

**FINANCIAL INNOVATIONS AND MONETARY
CONTROL**

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INTRODUCTION

Monetary control is necessary to achieve desired level of growth and sustain price stability in the economy. Central Banks are responsible for conducting monetary policy to achieve these goals. Therefore, Central Banks use some instruments, also determine some targets on monetary variables. Achieving targets and slowing the rate of inflation increase economic agent's confidence to the Central Banks therefore creditability of Central Banks increase.

Financial system is composed of Central Bank, financial institutions such as commercial banks, finance companies and non-financial institutions such as cooperatives, thrift institutions, pension funds. Objective of the financial institutions is to make profits. If Central Bank actions, regulations restrict operations of these institutions, they immediately search an alternative way to realize profit maximizations. Therefore, whenever monetary authorities restrict the economic agent's behavior, new financial instrument come into view. Also, there are also other factors playing a role in the emergence of the new financial instrument like technology and economic conditions.

Financial innovations and monetary control are intricately linked to each other. When financial innovation occurs, this will lead decrease the effectiveness of the monetary control. Then Central Banks set new targets, change operating procedure in order to regain direct influence over markets.

In this study, the relationship between financial innovations and monetary control is examined. How financial innovation occurs and what are the implications of it on the monetary policy are tried to be

analyzed. And, whether Central Banks sustain its creditability during the changing financial environments by taking new measures, regulations and targets are examined.

As a conclusion, it is stated that in an changing financial structure Central Banks don't realize efficient monetary policy without setting new procedures and instruments in the long-run, because profit seeking financial institutions change or create new instruments in order to evade regulations or respond to the economic conditions in the economy.

CONDUCT OF THE MONETARY POLICY

I.A. Monetary Control and Its Instruments

Objectives of the monetary policy are the realization of high employment, economic growth, sustain stability in prices, exchange rates, interest rates and in the financial markets. Also, Central Banks have to defend monetary system against unexpected conditions.

Central Banks have three main instruments to control monetary growth. Open market operations are the most important policy tool in controlling money supply. Open market purchases expand monetary base thereby, rising money supply; open market sales shrink monetary base lowering money supply. There are two types of open market operations; dynamic open market operation are tried to change the level of reserves and the monetary base, defensive open market operation are tried to offset movements in other factors that affect monetary base. (Mishkin, 1989). Discount policy is realized by changing discount rate. A rise in discount loans adds to the monetary base and expands money supply. Fall in discount loans reduces the monetary base and shrinks money supply. Discount

loan facility is called discount window in which both discount rate and discounted quantity are determined. Discount policy can be used to signal Central Bank's intentions about future monetary policy. Rise in the discount rate, can be implied the slowdown expansion in economy. Also, discount policy can be used by the Central Banks to perform its role of lender of last resort. Reserve requirements affects money supply by causing money supply multiplier to change. A rise in reserve requirements lead contraction of the money supply.

These three instruments do not effect economic activity directly but rather work through their effects on financial markets. Thus, the policy instruments have their initial impact on the demand for and supply of reserves held by depository institutions. By changing these instruments, Central Banks affect the rate of growth of the money supply, the level of interest rates, security prices and credit availability. These factors, in turn, can effect the level of investment, consumption, imports, exports, government spending, total output, income and price levels in the economy.

I.B. Monetary Targeting

The central banks takes monetary policy actions with the ultimate purpose of achieving desired values for long-run goals, such as prices and real output. But, it is difficult to focus directly on these goal variables. Information on movements in the goal variables is available only with a considerable delay, and central bank actions affect the goal variables with lag. As a result, the central banks focuses its attention on the short-run or intermediate targets which it can influence more directly and observe frequently then the goal variables.

The various central banks use a variety of approach in pursuing their monetary aggregate objectives. Since October 1979, the US has set paths for total and nonborrowed reserves so allowed interest rates to emerge as the result of market interaction between the reserve path and the growth in the targeted aggregates. Most of the Central Banks, however, have used interest rates or other measures of money market conditions as policy instrument. Some of these Central Banks have explicit interest rate objectives that are adjusted from time to time in line with their monetary objectives.

