

PUBLIC LAW 480 ASSISTANCE AND
ECONOMIC DEVELOPMENT IN INDONESIA

by Bruce Glassburner.¹⁾

Foreign assistance, in the popular view, is seen mainly as a transfer of capital goods from capital — rich to capital — poor countries. The phrase conjures visions (in Indonesia) of the sparkling, modern Sriwidjaja fertilizer factory in Palembang, the Djakarta ring — road, and the Djatiluhur dam — or, as Professor Milton Freidman would call them, "industrial monuments". It comes as something of a surprise, therefore, to learn that the largest single component of foreign assistance given to Indonesia since she achieved her independence has been in the form of agricultural commodities — mainly from the United States.

The United States has provided a total aid flow to Indonesia between 1946²⁾ and 1969 of approximately \$ 1.2 billion. Of this, \$ 565 million or nearly half, has been some form of P.L. 480 commodity shipments.³⁾ In the years since resumption of U.S. assistance following the attempted **coup d'etat** of 1965, the proportion of such assistance in the total has risen sharply (see Table I), the peak proportion having been reached in 1968, when 77 per cent of U.S. Assistance was in this form. The largest total inflow under P.L. 480 will be realized in 1969 — more than \$ 110 million worth of rice, wheat products, cotton, and tobacco. Rice in the most important single commodity, accounting for half of the total value net of freight; cotton is next, accounting for about one-third of the value. Two thirds of the total (by value) comes as food, one-third as fibre.

1. Professor of Economics, University of California, Davis; SEADAG (South-east Asia Development Advisory Group) Grantee for research in Indonesia for valuable assistance.
sia, summer, 1969. The author wishes to express his appreciation to the staff of the USAID Mission and to Drs. Legowo of the University of Indo-
2. A modest inflow of Marshall Plan funds was channelled to the islands before the official transfer of sovereignty in 1949.
3. The \$ 565 million figure is tentative, and I have reason to believe that it is an understatement.

Table I.

PL 480 in the Total U.S. Assistance Program (Commitments).

Year	Total Assistance	PL 480	PL 480 as share of total (per cent)
1946-65	\$ 800.0 million	\$ 290.0 million	36
1966	45.9 million	45.9 million	100
1967	65.3 million	27.8 million	42
1968	110.0 million	85.0 million	77
1969 ^{a)}	166.6 million	116.3 million	70
Total	\$ 1,187.8 million	\$ 565.0 million	48
Sub-totals :			
1966-69	\$ 387.8 million	\$ 275.0 million	66
1966-69/ 1946-69	32.5 (percent)	48.5 (percent)	

Sources : 1946-65, "United States Assistance to Indonesia", USAID, Djakarta, November 26, 1966 (mimeographed).
1966-69, "United States Economic Assistance to Indonesia", USAID, Djakarta, revised July 25, 1969 (mimeographed).

a) estimated.

Value of the Resource Flow

How valuable is P.L. 480 assistance to Indonesia? The summation of values of shipments is an inadequate indicator for a variety of reasons. In the first place, P.L. 480 assistance is not **gratis**, except for a very small proportion (less than ten percent). The remainder is provided through loans, repayable in either local soft currency (as was the case with all P.L. 480 loan agreements prior to 1966), or in convertible currencies (as with all such agreements since April 1966). Under more normal lending circumstances, the total "current" value of repayments would exceed the value of the loans, because of interest payments — i.e., if we were to sum all scheduled repayments until the loans are retired, the repayments would exceed the value of the commodities provided. In the case of P.L. 480 assistance to Indonesia, however, this is not the case.

Taking into consideration only agreements and commitments through 1969, total recoveries including interest, realized and scheduled, will amount to a little more than \$ 490 million, while, as we have seen, the value of

goods shipped exceeds \$ 550 million. The basic reason for this anomaly is that the United States recovered only a total of \$ 85 million for all sales under agreements signed in the period 1956-62, whereas goods shipped in that period were valued at \$ 290 million. The "losses" to the U.S. during that period were caused by the granting back to the Indonesia Government of large parts of the rupiah proceeds of sale, to provide local finance complementary to development projects financed by foreign exchange loans and grants; and also to very substantial unrecoverable depreciation of U.S. — help rupiah funds during the long period of hyper-inflation.

This very favorable situation (from Indonesia's point of view) will not continue if the terms of loan agreements entered into since 1966 are to be met. These repayments are to be in convertible currency, and full principle plus interest are to be repaid¹⁾ Presently scheduled repayments of principle and interest for P.L. 480 loans extended since 1966 total more than \$ 400 million in repayment for goods valued at approximately \$ 275 million (including those provided gratis).

