

# Parallel Money Markets in the Inconvertible Currency System

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## I. Introduction

Perhaps one of the best-known parallel money markets is the Eurodollar market on the international financial scene. The expression Eurodollars are deposits of U.S. dollars held outside the United States. In the same fashion the term Euro-German marks refers to deposits of German marks in banks not resident in West Germany. Offshore markets do exist in many convertible currencies other than U.S. dollars. In short, banks resident in country A accept deposits and make loans in the currencies of countries B, C, D and so on in a Euro-currency market; depositors and borrowers are often non-residents.

The rapid emergence in the 1960s of a worldwide Euro-currency market that coexists and competes with the domestic banking system resulted from the peculiarly stringent government regulations on transactions in the money market. These regulations contrast sharply with the relatively great freedom of nonresidents to make deposits or borrow foreign currencies from these same constrained national banking systems. The parallel money market is now the focal point of the short-term financial market.

A close resemblance to the Eurocurrency market is to be found in a private money market in the inconvertible currency system, parallel to the banking system, where local currencies as well convertible foreign currencies are traded. These markets flourish in many less developed countries, and are called a variety of name: black market, curb market, unorganized market or unregulated market. As a parallel market, it has a largely domestic intermediation aspect within the confines of a single national currency: it supplants financial intermediation between savers and investors that might otherwise flow through a purely domestic banking system.

A striking example can be found in Eurodollar transactions during the monetary crunch of 1969 in the United States. Similarly, a parallel money market in a less developed country has an important function of financial

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intermediation, whether it is against banking regulations or not. Like the Eurocurrency market it also has an important foreign exchange aspect: by trading convertible foreign currencies the market provides a function of covered interest arbitrage to some extent and is another channel for international short-term capital movements outside traditional foreign exchange banking.

Whether it is the Eurocurrency market in the convertible currency system or a private money market in the inconvertible currency system, the competitive strength of the parallel market in all the roles accounts for its growth and resiliency on the one hand, but has created an acute problem of regulating the market transactions for any single monetary authority. Besides these similarities, there are also noticeable differences between the Eurocurrency market and a private money market in a less developed country. All these factors account for the great difficulty academic economists have had in developing a single theoretical model to describe it.<sup>1)</sup> The purpose of this article is to explain the nature of the parallel money market in the inconvertible currency system, why it exists, how the market rates differ from the bank rates, and what regulatory issues are involved.

## II. Why Do Parallel Money Markets Exist?

A parallel money market (hereafter PMM) may be defined in this paper as a short-term money market where the money and near-money instruments are traded outside the domestic banking system in a wide sense<sup>2)</sup>.

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1) Koo (1982) developed two hypotheses to explain the cause and growth of the private money market in Korea. One is the residual-market hypothesis under which the private market is regarded in effect as part of the banking sector. The market thrives mainly because of excess demand for funds created in the bank owing to the rationing of credits. Another hypothesis is of a separate market, based on the assumption that the banking system and the private market are basically different from each other-functioning differently, offering different types of financial assets. The assumption behind this theory is that supply and demand are interest-inelastic and that the non-price factors are more important than interest rates in determining supply of and demand for loanable funds.

2) In the United Kingdom, the 'parallel' or 'secondary money markets' refer collectively to other money markets than the traditional money market that consists in the borrowing of day-to-day funds from the clearing banks by the discount houses and the investment of these funds primarily in government three-month Treasury bills. These markets include, among others, local authority and finance houses short-term borrowing, the Eurocurrency market and dollar and sterling certificate of deposit secondary markets. In this paper, the PMM is used in a different context.

Deposits placed with the market may be owned by anyone — individuals, corporations, banks or foreigners. In particular, the Eurocurrency market is a foreign money market of a convertible currency outside the country where the currency of denomination is legal tender. On the other hand, a PMM for an inconvertible currency is primarily located within the confines of a single national currency. The location of the market is important primarily because it affects regulations to which market transactions are subject. It also makes a difference in political or sovereign risk, and the like, associated with transactions in as much as it affects the interest rate or exchange rate charged.

