CHAPTER 4
INDUSTRIAL REPRESSION, INFLATION, INTEREST RATES AND THE FOREIGN EXCHANGE RATE IN THE PHILIPPINES: 1987-1992

by

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1.INTRODUCTION

In the World Bank (1993) policy research report entitled, "The East Asian Miracle," which covers the development experience of Hong Kong, Singapore, Taiwan, Korea, Japan, and other ASEAN countries, the factor singled out as most conducive to the achievement of the miracle is the macroeconomic management by the government. Citing the importance of both domestic and foreign investments in favor of the export industries, it pointed out that good macroeconomic management is the key factor which provides a solid base for these investments and therefore assures sustainability of economic growth. The East Asian miracle enabled the breeding of a favorable economic climate for investment opportunities in these economies thus resulting in macroeconomic stabilization over the past decade.

While Thailand, Malaysia and Indonesia have been perking up investments in their industrial sector, the industrial sector in the Philippines, on the other hand, has been exposed to depressive pressures since 1987. The depressive pressures include, not only man-made and natural calamities but more importantly, market mechanisms that have been adversely affecting the country's investments in the industrial sector.

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This paper is therefore, mainly concerned with the stumbling blocks to the country's industrial development and an exploration of the mechanism underlying the impediments to progress, particularly, the industrial sector in the Philippines.

Section 2 provides an overview of the Philippine experience of economic developments in the post-Aquino Regime since 1987. In Section 3, we expound on the hypothesis that there are certain transmission mechanisms behind the depressive pressures that stalled the progress of the industrial sector from 1987 to 1992. The depressive pressure stemmed most likely from inflation and an overvaluation of the peso. These market signals tended to make investments more favorable to the service sector. Section 4 provides details about the inflation experienced in the country during the period focusing on the cost side of production such as wage rates, import goods price and others. Recognizing a high nominal rate of interest as a cost for financing the working capital in the Philippine setting, we analyze the determination of a market rate of interest in Section 5. Finally, we summarize and offer some conclusions in Section 6.

2. INDUSTRIAL REPRESSION IN THE PHILIPPINES

The Philippine economy went through a boom-and-bust cycle brought about by external shocks and the balance of payments (BOP) crisis under the Aquino Regime from 1986 to 1991. The cycle started when the gross domestic product grew by as much as 3.4 percent in 1986, after the worst postwar BOP crisis in 1983. The growth rate reached its peak with 6.8 percent in 1988 and began to taper down to 0.8 percent in 1991, two years after the most dangerous coup attempt in 1989 during the Aquino regime. In May 1992, Fidel V. Ramos was elected President. However, the country's economy remained in recession with a negative growth of real GDP of -0.3 percent in 1992.

Table 1
Percent Distribution of
Manufacturing and Services in Real Output

	1987	1988	1989	1990	1991	1992	1993
Manufacturing	40.9	41.5	41.1	41.0	40.8	40.4	39.5
Services	59.1	58.5	58.9	59.0	59.2	59.6	60.5

Sources of basic data: *1993 Philippine Statistical Yearbook*, NSCB.

During this boom-bust cycle, the service sector began to take the lead at the expense of the manufacturing sector (Table 1). The share of real output of the manufacturing sector vis-a-vis that of the service sector (excluding government services) has been gradually declining from 41.5 percent in 1988 to 39.5 percent in the third quarter of 1994. This shift from the manufacturing to services sector during this period was also confirmed by Raul V. Fabella (1994). Fabella carefully studied the data on initial paid-up capital registered at the Securities and Exchange Commission (SEC) and returns on equity for various industry groups for the top 1000 corporations from 1980 to 1990. He concluded the following:

"In the Philippines, evidence from value-added growth, returns to equity and finally, shares in initial paid-up investment shows that effective incentives have been penalizing our industry and manufacturing sectors and celebrating the non-traded goods (service) sectors. Since industry and manufacturing have always been the source of growth dynamism, sustainable growth cannot adhere to an economy that puts them at a disadvantage."

Returns to equity redounded to the benefit of the service sector more than that of the manufacturing sector from 1980 to 1990. This goes to show that the country's resources were allocated in favor of the service sector, which in turn tapered down the relative share of real output of the manufacturing sector during the same period.

Table 2
Price of Manufacturing Goods Vis-a-Vis Price of Services

	1987	1988	1989	1990	1991	1992	1993
Price	100.1	101.7	99.5	99.3	97.8	94.8	93.8

Source of basic data: *1993 Philippine Statistical Yearbook,* NSCB.

From Table 2, we can confirm the fact that the relative price moved actually in favor of nontradable goods during the period 1988 to 1994.

3. THE UNDERLYING MECHANISM CAUSING THE REPRESSION

A persistent decline since 1987 to 1994 in the price of tradable goods relative to that of non-tradable goods has been continuously discouraging domestic resource allocation in the Philippine manufacturing sector.

There are two possible root causes, namely: a) external shocks and b) market rate of foreign exchange, which brought about the decline the in relative price of tradable goods, and which in turn resulted in the country's industrial repression.

(A) The first cause, the root A in Diagram 1, is directly concerned with external shocks. Since 1984, the Philippines faced severe bank runs that lingered for a long time, lasting until 1992. The Philippine banking system is essentially vulnerable because components of its portfolio assets were dominated with highly risky assets and it faced a lack of confidence due to moral hazards committed by the bankers.* The Central Bank provided special lending facilities to those banks which faced critical liquidity problems caused by the bank runs.

Aside from the social instability which generally triggered bank runs, the Aquino regime was besieged by coup attempts at least once a year from 1987 to 1989. It was very difficult for the Aquino administration to reconcile with the recalcitrant soldiers who once played an active role in toppling down the Marcos dictatorship in 1986. Since the Aquino administration failed to succeed in the implementation of the agrarian reform, it received a lot of criticisms, some of which triggered several coup attempts which were allegedly masterminded by several political aspirants.

With these political turmoils and the vulnerability of the banking system, money was in oversupply even under the IMF-World Bank economic stabilization scheme. It was in December of 1989 when the Aquino administration was confronted with its most dangerous and serious coup attempt that wrought devastating effects on the country's economy. First, it scared off foreign direct investments (except the ongoing projects) not only in the Philippines, but elsewhere in the Asian region. Secondly, there was a fear of a massive bank run shortly after the attempted coup. The Central Bank of the Philippines injected additional reserve money to accommodate the surge of withdrawal of deposits and to allay people's fear of a bank run. The sudden increase in money supply trigerred an excess demand for nontradable and tradable goods and portfolio assets. Excess demand for portfolio investments was absorbed by an additional issuance of Treasury bills. An increase in import met a part of the excess demand for tradable goods. The rest of the demand was satisfied by an increase in market prices of tradable goods. The excess demand for non-tradable goods resulted in steeper increase in its own prices than those of tradable goods, which puffed out the rate of inflation in the ensuing years.