Calculations in "current" flows, however, are not a valid indication of the true value of the resource flow. The largest part of the gain to Indonesia is the value of having increased resources in the early stages of her development effort when saving capacity is low and capital is scarce. In other words, her social rate of discount is very high, and the resource stream should be considered at present value, appropriately discounted. One cannot estimate a social rate of discount with any accuracy, but it seems reasonable to assume that in Indonesia, since independence, a rate no lower than 8 percent would be appropriate, and perhaps 12 percent could be regarded as the upper limit.²⁾

Rough and ready calculations, using these two rates are given in Table II, below. Given the limitations of information on actual resource transfers; this table is largely illustrative, but it will very likely be an understatement, rather than an overstatement of the present (1969) value of the resource flow.

1. One can anticipate, however, that if debt-servicing problems remain formidable for Indonesia over the next several decades — as they surely will — U.S. and other government assistance will take on, increasingly, some form of debt forgiveness or postponement. Indeed this is already a large (and largely hidden) element in the assistance package of all the donor nations.
2. 12 percent is the official long-term lending rate.

Table II.

Net Present Value of P.L. 480 assistance to Indonesia 1956-1969.(in millions of U.S. Dollars)^{a)}

Discount Rates :	12 percent	8 percent
Present Value of all shipments.	929.4	855
Present Value of all payments. (paid and scheduled)	(—) 228.7	(—) 243
Net Present Value	650.7	612

a. All values are approximations only. Pending the availability of more accurate data on actual shipments under each agreement, the timing of resource transfers remains uncertain, and hence the discount factor applicable is uncertain. The orders of magnitude, however, are significant.

The Critique of P.L. 480.

The professional literature on P.L. 480 assistance is voluminous. A brief bibliography is given at the end of this article. Much of this literature has been critical. Schultz, in particular, has expressed concern about this kind of program from a number of points of view. The aspect of the "P.L. 480 Albatross" (as Schultz has called it) which concerns us most in the present context, is the impact on the incentives to domestic agricultural producers. These effects are discussed in connection with P.L. 480 as a source of finance for labor-intensive public works, pp. 5-16, below. Other authors have raised questions concerning the effects on local monetary policy of having large quantities of domestic currency under U.S. control as a result of proceeds generated by sales of P.L. 480 commodities.

Broad Financial Considerations.

The sale of P.L. 480 commodities under agreements reached from 1956 through 1962 yielded the equivalent of Rp. 22.8 billion.¹⁾ This total, even though its value in U.S. dollar terms was less than half the cost of the commodities shipped to Indonesia, was extremely large in the perspective of the small monetary sector of the Indonesian economy. The total money stock in 1966, for example, was only Rp. 21.0 billion.²⁾

1. Gross and cumulative, converted to "new" (i.e., post-1966 revaluation) rupiah, **Indonesia Financial Operations Status Report**, June 30, 1968. USAID/DJAKARTA, page E-1.
2. **Statistik Indonesia**, 1964-1967, Biro Pusat Statistik, Djakarta.

While these earlier funds were payable directly to a U.S. owned account, and have been fully used up, agreements under loans since April, 1966, have required that proceeds of sale be deposited in a "Special Account", owned by the Indonesian Government, but subject to U.S. approval prior to release. Cumulative deposits to this account through June 30, 1969 had reached Rp. 55.8 billion. Cumulative approved withdrawals totalled Rp. 19.2 billion, leaving a balance on June 30, 1969 of Rp. 36.6 billion. This balance is approximately 30 percent as large as the total money stock. This is an immense proportion of the nation's financial resources to be subject even to partial supervision by a foreign nation. On the other hand, the size of the buildup is strong evidence against the argument that the handling of such funds is inflationary. During the hyper-inflation period of the early 1960's, the U.S. Government might have been able to cushion the force of the huge government of Indonesia deficits by freezing its deposits altogether — as opposed to granting and lending funds back to Indonesia and the spending of locally generated funds for "U.S. uses" within the country. It is doubtful if such a policy would have been politically feasible in either country. In any case the inflation was the result of deplorable fiscal policy on the part of the Indonesian government, and the net financial impact of P.L. 480 operations was clearly deflationary. In the present situation (i.e., since 1966), accumulation of funds in the Special Account has been carefully accounted by both governments and its impact on the effective money supply taken into account in the struggle to bring the rate of inflation down. Again, the net result has been a very large net buildup of local currency and a net deflationary effect. Releases have been modest, and exclusively for the purpose of providing finance for development activities.

P.L. 480 as a potential source of finance for labor-intensive public works.