Targets for growth in financial aggregates such as money and broad measures of credit can provide an appropriate way of structuring the intermediate and longer run strategy of policy to the Central Bank and the public. In order to analyze the role of targeting in monetary policy, the followings must be considered:

An instrument variable can be directly controlled by the Central Bank. Also, "Operating targets" can be controlled with a rather high degree of precision through manipulation of policy instruments. Potential operating targets include measures such as non-borrowed reserves, and monetary base, short-term money market rates, overnight rates.

Goal variables, which represent the ultimate objectives of the policy such as price level stability or inflation prevention also include the behavior of balance of payments and foreign exchange of the currency.

Intermediate target which is neither an instrument nor a goal, but serves as an operational guide to monetary policy. There are three criteria in choosing intermediate target. It must be measurable,

controllable and must have a predictable effect on the goal. Quick and accurate measurement of an intermediate target is necessary. Controllability is another important reason for choosing target variable. Money supply is appeared dominate in controllability. Ability to predictably affect goals is important criteria for Central Bank. A closer link of these goal with targets can be help for realization of target. (Mishkin 1989)

"Indicator variables" provide information to the policy maker regarding current condition of the economy such as row commodity prices, interest rate spreads. (Mc Callum, 1985)

Moreover, the strategy of monetary targeting had three principal operational features. First, monetary aggregates should be targeted to grow at rates which would be conducive, over the medium term, to low rates of inflation. Second, monetary growth was not only achieve " end-point" target but was supposed to move along a reasonably stable path toward the end-point. This stability in itself was an objective of targeting, and would require more stability in the rates of growth of the monetary aggregates. Third, the targets were to be publicly announced in advance. The objective here was one of the favorably affecting expectations by making a creditable commitment to policies which would contribute to a reduction in inflation.

Monetary targeting has many practical problems. Such as choosing the monetary aggregate to be targeted and appropriate definitions of the monetary aggregates during a period of innovation and deregulation; establishing a time period over which targets should be set, how frequently they should be reset, how much they could reasonably be changed from year to year, and whether the

previous target value for money or actual value should be used as the base for target in the next period; deciding how quickly a deviation in money from target should be corrected to avoid overshooting the target and need to reserve policy; determining whether reserves or short-term interest rates would be better instruments to attain monetary targets; exercising judgement in interpreting deviations in money from target as economically significant or not, and deciding whether the policy process should focus only on money or broad range of indicators to ensure that money was giving the correct signal; deciding how to identify and tended with shifts in the trend of velocity and the demand for money, particularly when inflation and inflationary expectations dropped sharply following a period of monetary restrained, thereby changing the relative demands for financial and real assets.

FINANCIAL INNOVATIONS

Innovation is normally defined as the introduction of a new product to a market or the production of an existing one in a new manner. Financial innovations occur because market participants are constantly searching for new ways to make greater profits.

The process of "financial innovation" includes changes in financial instrument, institutions, practices and markets. In broad sense, financial innovation affects the nature and composition of monetary aggregates through new financial instruments or changes in old instruments as well as the term and conditions of debt/credit arrangements.

Innovations can be grouped by a functional basis, "aggressive" or "defensive". Aggressive innovation is the introduction of a new

product or process, in response to perceived demand. A very large part of innovation since at least the late 1970s is aggressive innovation in the literature. Defensive innovation is response to changed environment or transaction cost.

Financial innovations lower the transaction cost of transferring funds from lower yielding money balances to higher yielding alternatives. Therefore, with financial innovations market participants attempt to minimize risk and to maximize return.

Financial innovations are mainly the result of four interrelated factors:

1. High, variable and unpredictable inflation, interest rates and exchange rates, increase in government deficits and their effects on interest rates and financial markets, floating exchange rates: Many financial innovations offer protection against changes in the financial environment, especially changes in exchange and interest rates.

2. Technology: The development of new technology can stimulate financial innovation by lowering the cost of providing new financial services and instruments by using computers and telecommunication. The rapid development of technology in the financial sector, the introduction of new communication and transmission systems also speeds up information flows.

3. Changes in the Regulatory Environment: The relationship between regulation and innovation is the most debated in the literature. It is clear that each can cause the other, but it is not clear how significant such effects have actually been.

4. Changes in Perceived Market Conditions: Financial innovation is fundamentally market driven. Firms offer new products

because it is profitable. In other words because the customer demand them or at least will pay for them. The existing structure of the financial industry, degree of concentration and competition in the banking sector, ease of entry, profitability, extent of development and of specialization among different types of financial instruments, available choice of portfolio assets, interaction of market forces with regulations effects financial innovations. Changes in the international financial environment and the increasing integration of domestic and international financial markets also lead financial innovation.

