

THE HIGH INTEREST RATE POLICY UNDER FINANCIAL REPRESSION

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I. INTRODUCTION

MANY developing economies have suffered from persistent inflation and external imbalances with ambitious investment policies under "financial repression." To cope with such situations, some economists advocate adopting a high interest rate policy in these countries in order to accelerate economic growth in a less inflationary way by mobilizing savings for investment through financial intermediation, as against the "Keynesian" type of the low interest rate policy aimed at stimulating investment.¹

Their argument runs as follows: Regulated low interest rates more or less necessitate credit rationing in the organized loan market which enables less efficient investments to enjoy cheap credits, thereby retarding economic growth on the one hand. They make it more likely for the monetary policy to be accommodative enough to increase inflation on the other. Besides, the low interest rates in an inflationary environment usually provide persistent negative real returns on financial assets in the organized market which keeps savers away from those assets and sends them toward unproductive inflation hedges such as real estate, jewels, commodity inventories, and consumer durables, etc., or toward the unorganized financial market (UFM) which is segmented and risky but free from financial regulations.² Thus, resulting financial disintermediation in the organized market hinders its role in economic growth.

As shown in my 1981 paper [6], however, as far as "quantitative" aspects of investable funds are concerned,³ the celebrated "high interest rate policy" is not necessarily successful in increasing available funds for investment in a less inflationary way under certain conditions on reserve requirement policy of the

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¹ For a comprehensive survey of the literature, see Coats and Khatkhate [3] and *World Development* [14].

² Because of its own characteristics, it is generally hard to get reliable data for the size of the unorganized financial market. In the Korean case, for example, outstanding loans in the UFM estimated by the Bank of Korea amounted to double the commercial bank loans outstanding in 1964 according to Cole and Park [4, p. 126].

³ We are concerned only with amounts of transferable saving. Qualification for "qualitative" aspects will be given in Section II.C.

monetary authorities and portfolio balance behavior of the private sector. In particular, consider the case where substitution between financial assets, that is, bank deposits and "securities" with the unorganized financial market, is dominantly important relative to substitution between financial and non-financial assets such as unproductive inflation hedges. Then, higher reserve requirements and/or higher substitution between the UFM securities and bank deposits tend to generate the perverse case against the high interest rate policy where *total* financial disintermediation occurs. (This aspect is also stressed in Wijnbergen [13].)

The purpose of the present paper is twofold. First, we review the above argument using a simple LDC model which takes account of several stylized features of financial markets in these countries (Section II). It is emphasized here that, in addition to these *stock shift* conditions above, namely, the lower reserve requirements on bank deposits and the lower substitution between them and the UFM "securities," the higher responsiveness of *flow* saving with respect to the real interest rate on bank deposits is also necessary for a high interest rate policy to be successful. Without this condition, the high interest rate policy accompanying an increase in "inside money" is shown to make little difference from the conventional policy of inflationary "outside money" creation.

Second, experiences in the high interest rate policies in Taiwan for the 1950s and Korea for 1965–71 are examined from a viewpoint of whether and how the conditions outlined above were met there (Section III). Though data availability is limited, the Taiwanese case appears to meet these conditions. By contrast, observation of sectoral portfolio balance behaviors with flow-of-funds tables in the Korean case shows mixed results of successful high interest rate policy and inconsistent monetary accommodation, which includes conflicting reserve requirement policy for the earlier period of the 1965 reform and reckless promotion of borrowing from abroad throughout the period. The results imply that we should evaluate the effects of the high interest rate policy separately from those of other policies undertaken simultaneously. Finally, Section IV concludes the paper with a few qualifications.

II. CONDITIONS FOR A SUCCESSFUL HIGH INTEREST RATE POLICY—A SIMPLE MODEL

In this section we provide a model of a typical developing economy, with a special focus on its portfolio balance behavior.⁴ Suppose a small open economy which consists of five sectors: the central bank, the private bank, the firm, the household, and the foreign sectors.⁵ There are two goods: domestic and foreign; and five assets: physical capital, cash, bank deposits, "securities" in the unorganized financial market, and bank loans. The price of domestic goods is endoge-

⁴ This section is based on Kohsaka [6].

⁵ We neglect the government sector in this model in order to focus on the private portfolio balance behavior.

nous, while that of foreign goods is given. The foreign exchange rate is assumed pegged. Since we are not concerned with stabilization of the short-run nature, economic activity is assumed to be at the full employment level which is exogenously given.

A. Model

The private banks supply deposits, D , in response to the household sector's demand for them, D^h , passively. Interest rates on bank deposits and loans, i_D and i_L , respectively, are regulated being lower than market determined levels. The banks are persistently confronted with strong demand for their loans by the firm sector, L^f ; thereby persistent excess demand for them under the regulated low bank loan rates, that is, $L^f > L$ where L is supply of bank loans. As such, credit rationing prevails in the bank loan market and the regulated bank loan rates play no role in allocating the loans. The banks are required to deposit a part of their deposits from the public with the central bank as reserves, qD , where q is a required reserve ratio. The central bank provides discounts and loans, Z , to the private banks with the regulated interest rate, which is also lower than the market determined level. Since the excess demand for bank loans forces the banks to have persistent strong demand for the central bank lending, this is also rationed and the central bank loan/discount rate is not effective in allocating these funds at all. With no way but to provide loans on the asset side, the banks place deposits net of required reserves fully for loans in the present model. Thus, the supply of bank loans, L , is:

$$L = (1 - q)D + Z. \quad (1)$$

The central bank supplies the base money, $C + qD$, where C is cash in circulation, either through purchases of foreign currencies from the private sector, or provisions of credits to the private banks. Foreign reserves, R , are in terms of the foreign currency, and foreign exchanges are concentrated in the central bank. The bank manages the official exchange rate, e , and the base money. Then, with policy variables, e , R , Z , and q , the balance sheet of the central bank is:

$$eR + Z = C + qD. \quad (2)$$

The household sector holds cash, C^h , bank deposits, D^h , and "securities" in the unorganized financial market, K^h , as assets which are constrained by their net worth, W^h .

$$W^h = C^h + D^h + K^h.$$

They are not allowed to hold foreign assets. Cash, bank deposits, and UFM securities are imperfect substitutes for one another. Specifically, the latter two are different with respect to risk and tax "evadability." Accordingly their demand functions are expressed as:

$$C^h = C(\bar{r}_D, \bar{r}_K)W^h,$$

$$D^h = D(\bar{r}_D^+, \bar{r}_K)W^h,$$

$$K^h = K(r_D, r_K)W^h,$$

$$r_D = i_D - \hat{p}^e,$$

where r_D : real deposit rate, i_D : nominal deposit rate, \hat{p}^e : expected rate of inflation, and r_K : real interest rate on UFM securities.

Since the three assets are gross substitutes, we get signs of first-order derivatives shown above each relevant real interest rate. The expected rate of inflation is regarded as exogenous for simplicity.

The firm sector holds the physical stock of capital, K , on its asset side, and bank loans, L , and UFM securities as liabilities. That is, the physical capital is financed in two ways. Since bank loans are rationed as we noted, $L^f > L$. Then, from the wealth constraint, we get supply of the UFM securities or demand for the UFM credits, K^f , as:

$$K^f = p_K K - L,$$

where p_K is market price for the physical capital.

The capital market is assumed to be so immature that marginal pricing of the physical capital is replaced by the UFM. Furthermore, in order to simplify the analysis, the UFM securities and claims of the physical capital are treated as perfect substitutes here. Indeed, in such developing economies as with a significant scale of the UFM, the marginal cost of capital is often stipulated by the UFM interest rates which are the marginal cost of borrowing. Following Tobin [11]'s approach, by identifying r_K as the marginal rate of return to the capital, the link between r_K and the market price of the physical capital, p_K , is obtained as:

$$p_K r_K = p r, \quad (3)$$

where p is reproduction cost of the capital and r , marginal efficiency of the capital. Note that the domestic goods price is also the reproduction cost of the capital goods here. Also, note that the UFM rate, r_K , is not necessarily determined uniquely because of the segmented nature of the market. Accordingly, r_K should be regarded as one of the representative UFM rates, and p_K is imputed by equation (3).

Thus, the stock equilibrium is expressed by the following market equilibrium conditions:

$$p_K K - L = K(r_D, r_K)W^h, \quad (4)$$

$$C = C(r_D, r_K)W^h,$$

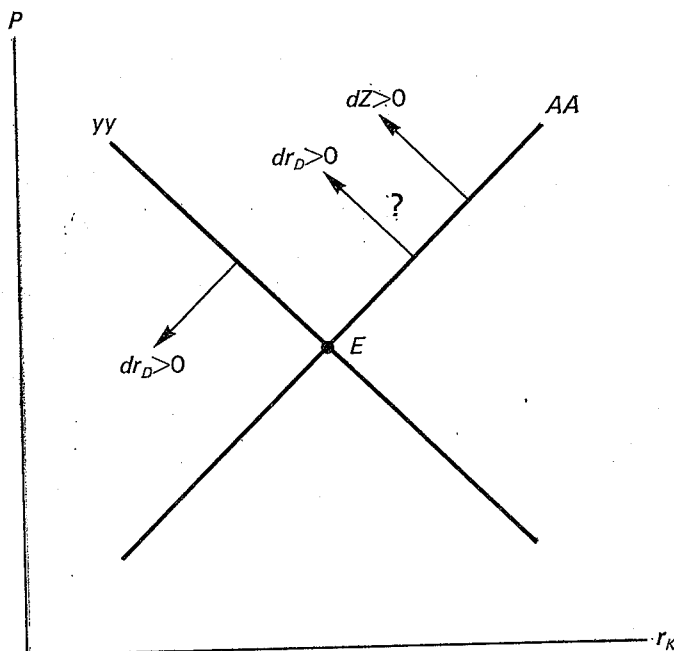
$$D = D(r_D, r_K)W^h. \quad (5)$$

As either one of the three equilibrium conditions is not independent, we drop the second one for cash. Substituting equations (1), (3), and (5) into equation (4), the stock equilibrium can be reduced into the following:

$$(pr/r_K)K - (1-q)D(r_D, r_K)W^h - Z = K(r_D, r_K)W^h. \quad (6)$$

Equation (6) implies two points. First, an increase in the deposits rate induces increased deposits in the banks and then increased bank loans, which has two

Fig. 1. Determination of Price Level and UFM rate



conflicting effects on the demand/supply condition of UFM securities. On the one hand, it reduces the firm sector's UFM borrowing and tends to lower its interest rate, but, on the other, it reduces the household sector's UFM lending and tends to raise the UFM rate. Second, an extension of the central bank loan to the private banks ($dZ > 0$) increases bank loans and thus tends to ease the UFM.

The AA schedule in Figure 1 illustrates the stock market equilibrium, which is a locus of combination of the domestic goods price, p , and the UFM rate, r_K , satisfying equation (6). One can show that AA is upward sloping in the (p, r_K) space and shifts to the northwest with increased central bank loans, though with the increased bank deposit rates its direction of shift is generally ambiguous.

Since we are more concerned with the portfolio behavior of the economy than the real economic activity, we will proceed without going into details of the latter. That is, in order to close our general equilibrium framework, we need the flow equilibrium condition which means the market equilibrium condition for the domestic goods:

$$b(ep^*/p, \bar{a}) - s(r_D^+, r_K^+, \bar{W}^h/p) = 0, \tag{7}$$

where b : trade balance in terms of domestic goods, p^* : foreign currency price of foreign goods, \bar{a} : domestic absorption in terms of domestic goods, and s : private savings net of investment in terms of domestic goods.

