquidity effect of the Euro currency market does not depend on the Euro banks having a

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5 Op. cit.



lower reserve ratio than US banks. The crucial reason for the additional expansionary effect of the Euro banks' is that they hold their reserves with US banks and not with US Federal Reserve which means that Euro banks' reserves get lent out by the US banking system. Their time deposits are less liquid demanding lower cash reserve ratio. Finally they can afford to hold lower reserves because of their ability to raise funds at competitive interest rates speedily.

### **Organizational Form of International Banking**

The organizational form of international banking business consists of setting up by a bank, a correspondent banking relationship or branch or subsidiary bank or opening a representative office, or seeking a non-controlling interest in an affiliated bank in a foreign country, setting up a joint venture or joining a consortium of banks.

### **Globalisation of Banking Systems**

The market for financial services and products is global in scope and dynamic. Growth of international banking has however been restricted to Euro currency and off-shore banking centres because of protectionist financial policies, restrictions on banking practices and unpromising financial environment. The worst causality of banking protectionism is efficiency and service. Banks want protection from competition while striving for a free hand abroad. This policy cannot be pursued indefinitely, because several governments insist on reciprocity in opening branches. Restrictions would slow down internationalisation of banking system. Since banks abroad are relatively free of restriction, close regulation of banks in the past in France and Germany has stifled their growth.

## **REGULATION OF INTERNATIONAL BANKING**

Banks may only engage in those activities granted to them by law, regulators and courts. When banks engage in international banking the issue of which country's rules apply arises. The country where the bank's headquarters is located is called the home country and the country where the foreign office of the bank is located is called the host country. A bank may only do business in another country with that country's permission. International cooperation has resulted in prescribing minimum standards for supervision of banks foreign establishments and adoption of capital standards.

### **BASLE COMMITTEE (1974)**

The Committee on Banking Regulation and supervisory practices (Basle Committee) was created by the governors of the central banks of the Group of 10 nations in 1974 to improve the coordination of bank supervision. The Committee which meets four times a year in Basle, Switzerland at the Bank



for International Settlements is required: (1) to define the responsibilities for supervising international banking; (2) to examine common problems such as foreign exchange positions at bank and monitoring country risk; and (3) to establish personal contacts to resolve mutual banking problems.

### **Concardat (1983)**

The Basle Committee in 1983 made agreement concerning principles for the supervision of Banks' Foreign Establishments that collectively with the 1975 version is called the revised Concardat. It lays down that no foreign bank should escape supervision and that supervision should be adequate; and stressed the need for international collaboration for bank supervision. The Concardat was reinforced by the issuance of minimum standards for the supervision of international banking groups and their cross border establishments.

The minimum standards are: (1) All international banking groups and international banks should be supervised by a home country authority that capably performs consolidated supervision; (2) The creation of a cross-border banking establishment should receive the prior consent of both the host country supervisory authority and the banks and if different, banking groups home country supervisory authority; (3) Supervisory authorities should possess the right to gather information from the cross-border banking establishments of the banks or banking groups for which they are the home-country supervisor; and (4) If a host country authority determines that any one of the foregoing minimum standards is not met to its satisfaction that authority could impose restrictive measures necessary to satisfy its prudential concerns consistent with these minimum standards including the prohibition of the creation of banking establishments.

### **Capital Accord (1993)**

In 1988, the BIS Committee on Banking Regulation and Supervisory Practices established on Capital Accord for international banks that became effective in 1993. The BIS Capital Standard calls for an 8% capital to risk weighted assets (Cooke ratio) and off balance sheet items ratio consisting of two tiers of capital, each equal to 4%. Tier I is common stockholders equity and tier II contains certain preferred stocks, subordinated debentures and other items.

The capital standard aims at putting all banks on equal basis with respect to capital adequacy and promote safety and soundness by requiring more capital. However, differences in capital across nations exist due to national discretion in the composition of tier II capital. German banks have *Stille Reserves* (silent reserves) which is the difference between actual and reported earnings, Australian banks have asset revaluation reserves and Japanese banks include 45% of the capital gains in the stocks they hold.

**Evaluation of Basle Accord**

The Basle Accord may be analysed in terms of its implications for bank safety and soundness and for bank competitiveness.

**Safety and Soundness**

The purpose of the capital agreement was to strengthen the capital base of the banking system. It is normally assumed that there is a direct relation between levels of capital and bank soundness because highly capitalised banks have greater resources available for absorbing unexpected losses. Although no correlation exists between bank capital levels and bank failures, higher capital level increases safety and soundness. Firstly, bank capital provides assurance to depositors who may feed a run on an unsafe bank by withdrawing funds even in the presence of deposit insurance. Secondly, capital serves to absorb unexpected losses.

The Accord has to be judged in terms of its contribution to the larger policy project of managing debt crisis and keeping international payments system functioning in 1980s. The strategies adopted in 1982 and 1983 for dealing with debt crisis, including capital adequacy standard, swift bail out of banks, provision of liquidity to debtors, obliging banks to raise fresh equity, strengthening banks to make loan loss reserves by changes in tax and accounting laws and encouraging debtor nations to adopt economic reforms advocated by Baker and Brady plans and the IMF and World Bank, helped maintain the international payment system. The strength of a bank is ultimately a function of profitability. Higher capital levels do not make banking a profitable industry. The focus is now shifting to risk reduction and promotion of bank liquidity.

**Competitive Effects**

An analysis of the Accord's competitive effect has to take into account that regulatory discretion at the domestic level will disadvantage certain commercial banks. The Accord does little to make financial institutions equal. The Accord has three parts each of which is subject to regulatory discretion so long as the capital standards are met or exceeded. These are the definition of capital, the application of risk weights to specific asset categories and treatment of off balance sheet activities. Differences in national discretion are particularly marked with respect to the definition of capital and the application of risk weights to specific asset categories and the treatment of off balance sheet activities. If national regulators interpret the accord in a comparatively stringent manner, the banks of such countries will be forced either to raise more capital or shed assets to meet target ratios. Those that do neither can be prevented from opening new branches or expanding into new geographic or product markets.

Conflicts in regulations could arise on both asset and liability sides. The underlying theory of the Accord in regard to assets is that the amount of required

capital should depend on the credit risk associated with the bank's asset portfolio including its off-balance activities. Different levels of capital are required to support different types of assets. For example the supervisors in USA and Japan do not require capital to support banks' holdings of claims on OECD governments while Bank of England places a 10% weight on some government securities and 20% on others. *Ceteris paribus*, British banks have to raise more capital to hold the same portfolio of assets.

In regard to liabilities, the Accord divides capital into Tier I and Tier II capital and stipulates an overall capital level of 8% of which 4% had to be Tier-I. Although Tier I has to be shareholder's equity only, discretion is given in determining Tier II. The greater the diversity of items allowed by a country's regulators into Tier II the easier will be for their banks to meet Basle standard.

National discretion also exists in regard to the applicability of the regulations to the various classes of financial institutions. The Accord states that it applies to international banks. The Japanese have restricted the application of accord to banks with significant international banking activities, those with branches or subsidiaries overseas. The Federal Reserve applies the standard to all banks and banks holding companies that it regulates. The Bank of England applies the regulatory regime across the board.

The implementation of the Accord has imposed costs on banks as well as on their customers. Commercial banks had to raise equity and/or shed assets which prove difficult. Bank customers especially middle market firms are affected because the risk weighing system favours bank asset allocation toward cash and government securities and away from loans. The Accord does not promote safety and soundness consistent with fair competition and involves costs to the banks themselves and their customers. The Accord has set rules for a greatly altered international payments system. A smoothly running international payments system is a public good and each country that enjoys its use also has a responsibility to contribute to its maintenance. To the extent that higher capital levels bolster confidence in international banking, the Basle Accord must be viewed as a welcome development.

