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AN APPLICATION OF BACHA'S THREE-GAP MODEL: THE CASE OF THE PHILIPPINES

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This paper uses a three-gap analysis to discuss obstacles to economic growth of a highly indebted country like the Philippines and how these affect inflation. The analysis shows the rather evident fact that as the foreign exchange constraint continues unabated, the only hope for economic growth would be structural improvements that would increase substantially the country's export earnings, reduce the country's dependence on imported imputs and imported capital goods, and reduce the grave fiscal drain on debt service.

Overall, this implies that an increase in productivity and competitiveness of the economy should be achieved without the massive foreign inflows that occurred in the last decades.

1. Bacha's Model

The three-gap approach of analyzing the medium-term problems of a Third World medium-income country (Bacha, 1989 and Rattsϕ, 1988) reveals clearly the fiscal and foreign exchange constraints that prevent that country's economy from achieving a higher potential output, savings and investment. Observed periods of growth, balance of payments crises, fiscal and monetary cutbacks, recession and eventual recovery correspond very well to the predictions of this approach. The following applies Bacha's version of the three-gap model to the Philippine context.

1.1 The Savings Gap

The savings-investment equation here replicates the one of Bacha. The national income identity gives the well-known equation:

(1) $I = (Y^* - C_p^* - C_g^*) + (M - X)$

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where I is fixed capital formation, Y^* is potential gross domestic product, C_p^* and C_g^* private and government expenditures, respectively, corresponding to Y^*. M and X are imports and exports, respectively, of goods and non-factor services. It is assumed that:

(2) $C_p^* + C_g^* = c\,Y^*$

Also,

(3) $M - X = F - J$

That is, the excess of imports over exports is equal to capital inflow from abroad[1] less the net factor service payment (composed mainly of interest payment) to the rest of the world.

Putting (1), (2) and (3) together gives us the savings-investment equation:

(4) $IS = (1 - c)\,Y^* + (F - J)$

The sources of potential investments are "internal savings" and "foreign transfers" (Bacha, 1989, p. 4). The right-hand side can be further decomposed as:

(5) $IS = S_p^* + (T - G) + (F - J)$

where S_p^* is potential private savings and $(T - G)$ the budget surplus in the current account. It is assumed that μ proportion of $(F - J)$ goes to the government and $(1 - \mu)$ to the private sector.

It we divide both sides of the equation by potential gross value added (gross domestic product), we derive:

(4') $is = s^* + f$

and

(5') $is = s_p^* + s_g + f$

[1]We shall follow Bacha's approach of netting out foreign reserves accumulation from F.

where the lower case letters denote the variables as fractions of Y^* and $s_g = (T - G)/Y^*$ and $f = (F - J)/Y^*$.

1.2 The Foreign Exchange Gap

The foreign exchange gap starts with equation (3). Imports can be broken down into:

(6) $M = M_k + M_r + M_o$

where:

M_k : capital good imports

M_r : imports of raw materials and intermediate inputs

M_o : consumer and other imports

We also assume that:

(7) $M_k = m_k I$

and

(8) $M_r = m_r (C_p + C_g + I + X)$

Putting (3), (6), (7) and (8) together yields the foreign exchange equation:

(9) $IE = (1/(m_r+m_k)\ [\ (1-m_r)X - m_r(C_p+C_g) - M_o + (F-J)]$

Dividing both sides by Y^* yields:

(9') $ie = (1/(m_r+m_k))\ [(1-m_r)x - m_r(c_p+c_g) - m_o + f]$

where the lower case letters again denote the division by Y^*. Since $m_r + m_k$ is most likely less than 1, the foreign exchange equation will yield a steeper slope than the investment-savings equation in the IE–$(F$–$J)$ space or i–f space.

1.3 The Fiscal Gap

The fiscal equation starts with the equation:

(10) $T + NT + GB + \mu(F-J) = C_g + I_g + D_g + O$

where:

T : tax revenue

NT : non-tax revenue, excluding grants and aid from abroad

GB : government domestic borrowing

$\mu(F-J)$: amount of net foreign transfers that go to the government

C_g : government consumption, not including interest payment for foreign debt

D_g : principal and interest payments on government domestic debt

O : other items, specifically, non-budgetary items and increases in cash balance.

The left-hand side gives us the revenue and government borrowings of the government net of foreign interest payments and the right hand-side gives us the expenditures of the government including debt service. As the government assumes much of the foreign interest payments and as the composition of loans is shifting from commercial to official loans, μ is becoming larger (towards unity).

Grants and aid increase the term $\mu(F\text{-}J)$ while both interest and principal payments for government foreign debt decrease this term.

It is assumed, as in Rattsϕ (1988) and Montes (1989) that private investment (I_p) reacts positively to both government investment (I_g) and capacity utilization (u). This is the "crowding in" effect of private investment. It is assumed that government investments stimulate private investments and b measures the net effect of this and the negative and traditional "crowding out" effect as a higher I_g increases domestic borrowing by the government. b is assumed to be positive and less than 1.[2]

[2]Stylized data on the Philippines seem to indicate b to be the range of .5 and .6

(11) $I_p = a + b\,I_g + c\,u$

Since

(12) $I = I_p + I_g$

(13) $I = a + (1+b)\,I_g + c\,u$

or

(14) $I_g = \dfrac{I - a - cu}{1 + b}$

Substituting (14) into (10) yields:

(15) $IT = (1+b)[(T+NT-C_g)+(GB-D_g)-O]+a+cu+\mu(1+b)(F-J).$

The fiscal equation can thus be written as:

(16) $IT = e + \mu(1+b)\,(F-J)$

where e captures all the terms on the right-hand side except the last.

