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THE DISTRIBUTIVE IMPLICATIONS OF EXPORT-LED
INDUSTRIALIZATION IN A DEVELOPING ECONOMY

by

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Abstract

This paper uses a Kaleckian model to study the effects of export expansion on income distribution given particular "structural defects" and institutional constraints in a developing economy.

The results show that there might be negative impacts on income distribution if the following conditions hold: 1) The bulk of export receipts goes to the payment of imported inputs and capital goods; 2) There are weak productive capacities and bottlenecks to the production of home consumption goods; 3) The export sector is an "enclave" making it difficult for resources to flow from exports goods to home consumption goods and vice-versa; 4) There are institutional factors that prevent the rise of real wages.

In such an economy, exports are vital for the reproduction of the system. The solutions to the deleterious effects on income distribution would lie in correcting the "structural defects" rather than export contraction.

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I. Introduction

There has been much controversy concerning the effect of export-led industrialization on 1) the distribution of final goods between domestic and external consumption and 2) the distribution of income among the populace. The two of course are closely related. This paper will try to tackle these questions employing the non-traditional approach of post-Keynesianism. It should be pointed out that this is a theoretical analysis. Although the structural features we assume here are exaggerated "caricatures" of some aspects of the Philippine economy, we are not saying that our results actually took place in the Philippines. Our analysis hypothetically assumes expansion of exports given the structural features of our economy. A simple look at historical data shows that export-led industrialization never took off in the Philippines. Our analysis is a hypothetical scenario. The main gist of the paper is that without substantial alleviation of the structural defects and bottlenecks to production plaguing our economy, expansions of exports may have short-run negative effects on income distribution.

The idea that export growth tends to be at the expense of the consumption of the majority of the population has been dismissed by most economists as a gross misunderstanding of the very basics of international trade. It is shown here however that there may be some

truth to the above assertion if we take into consideration certain structural characteristics of a developing economy, which are:

1. There are constraints and bottlenecks to the productive capacity of the economy.

2. One of the most important constraints may be the absence of a capital goods sector and the lack of an intermediate goods sector.

3. The export-sector is more of an "enclave" restricted to very few products geared, primarily for the export market. These export goods are in general not the goods that are produced for domestic consumption. This makes export supply quite irresponsive to relative prices between export goods and domestic-oriented goods as capital goods are sector-specific.

4. If cheap labor is the basis for the comparative advantage of exports extraeconomic pressures to decrease wages may have adverse distributive effects.

It will be pointed out, however, that the above facts at the same time emphasize the necessity of exports in such an economy, so that getting rid of exports would not be the way out of the dilemma.

2. Using Post-Keynesian Analysis

To illustrate our point, we use the macro-distribution models popularized by Michael Kalecki, Joan Robinson and Nicholas Kaldor.

These authors have studied the relationship between investment and income distribution in a developed economy. In these studies, the fact that a certain proportion of income is not consumed (savings mainly of capitalists) necessitates a sector that produces goods other than that for domestic consumption (investment goods) in order to generate full employment.

In our study, however, we create a simple economy where no investment goods are produced. Instead, export goods are used precisely to earn the foreign exchange needed to import these capital goods. Thus export production now takes over the role of investment in providing additional production that is not consumed by the income earners of the economy. We assume, as the post-Keynesians do, that the distribution between wages and profits reflect the distribution of income in the society. This is probably more acceptable in a developing economy than in a developed one. We abstract from government and its expenditures. We also assume that there is balanced trade and that the entire export revenue is spent on the importation of capital goods and intermediate inputs for the production of final consumer goods.

3. A Basic Demand-Determined Model

In our simple model, the economy produces only final consumer goods. We therefore come up with the following set of equations: The first equation states that the total value of the output of the society would be income for labor (W) and profits for capitalists (R).

$$Y = W + R \tag{1}$$

But since Y is made up of final consumer goods, it is made up of consumption expenditures of labor and capital. We assume (as the authors mentioned above do) that laborers spend all of their income and capitalists consume a proportion C_p of their profit.[1] Thus:

$$Y = W + C_p R \tag{2}$$

As long as $0 < C_p < 1$, (1) and (2) are inconsistent. The economy suffers from what Marxists would call a "realization" and what Keynesians would term an "underconsumption" problem.

Since investment goods are not produced in this society, and a government does not "exist", only exports could provide a way out of this mess. (2) therefore should be supplanted by

$$Y = W + C_p R + X \tag{2'}$$

where X denotes exports.

Solving (1) and (2') yields

$$(1-C_p)R = S_p R = X = S \tag{3}$$

where S_p is the savings rate of the capitalists and S the total savings in the economy.

Thus we see clearly that what Keynes and post-Keynesians have asserted with investments are true in this case for exports.

(1) Exports are the needed injection to take the country out of an underconsumption trap.

(2) Exports crucially determine the level of profits of the economy and so are tied to the distribution of income between labor and capital.

(3) The investment-saving identity is identical to an export-saving identity, since export revenue is used to buy all the investment requirements of the economy.