Financial innovations arise as a device on the part of the private financial sector to solve or to argument conflict between the newly developing economic and technical conditions, old statutory financial framework and regulations which played an important role in the past but which have then become obsolete. Financial innovation is fighter promoted when the financial authorities recognize the obsolescence of the existing statutory framework and deregulate the essential part of it. (Suzuki 1986)

Financial innovations occur because agents in market are searching for new ways to make higher profits. A change in the economic environment will stimulate a search for innovations that are likely to be profitable. Starting in the 1960 individuals and financial institutions operating in financial markets were confronted with drastic changes in economic environment, inflation and interest rates climbed sharply. Many financial intermediaries thought that these were profit in those funds and in order to survive, they search new financial products that might be profitable. In contrast to 1960s, 1970s and 1980s have become riskier. Volatility of interest rates were increased. These interest-risk also led financial innovation. The

development of variable-rate debt instruments such as certificates of deposits, mortgages, the creation of the futures market for financial instruments and creation of an options market for debt instruments appeared in these periods.

Both economic conditions, technology and regulations led to emergence of new financial instruments which realized in very short span of time, provide higher profit. These instruments are negotiable order of withdrawal account, certificate of deposits, banks credit cards, mortgages, automatic transfer accounts, overnight repurchase agreements, Eurodollars, commercial papers, money market mutual funds, Bankers Acceptances etc.

THE RELATIONSHIP BETWEEN FINANCIAL INNOVATION AND REGULATION

Regulation and innovation are intricately linked since regulation is a major cause of innovation whilst innovation sometimes leads to a need for new regulations.

Regulation can lead to financial innovation by creating incentive for firms and banks to evade regulations that restrict their ability to earn profits. Edward Kane (1982) describes this process of avoiding regulations as "loophole mining". The economic analysis of innovation suggest that when regulatory constraints are so burdensome that large profits can be made by avoiding them, loophole mining and innovation are more likely occur. Reserve requirements and restrictions on the interest rates restrict the ability of banks to make profits.

Regulation leads to innovation by Deregulation and by Ham-fisted Regulation:

Innovation can occur when the authorities change the operational rules of the financial markets so as to permit activities previously forbidden. Strictly, this is usually reregulation since one regulatory code replaces another even though the new regime is more liberal. Such deregulation can be either formal or informal.

In Ham-Fisted Regulation, Cargill and Garcia (1985) have argued that the main incentive to innovate is a desire to evade official regulation. In financial markets conditions are such that evasion is usually possible—low transaction costs, homogeneous products, many economic agents, good information etc. Establishment of Eurocurrency market is the example of Ham-Fisted regulation because it was originally developed as a device to evade Regulation Q which was an restriction on the maximum interest paid on bank deposits. Moreover, off-balance sheet lending and off-shore banking can be used to evade a wide range of controls on banks. Also, swap is an arrangement whereby each of two or more parties performs a transaction on behalf of the others so it may be a device to evade regulation.

The monetary policy problems raised by financial innovation process could go far beyond the monetary control strategy. The structural changes may be weakened the stability of the monetary and financial system. Several forces related to the innovation process and the factors underlying that process appear to be tending in this direction, although at this stage it is impossible to distinguish the direct effects of high inflation and interest rates from those of financial innovations.

Monetary policy and deposit institution regulation promote three major economic goals: Fostering financial stability, contributing

the good macro economic performance, securing efficient patterns of financial intermediary.

According to "Regulatory Dialectic" Kane (1988), when regulatory action as initiating the process, three stages occur in the adaptive sequence as regulatory avoidance, and re-regulation. When structural changes in regulated market kick off the game, the sequence becomes one of innovation, re-regulation and avoidance. In both sequence, two critical elements exist: The first is a conflict between creative and hard to forecast economic efforts to assert or reassert regulatory control, and the second is that the second or the third stage of any given sequence may also be interpreted as the first stage of a new sequence.

In regulatory dialectic, political process of regulation and economic forces of avoidance adopt continually to each other. This altering adaptation is not continuous. Rather it develops as a series of lagged responses. In order to maintain effectiveness of monetary policy, monetary authorities may change targets, term structure and also targeted variables, operating procedures.