The Asian crisis of 1997-98 was a painful reminder that adherence to the free working of market forces at the international level was not compatible with the maintenance of opaque, inefficient and loosely regulated local financial systems. Further, the emergence of large international conglomerates in a world where regulations based on sectoral and national framework require changes in methods and scope of regulatory frameworks. Two recent market and official initiatives in this regard are towards a greater market orientation of regulation in terms of shift from an approach based on mechanical rules to market discipline. The amendments to the Basle Capital Accord to permit the use of

internal models for market risk as well as the precommitment approach which would allow a self determined ex-ante allocation of capital, accompanied by ex post penalties, if losses exceed the precommitted amount; and the greater tolerance shown by the official community for the failure of individual institutions and emphasis on limiting the knock on effects of financial distress. Initiatives to improve the architecture of the international financial system in areas such as transparency, infrastructure and burden sharing between the public and private sectors and efforts to upgrade payment and settlement system in wholesale markets go in the direction of limiting the knock-on effects of financial distress.

### **Basle Committee on Banking Supervision (1998)**

The Basle Committee has been placing increased emphasis on the need for greater market transparency and sound risk management principles. In October 1998, a Consultation Paper covering sound practices in the areas of loan valuation, loss provisioning and credit risk disclosure has been issued. This paper complements the Basle Core Principle which outline the minimum requirements for the effective supervisory systems. The paper notes that weak or inadequate loan loss provisioning practices and poor transparency are major sources of risk to individual banks and the banking system as a whole. The paper will serve as a basic framework for supervisory evaluation of banks' policies and practices in the area.

The Basle Committee has continued to develop refinements to the Capital Accord. It released new guidelines concerning the type of securities that banks should be allowed to use in meeting their capital adequacy requirements. The Committee noted that some banks had issued a range of innovative instruments such as preferred shares with step-up coupons which offer issuing banks benefits such as ability to deduct interest dilution of shareholders equity, ease of sale in periods of financial market volatility and lower required return on capital than for common equity with the aim of raising Tier I capital in a more cost-effective way. The Committee decided to limit acceptance of these instruments for inclusion in core capital through introduction of stringent conditions and the imposition of a limitation on their use to 15% of Tier I capital. The Committee at the same time reaffirmed that common shareholders' funds should be the predominant element of capital since they enable banks to absorb losses on an ongoing basis and conserve capital during times of stress.

The relevance of the core principles for all banking systems has been brought to the fore by the events in Asia which revealed distinct weaknesses in the supervisory arrangements in many emerging market economies.

Weak banking systems throughout the region continue to impede economic expansion. There was also a rapid rise in the rate of expansion and a related

tendency to lower credit standards and increase risk taking generally. The large inflows into Asia in the early 1990s mainly loans from European and Japanese banks at generally declining spreads are good examples of this.

To prevent future crises, an informal assembly of senior officials from industrial countries and emerging markets called the Willard Group was constituted in 1998. Its three working recommendations are for improving transparency and accountability in both the public and the private sector, finding ways to strengthen domestic financial systems and finding means of involving the private sector more closely in crisis management and resolution.

With respect to strengthening financial system, the Core Principles for Effective Banking Supervision, the initiatives in 1998 in the area of payments and settlements, transparency in the conduct of monetary and financial policies and corporate governance and the proposed update of the 1988 Capital Accord to take account of the development in the financial system in the 11 years since, it was issued may be noted.

The objectives of the revision are: (1) continued promotion of safety; (2) enhancement of competitive equity; (3) more comprehensive approach to addressing risk; and (4) continued reforms on internationally active banks. In the revised Accord market discipline and supervisory review process would complement minimum capital requirements. The Basle Committee proposes to develop two quantitative parallel approaches to capital requirements. A revised standardised approach that seeks to redirect critical shortcomings in the present Accord and an alternative approach based on bank's internal rating systems that would be available to banks with sophisticated systems for rating credit risk.

Other unresolved issues in international banking are the financial responsibility of a host country to act as a lender of last resort, if a foreign bank or financial institution is in financial difficulty, differences in provisions for loan losses on international loans, foreign exchange risk and country risk. A related issue is the securitisation of international capital markets. A larger share of long-term, cross border capital flows are taking place via marketable equities and bonds. Despite the rapid growth of these forms of finance the international financial system does not provide clear delineations of responsibility for the liquidity and solvency of a system based on securitised finance.

## **ACTIVITIES OF INTERNATIONAL BANKS**

While direct lending is the major activity of commercial banks, their activities cover investment banking, bankers acceptance, commercial paper, medium term notes and direct lending.

**Banker's Acceptance (BA)**

The bill of exchange employed in export trade has evolved in course of time into a highly liquid bank guaranteed negotiable instrument known as banker's acceptance, (BA). The tenor of on acceptance is normally less than 6 months. Creating an acceptance involves the substitution of bank's creditworthiness for that of the borrower. The bank buys and then sells its acceptance, and the acceptance serves as a medium for the bank both to advance credit as well as to fund itself. The nature of the underlying transaction is important in determining a bank's maximum allowable exposure to any single customer, as is the original term to maturity (or tenor) of the acceptance. For the borrower acceptances can be an attractive means of financing when compared with the costs of other borrowing alternatives.

When a bank guarantees the payment of a bill of exchange or accepts the bill by indicating a commitment to honor the bill at maturity it becomes a banker's acceptance. BAs can be sold or discounted because they are highly standardized negotiable instruments that are guaranteed by banks. Acceptances are an attractive short-term investments in view of their safety and liquidity. The yields on BAs are higher than on CDs or treasury bills. They permit importers and other users to obtain credit on better terms than otherwise would be possible. They are standardised in terms of dollar amount and uniformity of credit quality which allows them to be traded efficiently in the OTC market. It can be discounted more than once. BAs are high quality assets. They are available in widely varying amounts. Dollar acceptances outstanding in USA in 1998 (year ending September) were \$14,363 million<sup>6</sup>.

**Commercial Paper (CP) and Certificates of Deposit (CDs)**

The short-term Euronotes consist of commercial paper and certificates of deposit. Commercial Paper (CP) consists of unsecured, short-term notes that are sold usually on a discount basis either through dealers or directly to investors. CP investors hold the paper until maturity and there is no secondary market because of its heterogeneity. Dealers make markets by generally standing ready to buy at substantial discounts any CP they have placed that investors wish to sell before maturity. CP is supported by the issuers maintaining lines of credit provided by banks upon payment of fees. Bank guarantees that CP will be honoured at maturity. The market for CP is much larger than the BA market. The outstanding CP in USA in 1998 (year ending September) was \$1,163,303 million<sup>7</sup>. Discount rates for CPs have been slightly higher than for BAs. The yields of directly placed CPs are slightly below BA's.

6 Federal Reserve *Bulletin*; May 1999, A 22.

7 Op. cit.

**Table 16.2 Net Euronote Issues**  
(1992, 1997, 2002 and 2003)

(US \$ Billion)

Instrument	Net Issues			
	1992	1997	2002	2003
Euro commercial paper	0.2	7.9	23.7	417.5
Other short-term				
Euro notes	11.8	6.9	(-)2 2.0	151.7
Medium term notes	28.3	83.0	65.8	1302.7
Total Issues	40.4	97.8	67.5	1871.9

Source: BIS, *International Banking and Financial Market Developments*, November 1994, August 1999 and June 2000 and December 2004.

The Euro commercial paper market which has declined to \$ 0.2 billion in 1992 has regained its position in 1997 when the net issues amounted to \$7.9 billion and has reached \$ 23.7 billion in 2002. International banks have been shifting from short-term financing to medium term Euronotes which have gone up from \$ 28.3 billion in 1992 to \$ 83 billion in 1997, \$ 65.8 billion in 2002 and \$1302.7 billion in 2003. There has also been a shift by international banks from issuance of certificates of deposit in favour of longer term funding, in particular, floating rate notes (FRNs).

A certificate of deposit (CDs) is similar to traditional time deposit from the view point of an issuing bank with a fixed maturity date. From the viewpoint of purchaser it has two features: it is negotiable and can be traded in the secondary market. Since it is a bearer security its ownership can be transferred prior to the redemption date. CDs pay no interest. There is only one single payment, principal and interest. The bulk of the deposits have a very short duration of 1, 3 or 6 months. For long-term CDs there is a fixed coupon or floating coupon. For CDs with floating rate coupons, the life of the CD is subdivided into subperiods of usually 6 months. Interest is fixed at the beginning of each period and is based on prevailing market rate which is usually the LIBOR but sometimes US Treasury Bill rate or prime rate is used. CDs in America are issued nationally in pieces of \$1 million through dealers or through direct placement by the banks own sales force to bank's own clients tailored to customers requirement.