In recent months there has been a good deal of discussion of the need for a large scale labor-intensive public works program and of the prospects of financing such a program with the proceeds of sales of commodities imported under P.L. 480. Labor-intensive programs, such as rehabilitation of roads, irrigation works, drainage canals, and flood control embankments can have surprisingly large benefit cost ratios. John Thomas¹⁾ has calculated that such programs in East Pakistan, over a five year period in the early 1960's, yielded a benefit-cost ratio of 2.95. This ratio, incidentally, is derived only from quantifiable, mainly internalized benefits. Non-quantifiable political and social benefits were not involved in the calculation and certain externalities were also not included. **A priori**, there is no good reason why Indonesia cannot profit in a similar way.²⁾

1. J.W. Thomas, "Rural Public Works and East Pakistan's Development", a paper presented at the Development Advisory Service Conference, Sorrento, Italy, September 5-12, 1968.
2. Pakistan and Indonesia are different countries with different problems, however. See my draft memorandum "The Experience With Labor Intensive Program in East Pakistan and Korea, and its Relevance to Indonesia", June 29, 1969.

Over and above these kinds of gains, labor-intensive works programs are highly desirable in this country. They can be used to help toward a solution to two vital problems, namely (1) flagging effective demand for food-grains and (2) labor saturation and unemployment. Works programs on which workers are paid largely or (preferably) entirely in cash, without the wage bill being tied directly to compensating imports can be of major assistance in bringing cost-benefit ratios in rice production above critical minimum levels.

Cost-benefit ratios in agriculture are now (in mid-1969) below the critical minimum necessary to make rice production using non-conventional inputs acceptable to any but the best endowed and most efficient farmers without substantial subsidy, and on many programs, present incentives are not sufficient given present subsidies. A strong case can be made against increased subsidies.¹⁾ In short, price rationalization in agriculture should be given high priority, using cost benefit ratios as the guideline.

Rationalization would be approached most rapidly by the rebuilding of The Marketing Board's (BULOG'S stocks²⁾ through domestic procurement and the withholding of imports — either by deferring shipments or by stockpiling imported food grains until acceptable internal price levels are attained. These stocks would then be available for later injection if (hopefully **only** if) cost-benefit ratios have become acceptable and if inflation reaches unacceptable levels. Unfortunately, there is a trade-off between maintenance of cost-benefit ratios and retaining present price stability. The immediate priority, however should favor incentives to farmers, lest the growth impetus in agriculture be lost. **In the long run**, rising productivity in agriculture is the best inflation hedge.

Public works fit into this picture in a rather complex way. They are needed, in themselves, but **they need not**, and should not, be undertaken at the cost of satisfactory production incentives. A massive PL 480 Title I program would jeopardize those incentives. Financing of such projects, then, should be internal **unless and until** cost-benefit ratios have risen to satisfactory levels. Stocks could then be sold off as a means of (a) increasing the government's rupiah resources and (b) containing the rate of inflation.

It should be emphasized that raising demand for food through increased employment in public works is **complementary** to BULOG stockpiling in this strategy — not a substitute. Indeed, given substantial administrative delays in initiating works programs, the demand effects **could** be too late

1. Most discussions of incentives in BIMAS and INMAS programs take subsidies, for working toward price relationships which eliminate the necessity for them altogether.
2. BUL purchases in 1969 have fallen very far below target and stocks have been depleted. Empty storage space is said to have reached 350,000 tons capacity on Java alone.

to contribute to the short term solution. If, as seems all too likely, the price structure of the past few months has already damaged incentives seriously, and (perhaps more importantly in the short term) the excellent weather conditions which have prevailed in the last few growing seasons do not persist, present problems of market oversupply (relative to effective demand) could become shortage problems in later seasons. It will then be extremely important to have substantial buffer stocks on hand. If domestic stocks have not been accumulated in sufficient quantity to meet that contingency, imports will then be needed.

It can therefore be seen that works programs should not be tied directly to import programs. Imports must be used as a hedge in import of a carefully used buffer stock program which would (ideally) use agricultural cost-benefit ratios as the gong to indicate the need for stock build-up and the rate of inflation as the whistle to indicate a need for injections. **Concomitantly** consumer demand should be pushed upward, using labor intensive projects, to generate market expansion at a rate which will balance rising productivity.

