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**MONEY MARKETS OF THE PACIFIC BASIN**

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**Gunter Dufey  
University of Michigan  
and  
Ian H. Giddy  
New York University**

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School of Business Administration  
Ann Arbor, MI 48109-1234**



# Money Markets of the Pacific Basin

by

Gunter Dufey  
The University of Michigan

and

Ian H. Giddy  
New York University

The objective of this essay is to explain the structure of the money market of major industrial as well as select emerging countries surrounding the Pacific Basin. The approach used here is to present first, the economic and regulatory framework for money markets in general, and second, to expand on this framework through identifying the highlights and distinguishing features of the money markets of the United States, Canada, Japan, and some emerging Asian markets. It is evident that our coverage is not comprehensive: the money markets of such important industrial countries as Australia and developing markets such as Singapore and Thailand have been omitted, for example. Moreover, some of the facts related here will no doubt soon be out of date. Our major goal, therefore, is to offer a useful framework for analysis to the reader who is seeking some perspective before conducting factual research.

By the late 1970s and early 1980s the authorities of the United States, Canada, and Japan, as well as the European economies, were forced to acknowledge the success of wholesale banking in "offshore" centers. They began to ease the more burdensome and unnecessary of regulations and to lower reserve requirements and other tax-like burdens. Japan and other countries even encouraged the growth of the domestic money market and innovative banking practices in order to attract some of the lost banking business back into

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the domestic market. The 1980s and 1990s, therefore, have seen a resurgence of domestic money markets in terms of breadth of instruments, depth of liquidity, and pricing efficiency.

#### **A FRAMEWORK FOR UNDERSTANDING DOMESTIC MONEY MARKETS: THEIR SIMILARITIES AND DIFFERENCES**

The money market of a country consists of the market for instruments and means of lending (or investing) and borrowing funds for relatively short periods, typically from one day to one year. Such means and instruments include short term bank loans, treasury bills, bank certificates of deposit, commercial paper, bankers acceptances and repurchase agreements, and other short term claims, which are sometimes backed by specific assets.

As a key component of the financial system of a country, the money market plays a crucial *private economic role*: i.e., reconciling the cash imbalances of economic entities (individuals, firms, and government agencies) that stem from the uncertainty in the timing of cash receipts and disbursements. (This contrasts with the capital market, where funds are made available by savers to borrowers for investments that have long term paybacks.) A well-functioning money market can perform these functions very efficiently if borrowing-lending spreads (or bid-offer spreads for traded instruments) are small (operational efficiency), and if funds are lent to those who can make most productive use of them (allocation efficiency). Both borrowers and lenders prefer to meet their short term needs without bearing the liquidity risk and interest rate or price risks, respectively, that characterize longer term instruments; money market instruments allow to be accomplished this in an efficient manner. Thus the money market sets a market interest rate that balances cash management needs, and sets different rates for different uses that balances their risks and potential for productive use.

The money market sets prices for financial claims that simultaneously balance the relative value of money *over time* and *across countries*. Through the term structure of interest rates, short term interest rates are linked to long term rates by the market's

expectations about future long term rates. Through foreign exchange swap contracts-- simultaneous spot purchase and forward sale of a foreign currency--the interest rate in one currency is then linked to the equivalent rate in another currency.<sup>1</sup>

At the same time, domestic money markets everywhere play a key role in the implementation of *public economic policies*. These policies are of three kinds:

- The money market, along with the bond market, is used to **finance the government deficit**.
- The transmission of **monetary policy** including **exchange rate policy** is typically conducted through the money market, either through banks or through freely traded money market instruments.
- The government uses the institutions of the money market to influence **credit allocation** toward favored uses in the economy.

These three important public policy functions of the money market mean that the domestic money market is prone to be subject to substantial government influence.

Technical decisions of deficit financing may mean that there is an imbalance between supply and demand in certain segments of the maturity spectrum, which can result in a "kink" in the Treasury yield curve in some countries. The conduct of monetary policy and retention of special influence usually implies protection of the privileged positions of certain financial institutions, such as the primary dealers in the United States and the discount houses in London. The legal or moral suasion that governments exert over their banks and other financial institutions to allocate credit to favored sectors can produce distortions in the domestic sector that are not present in the external sector of a money market.

To summarize so far: the observer of a money market can begin by asking two questions: (1) How *efficiently* does the money market perform its private economic role of balancing the cash needs of investors and borrowers, and (2) what does the *government* demand of the money market to serve its public policy objectives?

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<sup>1</sup>Indeed in some countries the most important domestic money market instrument is a foreign currency deposit converted into a domestic currency deposit by means of a foreign exchange swap. Thus in some countries such as Switzerland, foreign exchange swaps are regarded as money market instruments in and of themselves.

In answering these questions, the reader will discover that there are two fundamentally different structures for money markets around the world. The first, exemplified by the United States, is *securities market dominated*: most short term funds are channelled through markets for traded instruments such as treasury bills and commercial paper. The second is *bank dominated*: the bulk of short term investments are placed in bank deposits or equivalent instruments such as bankers acceptances, and most short term funding is in the form of bank loans. The Japanese system is an example of this kind.

Another way of understanding a money market is by identifying the *risk and liquidity structure* of money market instruments. Ranked roughly from least to most risky and illiquid, these are (1) government securities, (2) bank deposit instruments, and (3) corporate liabilities. A fourth category, asset-backed securities, can fall anywhere in the spectrum, depending on the issuer of the assets and other features. The table below lists typical money market instruments in each of these categories.

Money Market Instruments	
Government securities	Treasury bills, government agency notes, municipal notes
Bank liabilities	Time deposits, certificates of deposit and deposit notes, bankers acceptances, repurchase agreements
Corporate liabilities	Commercial paper, money market preferred stock
Asset-backed securities	Commercial paper backed by accounts receivable

A final feature of modern money markets is the **derivative instruments** sector. All important money markets nowadays have a futures and options market in the key money market instruments such as treasury bills. Most have corresponding markets in terms of over-the-counter, i.e., private, contracts to fix or hedge money market interest rates, such as forward rate agreements (FRAs) and interest rate "caps." These derivative markets differ

widely with respect to structure and liquidity, and one can learn a lot about the money market as a whole by noting the number of traded contracts and the open interest in the futures and options contracts in local money market instruments. As we shall see, the authorities of some countries regard these instruments with suspicion, viewing them as engines of speculation rather than as useful hedging tools that contribute to the depth and diversity of the financial sector.

### **THE UNITED STATES**

While the U.S. money market falls decisively into the category of open-market dominated systems as opposed to bank-based systems, the U.S. Federal Reserve (Fed) and the large banks in cities like Chicago, San Francisco, and especially New York, known as "money center banks," are among the market's most important players. The Fed uses the U.S. money market as its platform for the implementation of monetary policy, and the banks use the market to make the most efficient use of reserves held at the Fed in excess of those required, or to meet shortfalls. The distinguishing feature of the U.S. money market is the degree to which the market is used by nonfinancial organizations, such as industrial corporations and municipal, state, and federal government units, both as a source of funds and as a repository for cash. Another dimension has been the pioneering of (indirect) individual investor use of the market, via **money market mutual funds** which invest in wholesale instruments such as those described below and sell shares to the public in \$1 denominations. Indeed, the growth of money market mutual funds, which provide individual investors and small business firms with returns that are typically just less than 50 BP below "wholesale" rates for money market instruments, has had considerable impact not only on the competition for retail deposits, but it has generated substantial demand for money market instruments, especially commercial paper.

Some prominent instruments and their principal users are listed in the table below.

