

# CHAPTER I

## MACROECONOMIC STRUCTURE AND ECONOMIC GROWTH IN THE PHILIPPINES

by

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### 1. MACROECONOMIC STRUCTURES OF THE PHILIPPINE ECONOMY

A country's economy has several facets to characterize its economic structures, based upon which we could make a comparative study with other countries' economies.

A conventional macroeconomic approach is to observe the economy from the viewpoint of macroeconomic structures. Macroeconomic structures consist of three aspects, namely, the functional distribution of national income, gross national expenditures, and production by industrial sectors.

We shall explore the production side of the economy in a later section as we attempt to explain the level of economic growth achieved. We discuss in this section both the structures of national income and national expenditures.

The figures in Table 1 indicate the percentage share for each item of national income evaluated at factor cost. The distribution is broken down into: compensation of employees, entrepreneurial and property income of persons, and corporate income before tax. However, the figures for compensation of employees are not separately observable from those for entrepreneurial and property income of persons during most of the period 1946-1986, except the period 1971-1974 during which both data are made available. The period 1946-1955 saw

**Table 1**  
**Share Distribution of Components**  
**of Gross National Income**  
**(Percent)**

	Compensation of Employees and Property Income	Corporate Income
1946	98.7	1.2
1950	98.0	1.8
1955	96.2	3.6
1960	96.1	3.7
1965	96.2	3.6
1970	94.3	5.5
1975	93.6	5.7
1980	90.5	8.4
1986	93.8	4.9

Source: *Philippine Statistical Yearbook (PSY)*, 1978 and 1989.

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a declining trend in the share of the sum of compensation of employees and entrepreneurial and property income of persons, and during the succeeding period of 1955-1965, the share of these items leveled off. A stable pattern of contraction in its share has been observed from 1965 to 1980. The share of these two appears within the range of 90-98.7 percent.

A remarkable feature of income distribution is shown in Table 2 where the share of compensation of employees is less than that of entrepreneurial and property income of persons and the former's share has been continuously decreasing from 41.1 percent in 1971 to 37.6 percent in 1974. From the evidence on the functional distribution of national income shown in Tables 1 and 2, it may not be hard to surmise that the size distribution of income is severely distorted in favor of a few rich.

**Table 2**  
**Share Distribution of Compensation of Employees**  
**and Entrepreneurial Property Income**  
**(Percent)**

	Compensation of Employees	Entrepreneurial Property Income
1971	41.1	54.8
1972	40.6	55.2
1973	38.4	54.3
1974	37.6	56.0

Source: PSY, 1978, *op. cit.*

Given the badly skewed distribution of income in the Philippines, it is interesting to see how personal savings have behaved over the past four decades. The figures in Table 3 are average rates of personal savings from disposable income per annum. One would be astounded at the evidence that the rate of personal savings has improved very little — by only 2 percent — over the three decades from the 1950s to 1970s. Due to the political and economic crises that occurred in 1983, the average rate of personal savings has plunged into a miserably meager size of 3.3 percent for the 1980s. The estimates for the rates of savings from

**Table 3**  
**Average Rates of Personal Savings**  
**(Percent)**

	Average Rates of Personal Savings* from Disposable Income	Estimates of Average** Rates of Savings from Entrepreneurial Property Income
1950-1959	9.5	19.0
1960-1969	10.4	21.0
1970-1979	11.1	20.0
1980-1988	3.3	

\*Personal savings include savings from property income.

\*\*Estimated based on the assumptions that property income accounts for 50 percent, 50 percent and 55 percent of national incomes generated in the 1950s, 1960s, and 1970s, respectively, and that all savings are made from property income only.

Source: Calculated from National Account Statistics in PSY, 1978-1989.

entrepreneurial and property income of persons are obtained based upon a bold assumption that all savings are made from entrepreneurial and property income of persons and that these income shares are 50 percent both the 1950s and 1960s and 55 percent for the 1970s. The estimates reveal that the savings rate of the rich families was at most only 27 percent during these periods. This means that a sharply skewed income distribution in favor of the wealthy families did not help much to provide the Philippines with a needed source of funds to finance investment for the rapid economic growth of the country.

We proceed to the next aspect of macroeconomic structures, that is, the structure of gross national expenditures. Table 4 shows changes in the percentage share of each component of gross national expenditures. From 1950 to 1960, the structure did not show any significant change in the share of each component until 1965 when a change in the structure appeared for the first time. The share of gross domestic capital formation jumped up to the level of 20 percent in 1965 from that of 17 percent in 1960. The share of personal consumption expenditure went down from 78.3 percent in 1960 to 74.1 percent in 1970, while the shares of other components remained almost the same as those in the 1950s. In 1975, one year after the oil price hike, the share of gross domestic capital formation increased again from 21.7 percent in 1970 to 26.8 percent in 1975 and had an upward trend until 1980 before it started going down beginning 1983. The share of personal consumption expenditure

**Table 4**  
**Share Distribution of Expenditure Component to Gross National Product at Constant 1972 Prices**

	1950	1955	1960	1965	1970	1975	1980	1983	1988
1. Personal consumption expenditure	77.3	81.9	78.3	76.7	74.1	68.1	64.1	66.3	73.8
2. General government consumption expenditure	9.9	8.6	8.3	8.0	8.5	10.6	9.0	8.9	9.7
3. Gross domestic capital formation	16.1	16.2	17.2	21.1	21.7	26.8	28.8	25.5	15.5
4. Export of goods and non-factor services	21.1	22.4	16.9	22.2	17.5	15.0	19.2	19.5	26.4
5. Import of goods and non-factor services	26.6	27.4	20.7	19.8	20.0	19.4	20.9	22.1	27.1

Source: Calculated from data in *Philippine Statistical Yearbook*, 1978, 1989.

contracted from 74.1 percent in 1970 to 64.1 percent in 1980. The export share also shrank from 17.5 percent in 1970 to 15 percent in 1975. The year 1983 saw a serious dollar shortage due to a huge short-term capital flight which led the Philippines to a foreign debt crisis.

The Philippines was able to weather the effects of the first oil shock relatively well. However, the second oil price hike came in 1979, after which gross fixed capital formation became inactive as shown in Table 5. The years 1981-1982 even saw a negative growth of exports due to the prolonged world recession. Thus, the Philippines' output growth had been deteriorating since 1979 until 1985. When the Aquino government came into power in 1986, the country's economy started to recover and posted GNP growth rates of 5.9 percent and 6.7 percent in 1987 and 1988, respectively. The shares of exports increased dramatically from a

**Table 5**  
**Growth Performance of Gross National Product by Expenditure Share, 1972 to 1988**  
(1972 Constant Prices)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Personal consumption expenditure	5.1	5.3	5.2	4.8	4.5	4.0	3.1	2.9	1.0	0.0	0.9	5.7	6.0
2. General government expenditure	2.1	0.9	3.0	3.7	3.7	3.7	6.4	-3.9	-6.1	-0.4	-0.4	7.2	11.3
3. Gross domestic capital formation	15.4	0.0	8.6	11.2	4.4	2.3	-3.5	-4.4	-43.4	-21.7	-9.1	30.3	19.2
a) Fixed capital formation	15.0	1.9	8.4	11.7	6.9	3.5	0.6	-2.5	-32.5	-24.2	-15.0	15.7	17.4
b) Increase in stock	16.9	-8.9	9.1	8.5	-8.3	-5.0	-29.8	-21.8	-168.4	-49.1	107.7	2,752.0	33.9
4. Export of goods and non-factor services	18.6	16.5	3.8	6.8	13.4	11.6	-2.6	10.2	8.2	-7.2	21.8	-1.3	14.8
5. Less: Import of goods and non-factor services	1.0	6.4	12.9	16.4	3.3	-2.7	3.5	11.5	-16.4	-23.0	12.9	26.5	36.
6. Expenditures on gross national product	7.4	6.3	5.8	6.9	5.0	3.4	1.9	1.1	-7.1	-4.1	1.9	5.9	6.

Source: PSY, 1989

level below 20 percent to 26.4 percent in 1988. A structural change in exports is evident from changes in the percentage share of each export goods as shown in Table 6. After the second oil shock, the share of primary commodity exports to total exports was reduced drastically in 1980 and has decreased continuously over successive years until 1988, while the share of other manufactures has been sharply increasing from 38.0 percent in 1980 to 66.7 percent in 1988. Thus, the major activity in foreign exchange earnings shifted from the primary commodity sector to the manufacturing sector in the 1980s.