4. Income Distribution with Fixed Output

The above analysis is most fruitful for an economy which has excess capacity so that the export sector acts as a safeguard against underconsumption and unemployment. In developing countries, however, productive capacity is usually weak and bottlenecks to production are prevalent. It is therefore important that we take this into consideration. First of all, consider the case where total output — that for home goods as well as that for exports — is fixed. It must be obvious that an expansion of X will be at the expense of domestic consumption. $W + C_p R$ will contract, home goods price will increase and it is easy to show that the wage share will decline. However even if the export sector can expand due to some excess capacity there an increase in exports may still cause income distribution to deteriorate if home goods cannot expand to meet the increased demand. The reason for this inability to cope with increased domestic demand may be a weak productive capacity or insufficient capital stocks for home goods. But equally

important would be certain bottlenecks in production such as lack of foreign exchange and credit to pay for imported inputs and working capital needs to production. (Here of course we may have to deviate from the assumption of trade balance. But this won't affect the main results of our analysis.) The above scenario wherein exports are expandable but home goods are not would be even more plausible if the government encourages expansion of exports via all sorts of incentives while discouraging expansion of home (import-substitute) goods via restrictions on foreign exchange and credit rationing with foreign reserves and prime loans going to the export sector.

The post-Keynesian analyses that we want here are the models of income distribution set up by Robinson, Pasinetti, Kaldor and Kalecki. Since these models are all in the same vein, we have decided to use our favorite among them - that of Kalecki.

Our Kaleckian model divides the economy between consumption goods and exports goods. (For Kalecki of course, the second sector is made up of investment goods.)[2] The total value of consumptions goods is given by (4):

$$C = P_c Q_c = W_c + R_c \qquad (4)$$

where P_c is the price of consumption goods, Q_c the quantity of consumer goods produced. W_c is the wage bill for labor in the consumer goods sector and R_c the profits for this sector.

Similarly

$$P_E Q_E = W_E + R_E \qquad (5)$$

where the subscript E denotes the export sector. We also have

$$C = P_c Q_c = W_c + W_E + C_p (R_c + R_E) = W + C_p R \tag{6}$$

because of our assumption of workers consuming all their income and capitalists consuming a proportion C_p of their income. (4) and (6) of course give the result

$$R_c = W_E + C_p R \tag{6}$$

Profits in the consumer sector are made up of the wage bill in the export sector plus the consumption of capitalists.

If then we expand the export sector X by ΔX (assuming these exists some excess labor), thereby increasing W_E to $W_E + \Delta W_E$, and R_E to $R_E + \Delta R_E$ then R_c should automatically increase from (6):

$$R_c = W_E + \Delta W_E + C_p R \tag{6'}$$

and $\qquad R = R_c + R_E + \Delta R_E$

Substituting (6') into (4) we get:

$$P_c Q_c = W_c + W_E + \Delta W_E + C_p (R_c + R_E + \Delta R_E) \tag{7}$$

If Q_c is fixed, then P_c will have to rise to accomodate the increased consumption from ΔW_E and $C_p \Delta R_E$. It can be demonstrated then that the wage share will again decline. For in the above analysis, total wage bill increases to:

$$W = W_c + W_E + \Delta W_E \tag{8}$$

However using (6), profits increase to:

$$R = R_c + R_E = (W_E + \Delta W_E + C_p R) + R_E + \Delta R_E$$

which yields

$$(1-C_p)R = (W_E + \Delta W_E) + R_E + \Delta R_E = X + \Delta X \tag{9}$$

Profits therefore will increase by much more than ΔW_E (because profits rise by ΔW_E and ΔR_E with a "multiplier" effect of $(\frac{1}{1-C_p})$). This increase was possible because prices of consumer goods have increased thus raising the level of profits in the consumer good sector.

Note that although in nominal terms the wage bill in (8) increases, it may actually decline in real terms due to an increase in P_c. Thus the claim that export promotion is at the expense of domestic consumption for the bulk of the population could happen because of the following:

(1) Exports are used only for the importation of capital goods and imported inputs. Notice that the above analysis would crumble if export earnings were used to purchase imported final goods to satisfy increased demand by both laborers and capitalists.

(2) The crucial assumption is that supply of domestic consumer goods is fixed and that there is full employment or bottle-necks to production. If supply of consumer goods were able to expand (to meets increased demand) due to some excess capacity then the above analysis again breaks down. The analysis breaks down even further for a longer time horizon

since export earnings are used to purchase capital goods which will precisely increase the productive capacity to produce consumer goods. Inasmuch as the gestation period of investment or capital goods take some time, the negative impact in income distribution will be stronger. We should, however, point out that there is a paradox here. As exports increase, the weak productive capacity of the economy forces income distribution to go against labor. But it is precisely through export increase that the productive capacity of the economy is increased.