Alternatively, in terms of prices, equation (17) can also be rewritten as:

(17) $IT = h\,(p)$

where h has a positive first derivative. This interpretation of the positive relationship between investment and prices can be any of the following:

1. The "Keynesian" interpretation of prices going up as full employment is approached.

2. It is mainly through seignorage that the government is able to capture excess private savings in order to increase government investments (see Bacha, 1989). In this interpretation, h is in the form of a Laffer curve function.

Again dividing both sides by Y^* yields:

(16') $it = e' + \mu(1+b)f$

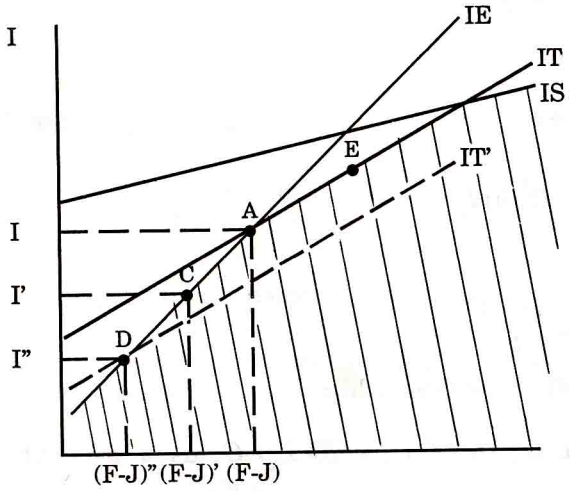


Figure 1

and

(17') $it = h'(p)$

where e' and h are e and h divided by Y^*

1.4 The Three Gap Analysis

Equations (4), (9) and (17) (or alternatively (4'), (9') and (17') can be drawn on the I and F–J space (or i and f space). A typical picture for the Philippines in the eighties would look like Figure 1. There, both IE and IT have slopes larger than IS. The slope of IE is steeper than that of IT, i.e. $1/(m_k+m_r) > \mu(1+b) > 1$.[3]

As can be seen from Figure 1, low levels of net foreign transfers will generate a balance of payments crisis with the foreign exchange constraint binding. There will therefore be an investment "gap" for both the savings and fiscal constraints. In the intermediate level, the fiscal constraint becomes binding and in the high range of F–J, the savings constraint becomes binding.

[3] In 1987, m_k and m_r were measured to be .2384 and .0869, respectively. With b having a minimum of .05 value and assuming μ to be .7, the inequalities will hold: $\frac{1}{m_k + m_r} = 3.075$

$\mu(1+b) = 1.05$

In the case where the foreign exchange constraint is binding, private investments are crowded out due to the lack of foreign exchange and is less than $(1+bI_g+cu)$. The state can actually reduce government investments to some extent (thus causing either government current expenditures to rise or decreasing the budget deficit) and still get the same total investments (since this will lessen the foreign exchange "crowding out" of private investments). Investment as a whole falls below that of the full potential of the productive capacity. If the fiscal constraint is binding, the economy is accumulating international reserves which cannot be used for growth, and the investment is below potential savings. Finally, if the savings constraint is binding, foreign reserves are accumulating and private investments are "crowded out" by increased government investments due to capacity constraints.

If we go to the I and p space, we see that given that we are in the low or intermediate level of $(F–J)$, we come up with Figure 2. At low levels of inflation, say, less than p in Figure 2, the government can increase total investment by increasing the government investment at the expense of a higher budget deficit and higher inflation. But as investment increases and inflation surpasses point p, the foreign exchange constraint sets in and crowds out private investments, so that further government expenditures will lead to an inflationary process without expanding output. Since we are talking about low levels of $(F–J)$, the IS curve is not binding in the relevant space.

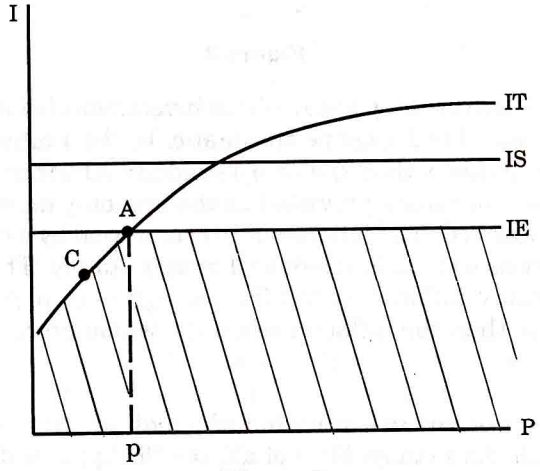


Figure 2

In fact, the above phenomenon is one of the striking features faced by the Philippine economy in the eighties. Restriction to growth consists mainly of the steep decline in foreign inflows and increases in foreign debt payments. This restricts our region to points around A and to its left in Figure 1 and to the shaded area in Figure 2. Let us now analyze what happens when $(F-J)$ falls to $(F-J)'$. This is exactly what happened in the years 1983 to 1985. The immediate result from Figure 1 is that the foreign exchange constraint becomes binding. Investment falls from I to I' (the economy goes into a downspin). In Figure 2, both IE and IT fall. But since $1/(m_k+m_r) > \mu(1+b)$, IE falls more than IT. This is shown in Figure 3.