IMPLICATIONS OF FINANCIAL INNOVATIONS ON THE MONETARY POLICY

Financial innovations have potentially for reaching implications for the design and implementation of intermediate targets of monetary policy. The structural changes also raise some questions about the stability of the financial system and about the adequacy of banking regulations.

Financial innovations have improved market integration and efficiency of international markets by bringing broader and more

flexible range of instruments. This has resulted in improved allocation of financial resources and better distribution of portfolio risks. Also, substitution of direct transaction in securities for bank credits and competition have reduced intermediation cost.

However, innovation and its consequences have also created new concern about the functioning and management of international and domestic financial systems. With new benefits new risk came into view. These risks relate to the quality of the banks' assets, the pricing of new instruments, the aggregate liquidity of the system, the risk transfer mechanism and the effects of innovation on markets volatility. In a qualitative sense, however, financial innovation increases uncertainty about the structure of the economy and there are potential effects of financial innovation process on the supply and the demand for money, interest rates and the transmission mechanism of the monetary policy.

Under pressures from financial innovation, the concept of money is in danger of losing its operational value. It is becoming difficult to distinguish between narrow and broad definitions of money.

Financial instruments with both investment and transaction characteristics are becoming very common. In the first group, innovations came about because explicit interest was not paid on reserves and on demand deposits. Also, interest rate ceilings on time deposits spurred innovations when market rates rose above these ceiling rates- both on the part of banks to find new ways to fund themselves and on the part of the depositors to find new way to earn a market rate of return on their savings. Hence, the first group on be included the federal funds rate, Repurchase Agreements,

large Certificates of deposits, overnight repurchases, Euro-dollar borrowing, bank-related commercial papers, money market mutual funds, consumer and corporate sweep accounts, NOW accounts and retail repurchase agreements.

In the second group, the "risk shifting" group, contains innovations such as variable lending, the future market and loan commitments, as well as, lines of credit to secure corporate commercial paper.

In the third group, some of the innovations stemming from regulatory changes. It might in some sense also be classified in the first group because the regulatory changes, were may help to financial intermediaries compete with unregulated markets in a high rate environment. In this category would be included six-month money market certificates, money-market deposit account, super and conventional NOW accounts and several other depository institutions that were designed to enable banks and thrifts to pay more competitive rates at both the long and short end of the maturity spectrum. The description and reasons of the emergence of the new financial instruments can be found in Table 1 through 7 (Wenninger, 1984).

Growth of these instruments and the extended which they are used for transaction purposes depends on target and the stance of monetary policy. If, for example, monetary policy pushes up interest rates, it tends to encourage the growth and increased the use of such instruments. Under these circumstances, it is not clear, ex ante, whether and to what extend these instruments should be included in the narrowly defined aggregates (Akhtar,1984). Moreover, rapid

changes in financial instruments leads to periodic redefinition of various concepts.

On the supply side, innovation process implies, *ceteris paribus*, upward pressures on money multiplier. Cash management and related practices tend to reduce public's currency holdings relative to deposits. Similarly, the effective reserve ratio against given category of deposits tends to fall as public shifts funds into substitute instruments with no reserve requirements or lower reserve requirements such as money market funds and sweep accounts. These movements are uneven and unpredictable so are the resulting changes in the reserve base, the effects on various aggregates differ in line with differing relationships to money multiplier. In addition, the money supply may be becoming more responsive to interest rates. Together with the influence of other volatile factors on bank money, make interest elasticity of the money supply unstable and unpredictable.

The shifts out of lower yielding transaction balances into instruments with market related interest payments, increasing demand for higher yielding instruments are helping to increase the demand for some broader aggregates which include those instruments. In these circumstances, targets of the Central Bank on monetary aggregates show deviation and monetary control become difficult. So, monetary authority must take measures in order to implement monetary policy. New regulations can be set and mechanism between financial innovations and regulations begin to work.