Signs of first order derivatives are shown above each variable. The higher terms of trade, p/ep^* , and the higher domestic absorption tend to bring the trade balance into deficit. While the lower cost of capital, r_K , stimulates investment, the higher real interest rates are assumed to contribute to the higher net savings. The assumed positive correlation between savings and real interest rates have implication that intertemporal substitution effects dominate income effects in the choice of present and future consumption.⁶

The flow market equilibrium is illustrated by the yy schedule in Figure 1, which is a locus of combination of (p, r_K) satisfying equation (7). The yy schedule can be ensured to be downward sloping. Note that yy shifts toward the south-west with higher bank deposit rates, but independent of increased central bank loans.

B. *Effectiveness of the High Interest Rate Policy*

Now, we are ready to analyze the effects of the high interest rate policy on domestic inflation and investment.⁷ To save space, the analysis is limited to the "short-run adjustments" in the sense that financial and physical asset accumulation processes are ignored, though dynamic processes of asset accumulation are of more concern in the context.

1. *An increase of central bank loans*

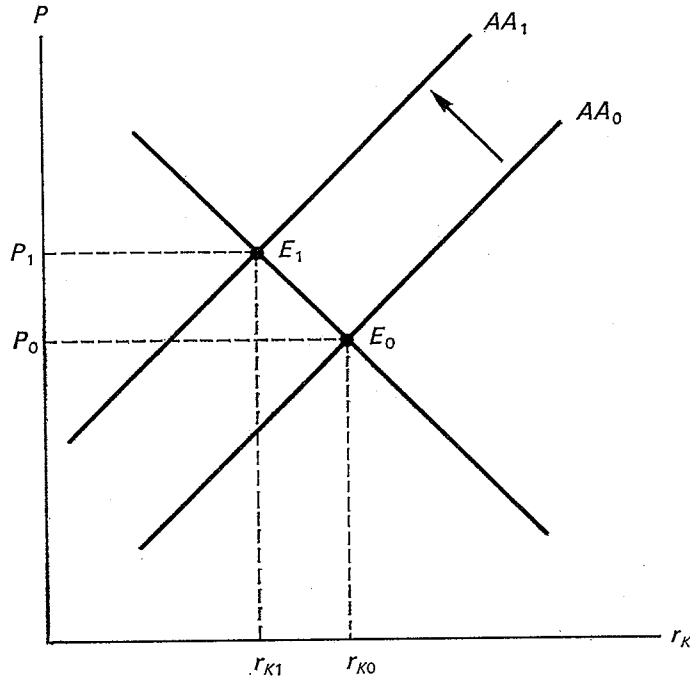
First, let us look at the effect of increased central bank loans. This case is illustrated in Figure 2. That is, an increase in the central bank loans shifts the stock market equilibrium schedule AA to the left without affecting the flow market equilibrium schedule yy , thereby generating inflation, $p_0 \rightarrow p_1$, but lowering the capital cost, $r_{K0} \rightarrow r_{K1}$. The latter effect promotes capital formation which accelerates economic growth.

To put it differently, the increased central bank loans partially slacken the bank loan market through expanding the loanable fund there, which reduces the dependency of the firm sector on the unorganized financial market. As such the UFM rate or the cost of capital declines. On the other hand, the planned saving does not increase at least in the short run, which yields the investment-saving gap, thereby inflation. This is a natural result.

⁶ Whether this holds true or not is a matter for both theoretical and empirical research (see, for example, Summers [10]). However, when we consider effects of "permanent" increases in real interest rates on private savings in the context of financial repression, I doubt that there could be a negative correlation between them. Moreover, the available empirical evidence seems to support the positive correlation. For example, using pooled data for seven Asian LDCs (1961-72), Fry [5] shows such empirical results that the domestic saving is significantly positively correlated with the real time deposit rate.

⁷ Inflation could be more explicitly taken into account than here by introducing adjustment lags in the goods market such as $\hat{p} = f(b-s)$ where $(b-s)$ represents excess demand for domestic goods and it is assumed as $f' > 0$.

Fig. 2. Effect of Expansion of Central Bank Loans



2. *An increase of the bank deposit rate*

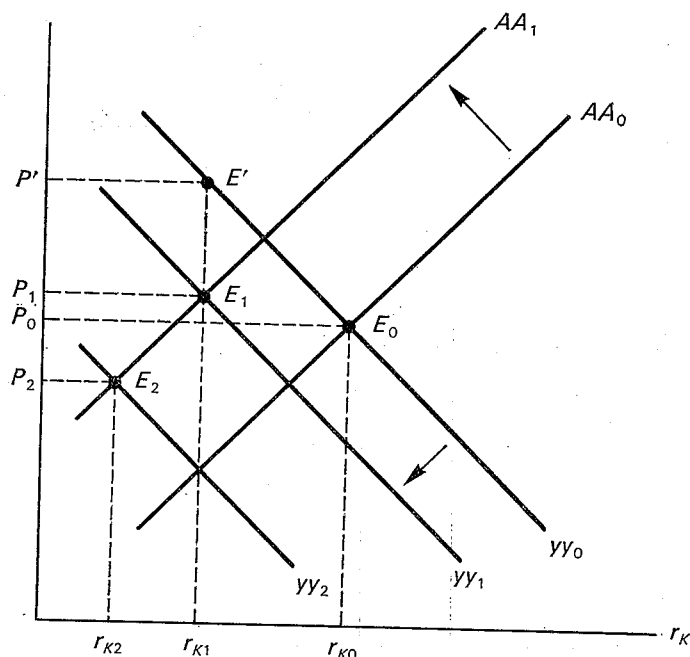
Next, we examine what happens with a higher deposit rate. With higher deposit rates, we implicitly assume that interest rates on bank loans are raised simultaneously to maintain the profitability of the private banks, but not to the extent that excess demand for loans is completely cleared away. Then the higher bank loan rate still remains ineffective in allocating funds. Also, with a simplified assumption of an exogenously given expected inflation rate, we can regard an increase in the nominal bank deposit rate as equivalent to that in the real one.

The higher deposit interest rate is supposed to raise the rate of saving with yy moving downward. As we noted earlier, however, the direction of shifts of the AA schedule due to an increase in the bank deposit rate is ambiguous. It can be derived that, if

$$(1-q)D_{rD} + K_{rD} > 0, \quad \text{where } D_{rD} > 0 \text{ and } K_{rD} < 0, \quad (8)$$

holds, AA shifts to the left. The first term of the left-hand side of condition (8) shows an increased loanable fund in the banking system through increased deposits due to the higher deposit rate, while the second term represents a decreased loanable fund in the UFM through the accompanied portfolio substitution from the UFM securities to bank deposits. Condition (8) implies that bank deposits and the UFM securities are imperfect substitutes to the household sector so that, even with the "leakage" of funds through reserve requirements,

Fig. 3. Effect of Higher Deposit Rate: Case A.



qD_{rD} , an increase in the former overwhelms a fall in the latter in mobilizing loanable funds to the firm sector. Or equivalently, if we note that condition (8) can be rearranged as

$$-C_{rD} - qD_{rD} > 0, \quad \text{where } C_{rD} < 0, \quad (8')$$

this implies that substitution from cash to bank deposits occurs due to the higher deposit rate in the household sector to some extent.

To put it another way, this is a case where the higher real deposit rate increases *total* financial intermediation because of *low* reserve requirements and/or *low* substitution between bank deposits and UFM securities.

Conversely, if

$$(1-q)D_{rD} + K_{rD} < 0, \quad (9)$$

AA shifts to the right. This is the case where the higher real deposit rate generates *total* financial disintermediation because of relatively *high* reserve requirements and/or *high* substitution between bank deposits and UFM securities. Thus, we examine first the former case where AA shifts to the left (case A), and then the latter (case B).

Case A: Increased Financial Intermediation

Figure 3 shows the result of comparative statics in case A. That is, the higher deposit rate induces a decline in r_K from r_{K0} to r_{K1} unambiguously and increases

investment; while its impact on the domestic price ($p_0 < p_1$ or $p_0 > p_2$) is dependent on the relative shift of the yy schedule to AA . The new equilibrium point, E_1 , illustrates a case with inflation generating. Note that, though bank loans and UFM credits are substitutes for each other to the firm sector, their interest rates behave as if complements here under the situation with excess demand for bank loans.

Let us compare this with the case of increased central bank loans above, which accompanies the same amount of a decline in the capital cost from r_{K0} to r_{K1} . Then the new equilibrium is attained at E' and the new equilibrium domestic price must be higher than that of the case A, or $p' > p_1$. Thus, we can see that the higher deposit rate policy is less inflationary than the domestic credit expansion by the central bank as a means of extending loanable funds in the banking system to stimulate investment.

What makes the difference between these two policy measures? Savings is the key variable to this question. The higher bank deposit rate is supposed to raise the private savings so that the I-S gap is slackened to result in downward pressure for the domestic goods price. If savings is perfectly inelastic with respect to the bank deposit rate, those two measures to increase loanable funds make no difference each other.

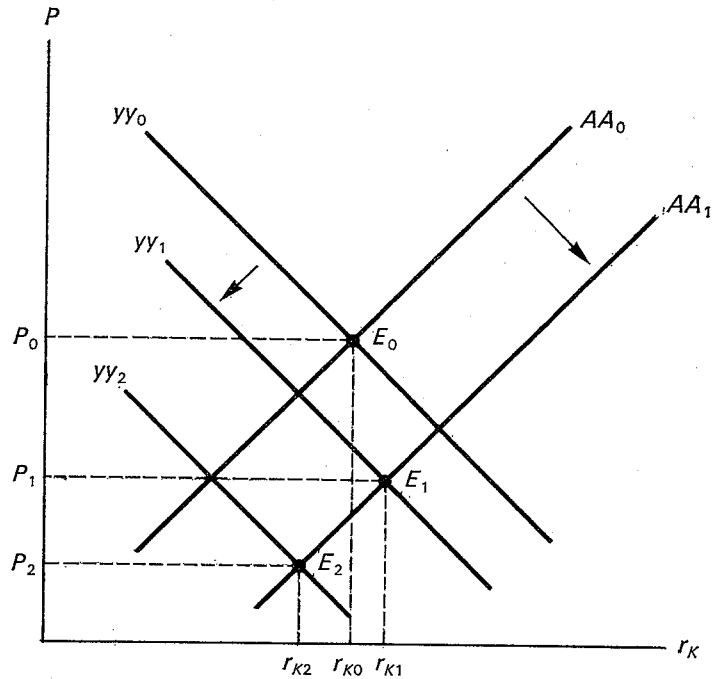
Therefore, we can sum up the discussions above as follows. In an economy where bank interest rates are regulated lower than market determined levels, there are two necessary conditions for the adoption of the high interest rate policy to be successful in stimulating investment in a less inflationary way: (1) reserve requirements must be low and/or bank deposits must be imperfect substitutes for the UFM securities to the extent that condition (8) is satisfied. And, furthermore, (2) savings must have positive elasticity with respect to bank deposit rates. Finally, if savings is elastic enough, the high interest rate policy could be successful in both promotion of investment and control of inflation. This favorable case for the high interest rate policy is illustrated by the equilibrium point E_2 in Figure 3.

Case B: Reduced Financial Intermediation

In case B, the UFM securities are such a good substitute for bank deposits for the household sector that the higher deposit rate decreases net loanable fund to the firm sector. Or, equivalently, the reserve requirement ratio, q , is so high that increased organized financial intermediation due to raised bank deposit rates leads to *total* financial disintermediation where the unorganized market is also taken into account. This is the case that Wijnbergen [13] is particularly concerned with.