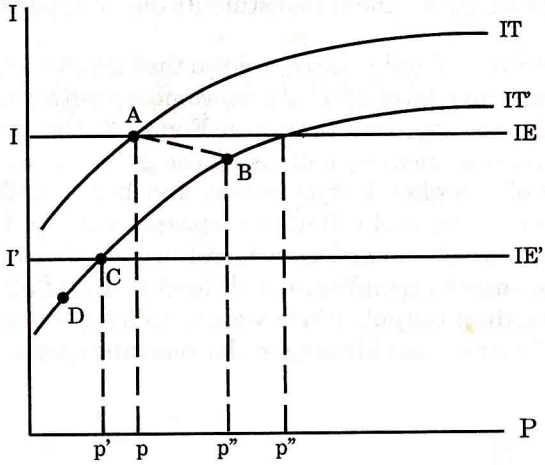


Figure 3

Thus we start from point A where investment is I and inflation is p. The path from I to I' may be traumatic. In the Philippines demand fell much more slowly than the sharp sudden cutback in supply so that an inflationary tendency prevailed as the economy moved from A to B and down towards C. The fall from B to C is caused by a drastic cutback in the budget as well as in credit and money supply. The recessionary moves also cause inflation to fall from a high of $p"$ to p' – which most likely is lower than the inflation when the whole process began (point A).

The above occurs in a situation which differs from Brazil which is the basis of Bacha's study. First of all, the Philippines does not have a strong industrial export base so that, in the short run, IE cannot shift upwards in an export-led recovery. Second, tax and non-tax revenues, as well as government consumption expenditures, are at a very low base such that increasing the budget surplus or decreasing the budget

deficit will have to entail cutbacks in government investment. This means that, again in the short run, *IT* cannot easily move upwards in Figures 1 and 2.

In fact the conditionalities are so stringent during the balance of payments crisis that the fiscal cutback may be so strong as to overshoot the point *C*. In Figure 1, *IT* shifts down to *IT"* so as to intersect *IE* at point *D* at a much lower investment (*I"*) (and at lower (*F–J*)). In Figure 3, the fiscal and monetary contraction brings the economy to point *D* at a lower investment level and a lower price inflation. The severe recession in the Philippines between 1983 and 1985 brought GNP down by around 10 percent in two years and brought inflation down to near zero.

The economic recovery that started late 1986 and continues to this day is a reversal of the path from point *D* towards *C* and maybe back to *A*. This reversal is brought about by allowing the government to expand its investment and expenditures, thus increasing the budget deficit and ending the low inflationary situation. (*F–J*) may improve somewhat (trade and new money facilities were injected in late 1985) shifting the *IE* and *IT* curves up in Figure 3 and allowing the economy to go beyond point *C* towards point *A*. But as (*F–J*) again reaches its limits, the foreign exchange constraint again sets in and the growth in *I* is in jeopardy. The concern with the balance of payments and inflation brings conditionality pressures again for fiscal cutbacks and for *IT* to be pulled down.

2. The International Dimension

Let us now investigate the possible options of the Philippines given that (*F–J*) cannot increase significantly in the next five to ten years. As shown in Figure 1, the important constraint is the foreign exchange constraint. The fiscal constraint is important insofar as this equation is made to respond to the foreign exchange constraint in order to alleviate the balance of payments and inflationary pressures (see section 1.4).

The general picture that looms is that if interest payment of debt (comprising most of the outflow on non-merchandise trade) and outflows in the capital account (particularly long-term capital outflow such as principal payment for foreign debt) continue without corresponding increase in foreign inflows, the foreign exchange constraint will restrict high growth. If the government attempts to pump-prime the system, it may eventually lead to balance of payments and infla-

tionary pressures. This would give external agencies the basis for insisting on fiscal cutbacks and contractionary measures.

The point is: If $(F-J)$ is not allowed to increase in the medium term, can the Philippine economy plan for a shift upwards of the IE curve so that with the same level of $(F-J)$, a higher level of investment and growth can be attained?

A look at equation (9) or (9') shows that a shift upwards in IE can be effected by:

1. an increase in the export potential of the economy (X increases exogenously)

2. a decrease in the import component of capital goods and intermediate inputs (a fall in m_k and m_r)

3. a fall in imported consumer goods (an exogenous fall in M_o).

4. a fall in consumption which reduces demand for imported inputs (an exogenous fall in C_p and C_g).