(B) The second root cause, identified as the root B in Diagram 1, has something to do with the country's foreign exchange market. Following Dornbusch

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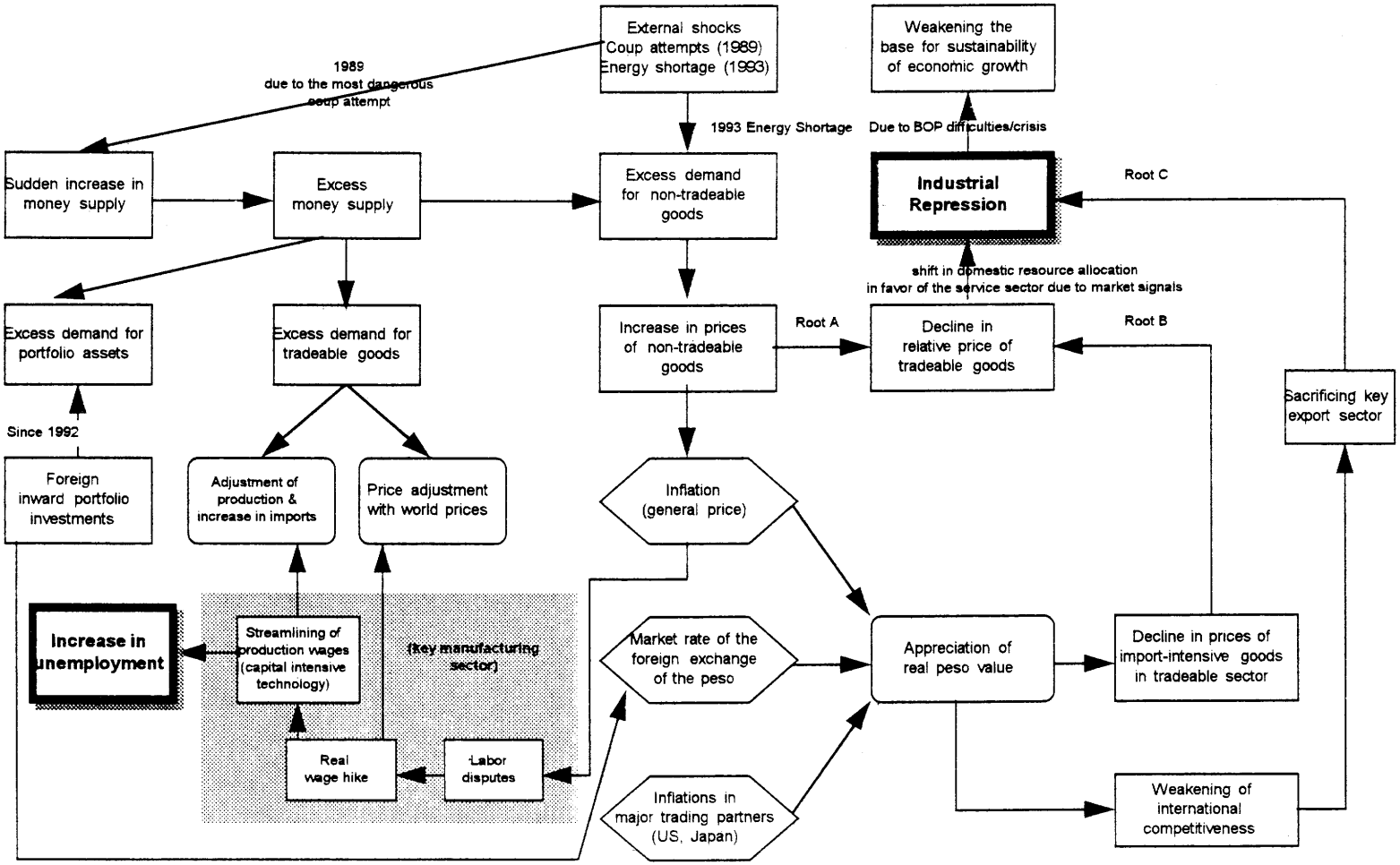
*See Sakai (1994) for a more detailed exposition.

Diagram 1. Transmission Mechanism Causing Industrial Repression and Increase in Unemployment In the Post Aquino Regime



(1980), we explore the two-sector model with imported intermediate goods. The model consists of two commodities—a tradable and a non-tradable good. In both sectors, technology is assumed to exhibit constant returns to scale with fixed coefficients. With competition and constant returns, prices of goods are equal to their average costs.

The price of the tradable good is described by the equation:

(1) $$P_T = W \cdot l_T + E \cdot P_m^* \cdot M_T + U_T \text{ (i, external shocks)}$$

where, P_T = price of the tradable good, W = nominal wage rate, l_T = labor coefficient to produce one unit of the tradable good, E = nominal market rate of foreign exchange of Peso, P_m^* = foreign currency price of imported intermediate good, m_T = the coefficient of imported intermediate input, U_T = disturbance term with nominal interest rate, i, and external shocks which affect market demand and supply.

Likewise, the price equation for the nontradable good (service) is given by:

(2) $$P_N = W \cdot l_N + E \cdot P_m^* \cdot m_N + U_N \text{ (i, external shocks)}$$

where P_N = price of the non-tradable good, l_N = labor coefficent, m_N = the coefficient of imported intermediate input, U_N = disturbance term.

Let P be the relative price of the tradable good in terms of the non-tradable good,

(3) $$P = \frac{P_T}{P_N} = \frac{W \cdot l_T + E \cdot P_m^* \cdot m_T + U_T}{W \cdot l_N + E \cdot P_m^* \cdot m_N + U_N}$$

If we normalize the prices, P_T and P_N with a general price, Q, we have the coefficient of the relative price in terms of real prices such that

$$P = \frac{P_T}{P_N} = \frac{wl_T + e \cdot m_T + \mu_T}{wl_N + e \cdot m_N + \mu_N} \qquad (3)'$$

where $w = \frac{W}{Q}$, $e = \frac{E \cdot P_m^*}{Q}$. And the notation , e, implies a real foreign exchange of the peso.

Taking the partial derivative of the relative price with respect to the real foreign exchange of the peso results in the following:

$$\frac{\partial \ln P}{\partial \ln P} = \left(\frac{e \cdot m_t}{P_T} - \frac{e \cdot m_N}{P_N} \right) Q \tag{4}$$

It is usually observed that the manufacturing sector uses more intensively imported intermediate input than the service sector does, to wit, $\frac{e \cdot m_t}{P_T} > \frac{e \cdot m_N}{P_N}$.

Hence, an appreciation of the real peso value tends to bring about a decline in the relative price of manufacturing goods which are tradable at the international markets. The decline in the relative price of manufacturing products gives rise to a substitution effect on the country's production structure in favor of non-tradable production (service sector) because of the concomitant shift in domestic resource allocation from the manufacturing sector to the service sector.

On top of the above two roots, another root is more directly relevant to depress the country's export sector:

(C) The third root cause, identified as root C in Diagram 1 is directly linked to the weakening of the country's price competitiveness in the world market due to the overvaluation of the peso.

In a nutshell, there are two possible root causes: excess money supply and the high real value of the peso, which explains the depressive situation surrounding the manufacturing sector in the Philippines. The industrial repression that resulted from these roots is due to market signals conveying the message that the service sector is more promising than manufacturing. Another root is more directly linked to losing export competitiveness due to the overvaluation of the peso.