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<b>Instrument</b>	<b>Principal Functions</b>
<b>Federal Funds</b>	<b>Interbank lending</b>
<b>Discount Window Advances</b>	<b>Bank borrowing from the Federal Reserve system, usually only when private sources not easily available</b>
<b>Negotiable Certificates of Deposit (CDs)</b>	<b>Bank deposits taken from the public; negotiable CDs are large denomination wholesale money market instruments</b>
<b>Repurchase Agreements</b>	<b>Securities dealers, banks, thrift institutions, nonfinancial corporations, governments use these to obtain short term (usually overnight) loans backed by securities</b>
<b>Treasury Bills</b>	<b>Short term debt of the U.S. government</b>
<b>Municipal Notes</b>	<b>Short term state and local government obligations</b>
<b>Commercial Paper</b>	<b>Unsecured negotiable notes issued by nonfinancial and financial businesses</b>
<b>Bankers Acceptances</b>	<b>Tradable notes issued by banks when they "accept" or guarantee trade-related obligations of nonfinancial corporations</b>
<b>Federal Agency Discount Notes and Coupon Securities</b>	<b>Short term claims issued by Farm Credit System, Federal Home Loan Banks, Federal National Mortgage Association</b>
<b>Futures Contracts</b>	<b>On organized exchanges, dealers, banks, and individuals trade, on contracts for future delivery (or cash equivalent) of instruments including some of those described above.</b>
<b>Futures Options</b>	<b>Exchange-traded rights to buy or sell futures contracts</b>
<b>Forward Rate Agreements</b>	<b>Over-the-counter contracts to hedge interest rates on instruments such as some described above.</b>

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The Federal Reserve Bank of New York, acting on behalf of the Federal Reserve Board in Washington, implements monetary policy by daily open market operations in the U.S. money market. When the Fed wants to inject money into the system, it will buy Treasury bills from a group of authorized banks and securities firms, "primary dealers," or lend money under repurchase agreements, buying securities today while agreeing to resell them at a certain price at a later date. When the Fed wants to tighten money, reducing the money supply and raising interest rates at the margin, it will sell Treasury bills or do "reverse repos," i.e., sell money market paper while agreeing to buy them back at a fixed price. Alternatively banks may borrow money from the Fed on a collateralized basis through the central bank's lending facility, the discount window. By controlling the supply of money or reserves that banks hold, the Fed has a direct influence on the Federal funds rate that institutions pay in the market to borrow and lend reserves, and an indirect influence on all other money market rates.

The fundamental attitude of the U.S. authorities is one of a suspicious *laissez-faire*: the guiding principle is to leave the markets alone except when instability, fraud, or loose banking practices are likely to upset the politicians or cause the public to lose confidence. If a suspicious practice occurs, the authorities intervene forcefully. But since the U.S. is a country that has great respect for the rule of law rather than the institutional influence of the regulators, abuses do occur right under the noses of the authorities from time to time. The use of commercial paper by securities firms' holding companies, the Treasury auction process, the repurchase agreement market have all had their crises and have spawned legislative response in Washington. By and large, however, the bank supervisors are concerned with bank soundness, the Securities and Exchange Commission focuses on public disclosure and transparency, the Treasury is worried with financing the government deficit, and the Federal Reserve is concerned with stable markets in which to conduct monetary policy. As long as these regulatory objectives are satisfied, the U.S. government has little

concern with the operation of the money market. Most of all, the market is not called upon to play a significant role in credit allocation, as is the case in some countries.<sup>2</sup>

The Treasury bill market is the world's biggest of its kind, and is widely used as the benchmark for short term dollar-denominated instruments as it is effectively free of default risk.<sup>3</sup> The T-bill is also regarded as the most liquid of securities. A measure of the liquidity of a financial asset is the spread between the bid price and the asked price quoted by market makers. In recent years the bid-asked spread on actively traded bills has been only two to four basis points, which is lower than for any other money market instrument.<sup>4</sup> As a result they normally bear the lowest interest rate at a given maturity. Treasury bills are issued and traded at a discount from par. They are sold at regularly scheduled auctions held by the Federal Reserve Bank of New York. On the day of the auction a competitive bidder states the quantity of bills desired and the price he is willing to pay for each quantity.<sup>5</sup> After filling noncompetitive orders, the Treasury allocates the remainder to those competitive bidders submitting the highest offers, ranging downward from the highest bid until the total amount offered is allocated. The "stop-out price" is the lowest price, or highest yield, at which bills are awarded.

Bank time deposits and certificates of deposit (CDs) have to a large extent atrophied in the United States, as their Eurodollar counterparts have substituted for the domestic

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<sup>2</sup>Even the United States is not free from such attempts to allocate credit. One example is the Community Reinvestment Act, an instance of legislative credit allocation focusing on the banking industry.

<sup>3</sup>Even if the U.S. government's credit standing were to deteriorate, they could always print new money to pay off Treasury bills, and would do so rather than default. So while T-bills are free of credit risk, there is no guarantee that their value in terms of purchasing power will hold.

<sup>4</sup>The more volatile are interest rates, the greater is the risk taken by a dealer "making a market," i.e., quoting a bid and an asked price. Hence bid-asked spreads tend to rise during periods of increased interest rate volatility.

<sup>5</sup>Investors can also make "noncompetitive bids," indicating the quantity of bills desired, and agreeing to pay the weighted-average price of accepted competitive bids.

market. The reason is that conventional bank time deposits and CDs are subject to reserve requirements. Instead, the wholesale interbank market in the United States is the market for **Federal funds**, which means short term interbank loans of money that is immediately available as deposits in the Federal Reserve System. Fed funds are not subject to reserve requirements.

**Bankers acceptances (BAs)** are in effect a means of bank financing, although they take the form of tradable paper much like CDs. Indeed in the United States, BAs substitute to an extent for negotiable CDs as a bank-backed tradable instrument. A bankers acceptance is created when a bank supports a corporate trade obligation (a "trade bill") by accepting responsibility for repaying the note, often after having issued a letter of credit to assure both parties' performance. While BAs reflect the accepting bank's credit standing, when that particular institution or the whole banking sector is under pressure, BAs can yield less than CDs, reflecting the fact that they are "two name" paper.

The principal form of funding for securities dealers is the **repurchase agreement**, or repo. A standard repurchase agreement involves the acquisition of immediately available funds through the sale of securities with a simultaneous commitment to repurchase the same securities on a certain date in the future. The repo is commonly regarded as a short term (often overnight) loan that is collateralized with Treasury bills or bonds or other government obligations. Under an overnight repurchase agreement, a dealer borrows funds from a bank by selling it a security, which the dealer repurchases the next day at a price agreed upon in advance. A reverse repo is the mirror image of a repo. Securities dealers handle a huge volume of transactions of this kind with the Federal Reserve. In addition to banks and dealers, corporations, institutional investors and government agencies are also major users of the repo market, both as borrowers and as lenders.

In some repurchase agreements, the agreed upon repurchase price is set above the initial sale price by an amount that reflects the interest rate. More typically, however, the

repurchase price is set equal to the initial sale price plus a negotiated rate of interest to be paid on the settlement date by the borrower. Repo interest rates are straight "add-on" rates calculated on an "actual/360" days basis. The amount of securities required as collateral for a given amount of cash loaned is the cash amount plus a "haircut" or margin, ranging from 1% to 5%, to reduce the lender's exposure to market risk, principally interest rate risk, affecting the value of the collateral. The collateral is valued at current market price plus accrued interest. Since most repos involve Treasury and federal agency securities which are maintained in book-entry form, the transfer of ownership of the collateral can be done efficiently at the same time as the transfer of funds. Since the costs can mount for many transactors, some lenders prefer to protect their ownership claims by using safekeeping arrangements. The most popular of these is the "tri-party repo" in which a custodian becomes a direct participant in the transaction with the borrower and the lender. The clearer-custodian ensures that exchanges of collateral and funds occur simultaneously and that appropriate operational controls are in place to safeguard the investor's ownership interest in the underlying collateral during the term of the agreement. Such an arrangement is now provided by the international securities clearing house, Euroclear.

In the United States, commercial paper (CP) has become the principal means of short term financing for nonfinancial and financial corporations, and as such it now has an amount outstanding exceeding every other money market instrument except Treasury bills. Commercial paper is simply an unsecured short term corporate promissory note. The CP market is unique in that it substitutes for bank lending and yet is highly dependent on commercial banks. In order to be marketable and to earn a top rating from the rating agencies, U.S. commercial paper must be supported by a liquidity line from a commercial bank. This "back-up line" as it is called, does not guarantee the *creditworthiness* of the issuer. That guarantee is provided by a standby letter of credit. Instead, the back-up line assures the investor that under normal circumstances, the issuer will have access to short

term credit that could be used to repay the commercial paper if for some reason the commercial paper market proves inaccessible.<sup>6</sup> Although corporations must pay a fee for this line, strong credits can usually raise money less expensively than by borrowing from banks. Even weaker credits have been able to issue commercial paper, either with a letter of credit or by issuing **collateralized commercial paper**. The latter employs Treasury or agency securities, or increasingly accounts receivable with sufficient overcollateralization, to earn a top credit rating. The technique consists of selling the assets to a special purpose vehicle, such as a trust, which issues commercial paper. This insulates the investor from the fortunes of the sponsoring company or financial institution.