2.1. Increasing Exports

The issue regarding exports is a controversial and complicated one. It includes the issue of the potential offered by the world market, the issue of competition with other Third World countries for that market and, related to that, the issue of higher productivity and higher value-added of export products. The composition of Philippine exports is shown in Table 1. What is striking is the shift of Philippine exports from an agro-mineral base to manufactured exports during the seventies and eighties. Manufactured exports have grown from almost nil to a level which comprise 60 percent of total exports in 1987. Table 2 shows that manufactured exports are composed mainly of garments, semiconductors and electronic components. This "diversification" of exports has not, however, led to an outward shift of the IE curve so as to enable the Philippines to cope more with the foreign debt crisis. The reason for this is that the manufactured exports are highly import dependent, employing imported textile yarns, fibers and electronic circuits for final assembly. A shift outwards in the IE curve can be effected through manufactured exports only if backward linkages are successful so as to allow the value-added component of the exports to increase. This, of course, entails increases in productivity and competitiveness, particularly in the production of textile yarns, fibers and

electronic components. Furthermore, since garments and semiconductors are exports in which the Philippines faces tough and unequal competition from more advanced Third World countries, it would be wise to diversify manufactured exports further. It is, however, clear from Table 2 that forward linkages from the agricultural and mineral-based products are not doing well. Manufactured food products, footwear, non-metallic mineral manufactures, metal manufactures, toys and sporting goods — all export goods with high local content — have declined from the 1982 level. Only chemical products, handicrafts and furnitures offer some promise but all come from quite a low base. It is imperative that efforts be made to increase the forward linkaging of agricultural and mineral crude products.

All in all, the Philippines will have to make an aggressive effort to capture markets from practically all possible trading partners. This would have to be combined with stronger competitiveness, productivity rises and higher value-added in our exports. It is in a way a motherhood statement for it is tantamount to saying that the Philippine economy should be more productive, more competitive and should industrialize (through forward and backward linkages) faster.

2.2. Making Do With Less Imports (?)

Figure 4 gives us the picture of total imports and its broad components for the late seventies and eighties. It is a fact that the majority of imports is indeed made up of non-consumer items — raw materials, intermediate goods and capital goods. It is also a fact that in the worst periods of recession (1984 – 1986), imports of these primary, intermediate and producer goods were the ones that suffered a decline. The fall was particularly hard on capital goods, as investments fell even below the replacement level. The foreign exchange crisis as effected by a massive decline in net foreign transfers (or a rise in net capital outflow) restricts essential inputs to production and causes economic decline. Table 3 reinforces this picture as we see that the top merchandise imports are almost all intermediate inputs and capital goods.

The question posed is: Given that net foreign transfers will not increase substantially in the medium term, can the Philippines grow without these imports? This will entail drastic reductions in m_k and m_r, and will mean a substantial backward linkaging wherein consumer goods production will employ local materials and local intermediate inputs. It also means the rise of non-existent industries, particularly heavy industries producing capital goods. The medium-term should be

Table 1 – PHILIPPINE EXPORTS BY MAJOR COMMODITY GROUPS: 1980 TO 1987
(F.O.B. value in million U.S. dollars)

Major commodity group	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total	535	796	1,142	1,189	1,168	1,837	2,725	2,294	2,574	3,151	3,425	4,601	5,788	5,720	5,021	5,005	5,391	4,629	4,842	5,720
Coconut products	177	271	212	254	228	374	609	466	540	761	908	1,024	811	750	590	680	727	459	470	560
Copra	139	170	81	114	110	166	140	172	150	201	136	89	47	34	49	4	–	–	18	32
Coconut oil	16	69	98	103	84	153	381	231	299	412	621	742	567	533	401	516	580	347	333	380
Desiccated coconut	19	20	19	21	18	32	60	30	37	90	82	107	116	102	68	68	106	76	44	75
Copra meal or cake	3	12	14	16	16	23	28	33	54	58	69	86	81	81	72	72	41	36	75	73
Sugar and sugar products	135	147	196	220	218	294	766	616	456	535	216	240	657	609	445	321	327	189	108	78
Centrifugal and refined sugar	133	132	188	212	211	274	737	581	429	512	197	212	624	567	416	299	290	169	87	60
Molasses	2	10	8	8	6	19	28	34	24	20	16	27	33	38	25	17	33	16	16	10
Others	*	5	*	*	1	1	1	1	3	3	3	1	0	4	4	5	4	4	5	8
Forest products	95	195	301	264	235	444	338	260	308	294	362	536	468	469	362	331	323	246	251	306
Logs	85	155	243	215	164	304	216	167	135	134	145	144	92	76	78	74	88	39	26	0.3
Lumber	7	8	13	11	10	35	30	27	68	67	85	198	181	126	124	149	107	90	103	154
Plywood	2	18	20	24	34	58	26	21	43	41	72	107	111	111	67	76	56	51	58	67
Others	1	14	25	14	27	47	66	45	62	52	60	87	84	156	93	32	72	66	66	85
Mineral products	37	70	224	224	239	374	518	332	371	501	554	831	1,031	758	532	440	266	243	267	224
Copper concentrates	30	47	185	185	191	290	393	212	266	268	250	440	545	429	312	249	115	84	90	109
Gold	...	...	...	8	27	40	74	76	65	71	76	103	239	215	169	154	104	100	140	90
Iron ore and concentrates	*	2	13	13	9	18	12	13	7	0	0	0	0	0	0	0	0	0	0	0
Chromite ore	5	11	9	6	5	9	13	13	15	25	25	23	33	25	16	10	19	12	10	7
Others	2	10	17	12	7	17	26	18	18	137	203	265	214	89	36	27	28	47	27	18
Fruits and vegetables	25	17	35	41	52	57	91	124	142	157	177	214	365	378	374	327	392	354	346	382
Pineapple products	7	12	22	20	21	23	35	41	52	64	74	96	97	101	107	102	115	128	128	136
Banana	18	2	6	15	24	28	45	73	76	72	86	100	114	124	146	105	122	113	130	121
Others	*	3	7	6	7	6	11	10	14	21	17	18	154	153	121	120	155	113	88	125