4. INFLATION IN THE PHILIPPINES: 1987 -1992

A year after the economic turmoil triggered by the moratorium on foreign debt services in December 1983, the rate of inflation skyrocketed to the rate of 53.3 percent in the ensuing year. It had calmed down to the rate of 3.0 percent by 1986. However, as the country's economy began to gradually stabilize, overall prices of goods and services jacked up again when the rate of inflation sprang back to 7.5 percent in 1987. Since then, the state of inflation continued to worsen year after year until it reached 17.0 percent in 1991 as seen in Table 3.

Table 3
Rate of Inflation in terms of GDP Implicit Deflator

	1987	1988	1989	1990	1991	1992	1993	1994 (I-III Q)
Rate	7.5	9.7	9.0	12.9	17.0	7.8	6.9	10.0

Overall price of goods and services is decomposed into its components of agricultural goods, manufacturing goods, services and others as follows:

(5)
$$\frac{\dot{Q}}{Q}=\sum_{i}\left(\frac{\dot{q}_i}{q_\tau}+\frac{\dot{w}_i}{w_\tau}\right)\bar{w}_\tau$$

$$w_i=\frac{X_i}{\Sigma x_i}$$

$$\bar{w}_i=\frac{q_i W_i}{\sum_i q_i W_i}$$

where X_i = real output of the i_{th} goods
q_i = price of the i_{th} goods
Q = overall price of goods and services
i = agricultural goods, manufacturing goods, services and others
$\dot{q}_\tau, \dot{w}_\tau$ = change in price and weight of the i_{th} goods.

The individual items in the right-hand side of equation 5 indicate their absolute contribution to the rate of overall price increase.

The weight of sector in terms of its real output, $\frac{X_i}{\Sigma x_i}$ is given in Table 4.

Table 4
Weight of each Sector in terms of its Real Output

	1987	1988	1989	1990	1991	1992
Agriculture	0.2438	0.2358	0.2287	0.2238	0.2253	0.2251
Manufactured	0.2506	0.2571	0.2561	0.2561	0.2571	0.2535
Services	0.3621	0.3627	0.3673	0.3696	0.3732	0.3740
Others*	0.1435	0.1444	0.1479	0.1505	0.1444	0.1474

Source of basic data: *1993 Philippine Statistical Yearbook*, NSCB.
*Others include Quarrying and Mining, Electricity, Gas and Water and Government Services.

The weight for agriculture, fishery and forestry continuously decreased from 1987 to 1990 and picked up for two years in a row, 1991 and 1992.

Table 5
Percent Contribution to Inflation by Sector

	1987	1988	1989	1990	1991	1992	Accumulated
Agriculture	25.1	12.8	20.7	17.0	15.0	30.8	18.9
Manufactured	27.5	32.9	16.6	25.4	19.9	13.1	25.6
Services	32.5	32.1	38.7	39.2	50.1	42.9	40.6
Other sectors	14.9	22.2	24.0	18.4	15.0	13.2	14.9
Inflation	100.0	100.0	100.0	100.0	100.0	100.0	100.0

As observed in Table 5, the most significant contributor to the overall inflation was the price increase in services which accounted for 40.6 percent of the accumulated inflation during the period 1987-1992. The second largest contributor that puffed out the inflation was the manufacturing goods whose price hike contributed by 25.6 percent to the accumulated inflation during the period 1987-1992. 1991 saw a surprising increase in the country's inflation of 17.0 percent. The single major factor attributable to this high rate of inflation was the price hike of services which contributed 50.1 percent of the 1991 inflation.

The contribution of a price increase in each sector to the inflation is decomposed into that due to a change in the price and that due to change in its

weight. Because a change in the relative price brings about a substitution effect on the production possibility frontier, our discussion should be made with a rigorous general equilibrium approach, in principle. Decomposition results shown in Table 6, however, show that the contribution of services to inflation is attributed largely to the increase in the overall price of services which accounted for 75.0 percent to 97.8 percent of the unit amount of the contribution to the inflation during

Table 6
Decomposition of the Contribution of Service Price Hike to the Inflation

(100%)	1987	1988	1989	1990	1991	1992
Due to *P/p*	74.4	97.8	83.5	95.4	87.8	93.9
Due to *W/w*	25.6	2.2	16.5	4.6	11.2	6.1

the period. Likewise, of the price increase in manufacturing goods, explained the most part of this sector's contribution to inflation. Therefore, we can rather safely playdown the effect of change in weight on the change in overall price of goods and services, for simplicity.

A closer look at the price movement of the service sector alone indicates that the increase in service price could be traced largely to the price hike of trading services the whole sole and retail trade which contributed about 82 percent of the accumulated overall price increase in s ervices during the period. This was particularly evident during 1987 to 1989. The percent contributions of the price hike of the trading services to the overall price increase of services reached as much as 81.6 percent, 49.2 percent and 40.5 percent in 1987, 1988 and 1989 respectively, as observed in Table 7.

The contribution to inflation of ownership dwellings of real estate, did not seem to be too great, amounting to only 16.7 percent to the accumulated overall price increase in services during the period. However, it should be taken into account that the price level of real estate and house rent has remained high even before 1992, and reached its critical threshold in 1992. Those living in rented houses in Metro Manila area could no longer afford their monthly rent with their meager salaries. The contribution of the price increase in ownership of dwellings

Table 7
Percent Contribution to Overall Price Services
by Major Service Entity (100%)

	1987	1988	1989	1990	1991	1992	Accu-mulated
Rate of Change in Price of Service	2.44	3.11	3.48	5.06	8.52	3.35	25.96
(100%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transportation & Communication	6.6	6.4	0.6	18.0	21.9	9.3	13.4
Trade	31.6	49.2	40.5	28.7	29.9	16.7	31.9
Finance	18.9	13.5	17.8	14.4	16.2	11.3	15.4
Ownershi of Dwellings & Real Estate	14.3	11.9	18.7	15.6	13.1	31.3	16.7
Private Services	28.6	19.0	22.4	23.3	18.9	31.3	22.6

and real estate was as much as 31.3 percent in this year. This price hike has prompted the government to enact a bill providing for a government low-cost housing program.

Theoretically, there are two possible causes for inflation. One cause is attributable to cost-push factors such as wage rate, imported goods prices, depreciation of foreign exchange rate of the Philippine currency, market rate of interest and x-inefficiencies. We shall discuss each of these factors, except x-inefficiencies below:

4-1. Wage Rate

It is difficult to obtain time series data on the wage rate. The data series is not available from both the *Philippine Statistical Yearbook* and Annual Report, Statistical Bulletin of the Central Bank which are the most reliable data sources. However, the series of legislated wage rate is available from the National Wages Council and Productivity Commission and the series of index of average earnings of employees in key manufacturing can be obtained from the Survey of Key Manufacturing Enterprises by the National Statistics Office.