The rationals behind my qualified opposition to dependence on P.L. 480 for financing public works is the following : I assume, at the outset, that if any such programs were undertaken, the Government of Indonesia (GOI) would (unless convinced of a better strategy) insist on realizing import and sale before paying out funds for the projects involved. I assume also that the size of the program will be limited to the value of the additional commodities sold as measured by revenues actually realized. This means that at least during the period before the repercussive effects of wage payments have time to be felt (hereafter, period I) there will be downward pressure on domestic prices which will probably have these revenue effects :

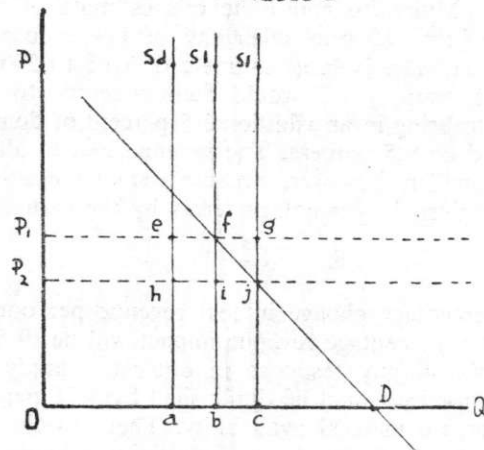
(1) Income to sellers of food grains will be reduced;¹⁾ (2) revenues from sales of imports not connected with the special labor intensive programs will be less than otherwise; and (3) revenues from the sale of the additional imports will fall short of tonnage imported multiplied by ex ante prices.²⁾ The above assertions are said to be probable, because it is assumed that

1. Perhaps farmers would be shielded from price depressing effects of imports if timed to hit the market post harvest. If the paddy is in the mills, the revenue impact would hit the middle-men. It would have some effect on paddy prices at the following harvest, however, and might therefore affect farmers expectations, thereby hurting BIMAS, INMAS, etc.
2. Ex ante prices here means the prices of food grains which would obtain in the absence of substantial "additional" imports connected with the program of labor intensive works. In figure I, it is taken to be price OPI. Gilbert's calculation (and those of most papers on the food-grain situation) take price as given, implicitly assuming infinite demand elasticity. Perhaps more precisely, in Gilbert's case, the assumption is that repercussive demand effects will instantaneously compensate for the market depressing effects of imports.

the overall price elasticity of demand for food-stuffs is less than unity, and that the period in question is short enough so that the price elasticity of supply can be ignored. The argument is illustrated broadly by figure I. (see page 45).

S_d is the amount of the commodities in question supplied domestically, i.e., available in period I. S_i equals S_d plus imports scheduled independent of the labor intensification (LI) program. S_i is the quantity supplied inclusive of total imports, including the additional imports for the LI program. Perhaps too obviously, under those assumptions, the period I impact would be negative on total returns and on all components, in that all must be less than they would have been at the ex ante price of OP_1 .¹⁾

FIGURE I



The price-depressing effect of additional imports depends on the elasticity of demand, of course, and on the proportion of imports to domestic supply.

Following Franklin Fisher,²⁾ the percentage change in price induced by a one percent increase in imports (i.e., expressed as a proportion of total supply) is given by the expression where P is price, I is imports, S domestic

1. I recognize that the assumption of vertical supply functions is crude, even in the short run. The "marketable surplus" will probably respond some to price changes, even in the short run. Mubyarto and Fletcher, using a lagged price for rice, got statistically significant price response coefficients for Java-Madura in the range 0.059 (for dry rice yields, 1951-62) and 0.326 (for wet rice output). The lags, however, imply a longer period and therefore higher elasticity. To the extent that there is some short term supply response my case is overstated, but that cannot be very much. Cf. Mubyarto and L.B. Fletcher, *The Marketable Surplus of rice in Indonesia: A Study in Java-Madura*. Monograph No. 4 International Studies in Economics, Department of Economics, Iowa State University, Ames Iowa, 1966.
2. See his "A Theoretical Analysis of the Impact of Food Surplus Disposal on Agricultural Production in Recipient Countries", *Journal of Farm Economics*, November, 1963.

$$E = 1 - \frac{I}{S} \left(\frac{S}{P} \right) = \frac{I}{\eta_S + \lambda \eta_D}$$

supply, η_S and η_D the price elasticities of supply and demand for the commodities within the country, and λ is the ratio $\frac{S+I}{S}$. In our short term case with η_S assumed to be equal to zero, the expression reduces to

$$E = \frac{1}{\lambda \eta_D}$$

To give some notion of the order of magnitude of E in Indonesia, take the upper limit of Mubyarto and Fletcher's estimate of the range of the "upper limiting values" of price elasticity of home consumption of rice (-0.5) and a conservatively large estimate of λ of 1.05 (i.e., imports at 5 percent of domestic supply). E would then be equal to 1.9. If the new LI program were to bring in an additional 5 percent of domestic output, the price impact would be 9.5 percent. The revenue loss to all sellers, in total, would be much smaller, however, because demand elasticity is less than zero. Thus loss is given in percentage terms by the expression :

$$R = 1 + \eta_D$$

where R is the percentage change in total revenue per one percent change in price. ¹⁾ Thus the percentage revenue impact will be $(9.5) (0.5) = 4.75$ ²⁾

In the absence of any response in domestic supply or imports, the total value of all supplies would be diminished by 4.75 percent as the result of a 5 percent increase in total availability. There would be a larger percentage loss if (as seems likely) demand elasticity is lower (i.e., smaller negative value) and if the value of λ were smaller than 1.05.