Corporations issue commercial paper under a **commercial paper program**, an arrangement with a group of banks that is set up in advance and which provides the master documentation and paperwork for future issues. Once the program is in place, paper is continuously offered. If and when the firm requires funds, or as is often the case, when an investor wants to place money for a short period, new paper is issued under the program (see box). The paper is issued at a discount and pays par at maturity. Maturities can last one day or up to 270 days, the maximum maturity to escape SEC registration requirements; however, most mature in one to three months. Money market funds are the largest investors, and the market is dominated by institutional investors such as cash-rich corporations, bank trust departments, pension funds, and insurance companies, as well as mutual funds.

Many instruments of both the money and the capital market are *tax driven*. Treasury bills are exempt from state and local tax, and **municipal notes** are exempt from Federal tax, so both are extensively used by individual investors in tax brackets where the lower yield is offset by the tax benefit. Some money market mutual funds specialize in RANs (revenue anticipation notes), TANs (tax anticipation notes) and other short term state and local

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<sup>6</sup>A standard backup line of credit can be withdrawn by the bank at any time in response to a change in the company's financial condition; "committed" back-up lines provide a greater degree of assurance--for a fee.

government obligations. Municipal issuers also use tax-exempt commercial paper, and variable-rate demand or put obligations. The latter are floating rate notes with a feature known as a demand option which gives the investor the right to tender the instrument to the issuer or a designated party on a specified number of days' notice at a price equal to the face amount plus accrued interest. Most of these securities are in the portfolios of tax-exempt money market funds.

### **Commercial Paper Placement**

Issuers sell commercial paper to the institutional investor public through *dealers*. Issuance occurs more or less as follows:

When a company issues commercial paper through a dealer, early in the day the treasurer of the company tells the dealer how much paper the company wants to sell and in what maturities. The dealer contacts prospective customers to determine the rate at which he will be able to sell the paper. On the basis of his information the dealer determines the rate at which he will buy the paper from the issuer. He also relays to the issuer any special requests for paper in specific quantities and maturities, but the issuer makes the final decision on these matters. The trade is usually settled the afternoon of the same day. The dealer resells the paper to investors as quickly as possible; only 5 to 10 percent of paper bought is taken into inventory. The dealer finances any paper held in inventory either with overnight repurchase agreements or with secured call loans from banks.\* Very large issuers, e.g., GMAC, distribute paper "directly," i.e., without employing a dealer.

\*From Timothy D. Rowe, "Commercial Paper," in Federal Reserve Bank of Richmond, *Instruments of the Money Market*.

An innovative form of tax-driven money market paper is **money market preferred stock**, which substitutes for commercial paper for some issuers. This paper, which is short term debt masquerading as equity, offers corporate investors a significant tax benefit: inter-company dividends are taxed at a favored rate in some countries. Therefore the after-tax return to corporate investors can be quite attractive. Since dividends are not tax deductible,

they are issued only by corporations which cannot use the tax shelter that interest payments provide.

Discussion of the U.S. money market would be incomplete without mention of the role of futures, options, and forward rate agreements (FRAs). Hedging instruments such as these have become an essential part of the toolkit of all banks and dealers, and of most issuing and investing participants in the money market. The exchange-traded and over-the-counter (OTC) derivatives markets in the United States are perhaps the best developed in the world. By far the most actively traded contracts in the world are the Eurodollar futures and Treasury bond futures contracts traded on the International Monetary Market (IMM) of the Chicago Mercantile Exchange, where options on futures contracts are also widely used for hedging. Many banks offer the over-the-counter equivalents of interest rate futures, namely FRAs--forward rate agreements.

#### CANADA

To the unsophisticated observer Canada often looks like a smaller version of the United States. In a superficial way, this holds also for the Canadian money market. However, upon closer inspection one detects significant differences. Some differences in the Canadian market relative to the U.S. market result from the smaller size of the market and the higher concentration among the financial institutions, which makes liquidity constraints more acute. Also, there are significant differences with respect to liquidity management by the Bank of Canada. Effective in late 1991 the Bank moved toward a system of zero-required reserves. Instead of restricting borrowing from the central bank by moral suasion, price incentives trigger the money market responses by direct clearers (which comprise both banks and deposit taking nonbank financial institutions) in the face of changes in the supply of

settlement balances, i.e., high powered money.<sup>7</sup> Last, but not least, there are substantial regulatory differences, especially with respect to the bankers' acceptance market which in Canada has become a major vehicle to avoid most regulatory costs of the banking system.

As in other Anglo-Saxon countries, the Treasury Bill (T-Bills) market represents the core of the money market. All levels of government in Canada have run substantial deficits on a fairly regular basis. Accordingly, the Bank of Canada, as the agent of the Federal Government, sells discounted T-Bills during Treasury auctions on Tuesdays of every week. Any bank or investment dealer (the Canadian term for investment banks) that is on the list of primary distributors of Government of Canada marketable securities is eligible to bid. Other investors have to put their order through one of these primary distributors. Bills are issued weekly in maturities of 91 days, 182 days, and 364 days.

While chartered banks formerly held a major portion of Treasury Bills as part of their required secondary reserves (eliminated in 1992) bought in auction, they and other financial institutions, corporations, pension funds, etc., even out their different liquidity needs by purchasing and selling T-Bills between themselves and money market dealers on a daily basis. Minimum trading units are C\$250,000. There is an active "when-issued" market, a forward market that links the new issue market with the secondary market in a smooth fashion.<sup>8</sup>

Apart from the Federal Government, the Canadian Provinces issue 3-month Provincial Treasury Bills as well as shorter term cash management promissory notes. Often this is done on a less regular, or "tap," basis. Even Canadian municipalities will occasionally use the money market to cover short term financing needs, mostly for less than

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<sup>7</sup>For a detailed account of Bank of Canada operating practices, see Donna Howard, "The Evolution of Routine Bank of Canada Advances to Direct Clearers," *Bank of Canada Review*, October 1992, pp. 3-22.

<sup>8</sup>For a thorough analysis of this market, see: D. Graham Pugh, "The When-Issued Market for Government of Canada Treasury Bills: A Technical Note," *Bank of Canada Review*, Nov. 1992, pp. 4-22.



90 days. Denominations are C\$100,000 and less, and debt issues originate by tenders to investment dealers or through private placements. This public market resembles the United States closely, except that volumes are smaller, players are fewer, and market liquidity is therefore somewhat less. Further, certain constitutional issues, especially the possibility of Quebec declaring independence, raise questions with respect to credit risk even to securities issued by the Federal Government itself.

As far as bank-issued securities are concerned, Canadian chartered banks originally offered traditional time deposits only. Later they came under pressure from non-bank intermediaries such as acceptance companies and large industrial enterprises, competing for short-term funds. As a consequence, there is now a Canadian CD market, where paper known as **Chartered Bank CDs** or **Chartered Bank Bearer Deposit Notes (BDNs)** are available from 30 days to one year. Minimum denominations are usually \$100,000. These securities trade on a discount basis and in most cases are issued directly by the banks to their customers rather than distributed by investment dealers. Chartered banks also issue bearer-form term notes and CDs in smaller denominations, ranging from \$5,000 to \$100,000, or even higher in registered form. Chartered banks also issue U.S. dollar deposit notes; essentially these notes are akin to Eurodollar CDs.

There is an active market for **wholesale deposits** in amounts above \$100,000. These are denominated in U.S. dollars outright, or they are so-called swapped deposits, i.e., covered with a forward exchange contract into Canadian dollar deposits.