From Table 8, we can see that the rate of increase in average earnings of employees in key manufacturing enterprises was at an all-time high during the

Table 8
Average Earnings of Employees
in Key Manufacturing and Related Deflators

	1986	1987	1988	1989	1990	1991	1992
Average Earning	113.0	134.0	164.7	191.2	220.7	271.4	301.0
Deflator of Manufactures	102.4	109.7	121.0	128.5	145.4	172.5	181.9
Average Earnings	—	18.6	22.9	16.1	15.4	23.0	10.9
Deflator of Manufactures	—	7.1	10.3	6.2	13.2	18.6	5.4
Real Labor Cost	—	11.5	12.6	9.9	2.2	4.4	5.5

Source: Selected Philippine Economic Indicators, *CB Yearbook* (1992).

period 1987-1992. During the years of economic recovery from 1987 to 1989, average earnings increased by of 18.6 percent, 22.9 percent and 16.1 percent, the rate peaking to as much as 23.0 percent in 1992. In the meantime, the rate of increase in the deflator of manufacturing goods was at all times lower than the rate of increase in average earnings of employees during the same period. This resulted in increases in real labor costs of key manufacturing enterprises, which were largely absorbed through the streamlining of production lines. We therefore conclude that the price hike of manufacturing goods is largely due to the tremendous increase in wages and salaries in the sector.

Labor unionists often claim that further depreciation of the Philippine currency worsens the inflation. Thus, their wages and salaries should be adjusted upward in the wake of the depreciation of the peso vis-a-vis the dollar. Table 9 shows the behavior of the Philippine currency, the rate of inflation and the rate of change in average earnings of employees in key manufacturing enterprises.

Table 9
Peso Value, Inflation and Earnings of Employees

	1986	1987	1988	1989	1990	1991	1992
Peso Value	20.4	20.6	21.1	21.7	24.3	27.5	25.5
Rate of Change in Peso	—	2.5	2.4	2.8	12.0	13.2	-7.3
Rate of Inflation	—	7.5	9.5	9.0	12.9	17.0	7.8
Rate of Change in Earnings	—	18.6	22.9	16.1	15.4	23.0	10.9

The coefficients of the rate of change of the peso value and the rate of inflation shows a high correlation between the two. It is likely that the close correlation between the two strengthened the stand of labor unionists to resist the depreciation of the peso without a concomitant increase in their salaries and wages. The correlation coefficient between the rate of change in the peso value and rate of increase in average earnings of employees is 0.49 and that between the rate of inflation and the rate of the average earnings is 0.56. Therefore, the high rate of average earnings of employees seems achieved through their bargaining power which took advantage of the Aquino administration's posture in favor of labor unionists rather than through the appreciation of the peso.

4-2. Imported Goods Price

The rate of change in the price of imported goods is shown in Table 10.

Table 10
Rate of Change in Prices of Imported Goods

	1987	1988	1989	1990	1991	1992
Price in Peso	2.2	0.54	13.0	16.3	11.5	1.7
Price in Dollar	-0.3	-1.86	10.2	4.3	-1.7	9.0
Exchange Rate	2.5	2.4	2.8	12.0	13.2	-7.3

Source: *1993 Philippine Statistical Yearbook*, NSCB.

The increases in the home currency price of imported goods in 1990 and 1991 is traced largely to the depreciation of the value of the peso in these years. The variance of rate of change in the peso value accounts for 67 percent of the variance of rate of change in the home price of imported goods. The correlation coefficient between inflation and the increase in home price of imported goods is 0.61 which implies a rather weak relation between the two during the period.

In contrast, the correlation between the inflation and the change in the peso value is strong, as mentioned earlier. With these observations, the weak correlation between the inflation and the increase in home price of imported goods leads us to surmise that the depreciation of the peso might be traced to the high rate of inflation during the period but not the other way around. The transmission mechanism from inflation to the depreciation of the peso might be a straightforward reflection of the country's purchasing power parity before the liberalization of foreign capital account took place in 1992.

(iii) Structuralists argue that a primary determinant of output and domestic price level is the lending rate. A recent study by Joven Z. Balbosa (1992) indicates a significant decline in the real output of selected manufacturing industries which can be traced to a tight monetary policy. He also says that "the real effective exchange rate had a contractionary effect on output, but their inflationary effect could not be firmly established by the results."

Of course, inflation is may be caused by excess demand for goods and services, as we have discussed in the section on the underlying mechanisms of industrial repression. Since the excess demands for goods and services are highly correlated with an excess supply of money, we will explore the basic features of the financial markets in the country in the following section.

5. INTEREST RATES, MONEY MARKET AND FINANCIAL INTERMEDIARIES IN THE PHILIPPINES

It is well recognized in the Philippines that the 91-day Treasury Bill has played a significant role as a bellwether for the country's financial system, to date. To see how it works, we first explore the workings of the country's money market.

5-1. The Money Market and its Interest Rates

The Philippine money market consists of an interbank money market and an open money market as seen in every financially developed economies where financial markets are well liberalized. The open money market instruments include Treasury Bills, commercial papers issued by non-financial sectors, promissory notes issued by non-financial sectors, repurchase agreements by the government (often called as reverse repurchase agreements) and other government securities while the interbank money market deals with call loans with very short-term maturity of 24 hours.The volume of money market transactions is given in Table 11.

Table 11
Money Market Transaction (in million Pesos)

Year	Treasury Bill (91 days)	Commercial Paper-NF	Promissory Note-NF	Call Loan	Repurchase Agreement-G	Other Gov't Security
1987	96,562	18,422	131,085	172,785	853	37,620
1988	295,266	16,835	104,076	303,503	3,526	55,744
1989	361,141	20,983	80,651	360,852	3,076	78,289
1990	425,091	26,340	63,254	730,742	3,572	89,689
1991	544,262	35,829	81,123	850,519	22,508	109,360
1992	851,847	69,258	75,867	888,643	4,467	168,650

Source: Bangko Sentral ng Pilipinas, *1992 Annual Report Statistical Bulletin.*

The single major instrument in the open money market is the 91-day Treasury Bill. The volume of transaction of the Treasury Bill has been overwhelming from the year 1988 when its volume of transaction skyrocketed from its transaction volume of P96.6 million in 1987 to P295.3 million. Since then the rate of increase in the transactions of the Treasury Bill has spanned the range of about 18 to 28 percent until 1991. In 1992, the transactions of the Treasury Bill again soared to P851.8 million, increasing by 56.5 percent. As a result, the market share of its transactions accounted for 72.8 percent of the total transactions at the open money market.

Commercial papers issued by non-financial sectors showed an increasing tendency in the volume of its transactions while the promissory notes issued by non-financial sectors had been losing in importance at the money market instrument during the same period. The importance of the reverse repurchase agreements by the Government was limited during the same period. Other government securities with long-term maturities increased very rapidly at the rate of 40 percent and above during the period 1987-1992, except in 1990 and 1991. However, the market share of their transaction volume accounted for 14.4 percent of the total volume transacted at the open money market in 1992. Longer-term government securities are still traded within the financial sector.

On the other hand, the Call Loan has been the single instrument operating at the interbank money market up to now. The Call loan is used by bankers to meet a legal reserve requirement set for them as one of the Central Bank's instruments for monetary control.

The behavior of the money market interest rates is evident in the data shown in Table 12.