A rough and ready way of estimating these short term impacts would be to assume that the proportionate price impact would be twice the proportionate change in total availability of commodities, and that the revenue

1) When price changes, value (V) changes from PQ to $(P + \Delta P)(Q + \Delta Q)$

$$\begin{aligned} dV &= PQ + Q\Delta P + P\Delta Q + \Delta P\Delta Q \\ \frac{dV}{dP} &= Q + P \frac{dQ}{dP} = Q \left(1 + \frac{P}{Q} \frac{dQ}{dP} \right) \\ &= Q (1 + \eta_D) \end{aligned}$$

differentiating
with respect to P {

$$R = \frac{dV}{dP} \frac{P}{V} = (1 + \eta_D) \frac{P}{V} Q = \frac{P}{V} Q (1 + \eta_D)$$

since $V = PQ$,

$$R = (1 + \eta_D)$$

2) Note again that demand elasticity is negative. Hence $R = 1 - 0.5 = 0.5$

impact would be equal to that change, all in percentage terms. These are probably too conservative guidelines if anything.¹⁾

The available wage bill.

Assuming that funds expended on wages are limited by revenues from additional sales proceeds from surplus commodity imports, we find that the LI program, unless given greater priority than that implied by this assumption, may be held back seriously by the revenue-depressing effects discussed above. Referring again to figure I, if the total proceeds from non-LI imported commodities were planned at quantity $a b$ and price OP_1 — i.e., total proceeds of area $a b f e$ — then additional funds will be the area of the rectangle $b c i j$ minus the area $h i f e$. To illustrate further, consider Table III.²⁾ Beginning with domestic supply of 10 million metric tons

Table III.

Hypothetical Numerical Example of Revenue Effects of A Large SAC Import Program Expansion.

Sources	(MT × 10 ⁶) Amount	Realized Value at P ₂ (Rp. × 10 ⁹)	(Rp. × 10 ⁹) Value at P ₁ Realized	Realized Value, Percent change
Domestic				
food supplies	10.00	350.0a)	316.0a)	-9.6
Non-LI imports	0.5	17.5	15.8	-9.6)
LI imports	0.5	[17.5]b)	15.8	[-9.6]) c) * 80.6d)
Totals	11.0	367.5	347.6	-5.4
		[385.0]		

P₁ = Rp. 35/Kg.
P₂ = 35(.904) = Rp. 31.6/Kg.

- a) On-farm consumption is evaluated at market price. This value is not literally realized, ofc course. See text.
- b) Ex-ante value computed ignoring price effects.
- c) Realized value percentage loss vis-avis ex ante value.
- d) Percentage increase in realized revenues o total imports sold on the domestic market compared with pre-LI import situation.

1. Incidentally, the same logic applies to stock control. Reverse these impacts to estimate BUL's price-raising leverage if BUL should adopt a marketing board policy and wish to raise prices and farm incomes. Similarly, this argument applies symmetrically to use of SAC imports as an anti-inflation tool.
2. This example is not to be construed as a realistic one. I am crudely lumping all food into one category here and ignoring the complexity of the distinction between marketed and non-marketed goods. A later paper will attempt to sort out these

and 500,000 tons of imports and a retail price of Rp. 35,—/kg., we introduce a massive campaign of P.L. 480 imports. The price-depressing effect (9.6 percent — corresponding to 0.5/10.5), drops the price from 35 to 31.6. Revenues from sales of imports, in total, rise from Rp. 17.5 billion to Rp. 31.6 billion, an 81 percent increase. The gain, however, is at the expense of an overall drop in value of supplies from Rp. 367.5 billion to Rp. 347.6 billion. The bulk of this loss, in absolute terms, falls on the value of domestic supplies, but revenues earned by the 500 thousand MT of "normal" imports also must absorb a part of the revenue loss. If we assume that programs are planned to utilize the entire Rp. 17.5 billion which the "normal" imports would have earned at the higher price, the "additional" revenue available for LI projects will be only Rp. 31.6 billion less Rp. 17.5 billion, or Rp. 14.1 billion. In terms of employment effects, then, we would have a wage fund sufficient to create 201 million mandays of employment at an assumed cost per manday of Rp. 70.¹⁾

Repercussive demand effects.