Also, due to the effects of financial innovations, capital and money markets are no longer distinct, the size of financial sector has

grown enormously and financial markets become more volatile, there is a much greater emphasis by governments on international trade in financial services. Moreover, conflict in the objectives of the Central Banks has sharpened. Because, Central Banks have not only macroeconomic goals of policy, such as inflation, but also structural goals like efficiency and stability. The effects of innovation is to sharpen this conflict. Also, with financial innovation, it is much harder to interpret financial data. Because, sensitivity of the data is likely to change as a result of financial innovation. However, while this may take monetary policy harder to implement, it neither makes it impossible nor justifies the abandonment of broad monetary targets.

CONCLUSION

The effects of the financial innovation on the structure and operation of the financial system have been profound. This has created uncertainties for the conduct of the monetary policy due to the difficulties in quantifying, both timing, extend and the functioning of the new transmission mechanism.

Monetary policy is an effective instrument in relation to influencing demand. It is also crucial to generating an environment for sustainability of lower inflation. Achievement of ultimate policy objectives depends on the day-to-day application of the policy being consistent with those objectives. However, during the implementation of the monetary policy, some regulations set by the monetary authorities and certain monetary procedures are followed. The profit seeking financial institutions face this regulations that restrict their activities and reduce their profits. Then, financial institutions search new techniques and new instruments, also engage in off-balance

sheet activities in order to evade from monetary authority's regulations. At this time, "loop" begin to work.

In this context, Central Banks apply its procedures and implement monetary policy efficiently only in a short period of time. After a time span, new instruments come into view, and financial institutions finds a way resolution from restricted, unprofitable policy. Therefore, financial innovations and change in monetary procedures and monetary control follow each other.

Therefore, Central Banks have to change their tools, targets and operating procedures periodically, in order to cope with financial innovations in order to sustain stability in the markets and control the markets as a monetary authority.

TABLE 1

Instrument	Description	Reason
CONSUMER ASSETS		
Money-Market Mutual Funds	Shares of a diversified portfolio of short-term money-market securities offering chequing privileges.	Evolved in 1974 in response to rising money-market rates.
6-month Money-Market Certificates*	26-week time deposits in minimum denomination of \$10,000 at banks and thrifts. Ceiling rate is indexed to Treasury bills of comparable maturity. Minimum denomination was lowered to \$2500 in January 1983.	Authorised in June 1978 in response to high money-market rates.
Small Saver Certificates*	Time deposits with no minimum denomination earning variable yield based on the yield of Treasury securities of comparable maturity offered by commercial banks and thrifts. Original maturities range from 1 1/2 to 4 years depending on date of issue.	Authorised in July 1979 in response to high money-market rates.
All Savers' Certificates	One-years maturity savings certificate issued by depository institutions between October 1981 and December 1982 with annual yield of 70 percent. Of the average yield of 52-week Treasury bill. A maximum of \$100 (\$200 joint) of interest income was tax-exempt.	Legislated in October 1981 to stimulate household saving and promote flow of funds through thrifts.
91-day Money-Market Certificates*	Initially, time deposits with minimum denomination of \$7500 issued by depository institutions. Ceiling rate indexed to 91-day Treasury bill. In January 1983, minimum denomination was reduced to \$2500.	Authorised in May 1982 in response to high money-market rates.
Ceiling-free Certificates	Time deposit with original maturity in excess of 2 1/2 years if issued on or after 1st April 1983 or original maturity of at least 3 1/2 years if issued on or after 1st May 1982 with no minimum denomination.	Beginning in 1974 available only to consumers not covered by pension plans. Authorised for all consumers in December 1981 to encourage personal savings.

* In June 1983, the DIDC removed interest rate ceilings on time deposits, effective 1st October 1983.