The domestic banking system has played the primary role as custodian of the national money supply and the means of payment in international trade and capital-account transactions. In principle, the Eurocurrency market is unnecessary if commercial banks in the country provide solely short-term credit and foreign exchange services. Furthermore, the PMM in most less developed countries are not supposed to exist. Actually, however, whether it is legal or not, the PMM exists and is closely related with the other market, i.e., the domestic banking system. Why did the PMM including the Eurocurrency market come into being and why does it continue to exist?

Historically, the Eurodollar market was first created to reduce the perceived sovereign risk. After World War II, the Eastern bloc countries found themselves with foreign exchange reserves denominated largely in U.S. dollars deposited with banks in the United States. However, in the midst of the cold war that came to dominate the postwar period, the danger the United States might expropriate or otherwise control these reserves became unacceptable to the communist countries. As an alternative, these countries began placing their deposits in banks outside the United States. The deposits were still denominated in U.S. dollar but the immediate legal liability fell outside the United States, mostly in London. Later on some Eurodollars were also placed in such offshore banking centers as Nassau, Singapore, and the Cayman Islands mainly in order to seek a tax haven.

A PMM in the inconvertible currency system operates outside the banking system, if not outside the confines of a single national currency. Funds are traded in a domestic market mainly because the currency is not externally convertible.<sup>3)</sup> In contrast to the Eurocurrency market, PMM transac-

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3) This qualification has somewhat blurred lately. Recently it is known that Korean currency is smuggled out of the country. This money is probably used for the flight of capital and is traded in New York, Los Angeles, Tokyo, Hong Kong, etc., where there exist large Korean communities. Korean won purchased in those markets will certainly be carried into Korea by returning Koreans or

tions in inconvertible currency countries are generally carried out clandestinely using agents and brokers who disguise the names of transactors. Anonymity makes it extremely difficult, if not impossible, to track down the PMM transaction. This procedure enables transactors to evade regulations and taxes and also to avoid certain risks involved if their names are exposed.

The largest impetus to the PMM comes from regulations designed to control the banking system. It would be more exact to say that the difference in regulation within and outside the domestic banking system has played a key role in the development of the PMM. The regulations establish, among other things, levels of reserve requirements, maximum interest rates payable on deposits and arbitrary allocations of bank credit for domestic policy purposes. These regulations incur costs to banks which reduce the amount of interest for their deposits. An explicit limit on the interest discourages bank depositors during periods when market rates surge above ceilings.

The combination of these factors means that to the extent money can be traded outside the jurisdiction of regulations, the interest received by a depositor can be higher than otherwise. Whenever ceilings on the rates of interest become effective, the flight of deposits to the PMM, where higher interest can be earned due to no such regulations, was a natural development. This is the situation that comes to prevail in the Eurocurrency market where none of the above regulations exist. For other PMMs in inconvertible currency countries, transactions are carried out covertly to evade regulations. As such, freedom from restriction has created better financial efficiency in the PMM which competes with the regulated banking system. In a convertible currency system offshore unregulated PMM competes with onshore regulated banking system. In an inconvertible currency system an underground PMM competes with the domestic banking system. Unregulated markets often grow rapidly at the expense of regulated markets.<sup>4)</sup> The former and the latter are also closely interlocked. For example, in the United States when money was tight and market rates went up over interest ceilings, the holders of time certificates of deposit (CD) on U.S. banks replaced them with Eurodollar deposits. U.S. banks then

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visitors, or may be even used to pay for imports from Korea. A similar story is reported for the Philippine peso which has a limited market in Hong Kong. See "Korean Won Smuggled out of the Country, *The Chosun Ilbo*, November 10, 1983 and also "Manila Black Market Drains Needed Cash," *The Asian Wall Street Journal*, December 12, 1983.