A major point of argument is that the revenue loss would be restored because such a large proportion of total income is spent by the workers on food. Whether or not this assertion is supportable depends on the expenditure elasticity of demand for food. Mubyarto and Fletcher²⁾ present four observations, all highly significant statistically. These are given in Table IV, below :

Table IV.
Expenditure Elasticities for Food in Jogjakarta,
and Krawang, 1963-1964.

<u>District and Stratum</u>	<u>Elasticity</u>
Jogjakarta	
Stratum 17	0.631
Stratum 18	0.615
Stratum 19	0.691
Krawang	0.706

These elasticities give the proportion of **additional** income which would be spent on foodstuffs. If we conservatively assume that the marginal productivity of the workers before employment on LI projects was zero, and that therefore all income received is additional, we can apply the elasticities directly to total income and paid on those projects.³⁾ This means, then, that from 62 to 71 percent of income received would flow back into food markets. Possibly the elasticities given here overstate the countrywide regeneration of demand for food, as urban demand elasticities are probably

1. The Rp. 70 cost per man day was used in an internal paper of the National Planning Council (BAPPENAS) in February, 1969. Recent observations of rural wage levels in West and Central Java suggest that this may be too low a figure, however.
2. *Op. cit.*, Table 11, page 23.
3. This is undoubtedly a crude approximation, but it will serve to help us find the upper limit of the repercussive effects.

lower. On the other hand, elasticities countrywide in other Asian nations are generally higher. They range from 0.60 in Japan to 0.81 in Ceylon and India. For purposes of illustration, however, we will take the upper limit of the range of Mubyarto and Fletcher's observation, which is 0.71. This indicates that expenditure on food induced by the works program would be Rp. 10.0 billion, which represent a 28 percent leakage, and therefore a substantial shortfall in repercussive demand compared with the wage bill of the labor intensive projects.¹⁾

Supply Effects.

The assumption of zero elasticity of supply is, of course, a crude approximation, which makes sense only if one assumes a short period for completion of the circle of importation, employment, and expenditure. In due course, the labor intensive projects, by improvement of water supplies, transportation and so forth, will lead to shifts in the supply function and, probably, an increase in supply elasticity. These reactions will cut two ways, however. The greater elasticity of supply will mean an increased **negative** supply response to reduced prices. Borrowing again from Fisher,²⁾ the percentage supply effect of increased imports by one percent of pre-existing supplies is given by the expression.

$$K = \frac{\epsilon_s}{\epsilon_s + \lambda \epsilon_D}$$

which means that a given rise in supply elasticity will increase the supply effect more than it will reduce it. Shifts in the supply function which increase total domestic supplies will have the dual effect of pushing prices downward and lowering the value of the ratio $\lambda (= \frac{S + I}{S})$

This is reinforcing with respect to both price effects and production effects of imports, **besides** having a price-reducing effect of its own.³⁾

1. There would, of course, be multiplier effects, but these are more than matched by the negative multiplier effects of income reduction to domestic producers induced by the LI Inputs.
2. *Op. cit.*, p.865. K, in the expression is the elasticity of supply response with respect to changes in total supplies.
3. This abstracts from substitution in production. In East Pakistan the ready alternative of shifting from rice production to jute production i.e., from domestic to foreign market offered what was probably a major softening of all negative production effects. There is not, to my knowledge, any comparable alternative for the vast bulk of Javanese rice farmers. Sumatran farmers do have a comparable alternative in the form of rubber tapping. This has been a matter of great interest to the Australian economist, David Penney. Cf. his frequent articles in the **Bulletin of Indonesia Economic Studies** of the Australian National University.

Alternative strategies.

The solution to the conundrum posed here lies in raising demand enough, simultaneously, to overcome the drag effects. There is no question but that food needs in Indonesia are vastly above present consumption levels. Given expenditure elasticities substantially less than 1.0, incomes must be generated faster than food production is increased if the growth impetus of any program of agricultural improvement is to overcome its "internal contradictions". One mitigating measure would be to expand employment in labor intensive programs **in advance** of any import program. Food imports (and/or domestically accumulated stocks) could then be used to dampen any inflationary pressure might ensue.