Figure 4 depicts case B. As shown, since AA schedule shifts to the right, the higher deposit rate induces deflation in the domestic goods price, but its effect on the UFM rate is ambiguous. That is, the higher deposit rate increases savings, thus giving deflationary impact on the domestic goods prices. As for the UFM rate, while the financial disintermediation tends to raise it because of

Fig. 4. Effect of Higher Deposit Rate: Case B



a resulting tighter situation in the UFM, the deflationary pressure cools down the reproduction cost of the physical capital and, thus, under a given marginal efficiency of capital, tends to accompany a rise in the market price of the capital and a fall of r_K . Accordingly, if the saving is responsive enough to the deposit rate to provide a net decline of the UFM rate and the domestic goods prices are downward flexible enough, the higher deposit rate policy could be successful in both price stabilization and investment promotion even in case B. This is the case as illustrated by the new equilibrium point, E_2 in Figure 4. Otherwise, however, it would impose a deflationary impact on investment just as tightening of the central bank loans would, which is shown by the new equilibrium E_1 .

Thus, we sum up that case B with high substitution between bank deposits and UFM securities could be the very case against a high interest rate policy for economic development as pointed out by Kohsaka [6] and Wijnbergen [13]. Note, however, even in case B private savings, if responsive enough, could lead to price stabilization with promoting investment through lowered marginal cost of capital.

3. *Effects of foreign credits*

Finally, let us investigate the case where foreign credits are available for the

firm sector, while the household sector is not allowed to hold foreign assets. This is also a typical situation in some developing economies which persistently run short of domestic savings. Since foreign credits are not completely free from default risk and/or uncertainties over future profitability from the viewpoint of the foreigners, their supply is finitely elastic, if ever. Also, their demand is not completely elastic, because domestic borrowers are confronted with exchange risk and uncertainties due to variable capital controls by the authorities. As such, foreign credits are the third way of raising funds for the firm sector, being imperfect substitute for domestic sources. Accordingly, while the supply of foreign credits depends only on their effective interest rates taking account of those uncertainties, demand depends also on the UFM rate in the framework above.

As we suppose all foreign currency receipts and loans are concentrated in the central bank, capital inflows through foreign credits generate via the banking system or directly an equivalent amount of base money issue with increased foreign exchange reserves of the central bank as a counterpart. This has the identical effect of an increase in the central bank loans as seen before. Thus, other things being equal, with the lower UFM rate, the increased bank loans due to the successful high interest rate policy causes demand for foreign credits to shrink, thereby bringing about a monetary tightening effect.

But, consider a case where some exogenous measures such as provision of government guarantees for loan repayments are effectively taken to promote foreign borrowings by the domestic firms. Then, they would expand the base money supply, and give an identical result of monetary expansion as we saw in the present subsection at least in the short run.⁸ We should note, however, these effects are independent of the high interest rate policy.

C. *Omitted Issues*

In the above discussion, it might sound as if all that matters were the total amount of loanable funds to the firm sector over the whole organized and unorganized financial markets, because we have overlooked such aspects as segmentation in the unorganized financial market for the sake of analytical simplicity. That is, we have treated the UFM as if it were a unified system like the banking system.

The UFM is, on the contrary, quite segmented and strongly based on personal relationships between lenders and borrowers. Accordingly, it is likely that the UFM cannot make use of the scale economy with respect to risk pooling, collection of information, appraisal of lending opportunities, etc., unlike the official banking system. As a result, the average level of the UFM interest rates is generally higher by far than what would be determined in the open market, reflecting risk premiums evaluated in each segmented UFM.

⁸ Since foreign borrowing relaxes the foreign exchange constraint, its longer-run effect is different from that of the expansion of the central bank loans.

Thus, as far as we accept the general supposition that the official banking system is more efficient in allocation of loanable funds than the UFM, the stock shift within the household's portfolio alone would be helpful in improving efficiency in terms of financial intermediation.

Another important point in favor of the high interest policy relates to rationing in the bank loan market under the low regulated loan interest rate. This gives plenty of room for providing scarce funds to such less profitable investment opportunities that could pay only with low bank loan rates. The higher bank loan rates side by side with increased bank deposit rates would narrow the above possibility, thereby improving overall investment efficiency, even though they are still below the market equilibrium level and play little role in allocating loans.

Finally, we should note that we have not paid enough attention to the dual structure of the firm sector and the heterogeneity of investment opportunities. For the former, we usually see several preferential subsectors within the firm sector such as export and/or manufacturing industries. They could enjoy the preferred low loan rates and rationed credits from the banking system and the central bank. Then it follows that the marginal conditions extended in the previous analysis are determined by the rest of the sector. This issue will be discussed in Section III. B.

Generally speaking, investment opportunities are heterogeneous with respect to risk, maturity, and so forth. So under imperfect information, even without regulations on interest rates, there could remain credit rationing *and* interest rate differentials over the whole range of those characteristics in the loan market.⁹ These loan rates, however, would move somewhat parallel to one another as opposed to the case of deposit and UFM rates under financial repression.

III. TWO EPISODES OF THE HIGH INTEREST RATE POLICY

Experiences of Taiwan in the 1950s and Korea for the years, 1965–71, are often cited as two impressive episodes of the high interest rate policy successful in attaining high growth and controlling inflation through financial deepening process.¹⁰ We will reformulate these two cases below in the theoretical framework extended in the previous section. Instead of extending a full-fledged empirical analysis of behavioral relationships, however, we restrict ourselves to casual observation of statistical data here.¹¹

A. *Taiwan: 1950–60*

Taiwan in the late 1940s witnessed typical hyperinflation under the conditions of continued war and an influx of people from Mainland China. This inflation was hardly controllable with a series of superficial monetary reforms such as the issuance of new Taiwan dollars (NT dollars) in 1949. A group of scholars

⁹ See Stiglitz and Weiss [9].

¹⁰ For example, see Chandavarkar [1] and McKinnon [7].

¹¹ For the discussion on the Taiwanese experiences, I am indebted to Tsiang [12].

including Professor S. C. Tsiang advised introducing a system of price-index-escalated savings certificates. This was to sever the following vicious circle. Under inflation, the controlled or low interest rate policies prevent private savings from flowing into the banking system. Banks cannot but resort to money creation with domestic credit expansion in order to provide investment funds, which, in turn, accelerates inflation without monetary discipline.

The monetary authorities were hesitant to follow this advice, but eventually compromised to set up a special system of savings deposits with high interest rates called the Preferential Interest Rate Time Deposits (hereafter called PIR deposits) effective in March 1950. The one-month PIR deposit carried an interest rate of 7 per cent a month (125 per cent a year!), the level of which was supposed to be set high enough for the public not to expect any further increase in the future.

Indeed, this high bank deposit rate policy was effective in expanding time deposits not only absolutely but relatively to M_1 . Namely, the ratio of time deposits to M_1 increased from 1.7 per cent in March 1950 to 56.4 per cent by the end of September 1952 (see Table I). During the same period, we note that inflation rate declined from 10.3 per cent a month to -0.4 per cent. Since inflation did slow down surprisingly, the "real" interest rates (adjusted for actual inflation) on the PIR deposits turned positive and were maintained so (see Table II). Suppose that the ratio of M_1 to GNP is rather stable as was the case for 1951-53. Then the above fact suggests not only stock shift to "quasi money" from other financial and non-financial assets, but also a significant increase in flow savings in the form of time and saving deposits with higher deposit interest rates which guaranteed significantly positive real rates.

Unfortunately, we cannot tell more about the short-run stock shift due to an increase in the deposit rate, since we have no data available for the period just before and after the introduction of PIR deposits. What we can say is only about longer-run changes appearing in the bank sector's balance sheet;¹² the time deposits increased not only in its share of total bank liabilities from 12.5 per cent (1952) to 18.5 per cent (1960) (Figure 5), but also in size from 2.8 per cent of GNP to 6.0 per cent for the period, outgrowing increases of demand deposits and other items (Figure 6). The share in bank loans in the banks' total assets expanded from 50 per cent (1952) to 59 per cent (1960) (Figure 7), and in size it grew from 8.9 per cent to 15.2 per cent of GNP for the period (Figure 8).¹³

National income data of Taiwan starts from 1951. Accordingly, we cannot

¹² Note that we include the Bank of Taiwan which was one of the commercial banks, but also played the role of the central bank.

¹³ These share figures of the bank loans may sound rather small. It occurs because the Central Bank of China only began operating in 1961, thus, before then, the total assets/liabilities of the banks did not distinguish between central and commercial bankings. The former was implemented by the Bank of Taiwan, which has been the biggest commercial bank.

TABLE I
MONEY SUPPLY, TIME AND PIR DEPOSITS, INTEREST RATES, AND
WHOLESALE PRICES: TAIWAN, 1950-54

End of Period	Money Supply (NT\$ million)	Savings, Time & PIR Deposits* (NT\$ million)	Col. (2) as % of Col. (1)	Monthly Interest Rate on One-Month PIR Deposits	Monthly Rate of Price Inflation During the Quarter Just Ended (%)
1950 Mar.	348	6	1.7	7.00 (effective)	10.3
Jun.	401	28	7.0	7.00 (from Mar. 25)	0.4
Sept.	595	36	6.1	3.50 (from July 1)	6.0
Dec.	584	26	4.5	3.00 (from Oct. 1)	5.4
1951 Mar.	732	30	4.1	4.20 (from Mar. 26)	4.8
Jun.	942	59	6.3	4.20	3.9
Sept.	687	164	23.9	4.20	1.8
Dec.	940	163	17.3	4.20	3.9
1952 Mar.	867	271	31.2	4.20	2.6
Jun.	942	494	52.4	3.80 (from Apr. 29)	-1.0
				3.30 (from Jun. 2)	
Sept.	959	541	56.4	3.00 (from July 7)	-0.4
				2.40 (from Sept. 8)	
Dec.	1336	467	34.9	2.00 (from Nov. 30)	0
1953 Mar.	1074	499	46.5	2.00	1.5
Jun.	1198	640	53.4	2.00	1.4
Sept.	1292	671	51.9	1.50 (from July 16)	1.6
Dec.	1683	599	35.6	1.20 (from Oct. 10)	0.5
1954 Mar.	1622	667	41.1	1.20	0
Jun.	1809	747	41.3	1.20	-1.4
Sept.	1923	782	40.6	1.00 (from July 1)	-0.6
Dec.	2128	765	35.9	1.00	1.3
1955 Mar.	2300	816	35.5	1.00	2.7

Source: [12, p. 255]. (Central Bank of China, *Taiwan Financial Statistics*, various issues; and Taiwan Provincial Government, Bureau of Accounting and Statistics, *Taiwan Commodity Prices Statistics Monthly*, various issues.)

* Preferential Interest Rate Deposit Scheme was phased out in March 1955. Afterwards the former PIR deposits were merged into ordinarily savings deposits and the name was abolished.

directly check whether the savings ratio went up or down after the initiation of the high interest rate policy. This is important because the effect of price stabilization is supposed to rely heavily on the responsiveness of savings within our framework. Fact is that the savings ratio of the individual sector in 1952 became less than half of that of the previous year, i.e., from 5.4 per cent (1951) to 2.4 per cent (1952), and then increased gradually through the 1950s to 6 per cent (1960) (Figure 9).