#### **Medium Term Euronotes (Euro-MTNs)**

The medium term notes have a maturity range from 9 months to 20 years. Longer maturities involve liquidity problem. Although there is no secondary trading in Euro MTS, liquidity is provided by commitments from dealers to



buy-back paper before maturity at prices which assure them of their spreads. Table 16.2 presents the outstanding Euronote placements at \$ 1871.9 billion at the end of December 2003. The total outstanding amount of international short-term notes (commercial paper and certificates of deposit) was \$ 569.2 billion and medium term notes \$ 1302.7 billion. At the end of December, 2003 the outstanding EMTNs exceeded the volume of commercial paper by about four times.

Growth in EMNT was enormous in 1993. The year witnessed an issue to \$78.1 billion, more than 36 percent of the outstanding. Activity in 1993 was boosted by investor preference for long-term paper, the introduction of new currencies and maturities in drawing options and the development of special features. There was in particular shift away from best efforts placement towards the underwriting of issues which facilitates the raising of large amount of funds at short notice. A number of transactions were linked to derivative instruments (structured), allowing issuers and investors to modify risk/return profiles according to their own expectations and preferences. Euro medium term note further consolidated their dominant position in 1994 when \$136.9 billion and in 1995 when \$ 175 billion was issued. Their decline since then has been arrested in 1998 when \$ 103.1 billion net issue was made.

Multicurrency options have become the norm in EMTN programs enhancing the competitiveness of the technique vis-a-vis other forms of funding. EMTNs have evolved from being a borrowing device bridging the maturity gap between short-term Euro-notes and Euro-bonds to become a more general fund raising instrument providing a high degree of flexibility in terms of currency, maturity, size and structure of offering on very competitive terms. There has been concern about the liquidity of structured securities. Meanwhile World Bank has announced introduction of a global multi currency note program incorporating a continuous buy-back commitment.

## **COUNTRY RISK ANALYSIS**

The spread on Euro dollar loans which is negotiated with the borrower depends on the assessment of the country risk by the lender bank/syndicate. Spread could be as fine as 1/8 percent if the country of the borrower enjoys high credit rating/low risk rank. Country risk is inherent in off-shore credit extension having potentially favourable or adverse consequences for the profitability and/or recovery of debt or equity investments. The risks in international lending from political and economic factors which distinguish it from domestic lending. Economic risk occurs when a foreign borrower encounters problems in converting domestic currency into the currency in which the loan is denominated. The essence of country risk analysis at the international banks



consists of an assessment of factors that would allow a country to generate sufficient hard currencies to repay external obligations as they become due. These factors are both economic and political. Economic factors include quality of public sector management process, the resource base of the country and external financial position. Political factors include quality of government, stability of a country and the regional political environment.

Country risk is broadly divided into sovereign risk and transfer risk. Sovereign risk occurs when a national government refuses to permit loans to be repaid or seizes bank assets without adequate compensation. Transfer risk occurs when domestic currency cannot be converted into foreign exchange because of foreign exchange controls or for other reasons.

RBI issued guidelines on country risk management which are applicable only in respect of countries where a bank has net funded exposure of two percent or more of its total assets.

## COUNTRY RISK AND EUROMONEY

Country risk analysis is made by Euromoney and JP Morgan and published in Euromoney and World Financial Markets, respectively. Euromoney uses 9 variables. These variables and weights are presented in Statement 16.1.

**Statement 16.1** *Variables and Weights for Country Risk Analysis*

Variables	Weights
Economic performance	25%
Political risk	25%
Debt indicators	10%
Debt in default or rescheduled	10%
Credit rating	10%
Access to bank finance	5%
Access to short-term finance	5%
Access to capital markets	5%
Discount on forfeiting	5%

**Economic performance:** The Global Economic Projections made by Euro-money are used.

**Political risk** is defined as the risk of non-payment or non-servicing of payments for goods or services, loans, trade related finance and dividends and the non-repatriation of capital. Euro-money collects scores from risk analysts, risk insurance brokers and bank credit officers. A score of 10 indicates no risk of non-payment and 0 indicates no chance of repayment.

**Debt indicators** are calculated using debt service to exports (A); current account balance to GNP(B); external debt to GNP (C). Scores are calculated by the formula:  $C + (A*2) - (B*10)$ . The higher the score, the better.

**Debt in default or rescheduled** is based on the amount of debt in default or rescheduled over the past 3 years.

**Credit ratings** are calculated as the average of sovereign ratings from Moody's, Standard & Poor's and Fitch IBCA.

**Access to bank finance** is calculated from disbursements of private, long-term, unguaranteed loans as a percentage of GNP.

**Access to capital markets** reflects Euromoney's analysis of how easily each country might tap international bond and syndicated loan markets.

**Discount on forfeiting** reflects the average maximum tenor available and the forfeiting spread over riskless countries as the US, based on the average maximum tenor minus spread.

India is placed at 58th position out of 180 countries with a total score of 52.64 in March 2000 by Euro-money. Singapore (rank 15, score 90.18), Taiwan (rank 24, score 81.71), South Korea (rank 40, score 63.48), China (rank 48, score 57.60), Mexico (rank 49, score 56.89) and Thailand (rank 54, score 54.73) are ahead of India.

During 2004-05 international credit rating agencies like Standard & Poor (S & P) and the Japanese Credit Rating Agency (JCRA) have upgraded their ratings of India from BB positive to BB+ stable (February, 2005) and BBB negative to BBB stable (September 2004), respectively on account of the country's strong fundamentals and consequent sharp improvement in investor outlook.

## **COUNTRY RISK ANALYSIS OF MORGAN GUARANTY TRUST COMPANY**

### **Country Risk Scoring**

The system makes three key assumptions: (1) The 14 variables included here are what count for country risk; (2) The weights assigned to each variable are the same; (3) The scoring thresholds for each variable (which have been set at levels perceived to trigger heightened levels of concern) are concern.

The 14 variables

- \* Real GDP growth rate (% p.a.)
- \* Change in GDP growth (% points)
- \* Inflation rate (% p.a.)
- \* Per capita GDP (in US\$)

- \* Budget balance (% p.a.)
- \* Real domestic credit growth rate (% p.a.)
- \* Does the country meet the IMF's SDDS standards?
- \* Exchange rate - deviation from 5 year average (%)
- \* Current account balance (% of GDP)
- \* External debt (% of DGP)
- \* External debt (% of exports)
- \* Interest payments (% of exports)
- \* Short-term debt + amortization (% of reserves)
- \* M2 (% of reserves)

### **New Perspectives on Country Risk<sup>8</sup>**

Recently, three new perspectives on country risk have gained prominence; debt intolerance, original sin and currency mismatches. Debt intolerance posits that the debt/ country risk tradeoffs are worse for countries with a history of economic mismanagement. Original sin argues that countries less able to borrow in their own country should be intrinsically riskier. Currency mismatches maintain that countries whose net worth is more sensitive to exchange rate depreciations should suffer higher costs in the event of a crisis. Statistical evidence was found supporting aspects of all three in explaining country risk. However sound macro economic and structural policies hold the key to addressing country risk.

### **Arrangement of International Loans**

Globally commercial banks dominate the syndicate loan market. There are no noncommercial banks or non banks among the top 200 institutions that have around 90% market share. Investment banks since 1990s have however taken advantage of their expertise as bond underwriters and of the increasing integration of bank lending and disintermediated debt markets to arrange loan syndications. Multilateral agencies such as International Finance Corporation and Inter American Development Bank also participate in the syndicated loan market.

### **Types of Euro-dollar Credits**

There are two generic types of Euro-dollar credits: the term loans and the revolving credit facility. Since the Euro-dollar market is over-the-counter market, loans can be tailored to suit the specific needs of the borrower giving innovation free play.

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8 Borig Claudio and Packer, Frank, "Assessing New Perspectives on Country Risk", *BIS Quarterly Review*, December, 2004.

Syndicated loan or term loan refers to the loan made by a number of banks who have come together to make a loan to one borrower. The term loan is divided into three stages: the draw down period, grace period and redemption period.