**Table 6**  
**Percentage Shares of Export Components to Total Exports**

	1965	1970	1975	1980	1983	1988
Primary commodities	94.2	89.2	82.6	59.9	46.1	28.7
Chemical	0.3	0.4	0.9	1.5	1.7	3.6
Textile	0.6	0.4	0.9	0.6	0.5	1.0
Other manufactures	4.9	10.0	15.6	38.0	51.7	66.7

Source: PSY, 1978 and 1989.

## 2. INVESTMENT-SAVINGS GAP

The most important contributor to the nation's savings was personal savings before it was superseded by corporate savings in 1970. As pointed out in the preceding section, the average rate of personal savings improved only by 1.6 percent during the three decades of the 1950s to 1970s. However, with the progress of economic development and capital accumulation, the importance of corporate savings superseded that of personal savings to provide a source of funds for domestic investment in 1970, owing to a great increase in capital consumption allowance in particular. Table 7 indicates the ups and downs of the sectors' contribution to the nation's savings.

**Table 7**  
**Percentage Distribution of Savings**

	1950	1955	1960	1965	1970	1975	1980	1983	1988
1. Personal savings	75.7	43.9	46.0	54.7	32.9	34.9	23.2	4.7	31.5
2. General government savings	(0.8)	12.6	13.1	4.0	11.4	12.7	19.4	21.9	(4.0)
3. Corporate savings and capital consumption allowance	25.3	43.5	40.9	41.3	54.8	52.4	57.4	73.4	72.4
a) Corporate savings	3.0	11.0	7.6	7.3	12.9	11.7	21.3	21.5	18.3
b) Capital consumption allowance	22.3	32.5	33.3	34.0	41.9	40.7	36.1	51.9	54.1

Table 8 shows the magnitude of the gap between investment and savings. It is clear that the Philippines suffered from a chronic current account deficit after World War II. The first Balance of Payments (BOP) crisis came in 1949 with accumulated current account deficit of ₱712 million after the war. This crisis led to the import-substitution regime of import controls and high tariffs imposed on consumers' imported goods. The first stage of import-substitution appeared to be successful in the early 1950s. However, by the end of the 1950s, production in the manufacturing sector had become stagnant due to the narrowing absorptive capacity of the domestic market. The Philippines faced the second BOP crisis in 1962 which forced the government to liberalize import control and devalue the peso vis-a-vis the US dollar. During the decontrol period, although import and exchange controls had been dismantled by 1962, tariffs took over a direct control of imports to mitigate a predicted malignant effect on domestic production. The third BOP crisis laid bare the dysfunction of trade and industrial policies in the decontrol period. Manuel Montes (1987) rightly dubbed the subperiod 1971-1983 as the period of debt-driven growth. The accumulated investment-savings gap during this period recorded astronomically huge deficits of ₱114 billion. To finance these current account deficits, the government resorted to short-term borrowings from foreign countries. Wilfredo G. Nuqui and others (1987) made the testimony as follows:

"Authorities opted for foreign borrowings since the relatively favorable conditions in the international financial markets after the first oil shock made it possible to cushion the impact of the current account deficit on the overall BOP position. LIBOR from 1975-1977 averaged 6 percent. Real interest rates from 1974-1977 were negative, averaging minus 2.9 percent. With external borrowings, the international reserves increased. ...

Despite the chronic current account deficits, the government authorities pursued expansionary monetary and fiscal policies. Exchange rate adjustments were very minimal and the real effective exchange rate appreciated from 93.3 index points in 1973 to 105.2 in 1982.<sup>1</sup> High tariff protection and external borrowings contributed to the overvaluation of the currency."

**Table 8**  
**Investment-Savings Gap**  
**(In Million Pesos at Current Price)**

1946-1949	-712	Period of War Rehabilitation
1950-1962	-167	Period of Controls*
1963-1970	-609	Decontrol Period*
1971-1983	-114,072	Period of Debt-driven Growth**
1984-1988	28,673	Rescheduling and Adjustment

Sources: \* Aurora Sanchez (1983).

\*\* Manuel F. Montes (1987).

<sup>1</sup>Real effective exchange rate index calculated by Lamberte and others (1985) shows also an appreciation of the peso by 18.1 percent from 100.00 percent in 1973 to 87.17 percent in 1982.

The Central Bank had been borrowing heavily on a short-term basis, mainly to finance oil imports. The external shocks, together with the mismanagement of macroeconomic policies during the 1973-1983 period, brought the country to the most serious BOP crisis in 1983 over the postwar years. According to Montes (1987), the total external debt of the country was pronounced to be \$24.8 billion. The sum of current account deficits from 1970 to 1983 was \$15.4 billion. The extent of capital flight posted roughly \$9.3 billion which was about 37.5 percent of the external debt. Thus, the foreign reserves were reduced to \$430 million in October 1983. Faced with a foreign exchange shortage, the government declared a moratorium on payments of principal on its foreign liabilities in October 1983.

Table 9 provides proof of how much the government budget deficit is accountable for net borrowing from the rest of the world. During the period 1960-1964 before the Marcos regime, the government was a net saving agent to the nation's savings. The accumulated net lending to the rest of the world (ROW) during the same period was recorded at ₱479 million by 1964. The first presidential term of Marcos, 1965-68, saw the government become a net dissaving agent to the nation's savings. The accumulated net lending to the ROW amounted to minus ₱202 million by 1968. In 1969 Marcos was reelected president of the Philippines.

**Table 9**  
**Investment-Savings Gap of General Government**

	Gov't Investment in		$S_g - I_g$	Net Lending to the ROW
	Public Investment ( $I_g$ )	Government Savings ( $S_g$ )		
1960	215	302	87	52
1961	234	307	73	-85
1962	250	354	104	-128
1963	312	385	73	451
1964	251	415	164	189
1965	322	204	-118	222
1966	385	229	-156	521
1967	488	370	-118	-98
1968	536	414	-122	-857
1969	802	264	-538	-911
1970	417	1,009	592	-136
1971	585	1,338	753	-49
1972	1,034	719	-315	244
1973	1,398	4,121	2,723	3,950
1974	2,854	4,898	2,044	105
1975	4,368	3,508	-830	-6,073
1976	8,306	2,449	-5,857	-7,922
1977	9,489	4,665	4,824	5,106
1978	10,632	6,951	-3,681	-7,630
1979	14,475	11,098	-3,377	-9,763
1980	16,056	13,179	-2,877	-13,093
1981	20,017	11,502	-8,515	-15,338
1982	21,993	10,434	-11,251	-25,339
1983	19,751	16,603	-3,148	-26,996
1984	20,107	20,489	382	-14,484
1985	18,696	20,582	1,886	6,272
1986	18,148	12,311	-6,385	33,459
1987	20,516	12,065	-8,451	-210
1988	22,739	-5,770	-28,509	3,636

However, the government deficit worsened to the size of minus ₱538 million due to a sharp contraction of the government savings and a rapid increase in government investment in construction in 1969. This created a large current account deficit of minus ₱911 million. Fifty-nine percent of current account deficit was contributed by the government deficit.

The main factors that brought about the 1970 BOP crisis were a chronic government deficit resulting from smaller government savings and larger government investments in construction during the 1965-1968 period than those during the 1960-1964 period, and the increase in both government expenditure and construction investment for the presidential election campaign in 1969. The period 1969-1974 saw a government budget surplus. However, after the first oil price hike, the authoritarian government took an initiative to boost the country's economy, which brought about large government deficits during the period 1975-1983. The period 1975-1983 was also a period of record high current account deficit. The share of government budget deficits in the current account deficit amounted to 73.9 percent, 94.5 percent, 48.2 percent, 55.5 percent and 44.4 percent in 1976, 1977, 1978, 1981, and 1982, respectively.

In response to the economic crisis in 1983, it was imperative that the government should undertake an economic recovery program in 1984 in consultation with members of the international economic community such as the International Monetary Fund (IMF) and the World Bank. To achieve external and internal stability and to hasten the restoration of the normal growth process, the following adjustment measures were introduced, namely: 1) economic stabilization, 2) loan restructuring, 3) structural adjustments, and 4) realignment of public expenditures.

To attain economic stabilization, depreciation of the peso was implemented three times from January 1983 to June 1984. The peso value was finally declared to be a free float in October 1984.