TABLE 1.1

Instrument	Description	Reason
7 to 31-day Money-Market Certificates*	Non-Negotiable time deposits of \$20,000 or more with maturity of 7-31 days issued by depository institutions. Rate tied to 91-day Treasury bill. In January 1983 the minimum denomination was lowered to \$2500 and the interest rate ceiling was removed.	Authorized in September 1982 in response to high money-market rates.
NOW Accounts	Savings accounts permitting unlimited negotiable orders of withdrawal (NOW) earning a Regulation Q ceiling rate. Essentially an interestbearing chequing account; for consumers only.	First authorized in New England in 1974 and became nationally available by 1980.
Money-Market Deposit Accounts	Deposit with chequing privileges requiring an initial and average balance of \$2,500 but not subject to interest rate restriction or minimum maturity.	Authorized in December 1982 in response to high interest rates and continuing flows of funds into money-market mutual funds.
Super-NOW Accounts	Ceiling-free NOW accounts with minimum balance requirement.	Interest rate ceiling removed on NOW accounts with balances in excess of \$2,500. Authorized in January 1983, in response to continued high interest rates and flows of funds into money-market mutual funds.
IRAs and Keoghs	Tax deferred retirement savings instrument.	Authorized in March 1982 in response to high money-market rates.
Cash-Management/ Sweep Accounts	Sweep accounts offer automatic transfer of NOW account or demand deposit funds above some minimum level from accounts at depository institutions into interest-bearing investments such as Money-Market Mutual Funds or Retail RPs. Cash Management Accounts are similar, but in addition offer credit lines, debit cards and a larger portfolio of securities, are available from nonbank institutions (i.e. brokerage firms).	Banks began offering sweep accounts in 1981 in response to losses of consumer deposits to Money-Market Funds. Nonbank firms had been offering cash-management accounts in response to high interest rates.

TABLE 2

Instrument	Description	Reason
CONSUMER CREDIT AND MORTGAGES		
Variable Rate Mortgages	A mortgage loan which provides for the adjustment of its interest rate as market interest rates change	Initiated in the early 1970s, but not a significant force until the mid-to-late-1970s, to protect lenders from interest rate volatility.
Variable Rate Consumer Instalment Loans	A consumer instalment loan which provides for the adjustment of its interest rate as market interest rates change	Initiated in the late 1970s, to protect lenders from interest rate volatility. Not widespread at present, however.
Equity Access Accounts	Like a second mortgage, allows consumers to use equity acquired in their homes at a market rate of interest. These loan-like investments are packaged for sale to pension funds and life insurance companies.	Inflation resulted in large real estate capital gains.
Mortgage Pools and the Secondary Mortgage Market	Mortgages are packaged and sold in the secondary market. The selling institution often services these mortgages.	The secondary market was developed to enhance the liquidity of mortgage. By packaging and selling (mostly fixed rate) mortgages in the secondary market, banks and thrifts may increase mortgage originations.
Bonds Linked to home mortgages	Pools of mortgages used as collateral for bonds.	Tax advantages to issuer.

TABLE 3

Instrument	Description	Reason
BANK LENDING TO BUSINESS		
Fee-type services at commercial Banks	Fees for services such as cash management, data systems and loan commitments have to a large extent been replacing the more traditional compensating-balance arrangements.	High interest rates (and high opportunity cost on non-interest-bearing business chequing balances) have prompted corporations to demand explicit fees for bank services.
Multiple Pricing Options at Commercial Banks	Banks have been offering a wider array of pricing terms on bank loans, including spreads over the prime rate, the LIBOR rate and the CD rate. The options are usually specified in loan commitment agreements. The borrower may alter the pricing option at various intervals depending on market conditions.	The use of multiple pricing options has been spurred by volatile interest rates and by increasing price competition from foreign banks.
Prime/CD Option in Syndications	Pricing option for loan participants.	Attract US regionals.
Floating Rate Loans and Below-Prime Lending	The interest rate on these loans adjusts daily as with prime-based loans or periodically as with LIBOR or CD-based loans. Banks often charge discounts from the prime rate to their best loan clients.	Interest rate volatility has stimulated the use of floating rate loans.
Credit Extended to US Residents by Foreign Branches of US Banks	These are loans booked at the foreign offices of US banks and are typically funded in the Euro-dollar market and priced over LIBOR. These loans grew rapidly in the late 1970s.	State tax advantages, reserve requirements, and change in the spread between the prime rate and LIBOR have all contributed
Growth of US Branches and Agencies of Foreign Banks	The number and size of these institutions have grown rapidly during the 1970s and early 1980s. They have competed vigorously with domestic banks, particularly in the market for mid-sized corporate borrowers.	The breadth of the US loan market attracted these banks, along with the increasing ability to raise and move funds internationally.