Introduced only in 1962, the market for **bankers acceptances** has become huge. These are bills of exchange or commercial drafts, i.e., written orders to pay, drawn up by non-bank borrowers for payment on a specific date. Each of these notes is then accepted, i.e., "guaranteed" at maturity by the borrower's bank.<sup>9</sup> Thus, BAs represent two-name paper.

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<sup>9</sup>Technically speaking, an acceptance is better than a guarantee, since the bank is the first obligor, while the bank is only the second obligor under a guarantee.

Once the acceptance has been obtained, the drawer can present what is now a bankers acceptance to a money market dealer or the bank for sale. The latter will bid for the acceptance on a discounted basis. The normal terms are 30 to 364 days, although exceptions are possible. BAs have to be issued against security as defined in the Bank of Canada Act, but that definition is much broader than it is in the United States. The bank's acceptance is provided in return for a stamping fee (elsewhere known as a BA commission), the bank's reward for taking on the default risk. BAs come in round denominations of \$100,000 as well as \$500,000 and \$1 million.

The bankers acceptance market in Canada is in some respects a direct substitute for the external market. By accepting drafts and creating BAs, banks avoid the intermediation costs such as reserve requirements and, until recently, the contingent obligations created did not count against bank capital requirements. Thus, the BA rate in Canada substitutes for the LIBOR rate in the U.S. dollar market, and there even exists a futures market for BAs on the Montreal Exchange. This futures market in turn allows the larger Canadian banks, as well as some foreign banks, to create efficient over-the-counter markets for all kinds of interest rate management products such as FRAs and swaps, paying a fixed rate against the 90-day or 180-day BA rate, and the usual options-type products, such as Caps and Floors.

Just as in the United States, finance companies, both captive and independent, play an important role in the Canadian market. They obtain a large part of their funds from the sale of short-term promissory notes which are known as "finance" or "acceptance paper." These short-term securities are much more akin to CP than bankers' acceptances because they represent only one-name paper, although it is sometimes secured by specific assets such as receivables. In other cases, however, the backing is simply the general credit of the issuer.

Finally, there is a relatively small Canadian commercial paper (CP) market,<sup>10</sup> rated by one or two of Canada's rating agencies (i.e., the Canadian Bond Rating Service and Dominion Bond Rating Service). As in other areas, the CP market developed because of the price of chartered bank prime loans to better industrial credits. CP is issued in either discount or interest bearing form and can be made available both in bearer as well as registered form. With no SEC registration to worry about, terms can vary from a few days to a year and offerings are usually restricted to \$100,000 and higher. As in the United States, CP is backed by the general credit of the issuing corporation and implicitly by an unused line of credit at the issuer's bank. A special version is available in the form of demand paper that can be cashed in on 24 hour notice by the investor. The return on such paper is higher than the prevailing overnight rates and is normally slightly below 30-day prime finance company paper. Because of Canada's close economic relations with the United States, and the important role played by Canadian subsidiaries of U.S. based multinationals, "U.S. pay CP" (i.e., commercial paper denominated in U.S. dollars), has been available as an alternative in Canada for many years. Since most of these "multicurrency" programs are backed up by a parent company guarantee, they provide further avenues to integrate the foreign exchange markets in Canadian and U.S. dollars.

Because of the fact that dividends received by a Canadian corporation from another corporation are 100 percent exempt from taxation, **Dutch auction preferred shares** have caught on very quickly in Canada. Like "money market preferred" securities in the United States, this instrument pays something called a "dividend." However, the size of the dividend is established periodically at an auction through investors' bids that are unrelated to the earnings of the issuer, but rather determined by market yields on tax-free money market instruments.

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<sup>10</sup>For a detailed account of Canada's CP market, see: Peter Marchant, "Canadian Commercial Paper," in *Guide to International Commercial Paper, Euromoney Corporate Finance*, Supplement, January 1993.

Canadian Government securities, as in the United States, have been stripped and the short coupons are traded in the market as so-called residuals, competing directly with Treasury Bills.

Last, but not least, the Canadian market in 1989 started experimenting with securitization, although these efforts are several years behind equivalent activities in the U.S. market. What seems to work best so far are special purpose finance subsidiaries that purchase receivables and obtain credit enhancement, thereby reaching a standing that allows them access to commercial paper market financing. The reason why this development has lagged behind similar developments in the United States is a factor that affects other money market activities in Canada: the position of the banks is much stronger as their intermediation function is less hampered by regulation and legally imposed fragmented structures.<sup>11</sup>

## JAPAN

For at least the past thirty years, discussions of Japan's financial markets in general, and the money market in particular, have been dominated by two themes: "internationalization" and "liberalization." This is still the case, except that in conformance with current fashion the word internationalization has now been replaced by "globalization." By the same token, every major and not-so-major publication dealing with the analysis of these markets contains an appendix with an extensive timetable of various liberalization measures.<sup>12</sup> What all this really means is that, while significant steps toward liberalization have been taken, there are still restrictions that are a puzzle for the naive observer and the resulting phenomena are simply classified as Oriental mystiques. The essence is a precarious co-existence of

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<sup>11</sup>In particular, Canadian banks never were subject to any restriction against nationwide banking.

<sup>12</sup>For an example, see Masahiko Takeda and Philip Turner, "The Liberalization of Japan's Financial Markets: Some Major Themes," Basle: Bank for International Settlements, BIS Economic Papers, No. 34, November 1992, pp. 99-121.

regulated and nonregulated markets to which concepts such as market mechanisms and efficiency are applied at some risk.

To understand Japanese financial markets, one has to be aware that the real miracle is that liberalization has progressed as far as it has. A fundamental facet of the Japanese political economy is that financial markets are considered too important to be left to the free play of market forces. On the danger of doing injustice to a complex system, it is nevertheless useful to focus on certain of its salient characteristics. Deeply ingrained beliefs in the scarcity of resources, together with high population density and a long history of frequent man-made as well as natural calamities, have convinced the Japanese that society has to be well regulated and ordered in order to avoid the alternative of chaos and destruction. Based on Confucian values, wise leaders set policy, implemented by a well-educated and pervasive bureaucracy that is usually honest (unlike the politicians), and, at times, even efficient.

Destructive conflict among major interest groups is to be avoided by all means; no group with sufficient power to raise a major ruckus can be ignored or run over in a rough-shod fashion. Consensus is achieved through negotiations, reluctant give and take, until various factions are persuaded and bribed to agree to compromise in a lengthy process. Often, the compromise consists of the status quo being preserved with only minor cosmetic changes.

Foreign pressure plays a special influence in this process. It would be wrong to credit outside forces as being at the root of all significant changes in Japan's financial markets, such as the introduction of new financial instruments or general liberalization of financial markets. However, when outside pressures coincide with significant domestic interests, change often does occur more swiftly.<sup>13</sup>

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<sup>13</sup>See Adreas R. Prindl, *Japanese Finance: A Guide to Banking in Japan*, New York: John Wiley & Sons, 1981; and Frances McCall Rosenbluth, *Financial Politics in Contemporary Japan*, Studies of the East Asian Institute, Cornell University Press, 1989.

These general characteristics certainly apply to the Japanese money market. Historically speaking, the call market, established approximately in 1902, and the bill discount market, which originated in 1971, have been the primary markets by which Japan's financial institutions even out excess and deficit liquidity among themselves. These markets have also been used by the Bank of Japan to affect the money supply.

The market for call money is very similar to the U.S. Fed funds market with one exception. For many years, beginning after the 1927 banking crisis, call money transactions were collateralized. Non-collateralized call market transactions, however, have been expanding quite rapidly during the 1980s, and by the end of 1991 the average annual volume of unsecured call transactions exceeded that of collateralized transactions.<sup>14</sup>

More important, for many years interest rates for call money have been set under the guidance of the Bank of Japan with little regard to market rates, largely by compelling transactors to go through special brokers (tanshi) whose quotes were guided closely by the monetary authorities. And while the system of direct guidance of tanshi rates was officially abolished in the mid-1980s, the guiding hand of the Bank of Japan on money rates is still evidenced by the low variance of daily changes in market rates.