Table 12
Money Market Interest Rates

	1987	1988	1989	1990	1991*	1992*
91 day T-Bills	11.4	14.4	19.3	23.4	21.4	16.1
Commercial Papers-NF	10.4	13.5	17.0	21.2	19.4	15.7
Promissory Notes - NF	9.7	12.0	14.0	16.0	19.3	14.9
Repurchase Agreements-G	13.7	19.4	28.9	19.7	14.0	16.0
Other Gov't Securities	12.5	13.8	15.5	14.3	15.5	14.4
Interbank Call Loan	12.2	14.6	15.3	15.8	16.3	16.1

Source: Bangko Sentral ng Pilipinas Center for statistical information.
* Figures for 1991 and 1992 are calculated as annual average of the monthly figures.

Table 13
Correlation Coefficients

	TB	CP	PN	OGS	CL	RA
Treasury Bill (TB)	1	0.99	0.85	0.75	0.78	0.30
Commercial Papers (CP)		1	0.87	0.74	0.84	0.24
Promissory Notes (PN)			1	0.81	0.88	-0.05
Other Gov't Securities (OGS)				1	0.81	0.47
Call Loan (CL)					1	0.23
Repurchase Agreement (RA)						1

The correlation coefficients between the interest rates of every pair of instruments are given in Table 13.

It is clear from Table 13 that treasury bills, Commercial papers and promissory notes are considered as gross substitutes for one another. The correlation between treasury bills and commercial papers issued by non-financial sector makes them almost perfect substitutes for each other. Promissory notes, commercial papers and call loans are also loosely substitutable for one another. Promissory notes issued by the non-financial sector and call loans indicate somewhat closer correlation. However, the correlation of call loans and Treasury Bills is rather weak. These observations leads us to extrapolate that the money market in the Philippines seems to be fragmented between the interbank money market and the open money market. Commercial papers and promissory notes tend to bridge the gap between these money markets: Other government securities are closely correlated with promissory notes and call loans. Finally, reverse repurchase agreements are not correlated with other money market instruments.

Since the 91-day treasury bill is overwhelmingly the major instrument traded at the open money market, its plays a leading role in determining the market rates of interest for other instruments of the open money market. On the other hand, the call loan rate is affected by the changes in the rates of legal reserve requirements and also partly influenced by the change in treasury bill rate through transactions of the commercial papers and promissory notes which serve as gross substitute for call loans.

5-2. Financial Intermediaries and their Interest Rates

A general overview, and the structure and underlying weakness of financial intermediaries in the Philippines are fully discussed in Sakai (1994). Here, we provide only a basic picture closely related to our discussions in this paper.

Table 14
Total Deposit Liability of Banks
(in billion pesos)

	Demand Deposits	Savings Deposits	Time Deposits	Total Liabilities
1987	23.5	97.5	58.4	79.4
1988	24.1 (2.6)	127.7 (31.0)	75.0 (28.4)	226.8 (26.4)
1989	30.2 (25.3)	158.1 (23.8)	98.3 (31.1)	286.6 (26.4)
1990	34.2 (13.2)	205.0 (29.7)	111.4 (13.3)	350.6 (22.3)
1991	41.3 (20.8)	245.5 (19.8)	132.0 (18.5)	418.8 (19.5)
1992	46.0 (11.4)	302.3 (23.1)	144.6 (9.5)	492.9 (17.7)

Source: 1992 CB Annual Report, Statistical Bulletin.

Table 14 provides a picture of the total deposit liabilities of banks from 1987 to 1992.

1988 saw the volume of savings and time deposits leapfrog at the rates of 23.8 percent and 31.1 percent, respectively. The momentum for the tremendous increase in savings deposit has continued since then while that for time deposits has tapered off.

In 1992, banks' total deposit liabilities consisted of 61.3 percent savings deposits, 29.3 percent of time deposits and 9.4 percent of demand deposits.

A picture of the assets of banks is found in Table 15. An average of 76.0 percent of banks' assets was accumulated through loans and advances during the period 1987 to 1992. An average of 90.0 percent of loans and advances was due to lending to meet the financial needs of the private sector during the same period. The banks also earned income from investments in Philippine national government securities which accounted for an annual average of 19.3 percent of the total assets of deposit money banks during the period.

From Table 16, it is clear that the deposit money banks play a dominant role in generating financial assets and receiving financial liabilities, while the specialized government banks take quite a limited part in the financial activities. Commercial banks such as the Philippine National Bank and the Land Bank of the Philippines, take an overwhelming active part as a financial intermediary in the country. The bellwether in determining the market rates of interest on lendings and deposits is of course the commercial bankers. The commercial bankers are the ones who determine the market rates which reflects the financial market conditions of the demand for and supply of money. Thrift and rural banks follow suit as they apply to their patronage the market rates of interest quoted by the commercial banks.

Table 15
Gross Domestic Credits of Deposit Money Banks
(in billion pesos)

	Domestic Securities				Loans and Advances		
	Govern-ment	Central Banks	Private	Sub-Total	Govern-ment	Private	Sub Total
1987	23.4	0.4	7.0	30.8	14.4	105.6	120.0
1988	36.3	0.6	6.4	43.3	15.7	126.1	141.8
1989	51.7	1.1	7.3	60.1	18.2	155.8	174.0
1990	55.9	0.8	9.0	65.7	22.8	203.4	226.2
1991	56.9	19.6	11.1	87.6	24.5	218.5	243.0
1992	82.1	3.8	14.0	99.9	24.1	272.5	296.6

Source: *1992 CB Annual Report,* Statistical Bulletin.

Table 16
Percent Distribution of Assets and Liabilities
by type of Banking Institution (100%)

	1987	1988	1989	1990	1991	1992
Total Assets (billion pesos)	330.3	392.1	479.0	609.7	691.1	777.7
Commercial Banks (%)	87.0	87.3	87.8	88.5	86.7	85.0
Specialized Gov't Banks (%)	4.1	3.5	2.8	3.1	4.1	5.2
Thrift & Rural Banks (%)	8.9	9.2	9.4	8.4	9.2	9.8
Total Liabilities (billion pesos)	284.7	337.8	417.7	532.2	597.6	667.3
Commercial Banks (%)	88.3	88.7	89.3	89.8	87.5	85.6
Specialized Gov't Banks (%)	2.7	2.0	1.3	1.9	3.4	4.6
Thrift & Rural Banks (%)	9.0	9.3	9.4	8.3	9.1	9.8

Source: Calculated from the data in Selected Philippine Economic Indicators, *1992 Yearbook.*

The loans outstanding of commercial banks by maturity, in December 1992, posted a total worth of P256.3 billion comprising of P163.5 billion short-term loans, P35.6 billion demand loans and P57.2 billion medium and long term loans. This means that the short-term loans including the demand loans account for 77.7 percent of the total loans outstanding held by the commercial banks at the end of 1992. The average percentage contribution of the short-term loans to the total loans outstanding was about 76.2 percent during the period 1987-1992, while

demand and savings deposits accounted for an average of 68.3 percent of the total deposit liabilities of deposit money banks during the same period. This implies that the commercial banks took an acute lending position to minimize a risk from a mismatch of term transformation. They channeled off a part of the short-term deposits with them for the purpose of investing it in the securities.