Abaca products	43	26	17	15	16	24	46	22	27	29	25	38	31	25	26	25	37	31	35	47
Abaca unmanufactured	42	24	15	13	13	20	38	15	18	18	15	25	27	21	20	18	33	16	13	12
Abaca rope	1	2	2	2	3	4	8	7	9	11	10	13	4	4	6	7	4	15	22	35
Tobacco products	3	16	15	15	18	27	31	35	29	29	30	33	30	50	49	35	31	28	26	23
Raw tobacco	3	15	14	14	17	26	30	34	28	28	29	32	29	48	47	33	28	24	21	18
Cigars and others	*	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	4	5	5
Mineral fuel and lubricants	*	6	17	24	19	16	17	37	34	37	30	42	38	42	33	115	87	42	66	79
Chemicals	2	2	5	6	6	10	15	21	26	51	59	112	89	107	96	87	104	151	243	246
Textiles	3	5	5	7	9	24	20	22	28	21	31	39	33	69	56	25	38	39	44	68
Miscellaneous manufactures and others	14	39	114	111	124	191	271	357	589	722	1,011	1,463	2,198	2,453	2,449	2,586	2,934	2,807	2,874	3,558
Re-exports	1	2	1	8	4	2	3	2	24	14	22	29	37	10	9	33	125	40	112	149

Source: National Statistics Office.

Table 2 – EXPORTS OF NONTRADITIONAL PRODUCTS: 1982 TO 1987
(F.O.B. value in thousand U.S. dollars)

Commodity group	1982	1983	1984	1985	1986	1987
Total	3,025,030	3,111,833	3,650,850	3,315,309	3,542,491	4,423,423
Manufactured	2,460,692	2,537,193	2,991,264	2,564,520	2,684,898	3,604,495
Electrical & electronic equipment and components	1,000,083	1,053,765	1,273,585	992,663	903,492	1,099,871
Telecommunications & sound recording and reproducing apparatus & equipment	14,482	26,608	12,106	9,994	11,111	20,931
Electrical machinery, apparatus and appliances	117,474	126,045	351,178	271,701	368,495	492,522
Semi-conductors and other micro-components	868,127	901,112	910,301	710,968	523,886	586,418
Garments	539,335	542,412	599,686	621,712	749,794	1,095,634
Food products and beverages	214,469	175,471	133,915	157,141	135,577	153,319
Meat and meat preparation	1,298	528	631	259	485	359
Dairy Products and birds' eggs	2,050	2,738	437	361	3,043	1,800
Fish, crustaceans and mollusks, preserved or prepared, n.e.s.	48,618	55,010	47,277	49,239	52,947	59,861
Cereals and cereal preparations	5,246	5,164	5,168	5,594	5,677	6,942
Vegetables, roots and tubers prepared or preserved, n.e.s.	3,461	1,350	1,670	1,282	1,281	1,216
Fruit preserved and fruit preparations (excluding pineapple in syrup)	39,381	30,903	40,585	49,421	41,764	48,111
Sugar and honey	45,279	34,799	8,346	23,908	815	78
Sugar confectionery and other sugar preparations	3,667	4,410	3,757	3,953	5,073	7,270
Coffee, tea, cocoa and manufactures thereof						

Feeding stuff for animals	3,538	3,653	4,377	2,320	1,520	1,310
Miscellaneous edible products and preparations	6,308	7,754	8,676	6,781	7,846	8,515
Beverages	3,691	2,762	2,794	2,283	3,215	5,254
Handicrafts	121,600	127,909	133,024	122,381	145,791	199,001
Chemicals and chemical products	96,767	87,849	106,133	151,591	243,480	246,519
Organic chemicals	54,449	48,315	64,176	55,787	63,749	67,933
Inorganic chemicals	5,608	3,305	3,328	15,237	15,646	28,287
Dyeing, tanning & coloring material	809	2,532	452	427	306	608
Medicinal & pharmaceutical products	7,954	7,558	7,176	6,754	5,988	5,311
Essential oils & perfume materials	2,151	2,492	4,070	5,480	6,740	7,740
Fertilizers, manufactured	*	31	1,086	33,416	113,458	86,252
Explosives & pyrotechnic products	1,037	621	530	958	1,557	1,357
Artificial resins and plastic materials and cellulose esters and others	12,276	11,434	11,216	17,199	20,395	27,995
Chemical materials and products, n.e.s.	12,483	11,561	14,099	16,333	15,639	21,037
Furniture and parts	71,598	83,556	88,298	83,719	89,353	130,380
Footwear	61,986	54,956	46,382	38,641	30,837	31,265
Machinery and transport equipment	50,561	39,316	42,895	37,081	53,826	85,861
Non-metallic mineral manufactures, particularly cement	39,549	25,718	20,587	22,758	16,790	18,904
Textile, yarns, fabrics and products	38,917	28,468	25,447	25,154	34,455	55,808
Builder's woodworks	30,873	40,140	40,353	26,241	28,349	43,419
Toys and sporting goods	30,327	18,993	16,474	11,365	10,866	12,873
Watches and clocks	11,653	8,187	247	190	139	133
Cordage, cable, ropes, and twines	13,864	12,026	11,149	10,123	7,750	8,433
Fuel wood, woodcharcoal, pulpwood	6,364	7,732	12,036	15,759	10,738	18,031
Pulp and waste paper	10,612	9,960	12,403	13,235	11,409	12,829
Mineral fuels, lubricants and related materials	33,304	115,664	86,643	71,765	65,768	93,916