Faced with a severe foreign exchange shortage, temporary exchange controls were instituted to discourage imports and to see to it that the foreign exchange was allocated to priority imports. The foreign exchange allocation by the government was given in favor of heavily protected import substitutes. Additional measures taken to reduce importations were the imposition of new trade taxes, the rise in an ad valorem duty on all importations, and additional tariffs and export taxes.

Regarding monetary policy, the International Monetary Fund requested to restrict on reserve money levels from ₱32 billion in December 1984 to ₱31 billion in March 1985. To achieve this end, reserve requirements were increased and the Central Bank (CB) virtually closed the subsidized rediscounting window. The Central Bank also introduced the CB bills, or the so-called Jobo bills named after the CB governor, to mop up excess liquidity. The unprecedented high rates on the CB and T-bills reached a peak 40 percent and 42 percent, respectively, in November 1984.

Efforts to manage government budget deficits through raising tax rates, widening the tax base, and controlling the government expenditures and public investment resulted in a substantial improvement of the budget deficits which, in turn, improved the current account deficit due to the large cutback in imports as shown in Table 9.

The International Monetary Fund agreed to provide a standby credit to the Philippines in December 1984. The Paris Club and the Advisory Committee of commercial bankers ap-

proved loan restructuring principles to cover maturing debt for the period October 1983 to December 1986, with a ten-year maturity and a five-year grace period, and an interest rate of LIBOR plus 1 and 5/8 percent.

A structural adjustment was addressed to improve exports, raise domestic savings, and encourage investments. Trade liberalization was instituted on some 1,152 imports as of May 1986. Tariffs were reduced to an average 28 percent as of January 1986. The international marketing of coconut and the domestic marketing of sugar have been liberalized to encourage more private participation since February 1985.

As for realignment of public spending, an austerity policy was inevitable on public investments. The revised investment program was cut back and about 76 percent of the program for 1986-1987 was for ongoing projects. Priority was given to maintenance, agricultural projects and social infrastructure. Wilfredo G. Nuqui and others (1987) provide an informative paper on the adjustment measures introduced in 1984-1985.<sup>2</sup> An accumulated current account balance (or investment-savings gap) turned out to be positive during the adjustment period 1984-1988 as shown in Table 8. The factors for the attainment of this accumulated current account surplus are attributable to the above-mentioned adjustment policies.

### 3. INFLATION

Literature on Philippine inflation is very scanty. Four articles appeared in the *Philippine Economic Journal*, Vol. XIII, No. 3, 1974; these articles examined the effect of the oil price hike on overall inflation in 1974. There are two more interesting articles on Philippine inflation, the one contributed by Joseph Lim (1987) and the other by Roberto S. Mariano (1985). Joseph Lim reported that both the working capital cost-push effect and the monetarist effect seem to be at work in the short run and that this is particularly true for the post-martial law years. He also asserted that working capital cost-push inflation seems to dominate over the demand side. He then concluded that "the simple quantity theory of money is oversimplified and hides the full impact of monetarist prescriptions to inflation and that it neglects the transmission mechanism of credit and monetary cutback which may entail a drastic fall in income, investments, personal consumption expenditures and most likely, government spending" (1987, p. 56).

Roberto S. Mariano estimated a forecasting model for monthly inflation in the Philippines over the sample period of January 1972-December 1984. Since his main objective was to forecast inflation, he took an eclectic approach, culling from the Keynesian demand pull theory, the monetarists' quantity theory, the structuralist theory and so on. He concentrated on an empirical process to identify factors, from among those suggested by these theories, which serve as good indicators for likely movements of prices in the Philippines.

The estimates which Roberto Mariano obtained are summarized in Tables 10 and 11; these are quoted from the PIDS Monograph Series No. 10 (PP6-PP7).

The dollar black market premium (ERBMERP) is considered as a proxy for the inflationary effects of development in the political scene and the scarcity of foreign exchange. Mariano's study found that: "Versions of the price equation without this variable actually show reasonably good diagnostic statistics; however they fail dramatically in tracking the increase in inflation rates in November and December of 1983." A peso-denominated import

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<sup>2</sup>Readers who are interested in these measures in detail should refer to this paper.

**Table 10\***  
**The Price Equation**

Dependent Variable:  
3 MONCPI

Independent Variables	Regression Coefficient	Std. Error of Reg. Coef.	Computed T value	Elasticity at Means
1 CONSTANT	-.79569E+01	.54104E+01	-1.47068	
2 ERBMERP	.42427E-01	.50363E-01	0.84243	.01683
4 LAGCPI1	.97448E+00	.58538E-01	16.64685	.95988
5 LAGCPI2	.29286E+00	.55370E-01	-5.28920	.28410
6 PMOILD	.63435E-01	.19825E-01	3.19975	.04493
15 PMI	.72317E+01	.17232E+01	4.19667	.06833
14 PXPEXP	.28961E-01	.95256E-02	3.04038	.02788
13 TOTTGQ3	.54133E+01	.93122E+00	5.81308	.09725
7 DAY91	.92480E+00	.15896E+00	5.81774	.04484
8 WLNANCR	.60864E+00	.19761E+00	3.07992	.04867
11 PCFOOD3L	.98363E+00	.48235E+00	2.03926	.00375
16 DUM85	.18886E+02	.29496E+01	6.40306	.00132
Multiple correlation	0.99981			
R-squared	0.99963			
Adjusted R-squared	0.99960			
Std. error of estimate	3.00227			
Durbin-Watson Statistic	1.84914			
Rho estimate	0.07462			

Analysis of Variance for the Regression

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F value
Regression	11	3563629.00000	323966.28125	35941.92187
Error	147	1325.00000	9.01361	
Total	158	3564954.00000		

\*Reprinted from Table 2 in R. S. Mariano, *Forecasting Monthly Inflation in the Philippines*, PIDS Monograph Series No. 10, 1985.

price index for non-fuel items (PMI) and legislated minimum wage for the national capital region (WLNANCR) are settled on as cost-push factors in the price equation. Interest rate on 91-day treasury bills (91-DAY) as a regressor shows also good diagnostic statistics with a highly significant t-value. These results obtained in the price equation are quite consistent with the assertion cited by Joseph Lim. The monetarist approach to inflation in the Philippines is also valid and indicates a relatively large size of its elasticity at means.

Inflation in the Philippines before the first oil hike has been examined by Romeo M. Bautista (1974). He pointed out that a "feature of postwar Philippine economic development through the end of the 1960s has been the relative stability of the general level of prices." Table 12 provides us with average annual rates of increase in selected variables to see how these variables are related to movement of the consumer price index (CPI). The CPI increased

**Table 11\***  
**Variable Definitions for the Price Equation**

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CPI	= Monthly consumer price index for the Philippines, in percent (base year: 1972).
PMOILDP	= Average wholesale posted price of petroleum products, in centavos per liter, as regulated by the Board of Energy.
ERBMERP	= 100 * Hongkong Banknote Rate (₱/\$) / Official Exchange Rate (₱/\$).
TOTTGQ3	= TLG + TLG (-1) + TLG (-2) + TLG (-3)
TLG	= TL / GNPSEM.
TL	= Total domestic liquidity, in billion pesos.
GNPSEM	= Semestral real GNP, in 1972 billion pesos.
PMI	= PMQUSNF * ER (month / ER (1972)) * (1 + TARIFF) / (1 + TARIFF (1972)).
PMQUSNF	= Dollar-denominated import price index for non-fuels (in decimal; base year: 1972).
TARIFF	= Simple average (across items) of tariffs on imports, plus additional ad valorem duties on imports, in decimal.
ER (month)	= Average exchange rate for the month, in ₱/\$.
TARIFF (1972)	= .45
ER (1972)	= ₱6.671/\$1.
PXPEXP	= Export price index for all commodities (peso-denominated, base year: 1972).
91-DAY	= Interest rate on 91-day treasury bills.
WLNANCR	= Legislated minimum wage for the National Capital Region.
PCFOOD3L	= $\text{Log} \left( \frac{\sum_{i=1}^8 W_i PF_i}{\sum_{i=1}^8 W_i} \right)$
PF <sub>1</sub>	= Percentage increase in the price ceiling for the 1 <sup>st</sup> food item under price control, relative to the price ceiling in February 1980.
W <sub>1</sub>	= Weight in the CPI basket of the 1 <sup>st</sup> food item under price control.
DUM85	= 1 for 1985; 0 otherwise.