This seeming paradox could be interpreted as follows. First, since the saving ratio of 5.4 per cent in 1951 was unusually high for the earlier period, we can easily see that it was brought about by the significant rise in the nominal and real deposit rates in the previous year. Second, when we take account of the fact that the individual sector includes noncorporate firms, savings in this sector

TABLE II
 NOMINAL AND REAL INTEREST RATES, AND INFLATION RATES: TAIWAN, 1949-59
 (Annual % rate)

End of the Year	Secured bank Loans (1)	Time Deposits Three Months (2)	PIR Deposits Three Months (3)	Inflation in WPI (4)	Real Interest Rate (5)=(3)-(4)
1949	163.2	54.0	—	—	—
1950	50.2	27.0	47.6	90.7	-43.1
1951	69.6	27.0	69.6	52.9	16.7
1952	42.6	21.3	29.1	3.7	25.4
1953	30.6	16.2	22.4	16.1	6.3
1954	26.1	10.8	14.0	-2.1	16.1
1955	23.9	10.8	14.0	14.1	-0.1
1956	23.9	10.8	12.7	12.7	0.0
1957	21.7	10.2	—	7.2	—
1958	21.7	10.2	—	1.4	—
1959	19.6	9.0	—	10.3	—

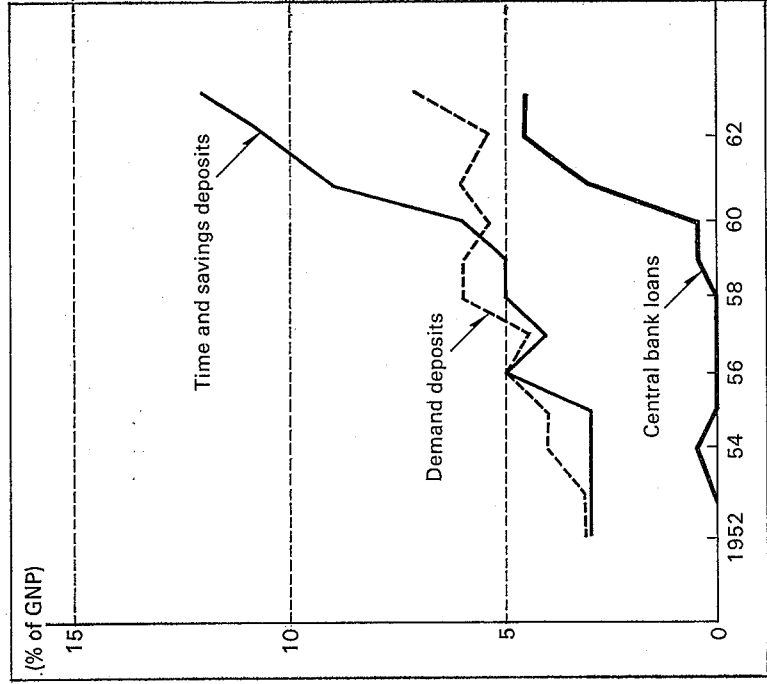
Sources: For columns (1)-(3), Central Bank of China, *Financial Statistics Monthly*, various issue; for column (4), [12].

tends to reduce not on the gross basis, but on the net basis through increased investment of those firms. This tendency seems to be stronger in the earlier period of industrialization with more small firms. In deed, as side evidence, gross investment in the corporate sector showed inverse movement to individual savings for the same period. Thus, we conclude that the higher real deposit rate brought about a significant increase in *gross* savings, thereby generating a deflationary impact on price levels.

As we saw earlier, the high interest rate policy in Taiwan aimed at mobilizing financial saving into the banking system, which is supposed to shrink the unorganized financial market. Though there is no reliable data available for its market size,¹⁴ we could make a conjecture over the demand/supply conditions of the market by looking at the movements of relevant interest rates. If there were excess demand for loans in the banking system because of controlled loan rate ceilings, increased availability of loanable funds due to high interest rate policies would yield a decline in interest rates in the unorganized financial market. This is what actually happened in Taiwan. The secured loan rate outside banks in Taipei (which is one of these curb market rates) at the end of the year fell from annualized 231 per cent (1949) to 181 per cent (1950), and kept falling gradually to 24 per cent (1964) (Figure 10). Consequently, in spite of gradual downward adjustments of the organized market rates, the interest rate differential between these two markets (where the organized market rate is represented by the secured bank loan rate) narrowed from monthly 6.5 per cent (1949) to

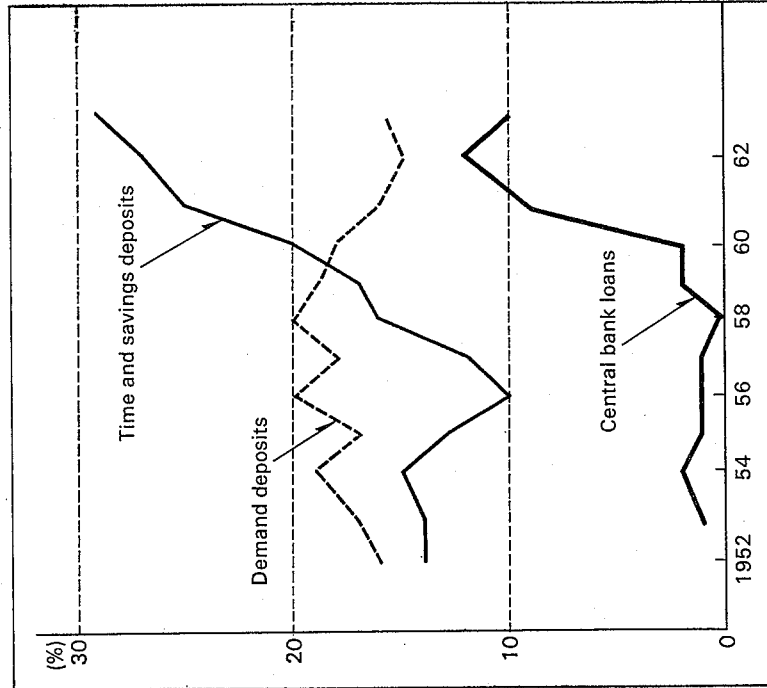
¹⁴ For later periods, the "curb market lending" consisting of shares of noncorporate enterprises, bills and accounts receivable, and business' borrowing from households as defined in Chiu [2], amounts to 38.7 per cent (1964) and 29.2 per cent (1982) of loans by Deposit Money Banks.

Fig. 6. Liabilities of the Bank Sector: Taiwan, 1952-63



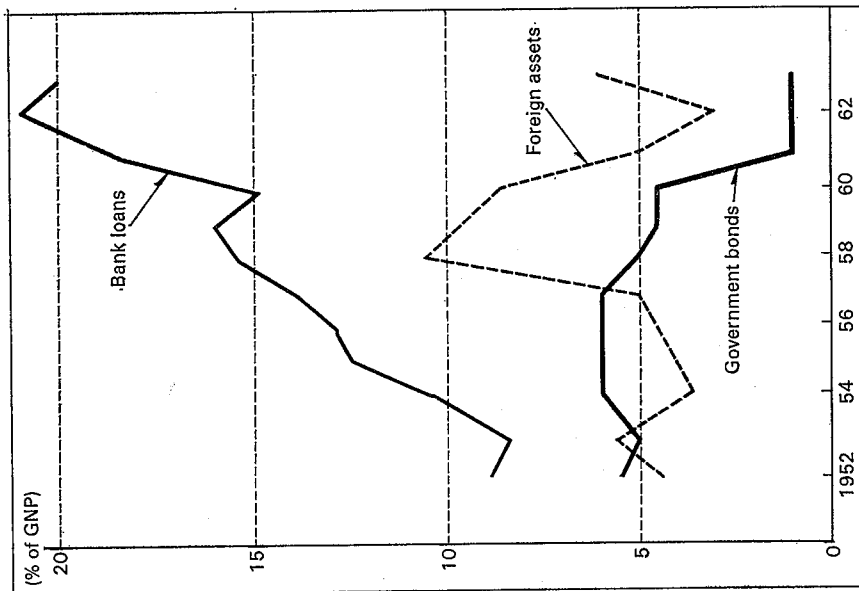
Source: The same as for Figure 5.

Fig. 5. Shares in the Total Liabilities of the Bank Sector: Taiwan, 1952-63



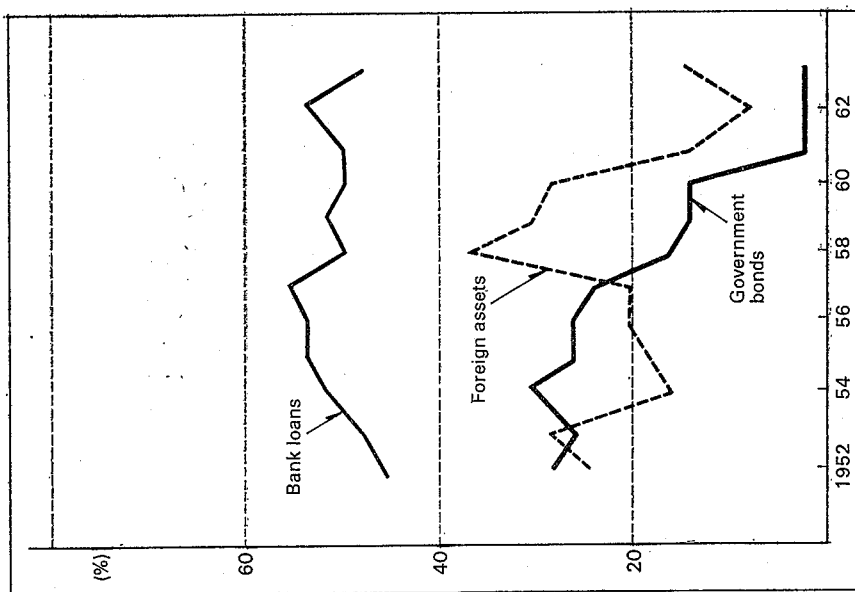
Source: Central Bank of China, *Financial Statistics Monthly*, various issues.

Fig. 8. Assets of the Bank Sector: Taiwan, 1952-63



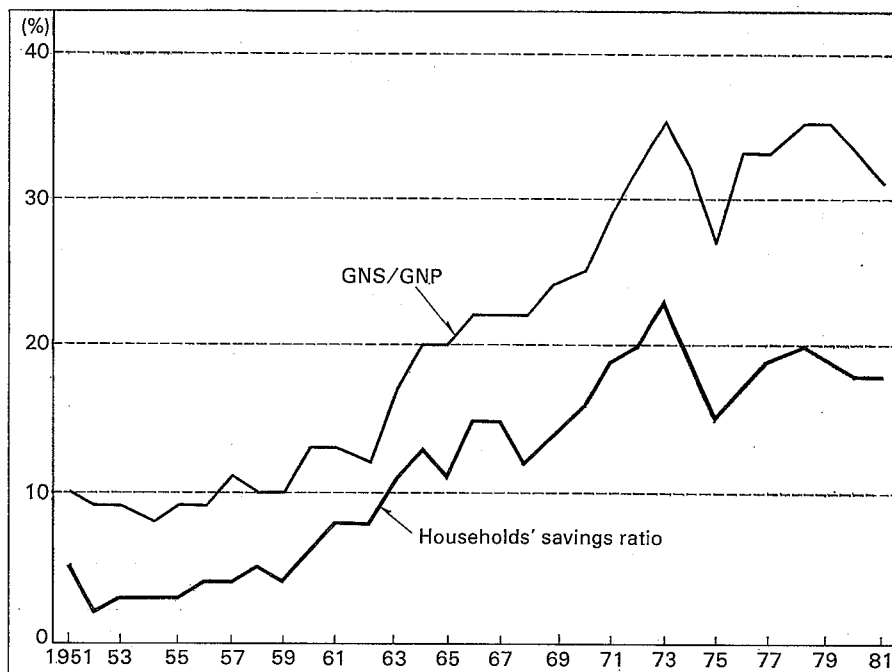
Source: The same as for Figure 5.

Fig. 7. Shares in the Total Assets of the Bank Sector: Taiwan, 1952-63



Source: The same as for Figure 5.

Fig. 9. Savings Ratios: Taiwan, 1951-81



Source: Directorate-General of Budget, Accounting and Statistics, *National Income of the Republic of China*, December 1982.