4) J. G. Gurley and E. S. Shaw (1960) showed it by analyzing purely domestic financial intermediaries such as tightly regulated commercial banks versus loosely regulated savings and loan associations.

borrowed from the Eurodollar market to offset the decline in CD's. Because of these developments, the Federal Reserve System eventually allowed interest ceilings to be abolished on, and reserve requirements to be kept low against, the certificate of deposit. Much like Eurodollar deposits, certificates of deposit are confined to firms making very large financial transactions; the minimum deposit size permitted by law is \$100,000. Other interest ceilings imposed by Regulation Q are also being phased out. In many less developed countries it seems to be common practices that domestic banks often adjust their reserve positions in the national currency by PMM transactions, thereby evading interest ceilings and other regulations.

The other type of regulation that governments impose on the money market is designed to support the foreign exchange value of their currencies. When under heavy pressures from the market to appreciate or depreciate a given currency, governments have often imposed substantial restrictions on foreign capital movements for balance of payments purposes.<sup>5)</sup> In the United States, for example, the government took such measures as the interest-equalization tax, the voluntary controls on bank lending abroad and on foreign investment, and the compulsory controls in the late 1960s. In most less developed countries foreign exchange controls are much more stringent not only on capital account but also current transactions. These controls, of course, apply only to transactions within the boundaries of jurisdiction of the country. As a result, two segmented markets in the same currency evolve: the domestic banking system and the PMM.

To summarize by returning to the question posed at the beginning of this section, particular risk, financial efficiency and other minor precursors are only a partial explanation of why the PMM came into being. On the supply side of financial services, freedom from reserve requirements or deposit insurance and interest rate restrictions gives the PMM a competitive advantage in providing higher deposit rates of interest. In the foreign exchange aspect, freedom from exchange controls on capital account for nonbanks is necessary to create a pool of funds to be invested in the PMM. Hence it can be presumed that banks and nonbanking enterprises which are not subject to effective exchange control and banking regulations are likely to engage in deposit and loan transactions in local currency as well as foreign currencies in the PMM.<sup>6)</sup>

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5) Currency convertibility is required under Article VIII of the IMF on the making of payments only for current international transactions.

6) See R. I. McKinnon (1979).

### III. Spread Between Domestic Bank Rates And PMM Rates

In the absence (or evasion) of governmental controls which affect the cost and availability of funds in the domestic banking system, and with comparable risks, the interest rate on funds traded in the PMM should be the same as in the domestic banking system. In reality, the presence of those regulations causes a significant difference between the two markets in the rates of interest for the same currency. Deposit rates are generally higher in the PMM because they do not have to incur certain costs that are required in the domestic banking system.

Again, a typical example is the Eurodollar market. Even in periods when no foreign exchange controls existed in the United States, interest rates on Eurodollars have often traded at a premium over domestic U.S. dollar interest rates for deposits. The premium reflects primarily the cost of adhering to regulations in the banking system. In other words, the premium or the spread between the two market rates will be limited by the amount of additional costs associated with operating in the banking system subject to the regulations.

In addition to the regulations, the PMM rates may very substantially from domestic bank rates for the same currency.<sup>7)</sup> A currency which is under balance of payments pressure, as many LDC currencies have often been, is very much in demand by borrowers for the purpose of capital flight. Because of the anticipated depreciations in the currency, many participants in the market have wished to borrow the currency either to convert it into other appreciation-prone currencies or to use it as a balance against the assets they already hold in the currency. Therefore, people demand far more money than the banking system makes available in many LDCs. To avoid capital outflow from the country under such a situation, governments have established such controls as credit rationing and foreign exchange controls which restrict the amounts of funds in local currencies as well as foreign currencies, supplied by the domestic banking system. Borrowers have had to raise the wanted funds in the PMM which caters to the demands of these individuals. As a result, interest rates free from controls in the PMM have increased substantially over the bank rates. The arbitrage process that would keep interest rates in the two markets in line is not allowed to operate in this case because of the capital outflow controls.