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\*Reprinted from Table 3 in R. S. Mariano, *op. cit.*

by 1.7 percent annually on the average from 1955 to 1960, by 5.4 percent over the period 1960-1965 and by 3.4 percent during the period 1965-1969. The same index, however, went up sharply by 18.3 percent during 1969 to 1971 or by 11.7 percent during 1969-1973. There seems apparent positive correlation between rates of inflation and increases in nominal wage and salary, but the real incomes of both salaried employees and wage earners have fallen continuously since 1955 except during the period 1965-1969.

There appears to be no definite relationship between changes in money supply and the CPI. Bautista explains thus:

“At any rate the CPI increases could not be attributed to money supply expansion in a fundamental sense. Even if a significant rise in the CPI were to occur concurrently with substantial monetary expansion — the latter is more properly viewed as an accommodating factor rather than a basic cause of inflation.”

After the CPI went up by 34.5 percent in the year of the first oil shock, 1974, the CPI went down by 6.9 percent in 1975 and by 9.6 percent annually on the average from 1975 to 1978. The second oil price hike disturbed the Philippine economy and advanced the CPI by 17.5 percent in 1979. The rate of inflation has kept the CPI at a two-digit level over the period 1979-1983.

Observed changes in the CPI during the same period were recorded as 18.2 percent in 1980 and an annual average rate of 12.4 percent from 1980 to 1983.

The year 1984 saw the Philippine economy in havoc due to the serious shortage of foreign exchange which caused a moratorium in the repayment of external debt. The Philippines reached the record high inflation rate of 50.3 percent over the postwar period.

The introduction of foreign exchange control, tight money policy and austere fiscal policy, which were basic conditionalities to obtain financial support from the International Monetary Fund (IMF) and the World Bank, stabilized the aftermath to the balance of payments crisis and the outbreak of political strife in 1986. The rates of inflation during 1983-88 went down to 0.8 percent, 3.8 percent, and 8.8 percent in 1986, 1987, and 1988, respectively.

It would be useful to see how an inflationary pressure facing each industry contributes to an overall rate of inflation in the Philippines. Since the time-series data for household spending are not available, we proceed to our analysis based on the data for gross value added from 1975 onward.

The following formula is used as the measure for the contribution of an implicit deflator of a given industry to the overall rate of inflation.

$$IP(t) = \frac{\sum_{i=1}^n X_i(t) P_i(t)}{\sum_{i=1}^n X_i(t) \cdot P_i(0)}$$

where

- $IP(t)$      ≡ overall index of price at time  $t$ .
- $X_i(t)$      ≡ quantity produced of the  $i$ th commodity at time  $t$ .
- $P_i(t)$      ≡ price of the  $i$ th commodity at time  $t$ .
- $P_i(0)$      ≡ price of the  $i$ th commodity at the bench mark year.

$$IP(t) = \frac{\sum_{i=1}^n X_i(t) P_i(0) \cdot P_i(t) / P_i(0)}{\sum_{i=1}^n X_i(t) P_i(0)}$$

$$= \sum_{i=1}^n W_i(t) \cdot IP_i(t)$$

where

- $W_i(t)$     ≡  $X_i(t) P_i(0) / \sum_{i=1}^n X_i(t) P_i(0)$
- $IP_i(t)$    ≡  $P_i(t) / P_i(0)$

A rate of inflation is given by the following formula:

$$\frac{IP(t) - IP(t-1)}{IP(t-1)} = \sum_{i=1}^n \left\{ \frac{W_i(t) IP_i(t)}{IP(t)} \cdot \frac{IP(t)}{IP(t-1)} - \frac{W_i(t-1) IP_i(t-1)}{IP(t-1)} \right\}$$

since  $\frac{W_i(t) IP_i(t)}{IP(t)} \equiv \frac{X_i(t) P_i(t)}{\sum_{i=1}^n X_i(t) P_i(t)} \equiv V_i(t)$ ,

Hence,

$$\frac{IP(t) - IP(t-1)}{IP(t-1)} = \sum_{i=1}^n \left\{ V_i(t) \cdot \frac{IP(t)}{IP(t-1)} - V_i(t-1) \right\}$$

Therefore, the contribution of change in the *i*th commodity's price to the overall rate of inflation is given by the following formula:

$$V_i(t) \frac{IP(t)}{IP(t-1)} - V_i(t-1)$$

It could be deduced from Table 12 that the behavior of the CPI is almost the same as the behavior of the implicit deflator of gross value added. The greatest contributor to the overall inflation is obviously the service sector. According to the results from the calculation on the contribution of each service sector to the implicit deflator of overall service, a single important sector to push up the implicit deflator of overall service sector is the trade sector which explains increases in its deflator by 40-60 percent during the period 1975-1988 as shown in Table 13. Transportation cost is often emphasized as both a cause and an effect of inflation in the Philippines. It should be, however, acknowledged properly that the size of the contribution of increase in transportation cost is almost the same magnitude as that of cost for financial and housing sectors, as far as the direct effect of increases in these costs on the overall inflation is concerned.

**Table 12**  
**Contribution of Change in Price by Industrial Products**  
**to Overall Rate of Inflation\*\***

	1975-1978		1978-1979		1979-1983		1983-1984		1984-1988	
CPI	9.8		17.5		15.5		50.3		10.0	
Average rate of overall implicit deflator	9.3	100.0*	15.2	100.0*	13.8	100.0*	49.7	100.0*	10.4	100.0*
Primary commodity	1.9	20.4	4.0	25.3	2.2	15.9	17.5	35.2	1.9	18.2
Manufacturing	2.3	24.7	3.0	19.7	3.6	26.1	13.2	26.6	2.5	24.1
Construction	1.1	11.8	1.8	11.8	1.2	8.7	0.7	1.4	0.0	0.0
Gas, water and electricity	0.0	0.0	0.3	2.0	0.3	2.2	0.9	1.8	0.5	4.8
Services	4.0	43.1	6.1	40.2	6.5	47.1	17.4	35.0	5.5	52.9

\* percentage share of contribution.

\*\* calculated according to the formula  $V_i(t) \frac{IP(t)}{IP(t-1)} - V_i(t-1)$

**Table 13**  
**Contribution of Each Service Component**  
**to the Implicit Deflator of Overall Service\*\***

	1975-1978		1978-1979		1979-1983		1983-1984		1984-1988	
Average rate of change in overall implicit deflator for service	12.0	100.0*	16.5	100.0*	15.5	100.0*	43.7	100.0*	12.4	100.0*
Transportation	2.0	16.7	2.6	15.8	2.5	16.1	7.5	17.2	0.8	6.5
Trade	5.2	43.3	7.6	46.1	6.8	43.9	25.7	58.8	5.2	41.9
Finance of housing	2.0	16.7	3.0	18.2	2.6	16.8	2.3	5.3	2.1	16.9
Private service	1.4	11.7	2.4	14.5	2.1	13.5	4.8	11.0	2.1	16.9
Government service	1.4	11.7	0.9	5.5	1.5	9.7	3.4	7.8	2.2	17.7

\* Percentage share of contribution.

\*\* Calculated within the service sector according to the formula  $V_i(t) \frac{IP(t)}{IP(t-1)} - V_i(t-1)$ .

Aside from the service sector, the inflation rates of both the primary commodity sector and the manufacturing sector explain the overall inflation by about 40 percent during 1975-1988. The primary commodity market appears to be more vulnerable than the manufacturing products' market in response to external and internal disturbances. Increases in the implicit deflator of the primary commodity account for increases of 25.3 percent and 35.3 percent in 1978-79 and 1983-1984, respectively in overall implicit deflator of gross value added as observed in Table 12. It would be hard to believe that the vulnerability of pricing for primary commodity in the Philippines has been attributable to an interplay of demand and supply.

#### 4. GROWTH PERFORMANCE

The track record of Philippine economic growth has been quite substantial over the postwar years until 1979, the year of the second oil hike. The period 1946-1949 saw a rapid recovery of the country's economy from devastation suffered during the war. The Philippines resorted to large amounts of import to meet a massive demand for consumption expenditure during the same period, which became a main factor leading to the first crisis of its balance of payments (BOP) after the war. To cope with these BOP difficulties, the government introduced an industrial policy to encourage domestic production of consumer goods in substitution for imported ones. The industrial strategy based on import substitution could have lasted until 1957 during which the Philippines started to get into the second phase of the BOP crisis. The average annual growth rate of gross national product (GNP) was about 6 to 7 percent from 1950 to 1956 and went down to 1.3 percent in 1960 from 5.3 percent in 1957.