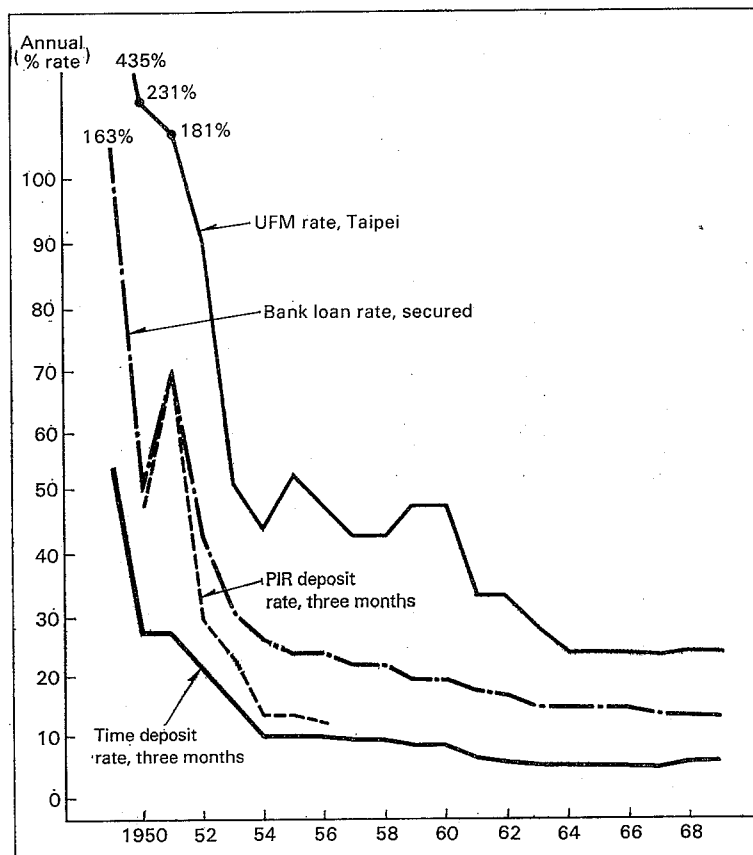
less than 1 per cent (1969). These facts suggest increasing substitutability between these two markets from the viewpoint of borrowers and also a decline in the relative importance of the unorganized financial market.

While nominal interest rates on the PIR deposits were adjusted downward along with declining inflation rates, they amounted to 56 per cent of M_1 in 1952, and were then consolidated into the ordinary time deposits by the end of 1958, which might suggest that the phase of stabilization was completed as Chandavarkar [1] expressed. As such, Taiwan was the first developing country in the post-World War II period that adopted high interest rate policies, to be successful in mobilizing private savings into the banking system, thereby controlling inflation *and* attaining high real growth.¹⁵ The high interest rate policy in the process of economic development could be called a Taiwanese invention in this context. Reality is, however, that the monetary authorities were not necessarily willing to adopt such a policy for the period.¹⁶ Rather, they were forced to do so under the interest-rate-elastic private savings since they had learned the importance of controlling inflation for stability and growth.

¹⁵ Chandavarkar [1, p. 78] put it as follows: "China is rightly regarded as a pioneer and leading exponent of a high but flexible interest rate strategy."

¹⁶ Tsiang [12, p. 173] exemplifies the reluctance of the authorities to adopt the high interest rate policy at that time and criticizes them for this.

Fig. 10. Interest Rates: Taiwan, 1949-69



Source: The same as for Figure 5.

B. Korea: 1965-71

In 1965, Korean authorities implemented a series of measures for financial reform including upward adjustment of official interest rates. While it was relatively mild (around 10 per cent annually in terms of WPI) in the beginning of the 1960s, price inflation resumed rising in 1963 toward 1965 with high growth rates of the real economy (Table III). In order to cope with the inflation, the authorities decided to follow the line of recommendations made by professors J. Gurley, E. Shaw, and H. Patrick based on the USAID program, which suggested establishment of a Stabilization Account in the Bank of Korea (BOK) to control the base money, adjustment of official interest rates toward competitive levels, and so on.

The main thrust of the reform included a remarkable increase in overall official bank deposit rates, a less remarkable increase in selective official bank loan rates, and a partial moderation of direct controls over bank loans (Figure 11). Ceilings on deposit rates were exactly doubled, for example, from 15 per cent to 30 per cent a year for one year time deposits, which resulted

TABLE III
 REAL GDP GROWTH AND INFLATION: KOREA, 1954-81
 (Annual % change)

Year	Real GDP Growth	Inflation in WPI
1954	5.6	25.7
1955	4.5	81.8
1956	-1.3	32.5
1957	7.6	16.0
1958	5.5	-6.5
1959	3.9	2.6
1960	1.2	10.1
1961	5.8	13.8
1962	2.1	9.5
1963	9.1	20.4
1964	9.6	34.4
1965	5.7	9.9
1966	12.1	9.0
1967	5.9	6.4
1968	11.3	8.1
1969	13.8	6.6
1970	8.8	9.4
1971	10.1	8.6
1972	6.1	13.8
1973	15.3	6.9
1974	8.3	42.1
1975	8.1	26.6
1976	13.9	12.1
1977	10.1	9.0
1978	11.3	11.7
1979	7.1	18.8
1980	-3.5	38.9
1981	8.0	22.5

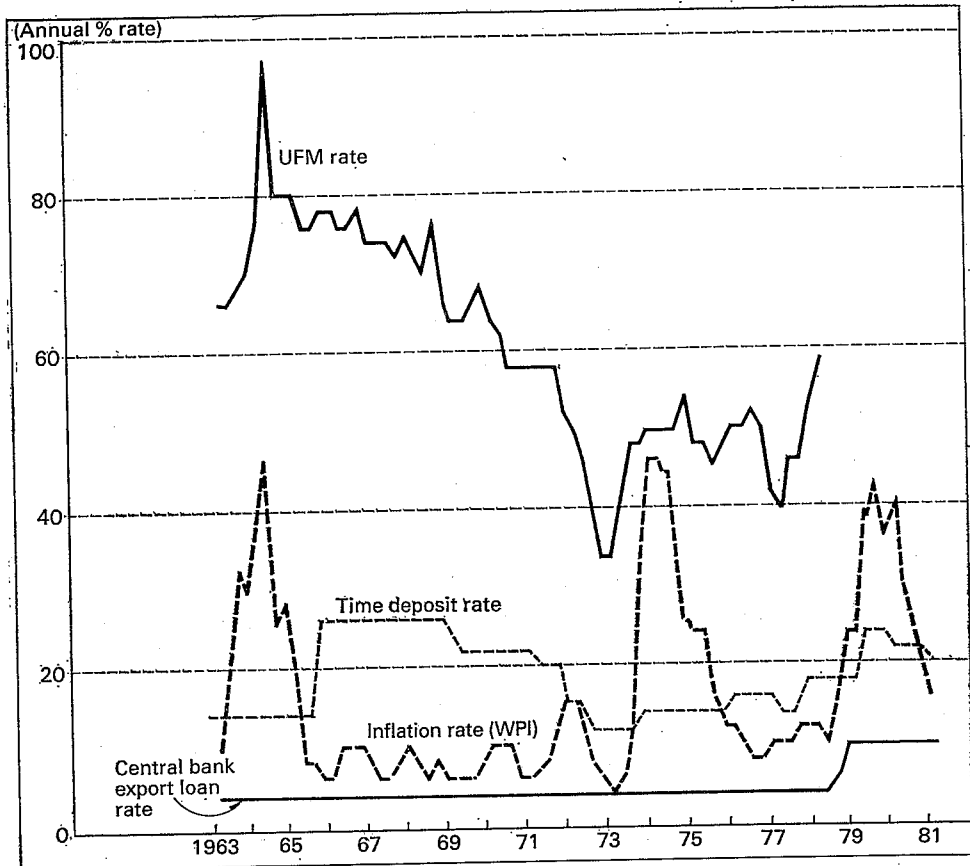
Source: International Monetary Fund, *International Financial Statistics*, various issues.

in 26.4 per cent of the effective rate in September 1965. As for bank loan rates, while bank general loan rates such as for discounts and nonpreferential loans were raised from 14 per cent and 16 per cent to 24 per cent and 26 per cent, respectively, preferential loan rates such as for exports were actually decreased from low 8 per cent to lower 6.5 per cent.

In the following, using flow-of-funds data, we focus on portfolio balance behavior of the bank, corporate firms and household sectors during the period of the financial reform. First, we will see the impressive short-run impacts of the high interest rate policy adopted in 1965. Then, after reviewing the whole process of financial development until 1971 in the longer-run perspective, we will end up with a reassessment of the reform.¹⁷

¹⁷ For a more detailed and comprehensive description of Korean financial development, see Cole and Park [4].

Fig. 11. Nominal Interest Rates and Inflation Rates: 1963.I-81.IV



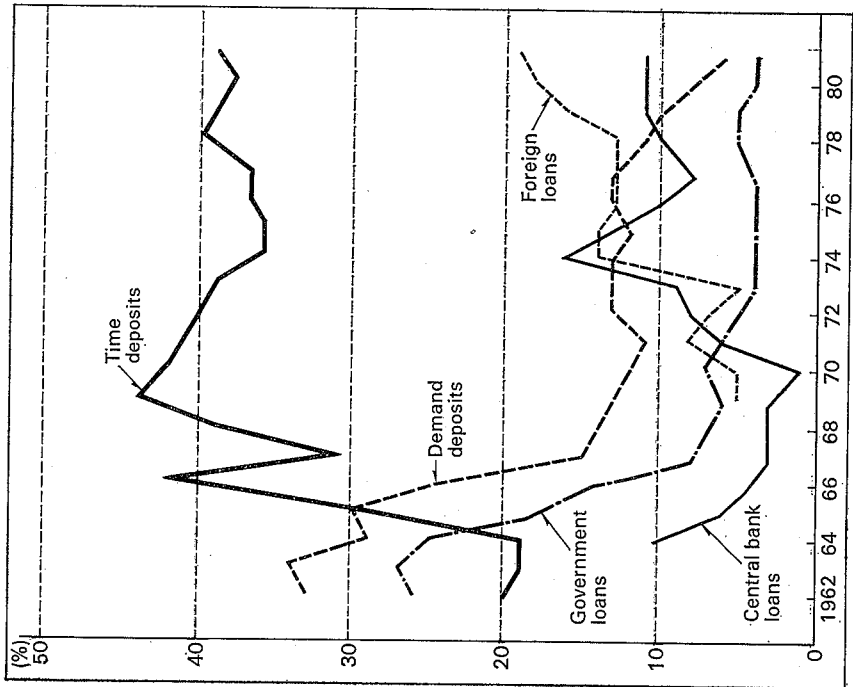
Source: Bank of Korea, *Economic Statistics Yearbook*, various issues.

1. Short-run impacts of the financial reform

The effect of the reform on demand for time deposits was very explicit. From the end of 1964 to that of 1966, the relative share of time deposits in the bank sector's total liabilities increased from 18.6 per cent to 42.2 per cent, while those of demand deposits, loans by the central bank and loans by the government declined by 4.7 per cent, 6.1 per cent, and 10.9 per cent, respectively (Figure 12). Also the ratio of time deposits to the nominal GNP more than tripled from 2.0 per cent to 6.8 per cent, while that of demand deposits rose only from 3.2 per cent to 3.9 per cent and those of central bank and government loans fell (Figure 13). This suggests the decreased dependency of the bank sector on the sources of funds other than deposits, which must reflect the relative easing in the bank loan market.