TABLE 3.1

Instrument	Description	Reason
Correspondent Networks and Loan Syndications	Better communication, data management, and other services have led to greater reliance on correspondent networks for syndications and loan participations.	Lending constraints and recent merger and acquisitions activity have contributed to the formation of larger loan syndicates (including foreign banks) organized through the correspondent networks.
Leasing by Banks and Bank Holding Companies	Banks and bank holding companies purchase capital equipment to take advantage of investment tax credits and accelerated depreciations. This equipment is leased to corporations.	This type of leasing began in the 1960s and grew more popular in the 1970s. The recent Economic Recovery Tax Act provided greater incentives for leasing arrangements.
Samurai and Shogun Leases	Long-term leasing finance for capital goods exports.	Initiated by Japanese Government to reduce particularly sensitive trade surpluses.
Loan Production Offices and Asset-Based Finance Companies	These facilities make loans to business, often providing working capital. The loans are usually secured by inventories, accounts receivables or other such assets.	Circumvent interstate banking restrictions by establishing bank-related loan offices in more than one state.
International Banking Facilities	The Federal Reserve Board permitted the establishment of IBFs beginning in December 1981. These facilities conduct deposit and loan business with foreign residents, including foreign banks. IBFs are not subject to reserve requirements or interest rate ceilings and are exempt from insurance coverage and assessments imposed by the FDIC.	To enable domestic banks to compete more effectively with foreign banks for international business.
Pricing Caps	Automatic change in basis of loan pricing when difference between relevant interest rates crosses threshold.	Protect borrower and/or lender against unusual relative rate developments.

TABLE 3.2

Instrument	Description	Reason
ECU Loans SDR Loans	Ready-made diversification.	Exchange rate volatility.
Multicurrency Clauses	Affords borrower flexibility to choose denomination at draw-down.	Exchange rate volatility.
Sub-Participation in Syndicated Credits	Options to put loans to under-writers.	Broaden market by making syndicated credit more liquid.
Bullet Credits	Syndicated credit with all principal paid at maturity.	Increase flexibility for borrowers.
Contractual Linkage to Access to IMF Resources	Syndicated credit contingent upon IMF programme being in place	Enforce policy conditions.

TABLE 4

Instrument	Description	Reason
<p>TREASURY SECURITIES AND AGENCIES</p> <p>Variable Rate Saving Bonds</p>	<p>The new floating rate savings bonds tie their yield to the 5-year Treasury securities. The Treasury also guarantees a minimum rate of return on these bonds.</p>	<p>High and volatile interest rates made the old fixed rate savings bonds un-attractive to investors.</p>
<p>Adjustable Rate Federal National Mortgage Association Securities</p>	<p>Since late 1982 and early 1983, Federal National Mortgage Association has added adjustable rate graduated payment and growing equity mortgages into the securities they issue.</p>	<p>The increased popularity of new forms of mortgages and the reduced supply of conventional fixed rate mortgages led to the change.</p>
<p>Carter Bonds</p>	<p>The Treasury issued these bonds in 1979. They were denominated in foreign currency.</p>	<p>The bonds were part of President Carter's programme to boost the US dollar.</p>

TABLE 5

Instrument	Description	Reason
TAX-EXEMPT SECURITIES		
Municipal Bond Funds	Similar to the stock mutual funds, these funds enable small investors to diversify their tax-exempt portfolio and to improve the liquidity of of their holdings.	1976 legislation allowed the dividends on these bond funds to be exempted from Federal income taxes . Also, investors' increasing interest in tax-free income helped the growth of the industry.
Deep Discount Municipal Bonds	These municipal bonds carry a low coupon and are issued at a discount from par.	High and volatile interest rates made conventional fixed rate bonds less attractive to investors.
Insured Municipal Bonds	These Bonds carry insurance issued by several private organisations. Both the principal and interest are guaranteed.	The deteriorating financial position of of many municipalities led them to purchase insurance in order to reduce their cost of financing.
Tax-exempt Unit Trusts with put Options	These unit trusts carry put options issued by commercial banks. Investors have the option to sell the bonds back to the bank at par value, thus guaranteeing them against any default or market risk.	High and volatile interest rates.