The foreign exchange control was strengthened from 1957 to 1959 when the BOP was getting worse. It was not until 1962 when the Macapagal government was installed that the new government lifted all forms of controls on foreign exchange transactions and the decontrol program was completed under his regime.

However, tariffs took the place of import and exchange controls as the measure for protection. Sicat (1967) discovered that exports of the manufacturing sector did not contribute much to manufacturing growth due to a tariff structure shielding the import substituting sector throughout the post-decontrol period.

Reflecting these circumstances, the annual growth of gross national income was about 4 to 5 percent in the 1960s. As we already stated in Section 2, the first term of the Marcos regime saw an ambitious development program with government budget deficits which resulted in the third BOP crisis in 1969.

The Marcos government devalued the peso by 43 percent vis-a-vis the US dollar and reduced selected tariff rates in consultation with the International Monetary Fund (IMF) in 1970. The government also switched from an inward-looking to an outward-looking strategy. The support of the IMF and the World Bank, coupled with the excess supply of Euro-dollars after the first oil shock, made foreign loans easily accessible to an authoritarian government installed in 1972. Thus, the 1970s saw relatively high GNP growth rates of about 6 to 7 percent on an average annual growth which resulted largely from an immense sum of foreign debt.

The country's economy in the 1980s experienced turbulent internal and external shocks such as the second oil hike and the ensuing sluggish world economy, Aquino's assassination which precipitated the BOP crisis and the moratorium on repayments of foreign debt, and the political extravaganza in 1986.

The GNP growth tapered off from 5.0 percent in 1980 to 1.1 percent in 1983 and plunged into the negative phase with rates of -7.1 percent and -4.1 percent in 1984 and 1985, respectively. The country's economy has, however, been picking up since President Aquino set up her executive office in 1986.

It is interesting to explore a mechanism, if any, underlying the macroeconomic growth of the Philippines. It is also important to investigate the role of productivity growth in economic progress in assessing the effects of industrialization policies.

Figure 1 indicates a correlation between the implicit deflator of consumer goods (PC, and that of investment goods (PI) whose correlation coefficient is equal to 1, or more precisely 0.998. The behavior of the implicit deflator of PC is almost the same as that of PI, which allows us to treat both consumer and investment goods as perfectly substitutable goods according to the theory of composite commodity postulated by Leontief and Hicks. Hence, we treat consumer and investment goods as a single commodity for the time being to simplify our arguments on economic growth.

In conventional literature on economic growth, the theory is mainly concerned with a long-run equilibrium or a steady state achieving full employment without inflationary pressure. To examine the characteristics of the steady state, Domar (1957) perceived the importance of an increase in capacity output made by new investments while Keynes took up only its multiplier effect in the demand side as the theory of effective demand. Domar introduced a new concept of a potential productivity of investment such that,

$$\sigma = \frac{dp}{dt} / I$$

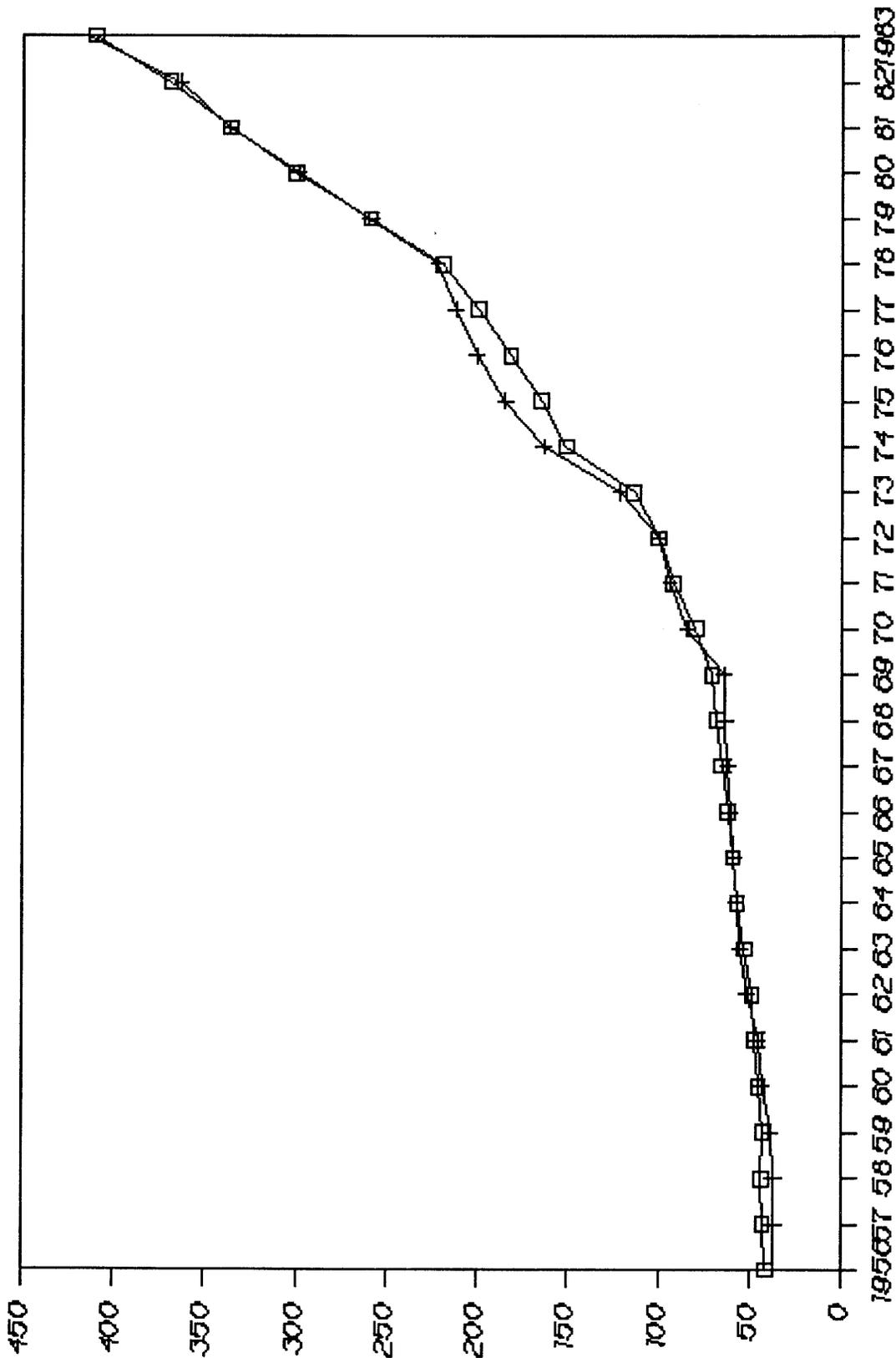


Figure 1 Implicit Price Index Numbers

where

- $\sigma$   $\equiv$  a potential productivity of investment
- $I$   $\equiv$  investment
- $\frac{dp}{dt}$   $\equiv$  change in potential output
- $P$   $\equiv$  level of potential output

The potential output is defined as a level of output concomitant with full employment. It is, however, inconvenient to adopt this concept of the potential output in analyzing an economic growth for a labor-abundant economy like the Philippines. Instead of following Domar's potential output, we use a capacity output whose definition is based on a full operation of the capital factor of input. To do so, we regard the wage rate as exogenously determined.

Provided that the Harrod (1939) and Domar (1957) growth model is applicable to the Philippine economy, we assume a Leontief-type of production function as follows:

$$Y_c = \min \left( \frac{K}{v} \cdot \frac{L}{l} \right)$$

where

- $Y_c$   $\equiv$  level of capacity output
- $K$   $\equiv$  capital service at full operation
- $L$   $\equiv$  labor service needed to keep full operation of capital service
- $v$   $\equiv$  capital coefficient
- $l$   $\equiv$  labor coefficient

A new investment creates an additional capacity to produce more than before by the amount given as follows:

$$\frac{dY_c}{dt} = \frac{1}{v} \frac{dK}{dt} = \frac{1}{v} I$$

where

$$I \equiv \frac{dK}{dt}$$

If an economic growth path is characterized by the equilibrium that the additional capacity is fully used to fulfill the same amount of increase in demand,  $\frac{dY_w}{dt}$ , then, at the equilibrium,

$$\frac{dY_c}{dt} / Y_c = \frac{dY_w}{dt} / Y_w = g_w$$

where

- $Y_w$   $\equiv$  warranted level of demand for gross national product
- $g_w$   $\equiv$   $\frac{dY_w}{dt} / Y_w$   $\equiv$  warranted rate of growth

Savings out of  $Y_c$  is given by

$$S_c = s \cdot Y_c$$

where  $s \equiv$  average rate of savings.

$$\text{Hence, } g_w = \frac{1}{v} \cdot \frac{I}{Y_c} = \frac{S}{v}$$

This implies that an equilibrium rate of growth, or the so-called warranted rate of growth, is equal to an average rate of savings deflated by the capital coefficient.