During draw down period which usually lasts 24 months the borrower can increase the amount of the loan. Grace period comes after the draw down period during which the amount does not change but the cash flows by way of interest and commission change. Finally the redemption period refers to the period when loan is repaid. It can be paid off at one go in which case it is called a *bullet payment* or in several installments called '*staged repayment*'.

Revolving credit facility is a loan that permits the borrower to draw down and repay at its discretion for a specified period of time. The flexibility has however, a cost to be met in the form of a commission called commitment fee. It has to be paid on the unused portion.

## **LOAN SYNDICATION**

The international syndicated loan is a facility for which there is at least one lender present in the syndicate whose nationality is different from that of the borrower. The syndication technique in the Euro-dollar market arose because of the large size of the loans and wide variety of banks providing the funds. Syndicated loans lie somewhere between relationship loans and disintermediated debt. The procedure also helps banks to diversify some of the unique sovereign risks that arise in international lending. Lead banks assemble a management group of other banks to underwrite the loan and to market shares in it to other participating banks. In a syndicate there are three levels of banks, lead banks, managing banks and participating banks. The mandate to organise the loan is awarded by the borrower to one or two major banks after a competitive bidding procedure.

### **Lead Bank**

The lead bank assembles a management group to underwrite the loan. The share of the loan underwritten by the lead bank is at least as large as any other lender. Once the lead bank receives the mandate from the borrower, a placement memorandum is prepared by the lead bank and the loan is marketed to other banks who may be interested in taking up shares. The syndicated loan market has advantages for junior and senior lenders. Senior banks benefit from fees from their expertise in risk organization and manage their balance sheet exposures. Junior lenders acquire new exposures without incurring screening costs in countries or sectors where they may not have the required expertise or established presence.

The placement memorandum helps the banks to understand the transaction and provides information about the borrower. On the basis of the data in the

placement memorandum banks make a reasonable appraisal of the credit before deciding about participation in the loan. Lead bank keeps normally 50-70 percent of initial underwriting share. The size of loan could be vary from a small sum of \$ 500,000 to several billions. The normal duration for syndication is about 6 weeks. But it could take less time, say 15 days, in the case of small loan and in the case of familiar borrower where the terms can be settled quickly and a placement memorandum prepared.

Common type of syndicated loan is a term loan with a grace period before repayment of principal commences. Grace period is one of the factors that determines the cost of the loan. Syndicated loans are normally denominated in US \$, but loans in Deutsche marks, Swiss francs, Japanese yen and other currencies are also granted. The average maturity of syndicated loan is 4.8 years. The US dollars are still the currency of choice for syndicated lending worldwide. In 2003 of total syndicated lending US dollar facilities represented 62% while the Euro accounted for 21% and the pounds, sterling and Japanese yen for 6% each.

**Club Loan:** In the case of smaller loans to frequent borrowers club loans are often raised. The club loan is funded by lead bank and managers. In such cases no placement memorandum is prepared. Club loans are common in periods of market uncertainty when large multinational banks are reluctant to do business.

### **PRICING OF EURO-DOLLAR LOAN**

The pricing practices in the Euro-dollar market reflect the nature of the market in which funds are bought and sold. The banks which lend do not have a deposit base. The lenders are wholesale banks that rely on a sole funding source, large time and call deposits from banks and other depositors. The lending banks' cost of funds varies directly with the level of short-term rates. There is thus a mismatch between source of funds and term loans. While funds are obtained more or less from the money markets, syndicated loans are for periods of 3,5, or even 8 years. The resulting interest rate risk from the mismatch is covered by the technique of roll over credit pricing. The loan is rolled over from one interest period to another at a floating rate until maturity. Interest on syndicated loans is altered every 3 or 6 months bearing fixed relationship to the London Inter Bank Offer Rate (LIBOR). The rollover Euro-dollars bear a rate tied directly to money market and interbank cost of funds and the rate is changed at fixed intervals.

The variable interest rates have advantages for both borrower and lender. They give access to borrowers to medium and long-term funds at short-term rates while they insulate the lenders/banks from interest rate risk. But variable rates make borrowers more vulnerable to default when interest rates rise. As a result the banks have exchanged interest rate risk for higher default risk.

**Spread**

Beyond the LIBOR is the 'spread' which is negotiated with the borrower before the loan is granted. The spread remains constant over the life of the loan or changed after a set number of years. The spread could be as fine as 1/8 percent and can go up to 1½ percent. Banks while not compromising on credit quality are competing on price in terms of spread and fees. At the end of 1993, Statoil (Norwegian energy deal) raised \$1 billion for 5 years at 0.3 percent over LIBOR. In another deal in the energy sector, Citibank arranged \$200 million for 3 years at 0.3 percent over LIBOR. Spread have widened in 1998 on account of the banks' reconsideration of their credit risk assessment procedure after the Russian crisis, introduction of market flex pricing which impart flexibility in the setting of prices between announcement and completion of facilities and convergence with bad market pricing practices. There are also praecipium, commitment fees, front-end fees and sometimes an annual agent's fee.

**Praecipium**

The praecipium is the lead manager's fees for assuming responsibility for setting up and coordination of syndication of loan which is around 1/8 percent of the loan.

**Commitment Fees**

Commitment fees of 0.5 percent in payable only on the undrawn amount of the loan.

**Front-end and Management Fees**

Front-end and management fees of 0.5 to 1 percent of the value of loan are one time charges negotiated in advance and imposed when the loan agreement is signed. Front-end charges are an important component of the bank's total return on credit. The front-end fees include participation and management fees. Participation fees are divided among the banks in proportion to share of the loan. Management fees are divided between underwriting banks and lead bank. Agent's fee, where applicable is an yearly charge and on a large credit may amount to \$ 10,000 per annum.

The annual charges on syndicated loans are:

LIBOR + spread × amount of loan + praecipium × amount of loan  
+ commitment fee × amount of loan undrawn + annual agents fee, if any.

**Front-end Charges**

Participation fee × amount of loan management fee × amount of loan  
+ initial agent's fee, if any.

**Example 1** Loan \$ 100 million.

Term 7 years and grace period.

Price 100 basis points over LIBOR of 10 percent.

Annual payment of interest and principal = \$ 21 million.

1 percent fee on \$ 100 million loan = \$ 1 million

Paid to the banks in the syndicate at the outset. This raises effective rate to 11.31 percent.

If lending banks pay 9.75 percent for their funds, the front-end fees increase their margin on loan from 125 to 156 basis points or 25 percent increment to their return on credit.

### **Secondary Market**

The secondary market consists of three segments; par/near par, leveraged (or high yield) and distressed. Most of the liquidity is found in the distressed segment. Syndicated loans are increasingly traded on secondary markets. The standardization of documentation for loan trading has contributed to the improved liquidity on these markets. Transferability clauses are incorporated into the loan agreement which allow the transfer of the claim to another creditor. The US market has generated the highest share of transferable loans (25% of total loans between 1993 and 2003) followed by EU (10%).

Participants in the secondary market are market makers (two way traders), active traders and occasional sellers and investors. The market makers are typically larger commercial and investment banks, committing capital to create liquidity and taking outright positions. Active traders are mainly investment and commercial banks, specialist distressed debt traders and “vulture funds” focused on distress debt. Non financial corporations and insurance companies also trade. Lastly occasional participants are present on the market either as sellers of loans to manage capacity on their balance sheet or as investors which take and hold positions. Sellers of risk can remove loans from their balance sheets in order to meet regulatory requirements, hedge risk or manage their exposure and liquidity. US banks transferred up to 25% of their problem loans to non bank investors.

The biggest secondary market for loan trading is US (\$145 billion in 2003) constituting 19% of new credit in that year and 9% of outstanding syndicated loan commitments. In Europe trading amounted to \$46 billion in 2003 (11% of primary market volume). In the Asia-pacific region secondary volumes are small with six or seven banks running dedicated desks in Hong Kong SAR and no non bank participants.



## LOAN AGREEMENT PROVISIONS

As compared to loans from domestic financial institutions Euro-dollar loan agreements are simple and contain fewer restrictive covenants. Loan document clauses cover pricing, interest payment dates and amortization dates. In the case of loans to multinational companies, affiliates are regarded as obligation of the parent company. There is a cross default clause which stipulates that the loan is in default if and when the parent is in default on its loans. The other aspect in the loan document reflects the international character of the loan. The borrower may be in one country, the booking of loan in another country and the funding in yet another country.