Some mitigation of the dilemma may also be hoped for from two other types of measures. One is the taking advantage of higher sub-elasticities by importing commodities consumed largely as luxuries (or near-luxuries) in a poor country such as vegetable oil and canned foods — or non-food commodities which are in short supply and may compete little with food consumption, such as tobacco. Recognition must also be given to the prospective gain to be derived from lowering production costs by means of the improvements of and increases in capital from works programs. Indeed, it is at least conceivable that such gains, reflected, in part, in reduced production costs in rural areas, could swamp the revenue effects which have been emphasized so heavily in the preceding analysis. Also, this analysis points up the importance of generation of urban demand for agriculture commodities. This would be the ready result of a modicum of success in the revival of dormant urban-based industry and of successful new investment in the urban sector of an order of magnitude achieved in other poor countries in the early stages of development programs. Urban economic sectors normally achieve respectable growth rates early in such programs, and typically grow at rates substantially above those of the rural sector. If accomplished **pari passu** with agricultural growth, the terms of trade between the two sectors need not be turned against the urban sector in the classic Lewis model fashion; and agricultural growth need not be stymied by inadequate effective demand.

P.L. 480 and the intersectoral term of trade.

Classical and neo-classical theories of economic development have shown considerable concern for the problems of the relative importance and therefore the relative incentives to development in industry and agriculture. By far the greatest attention — at least until very recently — has been focussed on providing terms of trade between the two sectors which would provide adequate incentives to growth in the industrial sector. Ricardo's primary interest, so far as policy was concerned, was to reduce protection to agriculture so that wage good would become cheaper and thereby lower the wage component of costs in the industrial sector. W.A. Lewis characterized modern problems of underdevelopment as occurring in a con-

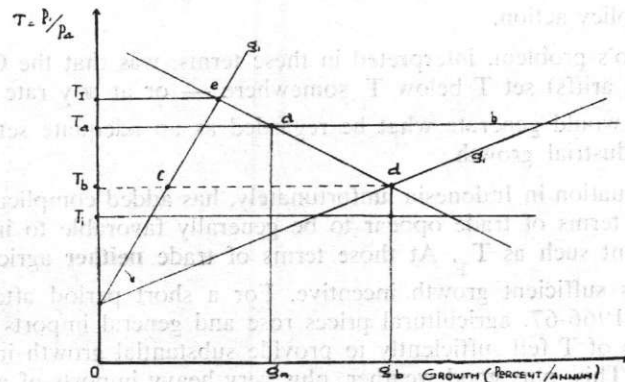
text of "unlimited supplies of labor". Labor saturation was seen by Lewis as a given depressant on wages which would accomplish Ricardo's objective without policy interference — other than provision of additional motivation for taking advantage of the opportunity. Lewis, however, foresaw that in the absence of increased productivity in the agricultural sector, the intersectoral terms of trade would eventually turn against the industrial sector.

Gustav Ranis and John Fei¹⁾ refined the discussion further and developed a conception of "balanced growth"²⁾ which involved interaction between the two sectors in a fashion which would tend toward stability of the terms of trade. If agricultural prices were to rise relative to those in industry, growth would be stimulated in agriculture relative to that in industry — thus stimulating a countervailing force which would tend to reestablish balance in the two sectors. Thus, when Lewis's turning point was reached — i.e., when terms of trade began to favor agriculture, agriculture (in the absence of institutional blocks) would tend to respond by increasing its rate of growth relative to that in industry; and the argument was taken to be symmetrical.

The above argument is summarized and illustrated in Figure II. The lines labelled g_i and g_a show growth responses of industry and agriculture, respectively. Balanced growth, in the Ranis-Fei sense, is achieved at T_b .

This is taken to be a satisfactory solution here, because this "equilibrium" set of terms of trade and growth rate yields satisfactory growth rates in both sectors — i.e., to the right of g_m .³⁾

FIGURE II



1. **The Development of the Labor Surplus Economy, Irwin, 1964.**
2. Thus adding yet another to the bewildering variety of such conceptions.
3. The sectors might very well have different values for g_m . In agriculture it might be taken to be the rate of population growth or some minimum acceptable rate of per capita output growth. In industry a higher rate might be required — as determined, perhaps, by some minimum acceptable rate of transformation from agriculture to industry (which, of course would imply Ranis-Fei imbalance).

Key:

T = the intersectoral terms of trade = P_i/P_a

P_i = price index of industrial goods

P_a = price index of agricultural goods

g = rate of growth of output (percent/annum)

g_i = rate of growth of output in industry = $f_1(T)$

g_a = rate of growth of output in agriculture = $f_2(T)$

g_m = minimum acceptable rate of growth

g_b = balanced growth rate

T_b = value of T which yields g_b : equilibrium terms of trade

T_a = upper limit of T "acceptable" for agriculture

T_i = lower limit of T "acceptable" for industry.