In a similar fashion, a currency which the market considers likely to up-value will find the local government opposing such a trend by imposing controls on foreign capital inflow. On several occasions this has been the

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7) H. Riehl and R. Rodriguez (1977)

case for West Germany and the mark. The pressures in the market during the late 1960s and 1970s have usually been toward an appreciation of the German mark. The German government introduced controls to limit the amount of funds that nonresidents could deposit in West Germany and to restrict the amount of funds that its residents could borrow abroad. Any nonresident wishing to hold deposits denominated in marks had only the alternative of the Euro-German marks. With a number of individuals wishing to purchase marks either to benefit from the expected appreciation or to protect the value of liabilities already contracted in marks, the rate on Euro-German marks fell considerably below the one prevailing in the domestic market in West Germany. Again, the usual forces of arbitrage were frustrated by the capital controls that effectively segmented the domestic from the foreign market.

There is one more important factor that affects PMM rates as opposed to bank rates. This is the difference in the variety of risks perceived by the PMM transactors. As mentioned before, these could include the political or sovereign risk associated with the specific market where the funds are deposited. The difference in the risk situations of the two markets makes it necessary for the market with higher risks, i.e. the PMM, to pay a premium over the rate paid in the other market.

Finally, like the money market, the foreign exchange market considers the time when the transactions is closed to be one of the elements in the market. In describing the money market, it can be pointed out by comparing currency and time deposit or a treasury bill. In the foreign exchange market the time element is taken into account dividing the market into spot and forward markets. For most convertible currencies, both markets are well developed. In particular, the forward exchange market is an important mechanism for hedging against exchange risk which has become more acute under floating exchange rates. It also allows banks to exchange one national currency for another in undertaking covered interest arbitrage that aligns interest differentials with forward premia or discounts in the forward exchange markets.

In many countries with inconvertible currencies the foreign exchange markets are imperfect and the forward exchange markets virtually do not exist. Instead a PMM is developed outside the official foreign exchange market: the PMM in this case may play the role of the forward exchange market to a certain extent.

According to the interest-rate parity theorem the currency with the higher interest rate will sell at a discount in the forward market against the currency with the lower interest rate. If the interest differential in favor of a given currency is higher than the discount in the forward market on that

currency, there is an incentive to invest funds in the high interest rate currency. In equilibrium, the forward discount is equal to the interest rate differential and there is no advantage in moving hedged funds to the high-interest-rate money market. In this case, the interest rate means the net accessible interest which is usually only available in the PMM of the currency.<sup>8)</sup>

Among convertible currencies, one currency can be freely exchanged with others in a unified market at a single but possibly variable exchange rate covering current transactions.

In contrast, for an inconvertible currency with higher PMM interest rate, the exchange rate in the PMM is generally at a discount against the official spot rate. The black market rate, in common usage, is always higher than the official exchange rate. How come? We may explain this by either a residual-market hypothesis or a separate-market hypothesis in the same fashion as developed by Koo (1982). However, these hypotheses do not explain why the foreign exchange market in an inconvertible currency system do not consider the time dimension. This puzzle may be resolved if we consider the exchange rate in the PMM is a forward rate for a certain period of time (or a weighted average period of time).

This hypothesis may be elaborated by exemplifying the foreign exchange market in Korea. Since there is virtually no forward exchange market in Korea, I propose the exchange rate in Korean won/U.S. dollar prevailing in the PMM (or a black market rate in common usage) to be taken as a hypothetical forward rate. In Table 1, hypothetical forward discounts are computed by subtracting the PMM exchange rate from the spot rate and then converting the rate differential into a percentage of the spot rate. It is not surprising that the hypothetical forward rate is at discount as Korean won has been under balance of payments pressure.

As net accessible interest rates, the six-months Euro-dollar rate (London Inter-Bank Offered Rate) and the interest rate in the Korean private money market are taken each. It seems to be common knowledge that foreign exchange traders actually use the Eurocurrency interest rate quotations instead of domestic bank interest on different currencies to determine their forward quotations. Since these traders know that they must cover in the Eurocurrency market anyway and that this market is deep relative to the forward market itself, it would seem that the PMM interest rates

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8) Domestic bank rates are usually either not net (they are subject to reserve requirements, interest withholding taxes etc.) or not accessible (foreign capital inflow-outflow controls, credit rationing, banking regulations, etc.). In such a case the interest-rate parity theorem doesn't hold. Riehl and Rodriguez, *ibid.*



dominate forward exchange rates.<sup>9)</sup> In general equilibrium, forward exchange rates and the PMM interest rates are simultaneously determined variables.