Total 17
Markets Rates of Interests on Lendings and Deposits

	1987	1988	1989	1990	1991	1992
Savings Deposits	4.5	4.1	5.9	10.7	10.7	9.4
Time Deposits (all Maturities)	9.8	13.4	17.0	20.2	18.5	14.0
Lending Rate (all Maturities)	13.3	16.0	19.5	24.3	22.7	18.3

Source: Selected Philippine Economic Indicators, *1992 Yearbook.*

Data on market rates of interest on lendings and deposits are given in Table 17. The movement patterns of time deposits and short-term lending rates appear to be quite similar while savings deposit rates move in a slightly different pattern from the movement of time deposit rate. We verify the relationship of the movements of the three interest rates through correlation coefficients shown in Table 18.

Table 18
Correlation Coefficients between Interest Rates

	SD	TD	LR	TB
Savings Deposits (SD)	1	0.75	0.86	0.79
Time Deposits (TD)		1	0.98	0.99
Lendings Rate (LR)			1	0.96
91-day Treasury Bill (TB)				1

The interest rate on time deposits is closely linked to the interest rate on short-term lendings but less closely related to savings deposit rate, while the savings deposit rate is somewhat closely correlated with the lending rate. Therefore, roughly speaking, the interest rates on savings and time deposits tend to be linked to the lending rate. These relationships lead us to the hypothesis that the lending market is linked to the open money market through the lending rate which is determined with reference to the TB rate, and that deposit markets are also linked to the lending market through the determination of the savings deposit rate with reference to the lending rate. It is worthy to note that the time deposit rate is almost perfectly linked to the TB rate while the linkage between savings deposit rate and

the TB rate is weaker than the linkage between savings deposit rate and lending rate. It is a well known fact among bankers in the Philippines that savings deposit rates differ from bank to bank. Different banks' liquidity positions entail a different offering of savings deposit rate to its patronage. This is quite different from the Japanese banking practice where the bankers follow the savings deposit rates quoted by the Banker's Association of Japan before Japan's financial liberalization in the late 1980s.

5-3. TB Rate and the Euro-dollar Rate

Table 19 provides a profile of the movement in foreign portfolio investments in government securities of the Philippines.

Table 19
Foreign Portfolio Investment in Philippine Government Securities
(in US million dollars)

	Total	Hong Kong	United Kingdom	United States	Sub-Total	(100%)
1987	111.41	100.87	1.91	5.64	108.41	97.3
1988	63.27	39.64	3.07	14.56	57.27	90.5
1989	436.80	306.46	18.30	32.75	357.26	81.9
1990	346.45	240.07	12.27	33.75	357.26	81.8
1991	298.02	126.97	39.34	60.80	221.11	76.2
1992	727.12	196.51	198.78	165.54	560.83	77.1
1993	1,491.36	363.73	356.35	482.23	1,202.31	80.6

Source: Bangko Sentral ng Pilipinas.

Hong Kong was the single largest portfolio investor in the country's government securities from 1987 to 1991. The portfolio investment made by Hong Kong, the United Kingdom and the United States of America accounts for more than 76.0 percent of the total foreign portfolio investments in government securities during the same period. The year 1992 saw a dramatic increase in investments of the United Kingdom and the United States of America, registering a surprisingly high rate of 405.3 percent and 172.3 percent, respectively. On the other hand, the rate of increase in Hong Kong's portfolio investment was posted at 54.8 percent in the same year. These massive foreign capital inflows occurred in the wake of the liberalization of foreign capital account in the Philippines in 1992. A deluge of foreign capital investment in government securities from these three countries reached a high of 85.1 percent, 79.3 percent and 191.3 percent from Hong Kong, the United Kingdom and the United States, respectively since 1993 and continues

to do so to date. The foreign capital inflow into the government securities market from these three countries alone accounted for 80.6 percent of the total foreign portfolio investments in the Philippines in 1993.

The LIBOR (3 month) and the US Treasury Bill rate, are almost perfectly linked with each other as indicated by the correlation coefficient of 0.996 during the period 1987-1994 (First-Quarter).

Table 20 gives us the interest rates for the US T-bill, Hong kong prime rate and the Philippine T-bill.

The correlation coefficients between these interest rates are also given in Table 21.

Table 20
Interest Rates of US, HK and the Philippines

	1987	1988	1989	1990	1991
US (TB)	5.8	6.7	8.1	7.5	5.4
Hong Kong	6.6	8.0	10.5	10.5	9.4
Philippines (TB)	11.5	14.7	18.7	23.7	21.5

Source:*International Financial Statistics (IFS)*, August 1994.
*Hong Kong prime rate in Selected Philippine Economic Indicators, *1992 Yearbook.*

Table 21
Correlation Coefficients Calculated from Table 20

	US	Hong Kong	Philippines
US (TB)	1	0.65	0.31
Hong Kong		1	0.70
Philippines			1

Before the liberalization of foreign capital account in the Philippines, the Philippine TB rate tended to be influenced by the Hong Kong prime rate to a certain limited extent, while the US TB rate had nothing to do with the Philippine TB rate. This implies that the Central Bank was able to influence the market rate of 91-day Treasury bills at its own discretion without much disturbance from the international money market until 1991.

From the onset of the liberalization of foreign capital account in 1992 onward, data on interest rates have become available from the IMF *International Financial Statistics.* (see Table 22.)

The data from Table 22 provide us with information on the relationship between the Philippine TB rate and the US T-bill rate as given by the regression equation below:

$$\text{RP TB} = \underset{(-0.1272)}{-1.1636} + \underset{(1.6969)}{4.522}\,(\text{US TB}) \qquad R^2 = 0.29$$

$$\ln \text{RP TB} = \underset{-2.0232)}{-0.232}\,.\,\ln \text{US TB} + \underset{(1.2514)}{3.4459}\,(\ln \dot{E}/E) \qquad R^2 = 0.47$$

(Note): 1. $\dot{E}/E$ change in nominal foreign exchange
2. t-values in the parenthesis

Table 22
Quarterly Data of Interest Rates in the US and the Philippines

	1992				1993				1994
	I	II	III	IV	I	II	III	IV	I
US (TB)	3.91	3.72	3.13	3.03	3.31	3.26	3.33	3.38	3.71
Philippines (TB)	18.63	15.01	15.61	14.76	13.33	10.87	10.9	14.7	15.09

Source: IFS, August 1994.

Expectedly, one cannot obtain any stable estimates for the equation of interest rate arbitration because the equation includes expectations about the US TB rates and foreign exchange rate. These expectations are very skittish and sensitive to various external shocks which are usually unpredictable. The coefficient of determination is very small due to misspecifications involved in the estimation. However, the estimate of the coefficient of the US TB rate is more or less statistically significant at the 5 percent level. The up and down movements for these two variables coincide with each other in 6 times over the period of the first quarter of 1992 and the first quarter of 1994 which accounts for the coincidence of the up and down movements of 75 percent for the whole period. And it would hardly be believed that these coincidences occurred by sheer chance. Therefore, we tentatively conclude that the Philippine TB rate is loosely pegged on the Euro-dollar rate. The interest rate spread between the two is expected to narrow down in the future to the extent that international optimism about the Philippine economy continues. The

Philippine TB rate would then become more closely pegged to the Euro-dollar rate in the coming years. And this tendency could be strengthened by the financial liberalization to be implemented in 1995 which would allow 10 foreign banks to enter the country's financial market.