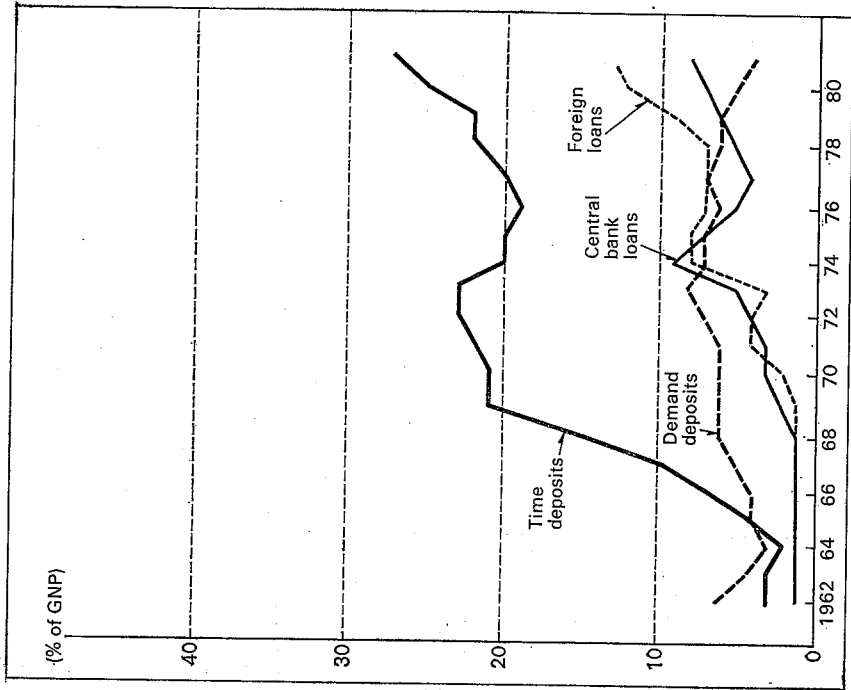
Nevertheless, bank loans did not show as much of a remarkable increase as time deposits did for the period, though they grew fairly well from 8.5 per cent to 10.7 per cent in terms of GNP (Figure 15). Their explosion was checked by

Fig. 12. Shares in the Total Liabilities of the Bank Sector: Korea, 1962-81



Source: The same as for Figure 11.

Fig. 13. Liabilities of the Bank Sector: Korea, 1962-81



Source: The same as for Figure 11.

increased reserve requirement at least up until early 1967,¹⁸ which was reflected in a decline of the bank loans' share in the total assets of the bank sector from 78.1 per cent to 66.8 per cent, while that of deposits to the central bank rose from 4.4 per cent to 19.1 per cent (Figure 14).

In sum, the increased demand for time deposits expanded the bank sector's source of funds, thereby leading to an increase in bank loans. Bank loans, however, were not allowed to grow in full proportion to the deposits' increase with a significant amount of "leakage" to reserves in the central bank.

Let us turn to the (corporate) firm sector's balance sheet. The share of bank loans in its total liabilities reduced from 19.3 per cent (1964) to 16.3 per cent (1966) and, furthermore, its size even shrank to around 7.0 per cent of GNP (Figures 16 and 17). Instead of corporate stocks and bank loans, foreign credits expanded its share from 7.9 per cent (1964) to 17.0 per cent (1966) and its size from 2.9 per cent of GNP (1964) to 7.3 per cent (1966). What caused this big stock shift on the side of ultimate borrowers?

One reason for this is that the Foreign Loan Repayment Guarantee Scheme was put into effect in 1964, thereby eliminating default risk from foreign lenders. The second reason related to political economy, or the "normalization" of diplomatic relations with Japan, which made access to Japanese banks easier. Third, since these guarantees were mainly provided to firms in the selective preferential industries almost automatically, those firms had ample incentives to borrow abroad.

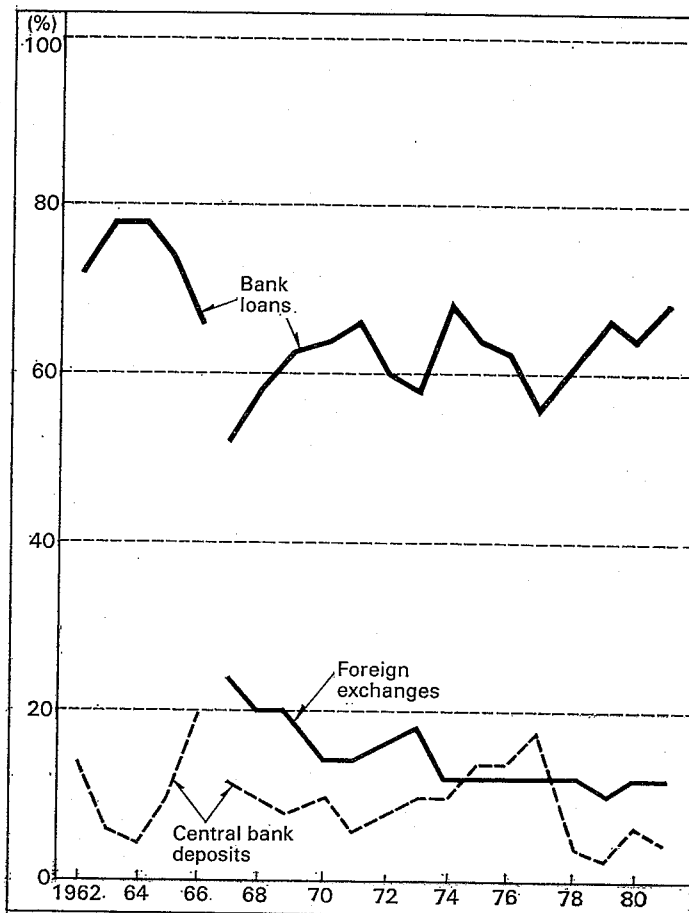
This exogenously extended opportunities for selective firms induced capital inflow, which, as we noted in Section II.B.3, would make the central bank play the role of international financial intermediary under the system of pegged exchange rates and foreign exchange concentration, bringing about effects equivalent to those of expansion in central bank loans.¹⁹ In fact, investment of the firm sector doubled from 6.2 per cent of GNP (1964) to 12 per cent (1966) (Figure 18).

¹⁸ Minimum reserve requirements were raised in December 1965 and February and October 1966, from 10 per cent up to 45 per cent for time and saving deposits for example, and then reduced in April 1967.

¹⁹ Indeed, the share of foreign claims in the total assets of the BOK increased to dominate that of BOK loans as below:

Year	Foreign Claims (%)	BOK Loans (%)
1964	36.8	43.6
1965	31.6	50.3
1966	45.5	39.3
1967	43.3	40.7
1968	55.1	32.5
1969	54.0	31.6
1970	48.0	39.4
1971	46.4	39.7

Fig. 14. Shares in the Total Assets of the Bank Sector:
Korea, 1962-81

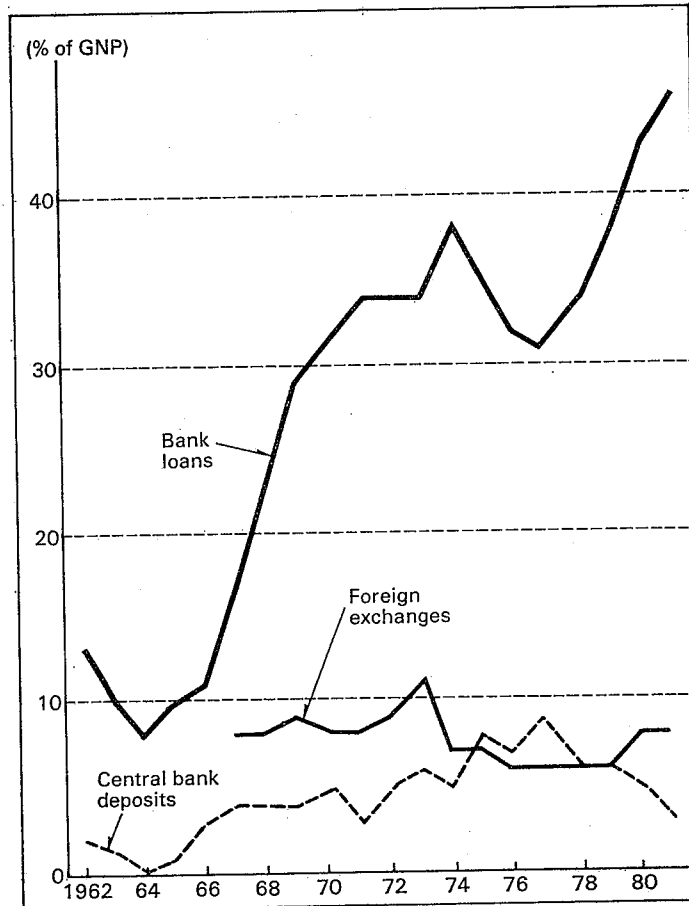


Source: The same as for Figure 11.

The household sector²⁰ tripled the share of time deposits in its total assets from 9 per cent (1964) to 26 per cent (1966) for the same period, mainly in substitution of its stock holdings, the share of which declined from 37 per cent to 26 per cent (Figure 19). While there is no reliable data about the movement of funds in the unorganized financial market, this substitution between risky assets with high expected rates of return and time deposits suggests another substitution between the UFM "securities" and time deposits to be very likely. By contrast, it is noteworthy to find that there was virtually no portfolio substitution between either cash or demand deposits and time deposits, although

²⁰ The "household sector" consists of noncorporate firms, individuals, and nonprofit organizations.

Fig. 15. Assets of the Bank Sector: Korea, 1962-81



Source: The same as for Figure 11.

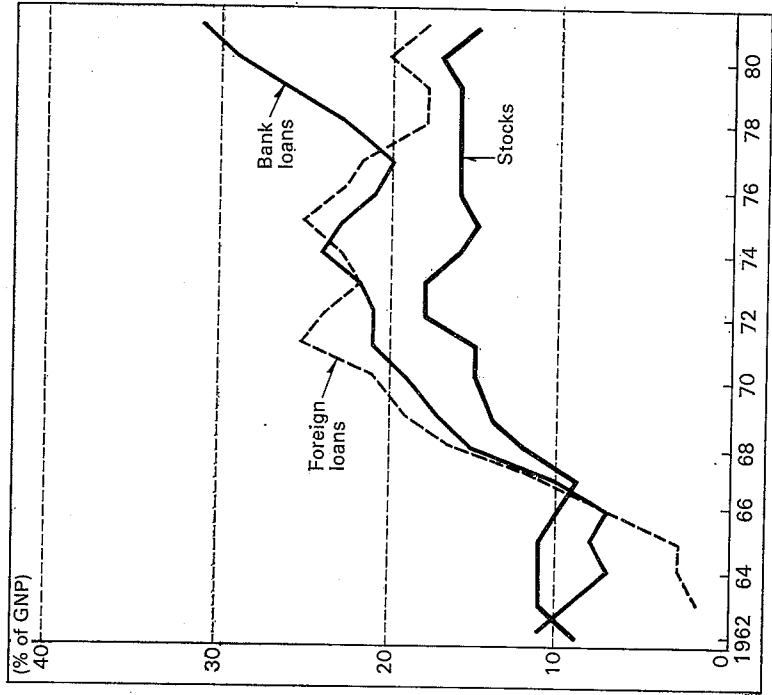
the former two are supposed to be positively correlated with the economic activity level that was booming then.

Time deposits held by the household sector grew sharply from 4 per cent of GNP to 12 per cent (Figure 20). Its share in gross financial savings jumped up from 9.3 per cent to 55.2 per cent, which was reflected in an increased ratio of the gross financial savings to GNP from 2.2 per cent to 6.2 per cent.²¹ Also, net financial savings rose from 1.7 per cent of GNP to 3.0 per cent.