**Jurisdiction:** New York is often chosen because of the extensive case law on banking matters even in cases involving lenders and borrowers who are not residents of the U.S.A. Judgment currency clauses are necessary because courts in several countries render judgment in domestic currency only.

**Place and Method of Payment:** Payment of interest and principal on loan is normally affected by means of transfer of funds from one bank account to another in the country of the currency in which the loan is denominated. Borrowers normally receive funds at the place of their choice.

**Guarantee Clause:** The syndicated loans have no collateral. A bank guarantee is required and the bank should satisfy capital adequacy norms.

**Pari Passu Clause:** The clause obliges the borrower to treat all members of the syndicate equally.

**Reserve Requirement Clause:** The lending banks in the Euro-dollar markets are free of any reserve regulations imposed when subject to a central bank jurisdiction. The reserve requirement clause stipulates that the borrower has to absorb any additional cost the lender incurs when interest free reserve requirements are imposed.

**Subordination Clause:** The borrower has to agree that over the life of the loan he will not contract a new loan subordinating the rights of the holders of the current loan.

**Free and Clear of Taxes:** Lending banks insist on payments of principal and interest should be free of taxes.

**Euro-dollar Availability Clause:** Permits the bank to call for prepayment, if sufficient dollar funds are not available.

**Loan Repayment:** There is a standard clause that permits the repayment of the loan at any time without any penalty.

### Prospects for Syndicated Loan Market

The decline in the annual volume of syndicated loans which manifested in 1991 reversed in 1995. The sharp decline during 1991-94 was on account of



general disintermediation of banks from the lending business. First banks have been forced to tailor their loan books to their capital strength. Secondly the demand from high quality corporate, bank and sovereign borrowers has come down since they have shown a preference for the securities market. They find that pricing is more competitive and bond holders require few covenants, take no claims over specific assets and make few demands on financial ratios. The loan markets are now attractive only to smaller, low quality credits unable to access bond market. Loan markets are profoundly influenced by the ability of the bond market to satisfy a wider range of borrowers with a greater variety of financing choices as well as its increasing role as an alternative source of assets for banks. The syndicated loan markets biggest advantage is its ability to provide financing in structures, amounts and to credits that cannot be accommodated by the securities markets.

Project finance, particularly in the energy sector in Asia is likely to provide with a significant chunk of their loan business. Further the provision of credit to mid-sized unrated companies whose need for funds does not justify the expense of a public bond offering constitutes a potential source of syndicated loans, M&A and restructuring are a potential source of demand for loans.

In the near future the loan and bond markets are likely to merge into one liquid global debt market. In the primary market loans are convenient for specific niche or structural reason. They are also a funding source of last resort.

### **EURO LOAN SYNDICATION FOR PROJECTS IN INDIA**

The Gulf crisis and the consequent downgrading of India's credit rating below the investment grade have put limits on external commercial borrowings (ECBs). On account of the predominance of short-term borrowing and withdrawal of NRI deposits there were net outflows under external commercial borrowings both in 1990-91 and 1991-92. The successful handling of the Balance of Payments (BOP) crisis and the implementation of structural reforms since July 1991 have restored investors confidence to some extent. Between 1993 and 1997 only in 1995-96 a decline in reserves was registered. There was some improvement in India's share of net private foreign capital flows in the period 1993-96.

The South-East Asian crisis which surfaced in July 1997 continued to deepen and broaden in 1998. The economies of Thailand, S.Korea, Indonesia and Malaysia which were affected directly by East Asian crisis experienced drying up of private foreign financing, together with large currency depreciation and precipitous decline in asset prices. In August 1998 the Crisis spread to Russia with severe consequences for the economy.

The East Asian crisis has had profound impact on normal international financial flows. In 1997 net private capital flows to developing countries fell by about 45% from \$ 215 billion in 1996. In 1998 they declined by a further 40% over 1997 to about \$ 68 billion. External liability of other emerging countries like Brazil was also affected. Global developments showed adverse impact on world stock markets (reflecting increasing risk aversion towards equity), profitability of western banks and significant cuts in interest rates by leading central banks.

India's balance of payments withstood fairly well the turbulence in the international financial markets. It was quite comfortable with substantial reserve accumulation from 1996-97 from FDI flows, short-term trade credits, banking capital (excluding VAI deposits) and current account surpluses led by buoyant invisible receipts and larger workers remittances. At the end of March 2005 foreign exchange reserves stood at \$ 140.9 billion. In 2004-05 when market conditions improved, Indian corporates raised ECBs for financing import of capital goods, investment in new projects, local sourcing of capital goods and investment in new projects. Net commercial borrowing amounted to \$ 4841 million.

#### **Guidelines on ECBs (1999-2000)<sup>9</sup>**

**Average Maturities for ECB:** ECBs should have the following minimum average maturities:

- \* Minimum average maturity of 3 years for external commercial borrowings equal to or less than USD 20 million in respect of all sectors except 100% EOUs.
- \* Minimum average maturity of 5 years for external commercial borrowings equal to or less than USD 20 million in respect of all sectors except 100% EOUs.
- \* 100% Export Oriented Units (EOUs) are permitted ECB at a minimum average maturity of 3 years for any amount.
- \* Bonds and FRNs can be raised in different tranches of different maturities provided the average maturity of the different tranches within the same overall taken together satisfies the maturity criteria prescribed in the ECB guidelines.

**USD Five million scheme:** All corporates and institutions are permitted to raise ECB up to USD 5 million at a minimum simple maturity of 3 years.

**Exporters/Foreign exchange earners:** Corporates earning foreign exchange are permitted to raise ECB up to thrice average amount of annual exports during the previous 3 years subject to a maximum of USD 200 million.

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9 July 1999 and Press Release of Ministry of Finance, 09.02.2000.

The minimum average maturity will be 3 years up to USD 20 million and 5 years for ECBs exceeding USD 20 million. EOUs are permitted to have foreign currency exposure up to 60% of the project cost.

**Infrastructure projects:** Holding companies/promoters will be permitted to raise ECB up to a maximum of USD 200 million to finance equity investment in a subsidiary joint venture company implementing infrastructure projects. This flexibility is being given in order to enable domestic investors in infrastructure projects to meet the minimum domestic equity requirements. In case the debt is to be raised by more than one promoter for a single project, then the total quantum of loan by all promoters put together should not exceed USD 200 million.

**Long-term borrowers:** ECB of 8 years average maturity and above is outside the ECB ceiling, although the MOF/RBI's prior approval for such borrowings will continue to be necessary. The Government will review the extent of debt under this window periodically.

**On-lending by DFIs & other financial intermediaries:** While DFIs are required to adhere to the average maturity criteria prescribed, namely, minimum of 5 years for loans of more than USD 20 million equivalent and minimum three years for loans less than or equal to USD 20 million for their borrowing, they are permitted to on-lend at different maturities. They may also on-lend for project-related rupee expenditure. However, other financial intermediaries are required to adhere to the general ECB guidelines on maturity as well as end-use in their on-lending programmes.

**Proceeds of bonds, FRNs and syndicated loans:** Corporate borrowers who have raised ECB for import of capital goods and services through Bonds/FRN/Syndicated loans are permitted to remit funds into India. The funds can be utilized for activities as per their business judgment except investment in stock market or real estate, for up to one year or till the actual import of capital goods and services takes place, whichever is earlier. In case borrowers decide to deploy funds abroad until the approved end-user requirement arises, they can do so as per the RBI's extant guidelines. RBI would continue to monitor ECB proceeds parked abroad.

**ECB entitlement for new project:** All greenfield projects other than infrastructure projects will be permitted to avail ECB to the extent of 35% of the total project cost, as appraised by recognized Financial Institution/Bank, subject to the fulfillment of other ECB guidelines.

All infrastructure projects will be permitted to have ECB exposure to the extent of 50% of the project cost as appraised by a recognized financial institution/bank, subject to fulfillment of other ECB guidelines. Greater flexibility beyond 50% of the project cost may be allowed in case of power sector and other infrastructure projects based on merits.