Table 2 cont'd.

Commodity group	1982	1983	1984	1985	1986	1987
Animal and vegetables oils, fats and waxes (excluding coconut oil)	29,561	47,884	63,821	42,955	19,853	23,016
Manufactures of metal, n.e.s.	19,415	10,938	9,915	7,930	9,522	17,143
Sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	2,006	1,854	1,933	1,806	2,063	3,526
Others	37,849	44,394	266,339	110,310	115,046	254,614
Unmanufactured	563,953	573,821	657,860	748,596	856,615	817,483
Bananas	147,362	106,058	122,996	114,292	130,507	121,537
Nickel and nickel ores	61,446	63,313	25,257	14,219	9,297	10,714
Iron ore agglomerates	105,622	114,377	105,024	94,982	85,151	75,878
Nickel concentrates	9,176	7,815	2,539	18,692	11,058	–
Fish: fresh or simply preserved	70,665	76,685	68,208	99,295	143,611	207,143
Coffee not roasted	49,429	46,687	76,154	69,542	118,756	32,116
Rice	201	9,386	796	27	11	24,696
Iron and steel	21,933	27,856	36,384	40,130	33,365	36,473
Vegetables and fruits, fresh or dried	27,490	26,804	34,180	32,468	36,733	49,920
Oil seeds and oleaginous fruit	8,521	5,277	10,091	6,907	2,353	1,666
Crude rubber	6,379	5,071	5,630	9,917	10,123	7,567
Crude fertilizers and crude minerals	4,760	5,519	5,015	4,677	5,168	6,920
Crude animals and vegetable materials, n.e.s.	20,403	20,189	16,516	24,583	28,565	30,091
Textile fibers and their waste (not manufactured into yarn and fabric)	6,059	6,718	7,461	14,595	22,453	35,264
Metalliferous ores and metal scrap	13,758	9,091	12,760	13,997	17,204	5,939
Non-ferrous metals	10,505	40,847	126,936	189,731	202,094	171,427
Others	245	2,127	1,914	542	166	132
Special transactions[1]	385	820	1,726	2,193	978	1,445

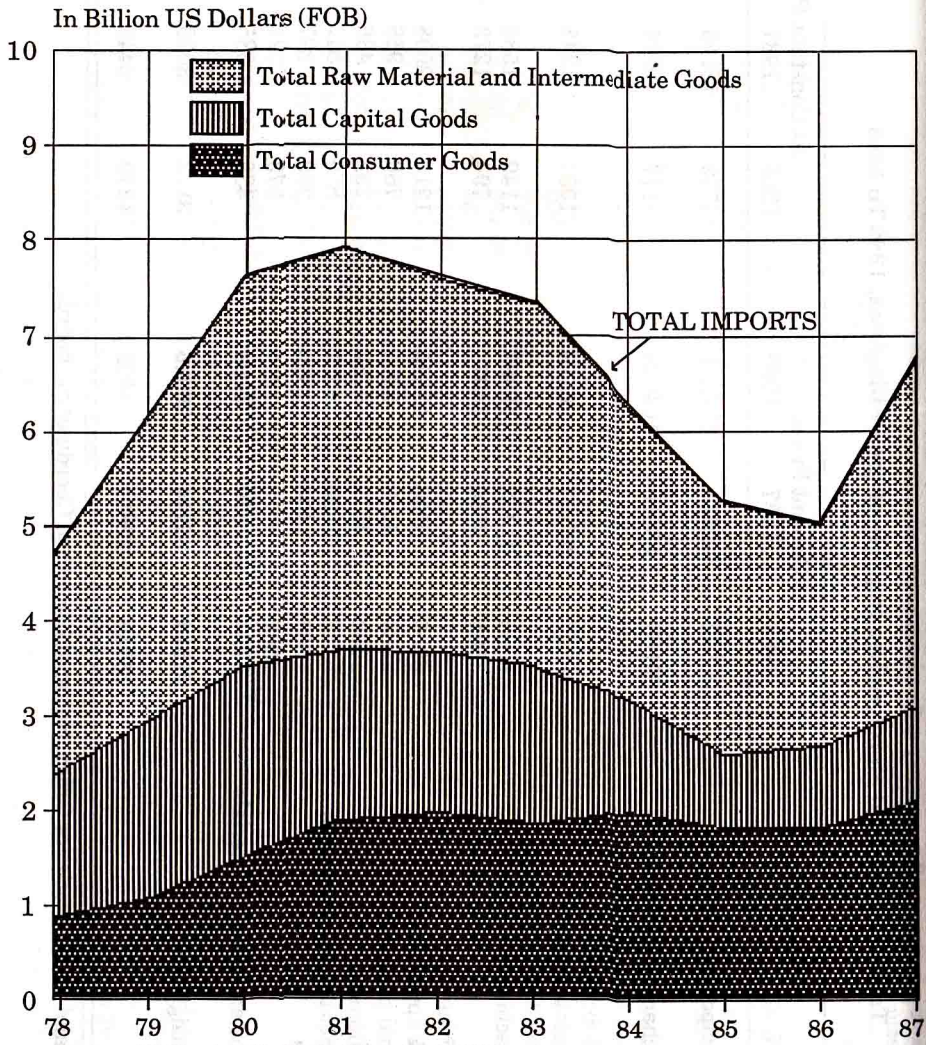
* Data are for repayment of loaned rice to Indonesia.