Finally, let us look at how the high interest rate policy affected the market determined interest rates. As far as the available data for the unorganized

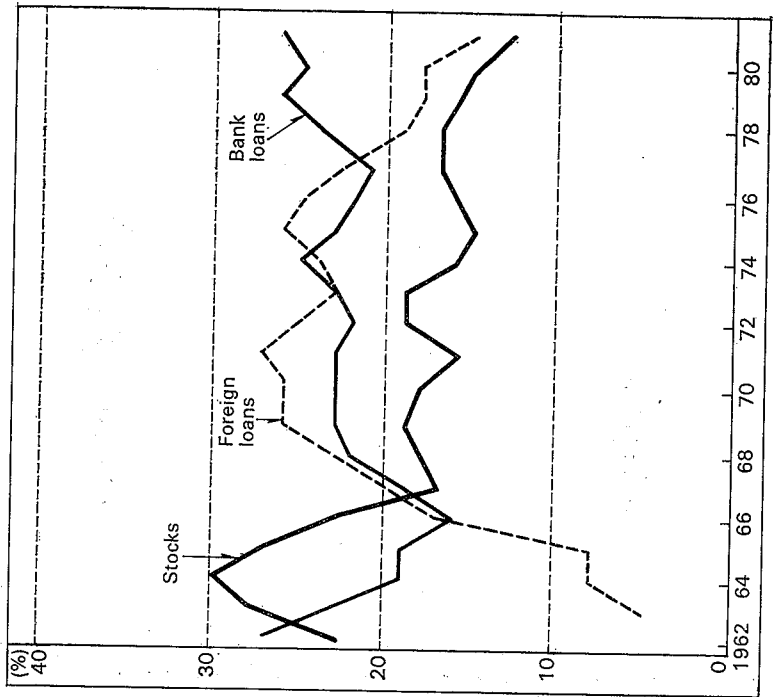
²¹ The reason why we use gross financial savings instead of the net counterpart is that the latter is likely to underestimate the "pure household" savings which is to be offset by the noncorporate firms' dissavings. Indeed, an increase in the household sector's financial liabilities grew from 0.5 per cent of GNP to 3.2 per cent mainly through bank loans.

Fig. 17. Liabilities of the Firm Sector: Korea, 1962-81



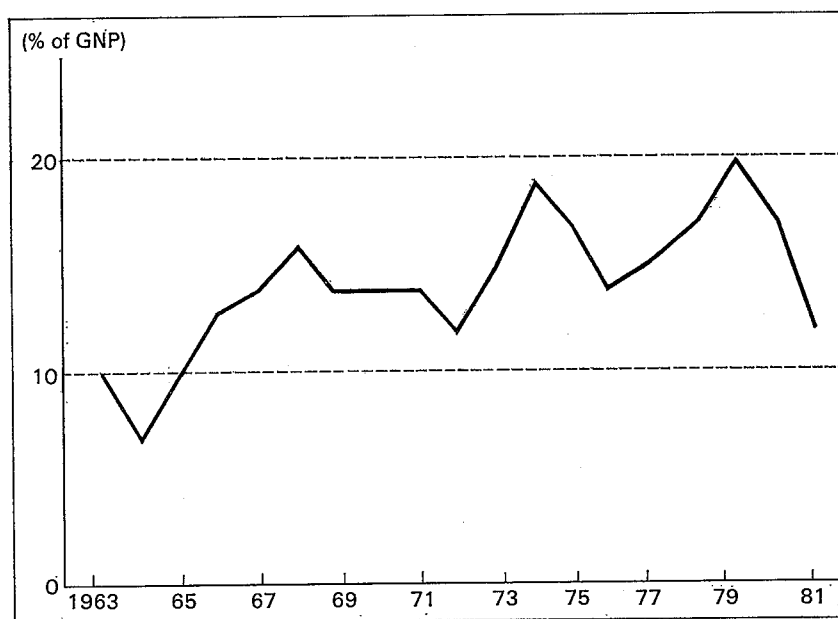
Source: The same as for Figure 11.

Fig. 16. Shares in the Total Liabilities of the Firm Sector: Korea, 1962-81



Source: The same as for Figure 11.

Fig. 18. Investment by the Firm Sector: Korea, 1963-81



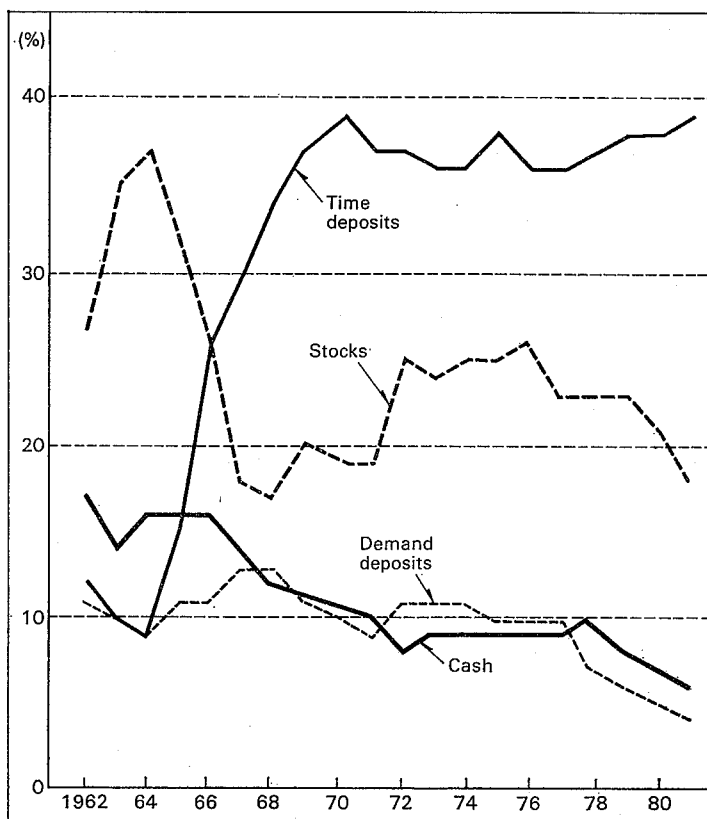
Source: The same as for Figure 11.

financial market rates are concerned, we found a less significant decline in them—from 79.6 per cent to 77.5 per cent a year (Figure 11). We cannot tell much about their reliability, though. Under such circumstances that appeared unfavorable to firms with respect to capital costs, their investment began booming from 6.2 per cent of GNP to 12.1 per cent with expanded fund availability due to foreign loans.

Here, we can sum up the short-run impact of the financial reform in 1965 as: (a) It was successful in mobilizing loanable funds into the banking system. (b) Bank loans expanded, but not in proportion with exploding time deposits because of increased reserve requirements on the banks. (c) Firms satisfied their demand for loans more by borrowing abroad under the newly-introduced loan repayment guarantee scheme, which caused expansion of base money. (d) Portfolio substitution resulted not between either cash or demand deposits and time deposits, but between risky assets and time deposits. (e) The financial savings rate exhibited an explicit upward change. (f) Available data suggests no significant decline in interest rates in the unorganized financial market.

Thus, as for the short-run impact of the high interest rate policy adopted in 1965, Case B in Section II seems to hold: (1) In contrast with an exogenous expansion in central bank loans, it was less inflationary to increase loanable funds in the organized banking system through successful mobilization of private savings. However, (2) because of increased reserve requirements on bank deposits and a high degree of substitution between time deposits and the unorganized

Fig. 19. Shares in the Total Assets of the Household Sector: Korea, 1962-81



Source: The same as for Figure 11.

market "securities," it was ambiguous whether or not the policy was successful in increasing total financial intermediation and promoting investment through lowering the marginal capital cost.

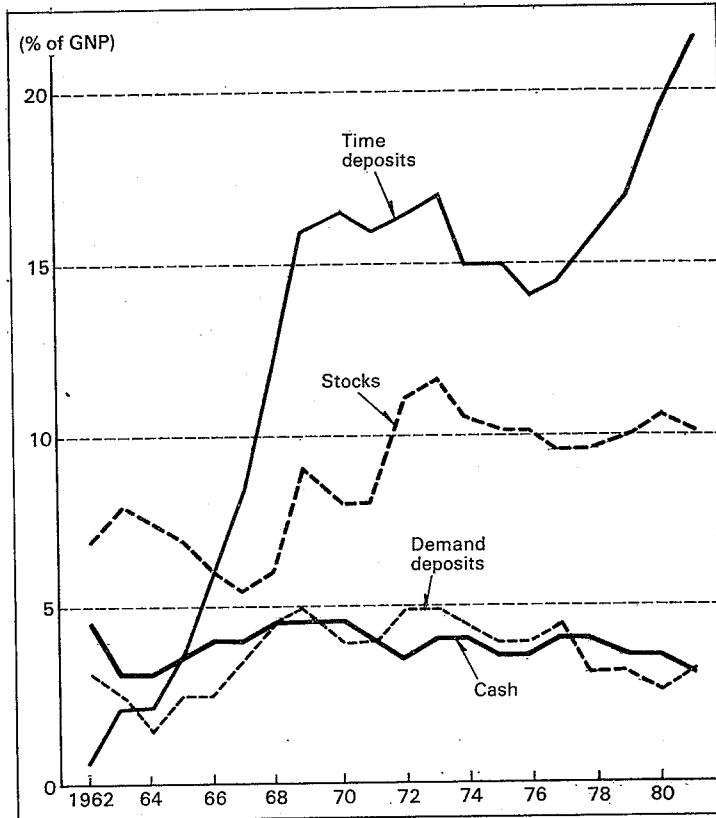
2. Longer-run performance during the period with the high interest rates

The high deposit rate policy was maintained at least until 1971. The present subsection reviews the process of financial development for the entire period of high interest rates in a longer-run perspective than in the previous subsection.

Impressively enough, under the high real deposit rate, time deposits continued to increase explosively in both relative and absolute terms. The share of time deposits in total bank liabilities kept on increasing from 31 per cent (1967) to a peak of 44 per cent (1969) (Figure 12),²² and its ratio to GNP from 6.8 per cent (1966) to 21 per cent (1969) (Figure 13).

²² A decline of the time deposits' share in 1967 was overvalued, because it reflected the institutional change. In 1967, the Korean exchange bank was established and a part of the portfolio of the Bank of Korea, the central bank, was transferred there which made it difficult to trace changes in shares over time.

Fig. 20. Assets of the Household Sector: Korea, 1962-81



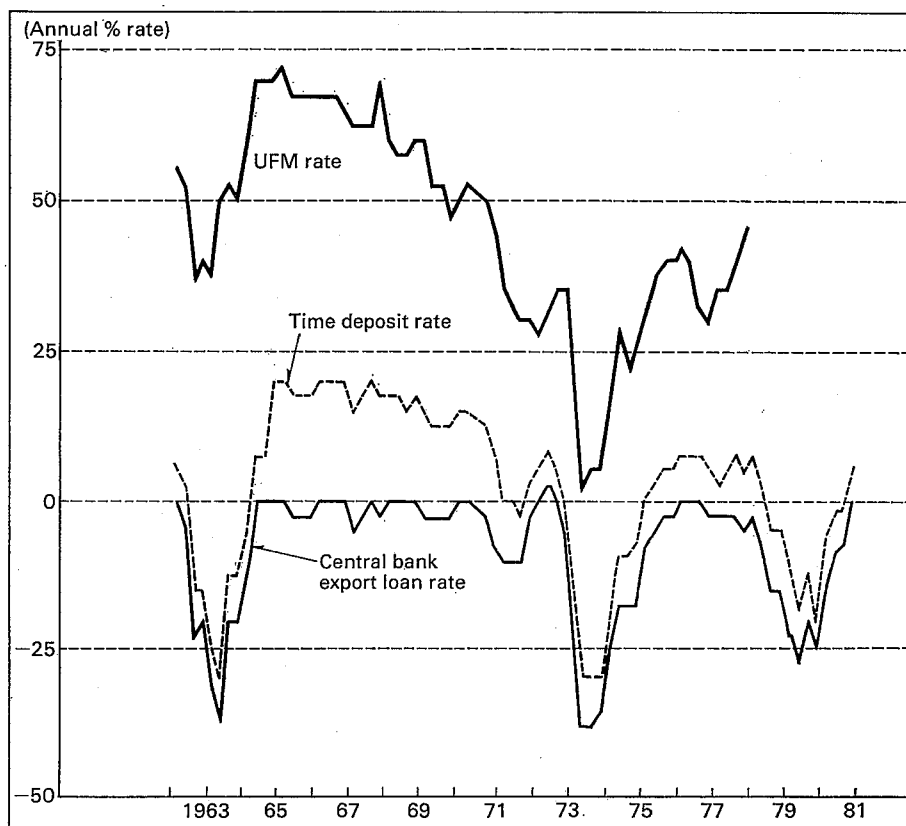
Source: The same as for Figure 11.