**Pre-payment of ECB:** Presently, prepayment facility is permitted subject to certain conditions, if they are met out of inflow of foreign equity. In addition to this the corporates can avail of either of following options for prepayment of ECBs.

- i. 10% of the outstanding ECBs once during the life of a loan.
- ii. All ECBs, with residual maturity up to one year.
- iii. 100% prepayment is allowed where the source of funds is from Exchange Earners Foreign Currency accounts.

**Refinancing the existing foreign currency loan:** Refinancing of outstanding amounts under existing loans by raising fresh loans at lower cost may also be permitted on a case-to-case basis, subject to the condition that the outstanding maturity of the original loan is maintained. Rolling over the ECB will not be permitted.

**Liability management:** Corporates can undertake liability management for hedging the interest and/or exchange rate risk on their interest rate swaps, currency swaps, coupon swaps and forward rate agreements without any prior approval.

**End use relaxation:** ECBs can be used for any purpose except investment in real estate and in capital markets.

**Government equity holding in PSUs:** In view of on-going disinvestment programs, borrowing by PSUs should not incorporate any covenant that government will continue to hold at least 51% of equity in PSUs concerned.

**Operating expenses:** Operating and out-of-pocket expenses incurred for ECB approvals, not resulting in loans, are allowed as per prevailing RBI guidelines on current account transactions subject to a cap.

**Simplification of approval procedure:** The regional offices of RBI would take loan agreement documents on record of all ECB approvals once the Government/RBI has approved them.

Default interest not exceeding 2% over the applicable rate will be incorporated in the approval letter/taken on record letter itself. No further approval would be required from the Government/RBI.

### **Structured Obligation**

In order to enable corporates to hedge exchange rate risks resources domestically, domestic rupee denominated structured obligations would be permitted to be enhanced by international banks/international financial institutions/joint venture partners subject to certain conditions. The domination of debt service in the post default situation may be in rupees or in forex as envisaged in the contract document.

In June 2000 the limit for ECB approvals given by RBI was increased to US \$100 million under all windows. Even in case of prepayment approved by the government, RBI was empowered to give all such approvals.

**Liberalization, 2002-03**

- ECB proceeds can be used in the first stage acquisition of shares in the disinvestment process and in the mandatory second stage offer to the public.
- ECB can be raised from any internationally recognized source.
- Prepayment up to \$1 billion can be made under the automatic route; and with RBI approval for ECBs above \$1 billion.
- ECBs can be raised for development of integrated townships.
- ECB up to \$50 million can be raised in one financial year under the automatic route.
- Units in SEZs can raise ECB through banking channels under the automatic route.
- Corporates can issue foreign currency convertible bonds (FCCBs) up to \$50 million in a year under the automatic route.
- The ceiling of US \$100 million for repayment of ECB under the automatic route was removed.

**Liberalization, February 1, 2004**

- ECBs are permitted for investment in all sectors except capital markets and real estate.
- Eligible list of ECB borrowers now includes all corporates (except banks), financial institutions and NBFCS.
- ECBs up to US \$20 million and minimum average maturity of 3 years are now eligible under the automatic route.
- ECBs above US \$20 million and up to US \$500 million are also permissible under the automatic route of RBI for loans with minimum average maturity of 5 years.

**Trends in External Commercial Borrowing**

Data on external commercial borrowing (net) and short-term credit (net) are presented in Table 16.3. Commercial borrowings (loans, FCCBs, floating rate notes, self liquidatory notes and leasing) have contributed on average \$ 1371 million per annum in the 8 year period, 1991-92 – 1998-99 reflecting

prudent external debt management, a cap on equity through GDRs. Short-term borrowing involved repayment in 1991-92 to 1993-94 reflecting the erosion of international confidence and rendering rollover of credit difficult. Reflecting the policy of restricting the component of short-term external debt liabilities within manageable limits, the share of the short-term external debt in the total declined by \$ 1680 million from \$6,726 million at end March 1997 to \$ 5046 million at end March 1998, the bulk of decline occurring under non-resident deposits. Commercial borrowing increased sharply during 2004-05 as access of the corporates to capital markets improved. Indian corporates raised ECBs mainly for financing import of capital goods, investment in new projects, local sourcing of capital goods and investment in new projects. The weighted average maturity period of ECBs in 2004-05 was 7 years. Short-term debt particularly trade credits have increased to finance import growth.

**Table 16.3** *Net External Commercial Borrowings*  
(1991-92 – 2004-05)

(US \$ million)

Year	Short Term Credit up to One Year (Net)	Commercial Borrowing (Net)
1991-92	-515	1456
1992-93	-1079	-358
1993-94	-769	607
1994-95	330	1029
1995-96	160	527
1996-97	1692	239
1997-98	-1680	3428
1998-99	771	4043
1999-00	344	-1860
2000-01	-471	3304*
2001-02	-84	-149
2002-03	81	-194
2003-04	167	-254
2004-05	3093	4841

\* Includes India millennium deposits of \$5.5 billion.

Source : Reserve Bank of India, *Annual Reports*.

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## GLOSSARY



**American Option:** An option that can be exercised at any time before its expiration date. Exchange traded currency options are generally American style options.

**Arbitrage:** Purchase of foreign exchange, or securities in one market coupled with immediate resale in another market in order to profit risklessly from price differences. Two types of arbitrage are interest arbitrage and currency arbitrage. The effect of arbitrage is to equate the price in all markets of a security of identical risk.

**Asked Price:** The price at which securities are offered.

**Asset-Liability Management (ALM):** It refers to short run balance sheet management and the focus is generally on the net interest income defined as difference between interest income and interest expense.

**ATM:** Automated teller machine. The unmanned machine is usually activated by a magnetically coded card which can be used to dispense cash, take instructions on fund transfer and give information on the state of the account.

**At-The-Money (ATM):** An option whose strike price is equal to the prevailing spot rate (at-the-money spot) or the prevailing rate corresponding to the contract's expiry date (at-the-money forward).

**Bank Rate:** It is the rate at which the central bank of a country makes advances, bills of exchange and other commercial paper to provide financial accommodation to banks or other specified groups of institutions (against approved securities or purchases or rediscounts). The Reserve Bank of India's bank rate is 6 percent (May 2005).

**Backwardation:** A relationship in which spot or cash prices are higher than forward or future prices.

**Banker's Acceptance:** A bill of exchange used in financing trade that has been endorsed by the bank. It constitutes a guarantee that payment will be forthcoming from it if not from the buyer. Acceptance by a first class bank would enable the merchant/exporter to sell it at discount and get immediate payment for the goods sold/exported.

**Base Rate:** Interest rate such as prime rate or LIBOR for pricing variable rate loans, rollover credits.

**Basis:** The spread or difference between two market prices or two interest rates.

**Basis Point:** One hundredth of one percent.

**Basis Price:** The price expressed in terms of yield to maturity or annual rate of return.

**Bearer Bond:** A bond held by whoever is in possession.

**Bear:** A market player who expects the value of a security to decline. A bear market has declining prices and the general sentiment is for further price declines to occur.

**Bid Price:** The price offered for securities or foreign exchange.

**Bill of Exchange:** Used in foreign trade as a means of payment. It is a written order telling one person to pay a certain sum of money to a stated person on demand or at a certain time in future.

**Bank for International Settlement (BIS):** An international bank established in 1930 to assist in transferring German reparations. It is now an official banking institution owned and managed by European central banks and located at Basle, Switzerland.

**Bond:** A security issued by government or a company borrowing money from the public stating the existence of a debt, rate of interest, date of repayment and the amount owing to the bondholder who must present it to obtain payment on maturity.

**Bull:** A market player who expects the value of a security or currency to increase. A bull market has rising prices and the general sentiment is for further price increases to occur.

**Broker:** A broker brings together buyers and seller for a commission usually paid by the initiator of transaction or by both sides. Brokers do not deal or take positions. They are active in money and foreign exchange markets in which banks buy or borrow and sell money.

**Cash Reserve Ratio (CRR):** Scheduled commercial banks are required to keep a statutory minimum level of cash of 3 percent of aggregate deposits. RBI varies the ratio according to the liquidity conditions in the economy. In May 2005 CRR is 5%.