T_a and T_i define the range of acceptable terms of trade. Any set of price relatives above T_a would yield inadequate agricultural growth. Indeed, at that level, industry would outgrow agriculture by the amount ab . An industry-oriented plan which chose such a growth pattern would have to undertake steps to suppress the equilibrating tendency by preventing a fall in T .¹⁾ The obverse case would occur at T_i , where only minimal acceptable industrial growth occurs. In some sense, any plan or set of policies which operates within the range T_i T_a is "satisfactory", although any set of intersectoral price relationships other than T_b would have to be maintained by policy action.

Ricardo's problem, interpreted in these terms, was that the Corn Laws (agricultural tariffs) set T below T_i somewhere — or at any rate below the level which would generate what he regarded as an adequate set of incentives for industrial growth.

The situation in Indonesia, unfortunately, has added complications. The equilibrium terms of trade appear to be generally favorable to industry — at some point such as T_i . At those terms of trade **neither** agriculture nor industry has sufficient growth incentive. For a short period after the bad harvests of 1966-67, agricultural prices rose and general imports increased, so the value of T fell sufficiently to provide substantial growth incentive to agriculture. This, plus good weather, plus very heavy imports of agricultural commodities, have (since then) all combined to turn the terms of trade sharply against agriculture — but still the industrial sector grows inadequately, and the modernization program in agriculture is threatened by low benefit-cost ratios.

1. Agricultural prices might be kept low by substantial imports, for example. Industrial prices might be kept high with heavy protection.

This analysis suggests that a balanced growth will be stable in Indonesia only if (1) steps are taken to keep the terms of trade low enough so that farmers can prosper using modern inputs and (2) if structural problems in industry are dealt with — i.e., rotating the g_i function rightward toward g_i .

Prescription (1) can be met by marketing board (BUL) activities using some such schema as that discussed briefly, above, pp. 6-7. Prescription (2) is far more difficult to deal with in the present context. Infrastructure investment, favorable monetary policy and interest rate structure, and use of *ad rem* subsidies are suggestions for consideration. The point to be stressed here, however, is that continued suppression of agricultural prices in order to make the term of trade attractive to industry may fail as a policy in two ways, it may kill growth in agriculture, **without** stimulating satisfactory growth in industry.

The point the above discussion in the context of an evaluation of the P.L. 480 program is readily apparent. Massive imports of foodstuffs on the order of those experienced in the past year, when combined with good harvest weather, are seriously threatening to a development program, such as Indonesia's, which puts major stress on agricultural development. This line of reasoning poses problems of re-orientation of policy connected with P.L. 480 food imports, along lines already suggested earlier. To reiterate, massive injections of imported foodstuffs into domestic markets should be avoided unless clearly required to stave off price rices, and, if possible, in a manner which will not depress agricultural incentive below critical minima.

Conclusion.

P.L. 480 imports have yielded a large net resource flow to Indonesia, both before and since the change in government of 1965-66. Until recently, however, little attention has been paid to domestic price and incentive effects. In the face of food shortages and rapid inflation — i.e., up until spring, 1969, the benefit of the inflow was unambiguously clear. With the advent of price stability and the sharp upswing in productivity in food production the need for a more subtle policy has become evident. Fortunately the level of awareness of the need for such a switch is rising rapidly in both Jakarta and Washington.

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THE ROLE OF INDUSTRY IN THE FRAMEWORK OF ECONOMIC STABILIZATION

by Mohammad Sadli *

I. Industrial Development in the Past.

Government efforts to build industrial projects and to guide industrialization have been undertaken since the beginning of our independence. Government policies to develop industry have included the following :

Protection.

A policy to provide protection to the domestic industry, industries still quite new which were established by Indonesians, has been implemented by the Government of the Republic of Indonesia in various forms. Protection has been provided against foreign competition as well as against domestic competition. Sometimes assistance has been given in the form of purchasing contracts from the Government or a Government agency. Protection against foreign competition was provided by sufficiently high tariffs. If tariff protection was not sufficient, the Government could introduce quotas, i.e., quantitative restrictions, against competitive import commodities or completely prohibit the importation of such goods.

Subsidy.

In her effort to stimulate local industrial developments, the Government in the past has also provided subsidies. There have been different varieties of subsidy. For example, long term credit with low interest rates; in the presence of heavy inflation, the real value of the debt continuously decreased. Another type of subsidy was the establishing of an import exchange rate which in terms of the dollar was lower than the free market rate. In the past the importing of capital goods and raw materials was very inexpensive, but the Government was forced to control the distribution of import licenses.

Financing.

Financing new industries has long been a difficult problem indeed. The Government has often provided financing facilities in the form of credit to purchase production equipment imported from foreign countries. The Department of Industry has had funds to assist in financing the development of small and medium-size industry. In the private

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