Estimates for  $v$  and  $g_w$  shown in Table 14 suggest that capital coefficients are fairly constant rates of about 3.5 percent during the period 1967-1979, and that actual growth rates appear to move closely with warranted rates of growth,  $g_w$ . A reciprocal of capital coefficient is interpreted as efficiency of investment. The efficiency of investment has deteriorated since the second oil shock.

In a labor-abundant economy, demand for labor to keep full operation of capital can be met without a change in wages. Hence, an increase in labor employed is equal to the increase in capital under the economy with Leontief type of production:

$$\frac{K}{L} = \frac{(K)/(L)}{Y/Y} = \frac{v}{I} \equiv \text{constant}$$

$$\text{and } \frac{\dot{K}}{K} = \frac{\dot{L}}{L}, \text{ where } \dot{K} \equiv \frac{dK}{dt}, \dot{L} \equiv \frac{dL}{dt}.$$

A possible level of investment to meet a nation's savings is given by the following:

$$\dot{K} = S_1 \cdot \gamma \cdot K + S_2 \cdot W \cdot L$$

where

$S_1 \equiv$  rate of savings from income accruing to capital

$S_2 \equiv$  rate of savings from wages and salaries

$\gamma \equiv$  rate of profit accruing to capital input

$W \equiv$  wage rate

$$\frac{\dot{K}}{K} = S_1 \cdot \gamma + S_2 W \frac{L}{v}$$

$$\text{Since } \gamma = \frac{1 - wI}{v},$$

$$\frac{\dot{K}}{K} = \frac{S_1}{v} - (S_1 - S_2) \frac{I}{v} \cdot w$$

$$1 > S_1 > S_2 > 0.$$

Figure 2 depicts that contraction in real wage from  $W_0$  to  $W_1$  increases the size of investment from  $(\frac{K'}{K})_0$  to  $(\frac{K'}{K})_1$ .

Table 14

	Capital* Coefficient (=v)	$s/v(\equiv g_w)$ (%)	Actual Rate of Growth ( $\equiv \Delta Y/Y$ ) (%)	$(\Delta Y/Y)/g_w$ (%)
1967	3.5	4.3	4.8	1.1
1968	3.6	4.3	5.4	1.3
1969	3.6	4.2	5.3	1.3
1970	4.3	3.7	4.3	1.2
1971	2.7	6.4	5.8	0.9
1972	3.3	5.6	4.9	0.9
1973	1.6	11.6	9.6	0.8
1974	2.3	9.1	6.3	0.7
1975	3.0	7.1	5.9	0.8
1976	3.6	6.2	6.1	0.0
1977	3.2	7.4	7.0	0.9
1978	3.2	7.6	6.8	0.9
1979	3.4	7.5	6.8	0.9
1980	5.7	4.8	4.4	0.9
1981	6.7	4.0	3.7	0.9
1982	15.7	1.7	1.6	0.9
1983	21.9	1.2	1.1	0.9

\*v  $\equiv I_{-1} / \Delta Y$ .

$I_{-1}$   $\equiv$  investment made in previous year.

$\Delta Y$   $\equiv$  difference between GNP and GNP in previous year,  $Y(t) - Y(t-1)$ .

s  $\equiv$  average rate of savings.

$g_w$   $\equiv$  warranted rate of growth.

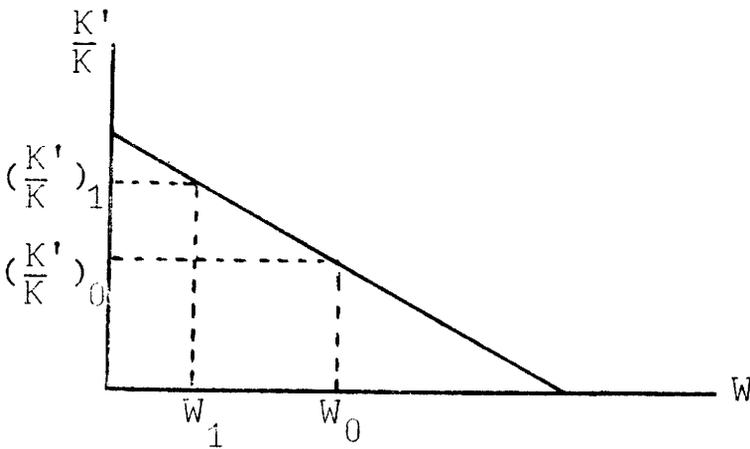


Figure 2

**Table 15**  
**Wage Rate Index of Laborers in Industrial Establishments**  
**in Manila and Suburbs**  
**(1972=100)**

	Money Wage Rates		Real Wage Rates	
	Skilled	Unskilled	Skilled	Unskilled
1949	61.0	47.0	142.2	109.6
1950	60.9	41.2	137.8	93.2
1951	57.2	44.4	119.7	92.9
1952	58.1	47.5	129.7	106.0
1953	59.3	48.8	137.3	113.0
1954	59.7	48.3	140.1	113.4
1955	59.7	49.7	141.5	117.8
1956	59.8	50.5	138.1	116.6
1957	59.7	49.9	135.7	113.4
1958	61.7	50.2	135.6	110.3
1959	62.9	50.6	139.5	112.2
1960	62.7	50.7	133.4	107.9
1961	62.6	51.9	131.2	108.8
1962	63.4	53.5	125.5	105.9
1963	65.2	56.3	122.3	105.6
1964	66.4	56.9	115.1	98.6
1965	68.2	60.8	115.2	102.7
1966	71.7	65.4	114.9	104.8
1967	75.0	68.4	113.1	103.2
1968	81.0	76.1	119.4	112.1
1969	85.3	79.7	123.3	115.2
1970	90.6	88.4	114.4	111.0
1971	95.3	94.4	105.1	104.1
1972	100.0	100.0	100.0	100.0
1973	105.3	102.6	92.4	90.0
1974	115.1	110.8	75.6	72.8
1975	119.7	120.1	72.7	72.8
1976	124.4	126.2	71.2	72.3
1977	137.5	132.9	72.9	70.4
1978	154.4	138.4	76.1	68.3
1979	170.1	145.8	70.8	60.7

Table 15 provides us with a wage rate index which shows changes in money wage rates and real wage rates. Both real wage rates of skilled and unskilled labor have long been going down until 1979. One important factor to explain the growth of the Philippine economy would be the consecutive decline in real wage rates over the 1960s and 1970s. It should be noted, however, that this is only true for the argument that domestic investment absorbs domestic source of funds.

Regarding productivity growth in the Philippines, there are many productivity studies to measure total factor productivity (TFP) growth rate. Studies attempting to measure TFP are those done by Lampman (1967), Danielson (1967), Williamson (1968), Ezaki (1975), Estanislao (1981), Sanchez (1983), and Hooley (1985).

Lampman found that capital formation accounted for 20 percent of aggregate growth from 1955 to 1965, land accounted for 6 percent of aggregate growth, labor for 54 percent, and technical progress for 20 percent. Danielson has computed partial and total factor productivity indexes for the Philippines for 1939-1960. His study was, however, not free from the influence of the war. Following Lampman’s approach, Williamson attempted to revise Lampman’s capital stock figures for construction and durable equipment. Williamson reported, based on his estimates of capital stock and labor, that the capital-labor ratio has undergone significant improvement in spite of an enormous rate of population and labor force growth over the period 1947-1965. Williamson assumed the factor shares in national income to be 0.55, 0.15 and 0.30 for labor, land and capital respectively while Lampman presumed the real factor shares to be 0.70, 0.10 and 0.20 for labor, land and capital, respectively. Ezaki obtained a labor share of 0.44 and a capital share of 0.56 which were obtained from the 1965 input-output table compiled by the National Economic Council. The capital stock which he used was based on its estimates made available by Canlas, Encarnación and Ho (1975). TFP indices calculated by these authors were obtained based on the Cobb-Douglas-type of production function. The Cobb-Douglas production function has stringent restrictions such that its factor shares are constant over time and the elasticity of substitution between its factors is unity.