**Call Money:** Interbank market in which banks deal with each other for funds on an overnight basis.

**Call Option:** An option in which the holder has the right to purchase or call a specific security/currency at a specific maturity date or within specified period of time.

**Certificate of Deposit (CD):** A negotiable certificate issued by a bank as evidence of an interest bearing time deposit.

**CHAPS (Clearing House Automated Payment System):** Electronic transfer automated payment system of payment between banks in UK.

**CHIPS (Clearing House Interbank Payment System):** An automated clearing facility set up in 1970 and operated by the Federal Reserve, New York Clearing House Association. The facility processes international money transfers for its members, US banks and branches of foreign banks.

**Chicago Board of Trade (CBOT):** An exchange specialising in the trading of futures and options.

**Chicago Mercantile Exchange (CME):** The exchange specialises in the trading of futures and options. CME's International Monetary Market (IMM) division has a large trading in currency futures. Its Index and Options Market (IOM) is one of the world's two leading exchanges in the trading of currency options.

**Collars:** A strategy using currency options in which one option is sold and another is purchased. The result is the creation of a range or limit in which both a best price and worst price are defined. Collars minimise or eliminate option premium.

**Collateralized Borrowing and Lending Obligation (CBLO):** It is a money market instrument with a original maturity between one day and up to one year.

**Clearing Corporation of India Limited:** operates the CBLO.

**Clearing House:** An institution in which interbank indebtedness is settled.

**Collateral:** A security given for the repayment of a loan.

**Commercial Paper:** An unsecured short-term note sold by corporates on a discount basis with a fixed maturity of 15 days to 180 days.

**Compensating Balances:** Minimum balance which a borrower in USA must maintain with a bank, usually between 10% and 20% of the line of credit.

**Credit Line:** A legal commitment undertaken by a bank to lend to a customer.

**Contingent Liability:** Liability which will materialise only on the occurrence of an uncertain event.

**Convertible Bond:** Bonds that are exchangeable at bondholders option into equity of the company that issued them at a fixed conversion price.

**Convertibility:** It implies the absence of restrictions on foreign exchange transactions or exchange controls.

**Counter Party:** The party on the other side of the transaction.

**Country Risk:** Risk associated with lending to economic agents or government of a particular country or in currency.

**Coupon:** A certificate attached to a bond evidencing interest due on a payment date.

**Coupon Yield:** The interest yield on a bond when calculated as the annual amount of money paid on coupons divided by the face value of the bond.

**Covered Interest Arbitrage:** A series of transactions on which a currency is borrowed, converted into a second currency and invested. Second currency is sold forward for first currency.

**Collateralised Lending Facility (CLF):** Banks are provided by RBI refinance under CLF to the extent of 0.25% of their fortnightly average outstanding aggregate deposits in 1997-98 for two weeks at bank rate. An additional CLF for an equivalent amount of CLF is provided for a further period of two weeks at a two percentage points above bank rate. CLF was withdrawn from October 5, 2002.

**Capital to Risk Assets Ratio (CRAR):** Risk assets ratio or Cooke ratio is a capital adequacy measure. Under this system the balance sheet assets, non-funded items and other off-balance sheet exposures are assigned risk weights according to the prescribed percentages.

**Cross Rate of Exchange:** The exchange rate between two currencies derived from the exchange rates between these currencies with a third currency.

**Credit Derivative:** It is a customised agreement between two counter parties in which payout is linked solely to some measure of creditworthiness of a particular reference credit and is thus largely independent of market or other risks attached to the underlying.

**Credit Risk:** The likelihood in bank lending that a borrower will not be able to repay the principal or pay the interest.

**Currency Swaps:** It is the exchange of a loan in one currency for a loan in another currency where both the principal and interest payments are exchanged.

**Current Account:** In India, U.K. and Australia the term is used for demand deposit.

**Currency Option:** It is a contract that gives the owner the right to buy or sell a given amount of one currency for another currency at a fixed price (exercise or strike price) within a given period.

**Currency Overlay:** It is the separate management of the foreign currency exposure created by international investment decisions. Investment funds offset the currency exposure of the funds equity by a hedging position.

**Derivatives:** Derivatives are financial instruments which are derived from the bank loans, bonds, currencies, money market instruments, equities and commodities. Derivatives are used by banks to hedge risks, to gain access to cheaper money and to make profits.

**Dealer:** A dealer acts as a principal in all transactions, buying and selling for his own account.

**Demand Deposit:** Deposit which can be withdrawn by cheque at any time without notice.

**Discount:** A sum of money allowed for payment of a sum due at a later date. When banks discount third party cheques or bill of exchange it buys the cheque/bill and receives the discount.

**Directed Credit:** After nationalisation of commercial banks in 1969, public sector banks have been directed to lend to agriculture, small industry, exports, new entrepreneurs, roads and water transport operators, retail traders, small businessmen, professionals, self employed and other weaker sections. Now all scheduled commercial banks are required to ensure 40% of net bank credit to the priority sector.

**Diversification:** Investing funds in a portfolio among a variety of securities offering independent returns.

**Draft:** In US an order by a seller directing the buyer to pay under agreed conditions. In India banks issue drafts drawn on their own bank office against consideration for settlement of debt/dues.

**Duration:** Duration measures the interest rate risk of a financial instrument. It shows the relationship between the change in the value of a financial instrument and change in the general level of interest rates.

**Economic Exposure:** It is defined in terms of a firm's cash flows and hence on its value. It deals with the extent to which the present value of the firm, an asset or a liability may be affected by the exchange rate changes.

**Euro-dollar:** Dollar deposits in banks in Europe including the branches there of American banks. The term is used to denote deposits in banks in a currency other than the currency in which the bank is located.

**Excess Reserves:** Reserves held by commercial banks and other financial institutions in excess of their required reserves.

**Exchange Controls:** Restrictions imposed by the government on the convertibility of currency or on the movement of funds in that currency.

**Exchange Rate:** The number of units of one currency expressed in terms of a unit of another currency.

**Federal Funds Market:** A market for unsecured loans between depository institutions in USA. They are reserves held at Federal Reserve Banks. The market is for overnight funds.

**Federal Reserve System:** It is the central banking system in USA consisting of 12 district Federal Reserve Banks.

**Float:** The difference between credits from cheques cleared and debits made on the same cheques.

**Floating Rate of Interest:** Interest rate reset at a regular intervals say 3 or 6 months LIBOR to reflect changes in market rates. It is calculated as so many points above the interbank rate, LIBOR.

**Floating Rate Loan:** A loan with a floating rate provision.

**Floating Rate Note:** A medium term security carrying a floating rate of interest reset at quarterly or half yearly intervals.

**Foreign Exchange Risk:** It arises out of the fluctuations in the value of assets, liabilities, income or expenditure when unanticipated changes in exchange rates occur.

**Forward Contract:** A contract for financial instrument to be settled on mutually agreed future date.

**Forward Exchange Rate:** An exchange rate applicable to the exchange of bank deposits that is to take place three or four business days in future.

**Forward Premium:** The difference (or discount) between forward and spot exchange rates. When forward currencies are worth more than the spot amount, the stronger currency is at premium; and the weaker currency at discount.

**Free Reserves:** In the US excess reserves less member bank borrowings from the Federal Reserve System.

**Future Contract:** A standardised contract traded on organised exchanges for sale or purchase at a future date of a financial instrument. If held until expiration, it may involve accepting (if long) or delivering (if short) the asset on which the futures price is based.

**Hedging:** It is a technique to offset commitments in order to minimize the impact of unfavourable potential outcomes.

**In-The-Money (ITM):** A currency option whose strike price would provide the holder of the option with a rate superior to that provided by the current spot rate (in-the-money-spot) or the forward rate corresponding to the option's expiry date (in-the-money-forward).

**Implied Volatility:** The expected volatility incorporated into currency option premium.

***Intrinsic Value:*** The amount by which the option is in-the-money. It represents the amount by which the strike price is better than the current market exchange rate.

***Interest Rate Swap:*** The exchange of fixed rate interest payments for floating rate payments on a notional amount.

***Interest Rate Mismatch:*** The traditional interest rate mismatch, lending long and borrowing in short-term market exposes banks to the risk that rates will rise. As interest rates rise low yielding short-term liabilities will be replaced or repriced more rapidly than assets. The mismatch arises out of repricing the schedule of assets and liabilities.