TABLE 6

Instrument	Description	Reason
CORPORATE BONDS		
ECU Bonds SDR Bonds	Ready-made diversification.	Relative interest rate and exchange rate volatility.
Currency Put Attached to Bonds	Option to convert bond proceeds into another currency at a predetermined exchange rate.	Proxy for medium-term option market.
Original Issue Deep-Discount Bonds	Bonds That have coupon payments giving yield below market rate of return.	Response to level and volatility of interest rates; postponement of tax payments.
Zero Coupon Bonds	No coupon payment; appreciation from discount value to par.	Same as above.
Variable Rate Bonds and Notes	Interest rates periodically adjusted to reflect market rates.	Lessens bondholder's exposure to volatility of interest rates.
Commodity-Linked Bonds	Principal is convertible into a fixed quantity of a commodity.	Lessens bondholder's exposure to volatility of inflation and interest rate; helps corporations raise funds in high interest rate period. Also acts as a proxy for medium-term forward market for commodities.
Bonds with Warrants	Bonds sold with options to purchase additional debt or equity at a fixed price or yield.	Partially hedges bondholder's risk associated with volatile interest rates and inflation.
Stripped Bonds	Coupon payments and final payment of principal separated and sold separately; like zero-coupon bonds.	Response to level and volatility of interest rates.

TABLE 6.1

Instrument	Description	Reason
Bonds with put Options	Bonds that can be sold back to the corporation at a fixed price.	Lower risk exposure from volatility of interest rates.
Interest Rate Swap Agreements	An exchange by two or more parties of a mix of fixed and variable payment streams.	Scarcity of bank names in fixed rate bond markets. Also used by domestic US banks and thrifts to better match asset and liability repricing; spurred by volatile interest rates.
Retractable or Extendable Notes/Bonds	Allows holder to extend or shorten maturity of bond/note.	Reduces risk from interest rate volatility.
Drop-lock Bond	Floating rate note carrying a high minimum coupon - automatic conversion to fixed rate if interest rate falls below minimum.	Reduces risk from interest rate volatility.
Floating Note Convertible to Fixed Rate Note	Specifies dates when holder can convert to pre-determined fixed yield.	Reduces risk from interest rate volatility.
Caterpillar Issues (roller Issues)	Fixed rate security with option by issuer or holder to call or put at par at predetermined rates or accept a new fixed rate bond at a new interest rate.	Reduces risk from interest rate volatility.
Partly-Paid Issues	Bondholder initially puts up 10-30 per cent. of principal and balance six month later.	Helps manage interest rate, liquidity and exchange rate risks.

TABLE 7

Instrument	Description	Reason
<p>FINANCIAL FUTURES AND OPTIONS</p> <p>Financial Futures on Cash - Market Instruments, e.g. US Treasury Bills, US Treasury Notes, US Treasury Bonds, GNMA Certificates Domestic CDs, Three-month Euro-dollar Deposits, pound sterling Canadian dollar, Japanese yen, Mexican peso, Swiss franc and, Deutsche</p> <p>Mark Financial Futures on Stock Market Indexes, e.g. Value Line Index, S&P 500 Index, S&P 100 Index and NYSE Composite Index</p>	<p>Commitments to buy or sell the given-cash market instrument at a specified time and place in the future. The price is established when the contract is made.</p> <p>These contracts are tied to price movements in the given stock market index. The contract is settled by cash at a specified time and place in the future. The price is established when the contract is made.</p>	<p>These contracts have evolved in part owing to increased interest rate and exchange rate volatility. Most were introduced in the last five years.</p> <p>These contracts have evolved owing to increased price volatility in the stock market. They have all been introduced since the beginning of 1982.</p>

TABLE 7.1

Instrument	Description	Reason
Options on Financial Futures, e. g. Us Treasury Bonds, S&P 500 Index, NYSE Composite Index and Value Line Index	These instruments allow the buyer to buy or sell the given futures contract, if he wishes at a given date in the future. A premium is paid for the option.	These contracts have evolved owing to increased price volatility in these indexes. The loss on an option is limited to the premium price.
Options on Indexes, e. g. Major Market Index, AMEX Market Value Index, S&P 100 Index and S&P 500 Index	These contracts are tied to price movements in the given index. They are settled in cash if the difference between the settlement price and the strike price leads to a profit; otherwise the contract expires with no settlement.	These contracts have evolved owing to increased price volatility in these indexes. The loss on an option is limited to the premium price.
Offshore Financial Futures Markets		More flexibility in instruments and time zones.
Option on Foreign Currencies, e.g. pound sterling, Canadian dollar, Deutsche Mark, Japanese yen and Swiss franc	These instruments allow the buyer to buy or sell the given currency, if he wishes, at a given date in the future. A premium is paid for the option	Relative interest rate and exchange rate volatility.

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