Regarding technological progress (TP), it is defined to be neutral if such progress keeps income distribution among factors or factor shares from changing over time.

Suppose the following production function with homogeneity of degree one:

$$Y = F[A(t)K, B(t)L]$$

where

- $A(t) \equiv$  technological progress embodied in capital
- $B(t) \equiv$  technical progress embodied in labor.

The elasticity of substitution between capital ( $K$ ) and labor ( $L$ ) is given by the following:

$$\sigma \equiv \frac{dk}{k} / \frac{d\left(\frac{F_L}{F_K}\right)}{\left(\frac{F_L}{F_K}\right)}$$

where

$$k \equiv K/L,$$

$$F_L \equiv \frac{\partial F}{\partial L}, \quad F_K \equiv \frac{\partial F}{\partial K}.$$

Hence,

$$\sigma \equiv \frac{F_K F_L}{Y F_{KL}}, \quad F_{KL} \equiv \frac{\partial^2 F}{\partial L \partial K}.$$

A factor share of capital input ( $\theta$ ) is given as follows:

$$\theta \equiv \frac{F_K \cdot A(\theta) K}{Y},$$

and an own rate of interest on capital input ( $\gamma$ ) is equal to the following at an optimal point,

$$\gamma = F_K \cdot A(\theta).$$

$$\frac{d\theta}{\theta} = \frac{d\gamma}{\gamma} + \frac{dK}{K} - \frac{dY}{Y}$$

$$\text{since } \frac{d\gamma}{\gamma} = \frac{dA}{d} - \frac{(1-\theta)}{\sigma} \left( \frac{dA}{A} + \frac{dK}{K} - \frac{dB}{B} - \frac{dL}{L} \right).$$

A change in capital share is given by

$$\frac{d\theta}{\theta} = (1-\theta) \frac{\sigma-1}{\sigma} \left( \frac{dA}{A} - \frac{dB}{B} + \frac{dK}{K} - \frac{dL}{L} \right).$$

The elasticity of substitution of Cobb-Douglas type is unity, i.e.,  $\sigma = 1$ . Therefore,

$$\frac{d\theta}{\theta} = 0.$$

This implies that assuming a Cobb-Douglas production function with homogeneity of degree one amounts to assuming a neutrality of technological progress. It would be worthwhile, at this point in time, to review briefly the literature on neutral technological progress.

Firstly, Hicks defines technological progress as being neutral if a capital share remains the same with the same capital-labor ratio before and after the new technology takes place.

$$\text{Thus, } \frac{dk}{k} = 0, \quad \text{and } \frac{d\theta}{\theta} = 0.$$

A capital share ( $\theta$ ) is expressed with per capita base as follows:

$$\theta \equiv \frac{\gamma \cdot K}{Y} = \frac{\gamma \cdot k}{y}, \quad y \equiv Y/L$$

Since a change in  $\theta$  does not occur, i.e.,

$$\frac{d\theta}{\theta} = \frac{d\gamma}{\gamma} + \frac{dk}{k} - \frac{dy}{y} = 0,$$

Hence,

$$\frac{d\gamma}{\gamma} = \frac{dy}{y}.$$

A labor share is given by the following:

$$(1 - \theta) = \frac{WL}{Y} = \frac{w}{y}$$

where

$w \equiv$  wage rate.

$$\text{Therefore, } \frac{dy}{y} = \frac{dw}{w} = \frac{dy}{y} \text{ and } \frac{dk}{k} = 0.$$

Secondly, Harrod designates his own concept of neutrality by saying that a new technology is embodied in labor input as a neutral progress if a capital share remains the same with the same capital coefficient,  $K/Y$ , i.e.

$$\frac{dk}{k} = \frac{dy}{y}, \frac{d\theta}{\theta} = 0.$$

$$\text{Thus, } \frac{dy}{y} = 0 \text{ and } \frac{dw}{w} = \frac{dy}{y} = \frac{dk}{k}$$

Finally, Solow explains a new technology to be neutral if an improvement of a productivity takes place associated with a capital input and does not change a capital share and the level of labor productivity realized before and after, that is

$$\frac{dy}{y} = 0, \frac{d\theta}{\theta} = 0$$

$$\text{Thus, } \frac{dy}{y} = -\frac{dk}{k}, \frac{dw}{w} = \frac{dy}{y} = 0.$$

As we pointed out earlier, the Philippines has undergone an improvement of labor productivity with a declining trend of real wage rate over most of the postwar period. This evidence does not support the view that the technological progress accomplished in the country's economy coincides with the neutrality of its progress in terms of Hicks, Harrod and Solow.

It implies that a serious bias might be included in TFP indices calculated in its studies based upon the Cobb-Douglas production function.

To overcome the deficiency contained in estimation of TFP based on the Cobb-Douglas-type of production, Sanchez (1983) and Hooley (1985) measured the TFP index associated with the more flexible form of production function based on the translog index used by Gallop and Jorgenson (1980). Sanchez used a translog production function to measure a total factor productivity for the manufacturing sector over the period 1958-1975. The output measure utilized to attain the translog index of output was net domestic product. In the period 1958-1975, TFP in the Philippines was reported to have grown at rates ranging from 0.7 to 1.3 percent when the capital input variant used includes residential construction capital in the capital input measure, or from -0.8 to 0.8 percent when residential construction capital is excluded. She compared TFP growth with those of Korea and Taiwan. Tables 16 and 17 which are reprinted from Sanchez's Tables 2.5 and 2.8 reveal the comparison of TFP in the Philippines with those in Korea and in Taiwan, respectively. Sanchez observed the same finding made by Christensen, Cummings and Jorgenson (1980) that very high average growth rates in real product are associated with high average rates of growth of both capital and labor

**Table 16\***  
**Average Annual Growth Rates of Real Product, Real Factor Input, Total Factor Productivity, Real Capital Input, and Real Labor Input, Korea and the Philippines, 1960-1973**

	Korea <sup>a</sup>	Philippines <sup>b</sup>
Real product	0.097	0.047
Real factor input	0.055	0.036
Total factor productivity	0.041	0.011
Real capital input	0.066	0.028
Real labor input	0.050	0.040

\*Aurora Sanchez, "Capital Measurement and Total Factor Productivity Analysis," (Ph.D. dissertation, University of the Philippines, 1983), Table 2.5.

Note: Estimates based on the CCJ Approach to TFP measurement.

Sources: <sup>a</sup>Christensen, Cummings, Jorgenson, *Economic Growth, 1947-1973: An International Comparison*, 1980.

<sup>b</sup>Tables 2.2 and 2.3.

**Table 17\***  
**Average Annual Growth Rates of Real Product, Real Factor Input, Total Factor Productivity, Real Capital Input, and Real Labor Input, Taiwan and the Philippines, 1960-1969**

	Taiwan <sup>a</sup>	Philippines <sup>b</sup>
Real product	0.089	0.044
Real factor input	0.044	0.031
Total factor productivity	0.045	0.013
Real capital input	0.063	0.036
Real labor input	0.036	0.029

\*Aurora Sanchez, *op. cit.*, Table 2.8.

<sup>a</sup>H. T. Oshima, "Economic, Demographic and Distribution Transitions in Postwar Taiwan: Labor Intensive Growth," February 1981. These estimates were calculated from Shirley W. Y. Kuo, *The Economic Structure of Taiwan 1952-1969* using the Solow approach. The assumed labor and capital income shares were 0.7 and 0.3, respectively.

<sup>b</sup>Computed from Table 2.4. The TFP estimates were calculated based on the Solow approach using labor and capital income share weights of 0.7 and 0.3, respectively.

inputs, and that low average rates of growth in real product are associated with low average rates of growth of factors of production. She pointed out that the evidence for Korea and the Philippines props up this proposition.

For the period 1960-1973, she found that the average ratio of construction and durable equipment expenditure to gross domestic capital formation of Korea, Taiwan and the Philippines showed no significant differences, but that the rates at which the ratio changed varied significantly between the former two countries and the Philippines. The rate at which it was taking the form of more productive investment was higher in Korea and Taiwan than in the Philippines. Moreover, Philippine manufacturing failed to avail of the opportunities created by increased utilization of installed machinery and equipment in raising output, while Korea had undergone a very rapid upward trend in the annual growth rate of capacity utilization rates in its manufacturing sector. Thus, she concluded that two factors responsible for the relatively slow growth of TFP in the Philippines were the slow rate at which capital stock was taking the form of productive capital and the low rates of capital utilization in the manufactur-

ing sector. The TFP growth rate in the agricultural sector in the Philippines was around 0.8 percent per year during the period 1959-1969 while Korea in 1958-1969 and Taiwan in 1955-1970 experienced average annual TFP growth rates in the same sector of 2.3 and 1.4 percent, respectively. The low TFP growth rate in the agricultural sector is another factor lowering the TFP growth rate for the Philippine economy as a whole. This evidence is confirmed in the studies made by Williamson, H. Oshima, and Hayami and Ruttan.