6. MONEY SUPPLY AND INFLATION

Mismanagement of the money supply is usually blamed for inflation, going by the different schools of thought in modern economics such as monetarist, new-classic, and Keynesian. The quantity theory of money is also assumed to be applicable to our two-sector model consisting of tradable and non-tradable goods, as expounded in the foregoing section with the hypothesis of the underlying mechanism for industrial repression in the Philippines.

6-1. Reserve Money

Reserve money is directly controllable by the Central Bank to meet a target for money supply. Reserve money is identically equal to the sum of net foreign assets of the CB and net domestic assets of the CB, as shown in the following:

Reserve Money = Net Domestic Assets (Credits) of the CB + Net Foreign Assets of the CB.

The breakdown of reserve money into different components is given in Table 23.

The fear of a balance of payments (BOP) crisis prevailed in 1990 because the Net International Reserves (NIR) of the CB decreased from P3.6 billion in 1989 to P1.9 billion in 1990. Since then, however the NIR has increased very rapidly, reaching P58.7 billion in 1991 and increasing to P94.0 billion in 1992. This was mainly due to an immense increase in the Gross International Reserves (GIR) of the CB. The GIR posted an 112.5 percent increase, attaining the level of P122.4 billion in 1991 from P57.4 billion in the preceding year. The GIR continued to increase further to the level of P133.4 billion in 1992. These resulted in the dramatic increase in net foreign assets of the CB in 1991 and 1992, as seen in Table 23.

In the meantime, the credit provided by the Central Bank to the national government declined persistently from P45.7 billion in 1987 to P21.4 billion in 1992, while the national government deposits with the CB climbed up from P42.5 billion in 1987 to P75.3 billion in 1991. In 1992, the national government deposits with the CB surprisingly shot up to P137.8 billion at the rate of 83.0 percent. The government deposits with the CB their tax collections and proceeds from the sales of government securities. This sudden and immense increase in government

Table 23
Reserve Money (in Billion Pesos)

	1987	1988	1989	1990	1991	1992
Reserve money	57.7	67.3	92.9	108.7	129.4	144.8
Net Foreign Assets (i + ii + iii)	-132.3	-121.6	-108.2	-140.5	-68.5	45.0
i Net international reserve (A + B)	-12.3	-8.0	3.6	1.9	58.7	94.0
A. Gross international reserve	41.9	45.0	53.2	57.6	122.4	133.4
B. Short-term liabilities	-54.2	-53.0	-49.6	-55.7	-63.7	-39.4
ii. Medium- and long-term foreign liabilities	-120.0	-113.6	-111.8	-142.4	-127.2	-55.9
iii. Foreign exchange receivable	0.0	0.0	0.0	0.0	0.0	6.9
Net Domestic Assets Assets (i + ii + iii)	190.0	188.9	201.1	249.2	197.9	99.8
i. Net credit to national government (A + B)	3.2	-17.3	-29.5	-27.5	-43.2	-116.4
A. Credit to national government	45.7	40.9	40.0	39.8	32.1	21.4
B. National government deposit with CB	-42.5	-58.2	-69.5	-67.3	-75.3	-137.8
ii. Assistance to financial sector (A + B)	15.4	15.0	15.0	14.8	14.2	13.9
A. Overdrafts	12.8	12.9	13.0	13.0	12.7	12.8
B. Others*	2.6	2.1	2.0	1.8	1.5	1.1
iii. Net credit to non-government institutions*	152.2	170.5	189.0	232.4	242.4	261.4
iv. Regular discounting	5.1	5.1	5.8	8.1	8.4	4.7
v. CB bills	-0.6	-3.4	-3.6	-1.9	-40.7	-67.5
vi. Reverse repurchase**1	-10.6	-6.3	-0.9	-2.0	-8.9	-22.1
vii. Forward cover difference**2	25.3	25.3	25.3	25.3	25.7	25.8

Source: Selected Philippine Economic Indicators, *1992 Yearbook*.

* Calculated by the author.

**1 Reverse repurchase agreement is the CB borrowings from domestic banks using government securities as collateral. Upon maturity the CB repurchases the securities from the bank at a market rate. The maturity for very short-term agreement comes after a day or two, or after two weeks.

**2 Refer to Sakai (1993).

deposits with the CB was obviously due to the mopping up operation of liquidity by the CB using the Treasury bills, which greatly enlarged the TB market in 1992. Due to the liberalization of foreign capital account in the same year, the enlargement of the scale of the TB market in the Philippines resulted in a wider basis for the rush of foreign portfolio investments.

The net credit to government and non-government institutions mainly brought about the IMF restriction on availability of domestic credit in the Philippines under a financial programming framework with consent between the IMF and the Philippine government. Thus, the net credit to non-government institutions was fairly restrained from rapidly increasing during the period 1987-1992, except in 1990.

Facing a BOP crisis in 1990, the CB tapped foreign currencies to the Philippines through a borrowing medium and long term foreign money to as much as P142.4 billion, which reduced net foreign assets by 29.9 percent in the same year. Offsetting the contracted effect on money supply entailed the expansion of domestic credit availability to non-government institutions by 23.0 percent in that year by the CB. However, the GIR began to increase drastically from 1991, registering a positive value of P45.0 billion in 1992 after being in the red by P68.5 billion in 1991. The rate of increase in net foreign assets of the CB posted 51.2 percent and 165.7 percent, in 1991 and 1992, respectively. These expansionary factors for money supply were offset by an IMF—approved open market operation with the Treasury and Central Bank bills as money market instruments. In fact, the CB bills increased from P1.9 billion in 1990 to P40.7 billion in 1991 and continued to increase to the level of P67.5 billion in 1992 as observed in Table 22. The 1989 increase in reserve money at the rate of 38.0 percent was due to external shocks caused by the most dangerous coup attempt in December of 1989. The increment of reserve money in that year amounted to as much as P25.6 billion of which the increment of net foreign asset comprised as much as P12.2 billion and that of net domestic credit P13.6 billion. The increment of credit to non-government institutions which amounted to as much as P18.5 billion, should have provided a leverage

Table 24
Rates of Changes in Reserve Money, Net Foreign Assets and Net Domestic Assets

	1988	1989	1990	1991	1992
Reserve Money (%)	16.6	38.0	17.0	19.0	11.9
Net Foreign Assets (%)	8.1	11.0	-29.9	51.2	165.7
Net Domestic Assets (%)	-0.6	6.5	23.9	-20.6	-49.6

to the expansionary pressure on money increase at the rate of 27.5 percent in 1989. This means that the increase in money supply in 1989 shows that the CB cannot actively intervene in the market, thus, the most vulnerable financial institutions suffered massive bank runs.

The major function of the Central Bank is to achieve stability of the country's economy through its control over the money supply and the stability of the variables of macroeconomic stability, particularly, inflation.

To see this, we should first examine if there exists pairwise any stable relationship between Reserve Money (RM), Highpowered Money (HM), M1, M2, and M3.