[1]Includes animal, live n.e.s. (including zoo animal, dogs, cats, insects, etc.)

Table 3 – Principal Merchandise Imports of the Philippines, 1986 To 1988

ITEM	At Current Prices			At Constant Prices		
	1986	1987	1988	1986	1987	1988
Total Mechandise Imports	106662	142918	178551	14539	18159	25232
A. Principal Merchandise Imports	60103	83560	104003	7177	9678	13370
1. Mineral fuels, lubricants and related materials	18807	27127	26118	1037	1348	2060
2. Machinery other than electrical machinery	8285	11433	15883	1149	1584	2559
3. Base metals	5681	9556	14074	794	1273	1619
4. Electrical machinery, apparatus & appliances	6959	9536	12625	1219	2098	2814
5. Cereals & cereal products	3984	3240	5805	760	959	1601
6. Transport equipment	1682	3172	6752	292	436	1075
7. Chemical elements and compounds	5846	7603	8617	676	847	624
8. Mfts of metals	1268	1404	1920	239	227	316
9. Textile yarns	4367	5919	7016	573	321	276
10. Artificial resins and plastic materials	3224	4570	5193	438	585	426
B. Imports of Consignment	21514	26744	29926	3113	3039	3506
C. Others	25045	32614	44625	4249	5442	8354

Source: Economic and Social Statistics Office, National Statistical Coordination Board.



Source: Philippine Statistical Yearbook, 1988.

Figure 4 – External Trade Imports: 1978-1987

concentrated on developing the capabilities of producing high-quality local inputs to production. The establishment of heavy capital goods industries may be a longer-run project since it requires substantial financial and savings resources, which can only come about after significant increases in income and domestic savings. There are, however, some capital goods, such as light agricultural machinery, whose production may be feasible and beneficial in the medium term. Again, as in exports, productivity, competitiveness and value-added should increase in most sectors of the economy.

The strategy here requires a strong industrial trade policy by the government. Whether this can be done with the fiscal and foreign exchange constraints severely binding is doubtful. In a way, productivity and structural improvements require the resolution of the net foreign transfer problem. Debt reduction or higher foreign inflows are imperative for long-run sustainable growth.

Another possible strategy in the short and medium run may be to reduce consumer good imports or to contract private and government consumption so as to reduce the required intermediate imports. The first can be done, say, by imposing quotas, tariffs or taxes on imported consumer items, preferably those considered to be luxury items. More than 50 percent of imported consumer goods are classified as manufactured (and "others") many of which in the Philippine context can be considered as luxury goods. Limiting the entry of these goods, however, will face stiff resistance from the powerful elite who are the purchasers of these goods and from multilateral agencies who will view this as contradicting the import liberalization program which aims to expose Philippine products to foreign competition. Whether this policy will work depends much on the political structure and will of the country. It is, however, safe to assume that this policy will definitely be inferior to one that effects an increased capability to export higher vaue-added goods or to one that reduces the dependence of growth on imported inputs and capital goods (reducing m_k and m_r).

Finally the least feasible approach is to reduce total consumption (C_p and C_g) so as to reduce imported inputs to production. This strategy, if successful in reducing balance of payments pressures, has always been accompanied by a tremendous recession which means that investment I falls even more than consumption. This defeats our initial purpose of trying to increase growth and investments. Of course a Stalinist approach of reducing consumption with the state expropriating the surplus (in terms of foreign exchange, fiscal savings and personal savings) for investment purposes can be implemented. The pol-

icy, aside from being morally repugnant, is perhaps politically infeasible given the already low base of the consumption level.

3. Shifting the Fiscal and Savings Curves Upwards

If, somehow, we manage to increase the *IE* curve, for growth to be sustainable, the *IT* and eventually the *IS* curves will also have to shift upwards. This is seen in Figure 5. Given a low base of (*F–J*), the original *IE* curve provides only *I* level of investments (at point *A*). As *IE* shifts up to *IE'*, *I* can go up to *I'*. Now the *IT* constraint becomes binding and so for *I* to go up further, *IT* will have to shift upwards. If *IE* and *IT* keep shifting up, it is easy to see that eventually *IS* will also have to shift up for *I* to keep increasing. The increase in *IT* is more essential especially since conditionalities (as explained earlier) usually force the fiscal constraint to intersect the foreign exchange constraint at the actual point the economy is in (see Figures 1 and 2). A shift in the *IT* curve will also allow the economy to expand with less pressure for inflation. This can be see clearly in Figures 2 and 3.