The bill discount market, based on commercial bills (tegata), played a similar role in financing trade. Like the market for call money, however, the market is strictly interbank, with participation limited to various financial institutions, including non-bank financial institutions such as insurance companies, credit cooperatives and others. Non-bank financial institutions, smaller banks, and credit unions are active in the money market, primarily as suppliers of funds; city banks and long-term credit banks tend to have structurally a shortage of funds.

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<sup>14</sup>Tomoko Fujii, "A Primer on Yen Fixed-Income Markets," Tokyo: Salomon Brothers, June 1992.

By way of a footnote, besides intervention in the call and tegata markets, the Bank of Japan has also engaged at times in *direct lending* through the discount window. For many years, this policy led to a condition of so-called "over-loan" where Japanese banks booked commercial loan volumes exceeding their deposits, funded by such direct loans from the Bank of Japan. This phenomenon has led to all kinds of theories about the uniqueness of the Japanese system. With the benefit of hindsight, it was largely due to the fact that interest rates on the deposit side as well as on the lending side were controlled, and the banking sector was starved for funds. This condition allowed the authorities to keep very close controls on the quantity of money in the economy and at the same time permitted the government to direct scarce funds into favored industries.

All this, of course, changed in the early 1980s: capital markets developed, large firms went to the Euromarkets, interest regulation was circumvented and subsequently relaxed, and banks were finally glad to have customers desiring loans.

During 1979, under some pressure from the United States as well as certain Japanese banking institutions, the Ministry of Finance permitted the issuance of certificates of deposit (CDs). Originally, this activity was curtailed by maturity restrictions as well as minimum size limits (¥100 million), but the rules were changed in 1988 to ¥50 million, and have become even lower since. Over the years, particularly since the 1988 money market reform, yields on 3-month CDs have become the representative domestic open market interest rate. CD rates in turn have become the base to compute rates on money market certificates (MMCs) for individual investors and have turned out to become the base for the short-term prime rate. CDs, however, have never played a role matching their potential, largely because of transactions taxes, and the secondary market for these instruments has therefore remained poor. Instead, corporations use large-scale (nonnegotiable) time deposits which are directly negotiated with the banks.

It is characteristic for the Japanese market that T-Bills, the backbone of most other money markets in industrialized countries, have come on the scene relatively late. It was not until early 1986 that the Ministry of Finance (MoF) started to issue 6-months bills, and 3-months instruments were not introduced until September 1989.

Besides Treasury bills, the Ministry of Finance has also been issuing so-called Financing Bills (FBs). These are used for central government cash management purposes only, as opposed to systematically raising funds for the government in the short-term markets. Since 1982, the Bank of Japan has occasionally been reselling FBs to money brokers in order to soak up liquidity. FBs are issued in discount form with an initial maturity of approximately 60 days.

The next significant step in the development of the Japanese money market occurred in November 1987 when the issue of yen commercial paper (¥CP) was permitted. Issuers are corporations that must obtain a credit rating from at least two rating institutions. By 1991 approximately 700 firms had qualified for CP issuance and in 1988 foreign companies were permitted to issue "Samurai CP;" Dow Chemical Company was the first company to take advantage of this opportunity. Banks and non-bank financial institutions, however, are not allowed to issue such securities.

Securities houses have been permitted by the MoF to issue CP since April 1990. Securities companies raise funds for financing inventories through the collateralized interbank market. Other non-bank institutions may be admitted to the market later.

The evolution of the CP market is a classic example of how financial reform works in Japan. During the early 1980s a strong domestic constituency, namely corporations, threatened to move their short-term fund raising abroad if they were not given permission to issue CP in Japan. Banks were opposed as they hated to see their best customers leave their captive lending business and corporate CP become competitive with CDs as well as time deposits. U.S. negotiators had pushed Japan to liberalize their financial markets further in



order to remove "structural impediments" to free markets and open competition, beyond trade in goods and services. In a complex process that lasted several years, the CP market was opened by giving CP a legal form, the equivalent of bills, with both securities companies and banks to become CP dealers.<sup>15</sup> The latter got a foot into the securities business. For a while, after the introduction, competition between various institutions for CP business was so keen that CP rates were below time deposit rates. Obviously, many corporations took advantage of this "hara-kiri" market.

The secondary market for CPs has not developed very well because of transactions taxes. Instead, paper is traded in the form of repurchase agreements.

This Gensaki market is actually a very old market; it represents a typical market phenomenon in response to restrictions. In the past nonbanks, i.e., corporations, had only the banks to rely on for adjusting liquidity, which was not too bad as long as Japan was rapidly growing and virtually all corporations were in a borrowing position. This situation, however, began to change in the 1970s and 1980s when successful corporations began to accumulate large cash balances in spite of their extensive investment programs. With no short-term paper available (except trade receivables), the inventive Japanese began to develop a short-term market out of longer-term securities by selling (buying) and simultaneously repurchasing (selling) the securities for different points in time. The difference in price of course represented the interest implied in these repo-like transactions. The market developed particularly during periods when the discrepancy between (controlled) deposit rates and market rates became significant.

The specific type of securities used for these repo transactions has changed. For many periods in the 1970s and early 1980s, the market used the medium term bonds issued

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<sup>15</sup>For details see Ulrike Schaeede, "The Introduction of Commercial Paper (CP): A Case Study in the Liberalization of the Japanese Financial Market," *Japan Forum*, Vol. 2, No. 2, Oxford University Press, Nov. 1990.

by the long-term credit institutions. However, there is nothing magic about these securities; some long-term government bonds and currently even money market paper with limited liquidity such as CDs, T-Bills, and CP, is traded on the basis of Gensaki agreements. In fact, all money market instruments are now traded in this market, with CD gensaki being most liquid and the interest rate in this market substituting as the money market indicator.

By law, such repo transactions can have maturities of up to one year, but in reality most deals are done for maturities with less than two months. Japanese securities companies were originally very active using this method to finance their bond inventories necessary for trading operations; corporations joined later. Indeed, the market differentiates by counterparty: "jiko gensaki" means an agreement negotiated by the securities company intermediating between its clients for its own account, while a repo negotiated between a securities company and an industrial corporation on one side is known as "itaku gensaki." These two types serve the purpose of providing funds for securities companies and corporations respectively. A third type of agreement that is known as "jiki gensaki" is negotiated directly between a borrower and an investor, with the securities company acting not as principal but merely as a broker.

Nonresidents have been allowed to participate in the gensaki market only since 1979. Tax issues have to be carefully monitored, which is why taxable investors use gensaki agreements that are timed in such a way that coupon dates fall outside the agreement for the taxable party; a tax exempt investor owns the securities during coupon dates. This technique is known in other markets as "coupon washing." A transfer tax of .03 percent, however, applies. When using government bonds, an additional .01 percent is payable; CD gensaki transactions, however, do not involve a transfer tax, which explains their popularity.

Asset-backed securities are being discussed in Japan in the early 1990s, but no consensus has been reached among the various parties concerned and there are legal/regulatory issues as yet unresolved.

There are, however, Euroyen futures contracts traded on the Tokyo International Financial Futures Exchange since June 1989. Since October 1989 the Singapore International Money Exchange (SIMEX) has traded 3-month Euroyen futures. Options on Euroyen futures have started to trade during 1992.

A good indicator of the functioning of the money market is a comparison of the differentials among rates of different instruments such as CDs, commercial bills, Euroyen, and others. A graph of such rates shows that toward the end of 1988 a substantial change occurred in the Japanese money market as rate discrepancies among these instruments became reduced to a few basis points. Prior to that period differences of up to 100 basis points, representing quantitative restrictions rather than credit or liquidity differentials, were visible.<sup>16</sup>

A bankers acceptance market has been promoted by the authorities in 1985 but it disappeared because of various transactions taxes, and better money market alternatives.

Given the history and the cultural context, Japan's money market has come a long way. A recent review by a Japanese observer mentions three remaining problems with respect to the Japanese money market.<sup>17</sup> *First*, there is a shortage of Treasury bills and Financing bills; this is because the Treasury does not issue enough short term paper relative to longer term fixed-rate bonds. *Second*, market participants, including regulators, have not made up their minds regarding the need, or lack thereof, for collateralizing transactions. It must not be forgotten that the stability of the Japanese financial system is of post-World War II origin. Prior to that time, the Japanese system had to endure a number of financial crises and crashes, and even in the modern period there were several accidents that almost

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<sup>16</sup>See Tomoko Fujii, "A Primer on Yen Fixed-Income Markets," Salomon Brothers, June 1992, Figure 6, page 9.