Identical relationships between them are shown below:

HM	=	RM - Cash in Vaults of the CB
	=	Currency in Circulation + Bank's Deposits with the CB
M1	=	Currency in Circulation + Demand Deposits = Narrow Money
M2	=	M1 + Quasi Money
M3	=	M2 + Deposit Substitutes = Domestic Liquidity

where Quasi money = savings and time deposits.

A set of pairwise correlation coefficients between M1, M2, M3 and controllable monetary aggregates (RM, HM) is given in Table 25.

Table 25
RM, HM, M1, M2 and M3
(in Billion pesos)

	1987	1988	1989	1990	1991	1992
RM	57.7	67.3	92.9	108.7	126.4	144.8
HM*	51.2	59.8	85.6	99.7	119.5	130.1
M1	52.4	59.7	78.5	89.0	101.4	112.1
M2*	158.3	195.9	251.1	297.3	344.1	381.9
M3	161.8	198.4	253.9	300.5	347.1	385.4

Source: Selected Philippine Economic Indicators, *1992 Yearbook.*
* Calculated by the author.
A set of pairwise correlation coefficients between M1, M2, M3 and controllable monetary aggregates. (RM, HM) is given in Table 24.

The correlation coefficients between monetary aggregates indicate that high-powered money is almost perfectly correlated with Reserve Money, M1, M2 and M3 during the period. Since the highpowered money (HM) is directly controllable by the CB, the almost perfect correlations of M1, M2 and M3 with the HM implies the controlability of these three monetary aggregates through manipulation of the HM as a policy instrument by the CB.

Under the economic stabilization program during the period, IMF suggested that the CB in the Philippines must use M3 as a target variable to achieve the country's macroeconomic stabilization. M.S. Gochoco (1993) examined the relationships between M1, M2, M3 and real income , the 91-day TB rate, and the nominal exchange rate using the Engle-Granger cointegration method. The results she obtained revealed that only M1 is cointegrated with real income, the 91-day TB rate, and the nominal exchange rate taken altogether. Hence, her conclusion is that M1 is the best choice for a target variable. The weakness of time series analysis arises from the requirement of a large size of the statistical samples, which often makes the time series analysis difficult, particularly for developing countries like the Philippines. With her findings, we tentatively assume that as far as inflation is more relevant to macroeconomic stabilization, M3 tends to be a suitable target variable.

The estimated demand function of M2 is found in Gochoco's study (1993), which is replicated below:

$$\ln \frac{M2}{Q} = -6.645 + 1.806\, l ny - 0.035 \ln i + 0.017 \ln E$$

(Dickey-Fuller Test = -2.188; estimates of coefficients are all statistically significant at 1 percent, where Q = general level, y = real output, i = nominal interest rate and E = nominal foreign exchange rate.)

These estimates give us the following:

$$\frac{\dot{Q}}{Q} = \frac{\dot{M}2}{M2} - \left(1.806\,\frac{\dot{y}}{y} - 0.035\,\frac{\dot{i}}{i} + 0.017\,\frac{\dot{E}}{E}\right) + \textit{Random Disturbances}$$

Since the correlation coefficient between M2 and M3 is equal to unity, we can safely use M2 or M3 interchangeably for the purpose of this study. It would be worthy to note that, *ceteris paribus*, a one percent increase in the nominal rate of interest arising from exogenous external shock tends to puff out the rate of inflation by 0.035 percent while a one percent increase in nominal foreign exchange rate

tends to reduce the rate of inflation by 0.017 percent. The latter is somewhat peculiar though. If money supply in terms of M2 would be equilibriated to the demand for money, the rate of inflation should be zero. In other words, the right-hand side of the differential equation above implies an excess suply of money bringing about an excess demand for goods and services which in turn results in inflation during the period. Therefore, we tentatively conclude that the inflation during the period could be traced largely to excess money supply rather than to the high rate of nominal interest and foreign exchange depreciation.

7. SUMMARY AND CONCLUSIONS

(i) The Philippine economy went through a boom-and-bust cycle brought about by external shocks and the BOP crisis under the Aquino regime from 1986 to 1991. Besides the boom-bust cycle, a remarkable feature concomitant with the cycle is "industrial repression" whereby a relative share of real output of manufactured to that of real output of services declined persistently from 1988 to 1992.

(ii) The industrial repression took place because the relative price of the manufactured goods in terms of services (nontradable) declined persistently during the period. These market signals led domestic investors to place their money into the service sector. Thus, the domestic resource allocation was made in favor of the service sector. The evidence for this shift in resource allocation during the period is also confirmed by Raul V. Fabella (1994).

(iii) The underlying mechanism causing industrial repression was hypothesized and represented in Diagram 1. There are three possible root causes that exert a depressive pressure on the country's industrial dynamics. Two are directly linked to the decline in the relative price of manufacturing goods. The root A in diagram 1 is the transmission from external shocks to inflation. The country's inflation was largely traced to the price increase in services due to excess supply of money, while the price increase in the manufacturing goods was largely traced to a higher increase in real wage earnings in key manufacturing enterprises which was brought about mainly by the Aquino administration's wage policy in favor of labor unions under the inflationary situations. Root B in the diagram is linked to the tendency of the overvaluation of the peso vis-a-vis the dollar. The appreciation of the real foreign exchange of the peso gave rise to the decrease in the relative price of the manufacturing goods since the production of manufactured uses imported intermediate input more intensively than the services do. This mechanism is understood as the straightforward application of the Stolper-Samuelson theory.

Root C is related to the direct and immediate effect of the appreciation of the real value of the peso on the country's export sector.

(iv) There is an the argument about the country's inflation. Joseph Y. Lim (1987), using structuralist approach, argues that the high nominal rate of interest is the main culprit adversely affecting inflation by jacking jerking up the cost for financing working capital. One could not play down this possibility to be the causal factor of inflation in the Philippine setting. Therefore, it necessitates a further study of the financial markets in the country and the likelihood of this cost-push effect on the country's inflation.

(v) The 91-day TB rate is the bellwether to determine market rates of interests such as short-term lending rates and other interest rates of the open money market instruments. There appears to be a fragmentation between the open money market and the interbank money market. The gap between the two markets seems to be partly bridged by transactions of promissory notes and commercial papers which are found to be close substitutes for the 91-day TB and weak substitutes for the Call Loan. The year 1992 saw the liberalization of foreign capital account. Since then, sizeable foreign capital flowed into the country's money market, the 91-day TB market in particular. The foreign portfolio investments were made by Hong Kong, the United Kingdom, and the USA which accounted for 80 percent of the total foreign portfolio investments in the Philippines in 1993.

Provided that the structuralists' hypothesis is true, if the nominal rate of interest on the Philippine TB with 91-day maturity is the main factor affecting the country's inflation, the question arises as to what extent the Bangko Sentral ng Pilipinas (BSP) could manipulate the rate of inflation against the increase in US TB rate. The answer to this question merits a study in the future.

(vii) Gochoco (1992) estimated a stable demand function for money based on the samples with quarterly data from 1982 to 1991. As far as this sample period is concerned, it is more likely that the excess supply of money was the main culprit that caused the high rate of inflation in the Philippines. Gochoco's findings seem to be consistent with our hypothesis depicted in Diagram 1.

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