Hooley utilized a model developed by Gallop and Jorgenson for measuring productivity performed in manufacturing as a whole as well as in individual industries for the period 1958-1980. From 1956 to 1980, a decrease in TFP growth of -0.15 percent annually is presented in Table 18 which is reproduced from Table 6 of Hooley's study. Hooley agrees with the inference made by Williamson and Sicat that the shift in manufacturing activity dictated by import controls and the protective tariff structure associated with import substitution brought about a significant decline in manufacturing productivity, by setting up the wrong interindustry shifts accomplished during the period 1956-1965. A remarkable feature of TFP growth is that TFP has been descending with increasing rates since 1971. Hooley decomposed TFP growth rate in manufacturing as a whole into its component elements of growth within industry and of that between industries (See Table 19 which reproduces Table 7 in Hooley's monograph.) The estimates shown in Table 19 lead us to surmise that the interindustry shift

**Table 18\***  
**All Manufacturing Annual Growth Rate, TFP**  
**and Selected Partial Productivity Measures, 1956-1980**  
**(All data in percent)**

Production per Unit of:	1956-60	1961-65	1966-70	1971-75	1976-80	1981-83	1956-70	1971-80	1956-80
Labor	5.55	3.27	4.87	0.59	-4.04	-3.35 <sup>1</sup>	4.56	-1.93	2.05
Capital	0.78	2.95	2.89	1.37	2.72	..	2.21	2.04	2.15
Intermediate goods	-0.51	-2.58	-0.26	-1.50	-1.86	..	-1.15	-1.68	-1.36
TFP	1.18	-0.71	1.22	-0.55	-1.90	-2.13 <sup>1</sup>	0.56	-1.23	-0.15
Adjustments: labor hours and quality									
a. Hours	0.0	-0.81	0.54	0.92	-1.01	..	-0.10	-0.10	-0.11
b. Age/sex	0.41	0.13	0.22	0.10	0.10	..	0.36	0.10	0.21
c. Education	1.14	1.01	1.02	0.10	0.10	..	1.01	1.00	1.01
Total adjustments	1.55	0.32	1.78	2.03	0.09	..	1.27	1.00	1.11
TFP adjusted (TFP less total adjustments)	-0.37	-1.03	-0.56	-2.58	-1.99	..	-0.71	-2.23	-1.26

Source: Growth rates for production and inputs from Tables 1 through 5. Adjustments for hours and labor quality based on data furnished by the Institute of Labor and Manpower Studies and Department of Labor, *Yearbook of Labor Statistics*, various years.

<sup>1</sup>(Preliminary estimate)

.. Indicates data not available.

\*Reprinted from Table 6 in R. Hooley, *Productivity Growth in Philippine Manufacturing: Retrospect and Future Prospects*. PIDS Monograph Series No. 9, 1985.

**Table 19\***  
**Annual Growth Rate, TFP Within and Between**  
**Industry, All Manufacturing,**  
**1956-1980**  
**(Rates of change in percent)**

	(1) All Manufacturing	(2) Within Industry	(3) Between Industry
1956-1980	-0.15	0.49	-0.64
1956-1970	0.56	0.77	-0.21
1971-1980	-1.23	0.34	-1.57

Source: Col. (1): Table 6.

Col. (2): Estimated using 1956 production weights.

\*Reprinted from Table 7 in R. Hooley, *op. cit.*

resulted in a net loss of productivity for the entire twenty-five year period. He concluded that while resource misallocation from an ill-conceived import substitution policy accounted for a significant part of the lackluster productivity performance in manufacturing, it was not the only factor and probably not the most important factor either. He inferred that the most important factor to cause significant retardation in TFP growth between subperiods is the wrong choice of the particular industries targeted for expansion. Based on Hooley and Moreno's study, *Flow of Funds*, the relative shares of nonfinancial government corporations in total nonfinancial corporate assets have been increasing since the late sixties or early seventies. It is estimated that the share of nonfinancial government corporate assets exceeds 50 percent until 1982 if corporations which are government-affiliated through control by members of the military or close associates of powerful political/military families are classified under government corporations. Hooley said that the shift of corporate assets from private to government-controlled must have had a significant downward impact on TFP performance for all corporations taken in the aggregate.

## 5. SUMMARY

A country's economy is well-described through its macroeconomic structures reflecting three different facets, namely, income and its distribution, expenditures of national products, and an industrial setup.

A look into the income structure of the Philippines over the postwar period reveals that the income distribution has been changing in favor of the rich group. However, the savings of the rich group was not significant enough to help hasten the growth of the Philippine economy as expected.

With regard to gross national expenditures, it was not until 1965 that a change took place in favor of gross domestic capital formation at the expense of personal consumption. It is noted that the contraction in the percentage share of personal consumption is not interpreted as an increase in personal savings. A structural change in exports is observed during the 1980s. The role of major foreign exchange earner has shifted from the primary commodity sector to the manufacturing sector in the 1980s.

A main contributor to the nation's savings since 1970 has been the corporate sector, given the Philippines' meager personal propensity to save. The period 1971-1983 saw astronomically huge accumulated investment-savings gaps which were made up for by resorting to short-term borrowings from the rest of the world. A bullish expansionary economic policy, coupled with the external disturbance of the oil price hike, is apparently accountable for this huge foreign debt.

In 1983, the most serious BOP crisis over postwar years, which devastated the country's economy, forced the government to declare a moratorium on repayment of foreign debt. To restore a normal growth process and economic stability, the government introduced adjustment measures in consultation with the IMF and World Bank.

Inflation in the Philippines during the post-martial law years can be traced to the working capital cost-push effect and the monetarist effect as well, though Bautista did not find any significant relationship between changes in money supply and the CPI before the first oil price hike.

We decomposed the overall rate of inflation into each implicit deflator of an individual industry's value-added to see how these individual industries contribute to form the overall rate of inflation. The most important sector to pull up the overall inflation is obviously the service sector whose rise in implicit deflator explains more than 40 percent of the overall inflation rate. Although an increase in transportation cost often gives rise to a serious conflict in the Philippine society, a single important contributor among services to an increase in overall implicit deflator of the service sector is the trading service. Therefore, we need to further study inflation, particularly the pricing in the trade service. It is often believed that the vulnerability of prices for primary commodities is attributable to an interplay of demand for and supply of these commodities. The data obtained from the sectoral value-added implicit deflators do not support this view, however.

The track record of the Philippine economic growth in terms of GNP has shown quite a substantial performance of the country's economy before the country suffered turbulent external and internal shocks in the 1980s.

Given a positive economic growth of the Philippine economy until 1983, we investigated a feature of the Philippine economic growth, with the use of two different growth models. Firstly, we applied the Harrod-Domar model based on fixed coefficient production function to the country's economy. Surprisingly, actual rates of growth were shown to be almost equal to warranted rates of growth during the period 1967-1983. The relatively high growth of domestic fixed capital formation could be attributed to the steady decline in the real wage rate. Secondly, there are a considerable number of studies on total productivity growth based on the neoclassical paradigm with well-behaved production function. Many of them resorted to Solow's approach which has the rather stringent restriction of assuming Hicks' neutral technological progress. Sanchez and Hooley elaborated a measurement of TFP growth based on the translog index approach developed by Christensen, Jorgenson and Lau. Both studies on TFP growth in the Philippines corroborated that the track record of TFP growth for the whole economy was quite poor during the period 1956-1980. Hooley pointed out that a misallocation of resources brought about by protectionist industrial policies is not the only factor and not the most important factor either, but that the most important factor to retard TFP

growth in the Philippines was the wrong choice of the particular industries targeted for expansion. Among others, the corporations related to the government directly or indirectly may be the most likely suspects of being accountable for the slow or even negative TFP growth. This suggests that a more extensive investigation into policy formulation and its implementation can provide us with significant insights into the characteristics and development of the Philippine economy.

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