<sup>17</sup>Kenzo Yamamoto, *Capital Markets and Financial Services in Japan: Regulation and Practice*, Tokyo: Japan Securities Research Institute, 1992.

happened. *Third*, non-bank participants are again affected by the lack of Treasury Bills and Financing Bills. This pushes them into privately issued money market paper such as CDs and CP, where credit risk is always a factor. Participants in the money market are particularly risk averse--institutions seek not to maximize return but to assure liquidity and the availability of funds.

A secondary market that really meets the requirements of the Japanese economy has been prevented from developing by, for example, the Ministry of Finance's practice of issuing FBs at below-market rates to limit government interest costs, and by vexing tax problems. For example, the gains from the redemption of discount Treasury Bills and Financing Bills are subject to an 18 percent withholding tax. This levy is deductible for taxable corporations, and refunded to tax exempt corporations either at redemption or at time of purchase, with respect to foreign central banks and other official institutions with tax exempt status in Japan.<sup>18</sup>

Turning to the individual investor, high net worth individuals now can choose from a variety of instruments as shown, for example, by the weekly personal investment column published in *Nikkei*. The competition for deposit funds is keen and sharp consumers (in Japan this means housewives who control the family's funds) can get decent rates on term funds. But regulatory distortions and institutional quirks remain. For example, the Postal Savings System effectively offers savings deposits which guarantee a fixed rate that allow for early withdrawal of funds by depositors without penalty. There is a whole range of time deposit facilities: small and large money trust accounts, medium term bond funds offered by investment companies, as well as trust fund accounts by trust banks that serve a similar function. However, when it comes to the "real thing," i.e., money market mutual funds that allow for check writing or, in Japan, the issuance of bank transfer orders, legal restrictions do

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<sup>18</sup>Interestingly, the reason given why individuals are not permitted to purchase Treasury Bills or FBs is the difficulty of tax collection.

not permit such vehicles. Instead, the average investor is relegated to a savings account that pays, with luck, 1 percent per annum.

### **PACIFIC BASIN DEVELOPING COUNTRIES<sup>19</sup>**

Analysis of the money markets of developing countries is necessarily different from those of developed countries; after all, they are still developing. Let us begin, therefore, by providing a general picture of the development phase of a money market and of the structure of interest rates in different segments of the market. We can then turn to cases of money market conditions in several developing countries such as Indonesia and Korea, and finally draw some conclusions about causes and remedies for underdeveloped money markets.

In those developing countries where a money market exists, it plays a different role than that in the industrial countries with well developed securities markets. Most developing countries rely much more on banks than on securities markets for the allocation of short term credit, so it should not be surprising that the first semblance of a money market is often the **interbank market** for deposits. Banks in developing countries are often seen as semi-public institutions since they serve most of the functions of a money and capital market. Banks themselves also serve much more important functions in both monetary policy and credit allocation. Often they are required to make loans to favored sectors at below-market interest rates (see box on banking in China). In turn, their market position may be sheltered from foreign competition and from financial innovation, or troubled creditors may be bailed out by government subsidies. In fact in many developing countries, the principal banks are state owned.

Some countries have actively promoted the development of a domestic money market, mainly because the government has recognized that the money market, particularly the market for Treasury bills, can be very helpful in the implementation of monetary policy.

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<sup>19</sup>The authors are grateful to Mr. Park Soongpoong and Dr. Kim Dong-Soon, who made many helpful suggestions about this section.

### **Bank Lending in China**

The early 1990s saw rapid growth of private banks in China, in response to enormous demand for credit on the part of non-favored businesses. Until the mid-1980s, all banks were state owned. Their lending practices were the very antithesis of prudence. If a factory was in decline, manufacturing pink sofas or something else that faced weak demand, then that would be sufficient reason to extend a loan so that the factory could meet its payroll. It did not matter whether the factory could repay the loan; the important thing was to avoid labor unrest. It helped if the factory manager had cultivated good *guanxi* (connections) with government officials and offered "samples" to lending officers. Because state banks were all chock full of bad loans that were rolled over when they became due, no one was ever disciplined for adding one more irrational loan to the pile.

Source: "Pushing the Limits in Chinese Banking," *New York Times*, February 7, 1993.

The government of a developing country typically creates a *primary market* by distributing money market instruments through compulsory assignment to banks and other financial institutions. But as a rule, low transaction volumes of these instruments indicate that the *secondary market* remains in its infancy often caused by the very fact that new issue rates are "off market."

Indeed, the major constraints on money market development in developing countries are restrictions on interest rates. The monetary and regulatory framework is used not only for its traditional functions, but also for the twin goals of lowering the cost of public borrowing and to ration domestic credit. When interest rates are low in real terms, credit becomes scarce--and someone must allocate funds. Obviously, this gives considerable power to the government and its bureaucracy to channel cheap credit resources to a limited group of chosen industries, ostensibly to promote industrial growth, generate scarce foreign exchange, or serve the present government's interests in other ways. This means that interest rates paid on deposits and charged for loans are unlikely to reflect the risks of these instruments. In many cases, real interest rates in regulated financial institutions are negative, providing opportunities for political corruption and incentives for criminal, personal enrichment of decision makers.

There is little room for an efficient money market in this context. In a free market the return will reflect the riskiness of the instrument, and interest rates in advanced countries' money markets will tend to be lower than commercial loan rates because the latter are riskier and less liquid. In a restricted money market the opposite is often true. So, if the government of such a developing country were to permit an open money market to compete freely with banks, the result would be severe disintermediation, and the government's power to ration credit would be profoundly weakened.

As one might expect the result is that in some countries, huge informal or "curb" money markets develop. Rapid economic growth coupled with subsidized and rationed credit creates a chronic shortage of capital, and to many companies what matters is the availability rather than the cost of funds. As a consequence, interest rates in curb markets are much higher than those charged by regulated institutions.<sup>20</sup>

In addition, effective rates charged by regulated banks may in fact be much higher than nominal rates, if the restrictions apply to nominal rates only. In Saudi Arabia, where Islamic *shari'a* laws restrict loan rates, banks offer loans at a discount from face and charge ongoing administrative fees to substitute for interest. Japanese banks have traditionally demanded that loan customers maintain a considerable amount of interest-free compensating balances. As a result Japanese banks retained considerable autonomy in controlling the effective interest rate level, thus circumventing nominal interest rate controls. In Korea, commercial banks are prohibited from requiring compensating balances; and while this prohibition had been on the books for many years, it has been honored more in the breach

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<sup>20</sup>The fact that many countries with repressed financial markets were able to achieve impressive growth rates in the real sector of the economy is in part explained by the availability of parallel markets, i.e., the domestic curb market for small enterprises and the offshore market for large business firms. These operate effectively in an environment of "dual" financial markets. See Gunter Dufey, "Banking in the Asia Pacific Area." In *Asia Pacific Dynamics*, R. Moxon, J.F. Truitt, and T. Roehl (eds.), Greenwich, CT: JAI Press, 1983.

than in the observance. At times, however, the Korean authorities have enforced this rule; during those periods, the banks' autonomy in loan pricing has been severely restricted.<sup>21</sup> Korea's curb market is huge, and, as described in the accompanying box, its money market has been rife with distorted interest rates.

#### **The Korean Money Market: An Example of a Distorted Interest Rate Structure**

Korea's financial market is a segmented one, and interest rates vary accordingly. The *first* segment is deposit and loan rates at banks: these are constrained to low levels--below 10 percent--by government regulation. The *second* is the nonbank financial institutions (NBFIs). Contrary to the situation faced by commercial banks, they can control effective interest rates, although the government has frequently sought to prevent this. NBFIs lend to companies by underwriting commercial paper, but when they do, they may simultaneously require the issuing company to buy paper issued by the NBFIs. Such paper pays a rate only slightly higher than commercial bank deposit rates. Official interest rates for CP ranged around 12-14 percent in the late 1980s, whereas effective interest rates fluctuated in a wide range centering around 17-19 percent. The *third* segment is the market for notes issued by the central bank, Monetary Stabilization Bonds (MSBs), issued to absorb cash created by Korea's trade surplus in the late 1980s as well as excess liquidity generated after inflation, wage settlements, and government spending programs. MSBs were issued and traded publicly and could be bought by individual investors directly or through trust funds at commercial banks. The burgeoning supply drove secondary market yields up, frequently above 16 percent. Being risk free and offering yields much higher than commercial bank deposit *and* loan rates, MSBs created a huge crowding-out effect, undermining bank intermediation as well as the development of other money market instruments. *Finally*, interest rates in the informal curb market ranged between 2.5 and 3 percent a month, roughly 30-40 percent per annum.