If the interest-rate parity theorem holds exactly:

$$(1) \quad 1 + i_k \cdot \frac{n}{12} = \frac{FR}{SR} (1 + i_{us} \cdot \frac{n}{12})$$

where SR is the spot exchange rate in Korean won/U.S. dollar; FR is the hypothetical forward exchange rate, i.e. the exchange rate prevailing in the PMM;  $i_k$  is the interest rate per annum in the Korean private money market;  $i_{us}$  is the Eurodollar interest rate; and n is the number of months

[Table 1] Parallel Money Market Rates

(%)

|         |     | Hypothetical<br>Forward<br>Discounts <sup>1)</sup> | LIBOR <sup>2)</sup> | Korean PMM<br>interest rate <sup>3)</sup> |
|---------|-----|--|---------------------|---|
| 1980    | I   | - 3.89   | 19.56               | 50.76                                     |
|         | II  | - 3.94   | 9.94                | 48.84                                     |
|         | III | - 2.02   | 13.94               | 42.48                                     |
|         | IV  | - 3.23   | 16.75               | 37.68                                     |
| 1981    | I   | - 2.17   | 14.81               | 36.60                                     |
|         | II  | - 2.61   | 17.25               | 35.16                                     |
|         | III | - 5.64   | 18.06               | 33.84                                     |
|         | IV  | - 1.26   | 14.81               | 35.40                                     |
| 1982    | I   | - 3.60   | 15.44               | 32.64                                     |
|         | II  | - 4.53   | 16.00               | 33.12                                     |
|         | III | - 7.42   | 11.94               | 27.48                                     |
|         | IV  | - 3.81   | 9.50                | 29.04                                     |
| 1983    | I   | - 0.68   | 9.75                | 24.12                                     |
|         | II  | - 0.84   | 9.94                | 27.48                                     |
|         | III | - 0.48   | 9.69                | 26.76                                     |
| Average |     | - 3.04   | 12.83               | 34.76                                     |

Sources: The Bank of Korea

All rates are of the end of the quarter in percent.

1) Converted the difference between the official spot rate and the exchange rate in the black market into a percentage of the spot rate in Korean won/U.S. Dollar.

2) The six-months London Inter-bank Offered Rate

3) Interest rates per annum prevailing in the private money market

9) R. I. McKinnon, *ibid.*

forward included to adjust it for the number of months that the rate applies if the rate is other than a per annum rate. As shown in Table 1, hypothetical forward discounts varied considerably in the range of  $-0.48$  percent and  $-7.42$  percent since 1980. Korea changed her exchange rate system in January 1980 from the one under which the exchange rate was pegged to the U.S. dollar to a floating exchange rate system. The spot rate has since been managed to a certain extent by the central bank while there is no control on the exchange rate in the PMM. During the period of the first quarter 1980 (I) to the third quarter 1983 (III), the Eurodollar interest rate (LIBOR) as well as the Korean PMM interest rate fluctuated widely.

For simplicity, average rates for the period are used in our model. From equation (1), we obtain the number of months forward in equilibrium on average less than two for the particular period in time. This number may be changed depending upon the spread between the spot rate and the PMM exchange rate, the Eurodollar interest rate and the PMM interest rate in Korea.<sup>10)</sup> It would seem that the PMM has evolved into an integral part of the forward market for foreign exchange.

#### IV. A Remark on Regulation

Aside from a normative judgment of its desirability, few will dispute that the PMM has played a useful role as a money market for corporate financing at a time of tight bank credits. Despite its efficiency and flexibility in functioning domestic intermediation and foreign exchange transactions, the PMM has created an acute problem for the monetary authority, and national central banks have responded differently to regulate the PMM transactions. The above analysis suggests, however, that the growth of the PMM would be naturally slow if stringent regulations of the banking system were relaxed. To the extent that banking regulations are needed for the purpose of macroeconomic policy resulting in asymmetry of regulations in the PMM vis-a-vis the domestic banking system, the unregulated PMM will still exist, if not flourish.