At the same time, however, the bank sector's dependency on central bank loans and also foreign borrowings was increased, that is, their shares rose from 2.9 per cent and 2.7 per cent (1967) to 6.4 per cent and 7.9 per cent (1971), respectively (Figure 13). The total size of these two sources of funds grew from 1.8 per cent of GNP (1967) to 7.6 per cent (1971).

If we turn to the household portfolio, the share of time deposits kept increasing from 30 per cent (1967) to a peak 39 per cent (1970) (Figure 19), and its ratio to GNP from 9 per cent (1967) to a peak 16 per cent (1970) (Figure 20). Attention must be paid to the fact that the time deposits were a substitute not for stocks, but for cash and demand deposits in the later period of the financial reform in contrast with the earlier period, while the ratios of cash and demand deposits to GNP remained almost unchanged.

Gross financial savings of the household sector reached a peak 12.3 per cent of GNP (1969) from 9.4 per cent (1967), and declined again to 9.5 per cent (1971) (Figure 22). Note that these movements coincided with those of real interest rates on time deposits. The one year time deposit rate was adjusted gradually downward in both nominal and real terms from 26.4 per cent (1965)

Fig. 21. Real Interest Rates: Korea, 1963.I-81.IV



Source: The same as for Figure 11.

Note: Real interest rates are defined as nominal interest rates minus inflation rates in WPI.

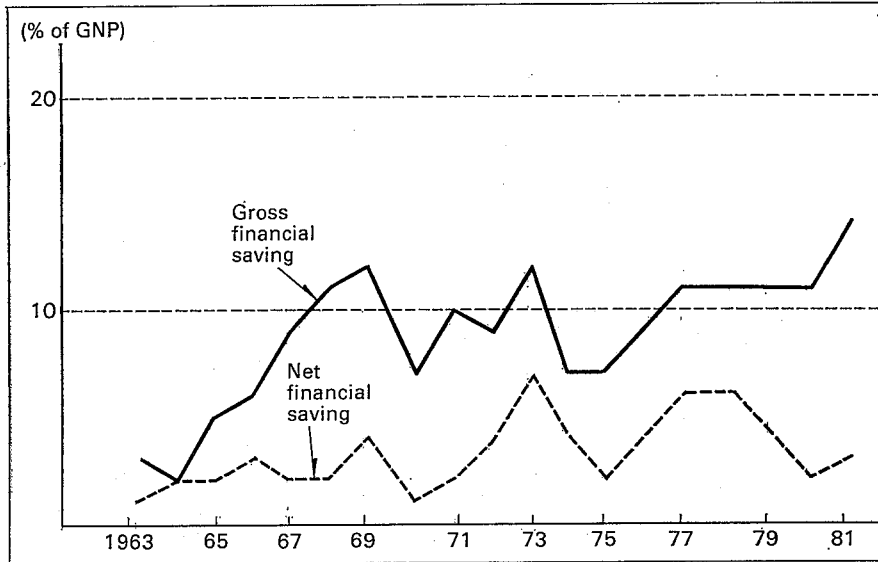
to 22.8 per cent (1970) for the former and from 19.5 per cent (1965) to 13.4 per cent (1970) for the latter (Figure 11).

Bank loans expanded its share in the bank sector's total assets from 52 per cent (1967) to 65 per cent (1971) under a loosened reserve requirement policy²³ of the central bank (Figure 14), and also expanded in size from 17 per cent of GNP (1967) to 34 per cent (1971) (Figure 15). This would be one factor in easing not only the bank loan market, but also the UFM under the circumstances with persistent excess demand for bank loans. Indeed the real UFM rate decreased markedly for the period.

Thus, as against the short-run movements, the share of bank loans in the total liabilities of the firm sector increased from 19.1 per cent (1967) to 23.2 per cent (1971) (Figure 16), and also their size doubled from 10.5 per cent of GNP (1967) to 21.1 per cent (1971) (Figure 17). But, bank loans were only one of

²³ See footnote 18.

Fig. 22. Gross and Net Financial Saving of the Household Sector: Korea, 1963-81



Source: The same as for Figure 11.

the main sources of funds to this sector. Particularly from 1967, the main source was foreign credits until 1977. Foreign credits enlarged its share from 20.2 per cent (1967) to 27.3 per cent (1971) and its size from 11.1 per cent of GNP (1967) to 24.8 per cent (1971).

Reflecting the above, the firm sector's dependency on the external funds in flow terms reached a peak 79.2 per cent (19.0 per cent of GNP) in 1969 from 41.6 per cent (2.7 per cent of GNP) in 1964. In addition to the enlarged fund availability above, reduced marginal costs of capital favored the firm sector. Indeed, the real UFM rate showed a significant decline from 70.6 per cent (1965) to 48.7 per cent (1970) (Figure 21), and its investment activity attained a maximum level for the entire period of 15.6 per cent of GNP in 1968 (Figure 18).

We can sum up the above review as follows. (a) Relatively high real deposit rates maintained from 1965 through 1971 brought about a marked continuous increase in time deposits. (b) After impact effects completed around 1967, the stock shift within the household portfolio occurred gradually and mainly between cash/demand deposits and time deposits which would reflect at least partially the ordinary process of financial development. (c) Bank loans acceleratingly increased partly due to increasing time deposits under moderated reserve requirement policy, but partly due to expansion of foreign credits and central bank loans. (d) An eased bank loan market yielded repercussions to the UFM; the real UFM rates showed a decreasing trend. (e) While the dependency of the firm sector on bank loans increased due to an eased bank loan market, that on foreign credits became dominant as an external source of funds. Accordingly,

(f) investment by the firm sector could attain the relatively high level of 11–13 per cent of GNP. (g) Coincidentally with slightly decreased levels of real deposit rates which were generated not by increased inflation, but by reduced nominal rates, the households' savings rate ceased to rise after 1969 at the level that had left the I-S gap.

Thus, after the above lengthy review of the longer-run effects of the financial reform, we find it necessary to distinguish between two aspects of the monetary policies for the period. One is, of course, the high interest rate policy, and the other is the easy monetary accommodation. These two appear to be contradictory in the context of a financially developed economy, but are not necessarily so in the context of "financial repression."

It is safe to say that the high deposit rate was successful in mobilizing savings into the organized banking system mainly in the form of time deposits in both the flow and the stock terms at least until 1969. The remarkable rise of the savings rate must have contributed significantly to price stabilization which was maintained until 1971. The gradual but significant stock shift from cash/demand deposits to time deposits would also help reducing inflation and capital costs, the latter of which seemed reflected at least partially in the declining UFM rates.

By contrast, monetary accommodation was too easy to sustain a successful stabilization path. First, since the dual system represented by the preferential sectors eroded the base of funds available for rationing to general loans, the monetary authorities had no choice but to expand domestic credits even for partial accommodation, thus heavily distorting the flow-of-funds structure. In extreme cases, those sectors that enjoyed the low preferred loan rates, made use of the resulting "reverse margins" by reinvesting funds in shorter terms in the UFM. Second, the foreign loan repayment guarantee scheme was selectively used for preferred sectors, but the guarantees were automatically provided in practice. Thus, as far as the authorities chose the dual system and the automatic guarantee scheme, they could not but lose the monetary discipline.

It follows, therefore, that we have seen the mixed results of the successful high interest rate policy and inconsistent and loose monetary accommodation for Korea, 1965–71. Actually, it has been often pointed out that the high interest rate policy generates incentives for firms to borrow abroad, thereby increasing capital inflow which devastates domestic monetary control.²⁴ We should note, however, that the high interest rate policy and the accommodative monetary policy are two separable options and not necessarily to be combined. It is a matter of choice whether to take strict monetary control through exchange controls or to take accommodative monetary policy under freer capital mobility, though the latter would be inflationary.

IV. QUALIFICATIONS

Thus far, we have reexamined the experiences of the high interest rate policy

²⁴ See McKinnon [7, Chapter 11], and Mathieson [8].

in Taiwan and Korea within the theoretical framework developed in Section II. The key element determining success or failure of those policies appears to be the private sector's savings behavior in both cases. There, the private savings was rather responsive to the real deposit rates, thereby bringing about remarkable price stabilization. As for the capital costs, however, we cannot make a definite statement about the effects of the high interest policy on them. The movements of the UFM rates seem to suggest that the capital cost declined in Taiwan for the 1950s, which is also ambiguous.

Among the major issues omitted, we make two notes here. First, though we have discussed savings mobilization quite a bit, we might be too optimistic about the function of allocation of funds of the official banking system. For example, "policy credits" for strategic sectors dominated the total bank loans for the latter half of the 1970s in Korea, unfortunately, resulted in a vast amount of unutilized capacity.

Second, we neglected aspects brought about by increased openness, though our sample period was far enough past to allow us to do so. Real and financial openness of the two countries in later years have to be taken into account in order for us to deal with more recent financial development. At any rate, financial development in Korea and Taiwan after the period investigated in the present paper will be left for future research.

REFERENCES

1. CHANDAVARKAR, A. G. "Some Aspects of Interest Rate Policies in Less Developed Economies," International Monetary Fund, *Staff Papers*, Vol. 18, No. 1 (March 1971).
2. CHIU, P. C. H. "Performance of Financial Institutions in Taiwan," in *Experiences and Lessons of Economic Development*, ed. K. T. Li and T. S. Yu (Taipei: Academia Sinica, 1982).
3. COATS, W. L., Jr., and KHATKHATE, D. R., eds. *Money and Monetary Policy in Less Developed Countries: A Survey of Issues and Evidence* (Oxford: Pargamon Press, 1980).
4. COLE, D. C., and PARK, Y. C. *Financial Development in Korea, 1945-1978*, Harvard East Asian Monographs 106 (Cambridge, Mass.: Council on East Asian Studies, Harvard University, 1983).
5. FRY, M. J. "Money and Capital or Financial Deepening in Economic Development?" *Journal of Money, Credit and Banking*, Vol. 10, No. 4 (November 1978).
6. KOHSAKA, A. "Hatten tojökoku no makuro kin'yü moderu—'kōkinri' seisaku no rironteki bunseki" [A macro-monetary model of developing countries—a theoretical analysis of the 'high interest rate policy'], *Ajia keizai*, Vol. 22, No. 9 (September 1981).
7. MCKINNON, R. I. *Money and Capital in Economic Development* (Washington, D.C.: Brookings Institution, 1973).
8. MATHIESON, D. J. "Financial Reform and Capital Flows in a Developing Economy," International Monetary Fund, *Staff Papers*, Vol. 26, No. 3 (September 1979).
9. STIGLITZ, J. E., and WEISS, A. "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 71, No. 3 (June 1981).
10. SUMMERS, L. H. "The After-Tax Rate of Return Affects Private Savings," *American Economic Review*, Vol. 74, No. 2 (May 1984).
11. TOBIN, J. "General Equilibrium Approach to Monetary Theory," *Journal of Money, Credit and Banking*, Vol. 1, No. 1 (February 1969).

12. TSIANG, S. C. "Monetary Policy of Taiwan," in *Experiences and Lessons of Economic Development*, ed. K. T. Li and T. S. Yu (Taipei: Academia Sinica, 1982).
13. VAN WIJNBERGEN, S. "Interest Rate Management in LDC's," *Journal of Monetary Economics*, Vol. 12, No. 3 (September 1983).
14. *World Development*, Special Issue, Vol. 10, No. 9 (September 1982).