In sum, restrictions on either nominal or effective interest rates often produce unattractive real interest rates to savers, particularly where (as in many developing countries) inflation is rife. This creates distortions, promotes informal markets and self-financing by

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<sup>21</sup>Korean academics criticize this restriction on the basis that it has kept Korean commercial banks from cultivating a capability for assessing customer's creditworthiness, as well as from charging an effective rate based on that assessment. They argue that even though politically-dictated credit rationing is the most critical cause of huge problem loans at Korea's commercial banks, the banks' incapability of assessing credit contributes to bad loan problems. They support their argument with evidence that compensating balances required by American banks have assisted banks in monitoring customers' credit. This inference appears to stretch that argument considerably.



companies and impedes the development of a money market. Further, although interest rate distortions constitute a major feature of financial markets in developing countries, the root of the problem is an absence of economic democracy, a political economy of what economists term *financial repression*. Political decisions that ration credit and favor a limited group of industries not only suppress financial market development but also may cause a critical shortfall of capital and inhibit real economic development. Worse, they often lead to capital flight as one avenue for savers to obtain adequate returns. Capital flight in turn necessitates foreign exchange controls, which carry with them their own sets of cost, distortion, and a corrosive effect on respect for laws and regulations.

Some argue that financial repression also constrains the central bank's monetary policy effectiveness and hence its ability to contain inflation.<sup>22</sup> Open market operations are far less likely to be distorted by credit allocation influences than by administrative controls. Using the money market for monetary policy both contributes to and depends on an efficient money market. The traditional instruments for the implementation of monetary policy in developing countries have been, (1) commercial bank reserve requirements or liquidity ratios, (2) central bank discount policy, and (3) the use of various direct controls such as ceilings on the amount of commercial bank credit expansion. As their economies' need for freer financial markets has grown, however, a number of governments have employed open market operations in money market instruments, such as Treasury bills and notes issued by the central bank to achieve their monetary policy objectives. Not all such efforts have proved successful; in Indonesia, for example, the distortions in the money market produced yields that did not reflect market conditions, and open market operations have not had the desired effect.

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<sup>22</sup>See Robert F. Emery, *The Money Markets of Developing East Asia*, Praeger, New York, 1991.

It is difficult to generalize about the money markets of developing countries, as each reflects its country's political economy. The situation in Indonesia illustrates the fact that one has to go beyond a description of the instruments of the money market to understand how the market works. Unlike many developing countries, Indonesia has a substantial market in commercial paper, or SBPU. SBPUs are promissory notes endorsed by a bank or nonbank financial institution, and can be rediscounted at the central bank, Bank Indonesia. However the market for short term obligations of Bank Indonesia, central bank certificates (SBIs), has remained undeveloped and artificial as a result of the central bank's control of the interest rate on SBIs. Bank Indonesia did this by mandating a cut-off rate for SBIs, that is, a maximum yield that banks and other purchasers of SBIs could receive and a rate that has generally been below other money market rates. This has made the paper unattractive to banks and forced the central bank to resort to administrative measures to control liquidity.

In some countries, such as Taiwan, where a current account surplus has translated into excessive monetary growth and inflation as the central bank purchases foreign exchange inflows in order to prevent the currency from appreciating, the government has created special issues of central bank bills to sell to the market in order to absorb the overabundance of liquidity. These operations promoted money market liquidity and certainly prevented higher inflation in Taiwan. Yet from the point of view of money market development, allowing yields to be determined by supply and demand seems to be far more important than ensuring the questionable objective of depressing the value of the currency providing benefits to the export sector of the economy.

The Treasury bill market in the Philippines provides a good example of how a money market can thrive even in an inflationary economy, as long as real rates are free to find their own levels. The Philippine government first issued Treasury bills in 1966. Currently the Treasury bill market constitutes a major component of the Manila money market and has a turnover roughly equal to that of the interbank market. Open market operations in the

Treasury bill market now constitutes the principal instrument for the conduct of monetary policy by the Philippine central bank. Not only does this contribute to a healthy financial market, but it provides the great bulk of domestic government debt financing. Last, but not least, it has permitted the country to remove all foreign exchange restrictions (1992), improving the economic management of a country afflicted by natural as well as man-made disasters.

In Korea, the evolution of a money market is constrained by the absence of a deep Treasury bill market as well as the interest rate distortions noted above. Volume is low because issuance has been sporadic, and although there is some trading of Treasury bills in a secondary market, the central bank does not support it through consistent open market operations because monetary policy is chiefly implemented via the central bank discount window. The market is further undermined by the lack of competitive bidding for the bills in the primary market. Instead, the issue system is administered by the Bank of Korea, with the paper being issued at yields that are unattractive relative to other returns available in the financial markets. The bulk of the traded money market consists of Monetary Stabilization Bonds (MSBs), issued by the central bank and traded on a discount basis, with maturities mainly under one year. MSBs are issued by public offerings and allocated administratively to banks and other financial institutions, who must either hold them or sell them in the secondary market. These allocations were a principal means of getting the vast supply of MSBs absorbed into the market.<sup>23</sup> Unlike Treasury bills, MSBs are issued purely for the purpose of reducing the rate of growth of the money supply, in effect sterilizing the inflow of funds from Korea's export boom. To forestall inflation the Bank of Korea issued huge

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<sup>23</sup>For example, trust funds at commercial banks have been forced to include Monetary Stabilization Bonds in their portfolios. In some kinds of funds, the proportion of required MSBs exceeds 80% of their total portfolio. Ironically these funds have benefitted in that many individual investors who did not have easy access to large-denomination money market instruments shifted their money from bank deposits paying under 10 percent to trust funds who were able to pay around 13 percent, thanks to the high yields on MSBs.

amounts of MSBs in the late 1980s, crowding out the private sector and producing frequent disruptions of the money market.

Several lessons can be learned from the experience of these developing countries. First, a direct cause of money market underdevelopment is the absence of reasonable effective interest rates paid and charged by financial institutions. The cause of this is not simply that they have not had time to develop the instruments, institutions and skills of advanced economies, but rather that the political-economic context is one of financial repression, where it is contrary to the government officials' interests to allow free, market-determined interest rates to prevail.

On the other hand if some financial institutions are able to find ways to charge and pay reasonable effective real interest rates, the deleterious effects of interest rate controls may be muted. The money market can be very flexible in adapting to changing macroeconomic conditions, allowing economic growth to occur even in the presence of high inflation. In fact, in some inflationary economies the money market has been forced to assume the functions of a capital market. Turkey and Brazil have experienced a decade or more of hyperinflation accompanied by solid economic growth, due in part to the resilience of their money markets. Inflation discourages investors from holding long term fixed rate instruments, which forces the government to follow one or more of three courses. One is simply to issue short term securities, as in the Philippines. Another, long the practice in Brazil, is to index government bonds to the inflation rate, or rather a so-called "monetary correction" factor. The third is to issue floating rate notes, where the rate is somehow tied to the yield on Treasury bills. The government of Turkey, fearing the vicious cycle effect of inflation indexation, has chosen this path.

As the financial regime in a developing country becomes more liberal, administrative controls no longer suffice for effective monetary policy. A money market that grows simultaneously with credit allocation imposed on financial institutions can produce severe

disintermediation, undermining the effectiveness of traditional monetary policy tools such as the discount window or credit ceilings. Open market operations require a deep primary *and* secondary money market, one that should be able to stand on its own and not be totally dependent on central bank operations. This means allowing and encouraging market makers to quote a two-way price. The rate set in both the primary and the secondary market should be determined by supply and demand rather than by government fiat.