In particular, lifting interest ceiling on bank deposits would not necessarily lead to removal of the PMM: rather more important would be a policy to integrate the PMM into the domestic banking system. For this purpose, the non-price factors are just as important as interest rates. One

10) In this model, if interest rate differential is larger than forward discount, funds flow to the higher-interest-rate country or the period forward in equilibrium becomes shorter. Actually, the larger interest rate differential is relative to forward discount, the less the incentive is there for hedging against currency risk in the longer period.

way of achieving this might be boost the performance of the banking system. Somewhat surprisingly though, the unregulated PMM does not compete with the banking system in all aspects. The latter continues to provide primarily the actual means of payment in domestic as well as international transactions. So the focus should be on structural reforms including deregulation in the banking system to improve services and enhance efficiency in order to compete with the PMM.

In addition, the real-name system under which bank deposits made under pseudonyms are taxed at a prohibitive rate should be introduced in order to discourage the incentive of seeking tax evasion in the PMM, particularly in the inconvertible currency system. Also there should be policy measures which prohibit a flight of assets to other markets, especially such real asset markets as the property market for speculation purposes.

Other related issues appear to be important to the PMM: first, money creation in PMM transactions; second, the behavior destabilizing domestic monetary policy; and third, the risks to the soundness of banks engaged in PMM activity. The first issue is whether the existence of the PMM increases the money supply available to be held by nonbank individuals and corporations for any given amount of money created by the central bank. In the banking system, it is considered that payment through checking accounts creates money via the multiplier effect. Does something similar take place in the PMM? If that is the case, the PMM is directly an engine of inflation and of excess liquidity creation.

First of all, it should be clear that the operation in the PMM are nothing but an intermediation of checking deposits, which still remain booked in the banking system. The activity is similar to the one carried on by nonbank intermediaries in the domestic financial market. Whether nonbank intermediaries create or do not create money is an old issue which has never been settled.<sup>11)</sup> Practically, there are no checking accounts, the major component of M1, and therefore there is no money multiplication in the PMM. Checking accounts are commanded by the banking system, and the deposits in the PMM are mostly interestbearing time deposits. There is, however, a better utilization of the money already created in the banking system via its rapid recycling from surplus units with idle balances to deficit units spending them. This intermediation produces an increase of the total purchasing power in action. In Fisher's terms, there is a speed-up of the velocity of money.

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11) See J. Tobin, "Commercial Banks as Creators of 'Money'," in *Banking and Monetary Studies*, Irwin Inc., 1963.

Money creation in the Eurodollar market was discussed by M. Friedman (1969) and criticized by F. Klopstock (1970).

A different issue is the potential disturbance on the domestic markets due to the PMM transactions. These do exist with regard to the monetary base, interest rates and foreign exchange rates. When funds move from one market to another, they produce desired as well as unwanted effects on these variables. The PMM sometimes operates as a buffer, ensuring domestic monetary equilibrium. Excess funds flow out of the banking system, attracted by the expectation of higher interest rates or depreciation of the value of the currency. On the other hand a shortage of liquidity may be satisfied by the inflow of the PMM funds. Sometimes, the PMM works against monetary equilibrium, baffling the monetary authorities' efforts to control the domestic money supply. The action against the monetary policy is noticeable when the monetary authority attempts to maintain certain foreign exchange rate or interest rates while the market bets against them.

The last issue, by no means the least, concerns the responsibility assigned to regulators to monitor the solidity of the banks. In the PMM, whether it is the Eurocurrency market or others for the inconvertible currency system, participants of the market are free from regulations and can play space and time arbitrage to a certain extent. They can also play the foreign exchange markets. In short, because of the nature of the PMM transactions and of the unregulated environment, banks if engaged in the transactions can inflate their operations beyond the point of capital adequacy, with consequent risks to their liquidity and solidity. Since a large portion of PMM transactions is carried on through the banks, protecting the soundness of the system has become a major issue for the monetary authority.

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