***Interest Rate Risk:*** The risk banks face that a shift in interest will reduce interest income.

***Intermediation:*** The process whereby banks or financial institutions stand between borrowers and lenders by borrowing from the latter and lending to the former for the purpose of risk bridging or preferred habitat (the lenders want to lend short/borrowers long).

***Investment Swap:*** Transaction where an investor converts the investment currency into a foreign currency on a spot basis and then sells on a forward basis, the foreign currency principal and interest in exchange for the original investment currency.

***Lead Manager:*** The managing bank in a syndicated loan responsible for the coordination of the loan, selecting co-managers, and dealing with the borrower.

***Lender of Last Resort:*** Central bank which stands ready in a financial crisis to lend to banks that are in long run sound condition but are in immediate need of liquidity to meet their obligations.

***Letter of Credit:*** In foreign trade banks undertake to pay the seller of goods in a foreign country as soon as certain stated conditions are met. The letter of credit is opened at the request of the importer who ultimately repays the amount to the bank.

***Law of One Price:*** The rule says that identical goods must have same price in all markets.

***Local Area Bank (LAB):*** With a view to enhance competition in rural areas LABs with jurisdiction over two or three contiguous districts have been allowed. Capital base Rs.5 crores and asset portfolio limit Rs.75-80 crores.

***LIBOR:*** London Interbank Offered Rate. The rate at which banks offer to lend funds in the international interbank market.

***Liquidity Risk:*** It is the risk of money needed to fund assets may not be available in sufficient quantities at some future date.



**Liquidity Adjustment Facility (LAF):** LAF was implemented (June 2000 and May 2001) to carry out the task of liquidity management by injecting and absorbing liquidity through flexible repo and reserve repo.

**Long Position:** Long position involves excess of purchases of foreign currency over sales or assets over liabilities or excess of purchases of particular futures over sales of same contracts.

**Mandate:** Borrowers authorisation to proceed with loan syndication on terms agreed with lead manager.

**Market Maker:** He stands ready to buy and sell securities by offering two way quotes (bid-ask rates) on a continuous basis.

**Mark to Market:** The revaluation of futures contract or securities in a bank's portfolio to reflect the most recently available market-price.

**Matching:** Matching refers to the distribution of maturities of bank's liabilities to equal that of its assets.

**Maturity Transformation:** Long-term lending financed by short-term interbank borrowing especially in the Euro currency market in such a way that interest costs on borrowing are changed every three or six months to reflect market rates such as LIBOR or US prime rate.

**Money Market:** The market for short-term loans. The participants are banks, brokers, discount and acceptance houses (in U.K.), securities firms and fund managers in USA and banks, Discount and Finance House of India, Securities Trading Corporation, mutual funds, investment institutions, financial institutions and Reserve Bank of India.

**Money Market (Centre) Banks:** Large banks which operate in major centres like London or New York and play a major role in the money market.

**Money Multiplier:** Ratio of money supply to reserve money. It is 1.1 for narrow money ( $M_1$ ) and 3.1 for broad money ( $M_3$ ).

**Narrow Bank:** It refers to banks that invest demand deposits in highly marketable liquid assets.

**Non-Performing Asset:** It is a credit facility in respect of which interest has remained unpaid for a period of 90 days .

**Nostro Account:** The foreign currency accounts maintained by Indian banks with foreign banks abroad.

**Note Issuance Facility (NIF):** A group of underwriting banks guarantees short-term paper of three to six months maturity by borrowers in their own names. Banks purchase any unsold notes at each rollover date or by providing a standby credit. NIFs are facilities provided by underwriting banks are called note purchase facilities and Euronote facilities.

**Notional Principal:** A hypothetical amount on which swap payments are based. The notional principal in an interest rate swap is never paid or received.

**Off Balance Sheet Activities:** Fee based bank's business that does not involve booking assets and taking deposits. Trading of swaps, options, foreign exchange forward contracts, standby commitments or guarantees, letters of credit, acceptances, endorsements and various contingent facilities are among off service sheet items.

**Offshore Banking Centre:** Bank subsidiaries/branches allowed to transact offshore business insulated from domestic banking regulations.

**Open Position:** A net long or short foreign currency or futures position whose value will change with a change in foreign exchange rate or futures price.

**Option:** The contractual right but not the obligation to buy or sell a given amount of specified financial instrument at a fixed price before or a designated future date. A put option gives the right to sell and a call option the right to buy the financial instrument.

**Out-of-The-Money (OTM):** A currency option whose strike price would provide the holder of the option with an inferior rate to that provided by the current spot rate (out-of-the-money spot) or the current forward rate corresponding to the options expiry date (out-of-the-money forward).

**Overdraft:** An arrangement by which a bank allows a customer to overdraw his account up to an agreed sum, than the amount standing to his credit in the account. Interest is payable on the overdrawn amount but the bank may make an additional charge for the facility. U. S. line of credit is similar to overdraft.

**Primary Dealer (PD):** The system of primary dealers has been operating since March 1996. The system is designed to help develop an efficient institutional infrastructure for an active secondary market trading, liquidity and turnover and encourage voluntary holding of government securities.

Subsidiaries of commercial banks, all India financial institutions, company in securities business with a network of Rs.50 crores are eligible to become primary dealers.

**Praecipium:** Fee payable to lead manager for setting up and coordinating a syndicated loan.

**Prime Rate:** It is the rate of interest charged by banks to their most credit worthy customers.

**Prudential Norms:** The main elements are income recognition, assets classification, provisioning for loans and advances and capital adequacy.

**Rating:** A grading given by a statistical service about the investment quality as to the credit worthiness of an issuer.

**Real Time Gross Settlement (RTGS):** In this integrated payment system both processing and final settlement of funds transfer instructions take place continuously (in real time).

**REPO:** A REPO is the purchase of one loan against the sale of another.

**Reserve Repo:** To release liquidity for short periods RBI conducts reverse repo operations through primary dealers.

**Reserve Requirement:** The fractional amount of deposit that a bank has to hold for cash reserve (10%) under the Reserve Bank of India Act and statutory liquidity ratio (25%) under the Banking Regulation Act 1949.

**Revolving Line of Credit:** Bank line of credit on which the customer pays a commitment fees and can take down and repay funds according to his needs.

**Risk:** A bank's overall risk can be defined as the probability of failure to achieve an expected value and can be measured by the standard deviation of the value.

**Risk Adjusted Assets:** They are the weighted aggregate of the degree of credit risk expressed as a percentage of the funded and non funded items. The aggregate is used to determine the minimum capital ratio.

**Rollover Credit:** A loan that is repriced (rolled over) periodically at a predetermined spread over an agreed upon currently prevailing base rate such as LIBOR.

**Sovereign Risk:** The chance of default or repudiation of a sovereign government to meet its external liabilities designated in convertible currencies.

**Spot Exchange Rate:** The rate of exchange for the closest delivery date (two business days).

**Spread:** The difference between bid and ask prices. Straight bond Fixed rate bond without conversion.

**Subordinated Debt:** Debt that can claim, in the event of liquidation, only after the claims of other debts have been met.

**Swap:** It is a contract for the exchange of streams of payment between two counter parties, either directly or through an intermediary.

**Swap Rate:** The difference between the spot and forward exchange rates expressed in basis points.

**Syndicated Loan:** The process by which a loan arranged by a lead bank is funded by being sold to another group of banks.

**Transaction Exposure:** It is the net amount of existing commitments to make or receive outlays in foreign currency.

**Translation Exposure:** Translation or accounting exposure is the net book value of assets and liabilities denominated in a foreign currency.

**Universal Bank:** Commonly found in Austria, Germany and Switzerland that are allowed to provide all financial services.

**Variable Rate Loan:** Loan made at an interest rate that varies with base rate such as LIBOR or prime rate.

**Vostro Account:** It is the rupee account opened by a foreign bank with an Indian bank.

**Yield Curve:** It is a graphic statement of the relationship between time to maturity and yield to maturity for a given risk class of securities. The yield to maturity is the average annual rate earned by an investor who holds a security until its maturity.

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