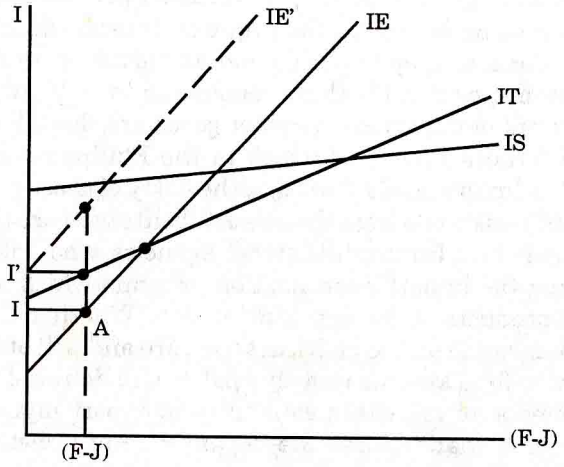


Figure 5

A successful shift in the *IE* curve will almost certainly entail increases in productivity in the economy. This will lead to a rise in investments and income. One may think that the fiscal equation may have a tendency to shift up as tax revenues increase. But government investments and expenditures will also have to increase to sustain increasing investments and income. The fact is that direct tax receipts in the Philippines are quite inelastic to income because of corruption in the government bureaucracy and because of the lopsided income distri-

bution in the country. Given this structure, increases in tax collection can only be effected with increased tax rates on essential goods (the most important of which would be fuel). This of course will have a stagflationary effect on the economy and may bring all three curves downwards. Thus, a shift in the fiscal equation will have to entail cleaning up the government bureaucracy as well as tackling the regressivity of the taxation process. Furthermore, it may also entail more efficient and profitable performance of government departments, corporations and other entities. The government cannot lag behind the rise in efficiency and productivity of the economy at large.

Finally, the foreign debt crisis has somehow been translated into a fiscal crisis as the government has assumed most of the foreign liabilities of the country. Furthermore, large domestic borrowings to finance an expansionary fiscal policy also took place from 1986 onwards. Debt service therefore will continue to average more than 40 percent of government expenditures in some time to come. This strong fiscal constraint will have to be tackled immediately.

The shift in the savings equation may follow more naturally from the shifts in the *IE* and *IT* curves. A shift in *IT* will entail an increase in government savings which will shift the *IS* curve directly. Furthermore, a substantial rise in potential income leads to an increase in the absolute amounts of savings as well as most likely the savings rate. This again shifts the *IS* curve upwards. It must be pointed out, however, that it is still important that savings mobilization and its efficient allocation and channeling to investments be undertaken, particularly by creating a vibrant rural income (and savings) condition, through a more efficient financial sector, and through successful reductions in capital flights, hidden wealth and other unproductive hoardings. Such measures will not only shift the *IS* curves upwards but may also affect the other two curves positively.

4. Growth If Net Foreign Transfer Increases

If net foreign transfer increases due to a successful multilateral aid plan or a significant amount of debt relief, then growth and investments can increase from the previous level without shifts in any of the curves. It is estimated that for the Philippines to sustain an annual growth rate of at least 6.5 percent in the next five years, financing of somewhere between $5 billion to $10 billion would be required.

Increases in $(F–J)$ can lead the economy to go from points D, to C, to A and to E in Figure 1. But the eighties are definitely different from

the seventies; one cannot expect (F–J) to increase successively through the years. Eventually and most likely, the foreign exchange or fiscal constraint will block the further substantial growth of the economy. Shifts in the *IT*, *IE* and *IS* curves will be necessary for further accumulation. Even in the seventies when net foreign transfers were plentiful, there did not seem to be substantial shifts in the three curves. In this case the growth has been limited to the shaded areas of Figure 1. One can imagine the much higher growth rates that could have been attained if increases in net foreign transfers were accompanied by shifts upwards of the three curves. The Philippines did not "take off" as its East Asian and ASEAN neighbors seem to have done.

References

Bacha, E. (1989), "A Three-Gap Model of Foreign Transfers and the GDP Growth Rate in Developing Countries," Preliminary Paper, (Feb.).

Devine, P. (1988), *Democracy and Economic Planning: The Political Economy of a Self-Governing Society*, Colorado: Westview Press.

Chenery, H. and Bruno, M. (1962), "Development Alternatives in an Open Economy: The Case of Israel," *Economic Journal*, 72, March, pp. 79-103.

Montes, M. (1989), "Financing Philippine Medium Term Growth," Preliminary Paper, (Feb.).

Rattsϕ, J. (1988), "Restrictions to Economic Growth: Growth Programming for Zimbabwe," Preliminary Paper (Dec.).

Taylor, L. (1988), "Macro Constraints on Indian Growth," V.K. Ramaswami Memorial Lecture, NewDelhi.

Williamson, O. (1985), *The Economic Institutions of Capitalism*, New York: The Free Press.