In summary, a viable money market in a developing country, or anywhere, must go beyond the interbank market. It must include Treasury bills or some other form of government short term obligations, which should be traded in an active two-way market by banks and/or other financial institutions. Central bank open market operations in the Treasury bill market or in repurchase agreements provide a sign of a well supported market, as long as the interest rate for the instrument is market determined rather than foisted on the banks by the government. As the market develops, regulated institutions' rates converge with those in the curb market and in the market for short term government instruments, and distortions in the interest rate structure are gradually corrected. Domestic financial institutions rely less on special protections against competitive pressures, learn to discriminate among credit risks, and gain other efficiencies that render them more able to fend for themselves in the international money market.

## CONCLUSIONS

The thumbnail sketches of domestic money markets provided here reveal many similarities--but the differences are even more striking. The similarities stem from the fact that the money market in each country performs three basic functions. The first is the evening out of liquidity imbalances of different financial institutions and different sectors of the economy. The second is its role as a focus for control of aggregate liquidity by the central bank. The

third is acting as a vehicle for the government to direct resources to favored uses, those with political as well as economic priority.

The problem is that the central bank officials, the political interest groups that make up the government, and the banks and companies who use the market, may all have different priorities. When these clash, the organization and functioning of the money market are affected, and the more it is distorted, the more it deviates from the "pure" sort of price-based allocation one finds in the international money market. Thus despite the considerable liberalization of capital flows and of domestic regulations that has occurred in the 1980s and 1990s, one finds plenty of evidence that even the major domestic money markets are restricted and incomplete. For example, when the Irish currency and money markets were under pressure in early 1993, the government undertook a "smear" campaign against unpatriotic currency speculators, prompting one journalist to remark:

In many ways the Department of Finance dislikes the whole idea of government instruments like gilts being the subject of grubby market trading. To them, gilts are Exchequer funding; to the brokers they are just a way to make a living, sometimes a very good one. One can imagine how the official mind feels about the national currency being treated as a kind of super bookie's shop.<sup>24</sup>

It should not surprise the reader to learn that Ireland, like many countries, makes it difficult for money market traders to short government securities by borrowing them under repurchase agreements.

Let us develop the conflicting interests theme with illustrations from the material presented in this chapter. The central bank is the single most important factor in most money markets, and that institution's foremost concern is usually the effectiveness of monetary control. It is no easy task to maintain price stability and to keep the path of *actual* output close to that of *potential* economic growth, and in all countries this task is made more difficult because political interest groups' desire for easy credit clashes with the central

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<sup>24</sup>Brendan Keenan, "Conspiracies and that 'Blackmail'," *Sunday Independent*, January 24, 1993, p.16.

bank's obligation to keep inflation from rising. Volumes have been written about the technical implementation of monetary policy, but few would dispute the statement that if central bankers had their choice, they would prefer a simple money market with few instruments in order to maintain as tight a linkage as possible between what they can control (*high-powered money*) and liquidity available to the public. It is no surprise therefore to learn that central banks' natural reaction to the introduction of any new instrument or technique is negative, especially if the instrument threatens to loosen the linkage between central bank credit and liquid financial resources.

Central bankers' responsibilities extend beyond price level control. The bankers are typically charged with the prevention of widespread defaults on financial institutions and a breakdown of the banking system as a result of financial panics or liquidity crises. This explains their role as "lender of last resort." In playing this role, however, the central bank cannot easily distinguish between rescuing the financial system and rescuing individual financial institutions. All panics start with the illiquidity of one particular bank. Hence the government is obliged to monitor, regulate, and supervise individual banks, and one difference between countries is how they allocate this responsibility--whether prudential supervision is done purely by the central bank or in part by a separate agency.

Government intervention is in part a function of the fact that investors in the money market have a very low tolerance for default risk, since money market instruments are "near cash" and so problems of liquidity or repayment can have a direct effect on businesses' ability to meet payrolls and other financial commitments. Consider the ongoing official concern about the stability of the market for derivative instruments and the risks banks take in this business. Derivatives have become such an integral part of some domestic money markets that any measures taken to restrict banks' activities in derivatives will be felt by all other money market participants. Some regulations designed to reduce default risk, such as

collateralization rules in Japan, conflict with the central bank's interest in having a smoothly functioning, liquid money market in order to fine tune monetary policy.

All central banks are bureaucracies with their own agendas, and not simply high-minded implementors of monetary policy. They seek power and a constituency and are inclined to aggrandize their aegis while fending off blame for the inevitable mistakes that occur in such a difficult field. They seek the tools to implement policy speedily, resist "loopholes" that give investors and borrowers choices, and attribute inflation to the budget deficit rather than to monetary policy. Their power on paper may be represented by a set of laws and regulation; but knowing that it is not possible in the innovative world of finance to design rules covering all contingencies, they seek "flexibility"--meaning personal discretion--in administering the financial system. The Bank of England has long stressed that bankers in London should follow well-accepted practices of good banking (as defined by the Bank of England of course) in addition to following the letter of the law.

The informal, personal approach to money market supervision employed by some central banks may be illustrated by an anecdote. At a dinner party, the Governor of the Reserve Bank of Australia remarked to the President of the Federal Reserve Bank of San Francisco that the implementation of policy in his country was not difficult despite financial market liberalization. The Governor would simply invite the heads of the five major banks for lunch and the resulting informal consensus was sufficient to determine effectively the behavior of the institutions. After a pause, the President of the San Francisco Fed replied that if he were to try this method of policy implementation, it would be necessary to throw a banquet for roughly 4,000 people, reflecting the number of independent financial institutions in the Seventh District alone.

One result of central banks' desire to exert discretionary power is that *quantitative restrictions*, such as assigned discount facilities, rather than pricing are the preferred means of exerting influence. Quota-like rules have the same economic shortcomings as do quotas



in international trade, yet central banks use them in countries as disparate as Germany and Venezuela. Offering below-market rates to a chosen few at the discount window gives the central bank power over institutions while also providing the government the opportunity to steer credit toward favored purposes such as exports that generate hard currency and jobs, designated industries such as prestigious high-technology plants, and ethnic businesses. Another example: requiring mutual funds to hold government bonds may make them safer, but not coincidentally help finance the public debt. Similarly, reserve requirements may help the central bank control the money supply, but it also happens to give that institution free deposits with which to earn a profit by investing them in interest-bearing securities.

Another result is that the *monetary* authorities in developed as well as developing countries often welcome, indeed insist upon, *supervisory* power over banks. Since bank supervision depends to a large extent on judgments about the quality of assets producing uncertain future cash flows, much discretion is given to examiners. Bankers who fear adverse judgments about their condition are much more likely to pay heed to a central bank governor's wishes than those who know that all the central bank can do is operate at arm's length in the competitive money market.

Our survey supports the notion that when central banks seek power to get banks to do something they might not otherwise do, there is a *quid pro quo*. Once a group of financial institutions have established themselves and adapted to a given regulatory regime, they may grumble about being hamstrung but that does not necessarily mean that they would welcome totally free competition. New instruments and techniques tend to disturb the *status quo* by bringing in new competitors and exerting pressure on lending spreads. Bankers therefore often form complex alliances and find common ground with the authorities in keeping competitive threats at bay. In Germany, for example, mutual funds can only buy securities that are traded on exchanges. But money market paper does not qualify as securities, so money market mutual funds have never gotten off the ground. This is welcome to the

Bundesbank for reasons of monetary control effectiveness as well as to the banks who fear (rightly) that money market mutual funds would simply enhance competition for depositors' money. Another illustration is the Japanese money market which is based on a financial system of segmented financial institutions facilitating the ability of the government to channel capital to favored sectors of the economy.

Of course domestic financial markets do not exist in a vacuum, and external market influences among other things make financial market development a dynamic process. Financial innovations, the Eurocurrency market, and gains in transactions and communications technology have forced many countries to liberalize their domestic money markets. Nevertheless the existence of central bank and other country-specific interests, and the inherent conflicts between the varied purposes that the money market is supposed to serve, virtually guarantee continuing discrepancies and distortions in domestic money markets--the very conditions under which external markets thrive.

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