The above exercise should help clarify certain points. Exports per se do not cause the problems associated with export promotion. The problem lies in the structural defects that themselves make exports vital to the economy. The problem lies in the lack of backward linkages in our economic development which has led to the absence of a strong capital goods sector.[3] The problem also lies in an economy that has a small productive capacity with bottlenecks that make supply expansions insufficient to meet consumer demand increases. When these conditions exist, export expansion may entail worsening income distribution, at least in the short run. The claim that exports are at the expense of domestic consumption may be partially true in the sense that real consumption expenditures of the labor sector may decline as exports increase. Note that the results here are the duplicate of the results that the post-Keynesians derive using investments as the key variable. None of these economists recommends a reduction in investments to improve the income

distribution picture, although they do favor high taxes on profits.

5. Income Distributing in an Economy with Unlimited Excess Capacity

Now let us take a look at the results of the study if aggregate supply of consumer goods were not fixed. Suppose the economy has an unlimited excess capacity; it can therefore expand production in order to meet increased demand. The expansion would proceed in a fashion similar to the Keynesian analysis we are so familiar with.

The first round of effect will be to meet the increased demand of ΔW_E and $C_p \Delta R_E$ (we are still assuming an expansion in the export sector). Consumer goods production can be expanded to meet this demand increasing the value of consumer goods (assuming an inflexible price) by $\Delta W_c = \Delta W_E + C_p \Delta R_E$. The additional labor (assuming unlimited labor supply) hired to expand production will in turn create a new demand equal to ΔW_c which will expand production by ΔW_c and so on. Since the marginal propensity to consume of workers is assumed to be equal to one, this process can go on indefinitely until the full capacity utilization is reached. It should be clear that the wage share will increase vis-a-vis the profit share. Income distribution will now turn in the favor of workers.

It must also be clear that the above scenario seems quite implausible unless the state is the one that undertakes the expansion in the consumer good sector. It would seem too little an incentive for capitalists to expand production in the consumer good sector if

their profits level there remains the same. In fact, the whole insight
of the macro-distribution theory of the post-Keynesians is precisely
that of "forced saving". Investment (in this paper, exports) spurs
profits and the necessary savings the society needed by increasing prices
and reducing real wages. This increases returns to capitalists who in
turn save a higher amount of their income providing the necessary savings
needed to match the investments.

6. Income Distribution in an Economy with Limited Excess Capacity

A hybrid of the last two scenarios would be more realistic wherein
both prices and quantity of consumer goods would increase. In this kind
of scenario, income distribution may favor either capital or labor
depending on whether price increases outweigh quantity increases. Here
we deviate from the post-Keynesian analysis and incorporate some elements
of the neoclassical supply function. We however add another structuralist
assumption wherein the export sector is an "enclave" so that capital
goods in the domestic-oriented industries and in the export sector are
not interchangeable. This means that a change in relative price between
the two sectors will not allow, in the short-run, resources to flow from
one sector to the other. (One is reminded of the idle sugar lands today
in Negros.)

The supply function for Q_c, using profit maximization, would
be a function of real wage and capital stock (the latter being fixed
in the short-run).

$$Q_c = Q_c\left(\frac{w}{P_c}, K\right) \tag{10}$$

Now, the same profit maximization process would yield a labor demand curve for the consumer goods sector.

$$L_c = L_c\left(\frac{w}{P_c}, K\right) \tag{11}$$

Equation (4) can now be rewritten as:

$$Q_c\left(\frac{w}{P_c}, K\right) = \frac{w}{P_c} L_c\left(\frac{w}{P_c}, K\right) + \left[\frac{w}{P_c} L_E\right] + C_p \, R/P_c \tag{12}$$

and

$$R = (wL_E + R_E)\left(\frac{1}{1-C_p}\right) \tag{13}$$

where L_E is the amount of labor employed in the export sector. We again assume exports to be exogenous. If export production increases, we would employ ΔL_E more labor, and profits in the export sector would increase by ΔR_E. (12) and (13) now become:

$$Q_c\left(\frac{w}{P_c}, K\right) = \frac{w}{P_c} L_c\left(\frac{w}{P_c}, K\right) + \frac{w}{P_c}(L_E + \Delta L_E) + C_p \, R/P_c \tag{12}$$

where

$$R = (w(L_E + \Delta L_E) + R_E + \Delta R_E)\frac{1}{(1-C_p)} = (X + \Delta X)\frac{1}{(1-C_p)} \tag{13}$$

Now both P_c and Q_c would increase (Q_c and L_c being spurred by a decrease in real wage). As long as w remains constant,

chances are $\frac{w}{P_c} L_c(\frac{w}{P_c}, K)$ will decrease, except in the unlikely event $L_c(\frac{w}{P}, K)$ is so highly elastic that its increase will offset the fall in the real wage causing a rise in the entire real wage bill. $\frac{w}{P_c} L_E$ would definitely fall. Thus real consumption of the labor sector would rise or fall depending on whether the increase of $\frac{w}{P_c} \Delta L_E$, where P_c is the augmented price, exceeds the aggregate fall in $\frac{w}{P_c} L_c$ and $\frac{w}{P_c} L_E$. Since the increase in prices of consumer goods will accrue to the capitalist (nominal wages being constant), it must be clear that total profits (and real consumption of capitalists) will increase.

Our assumption of an export "enclave" is crucial here. For in the typical neoclassical analysis, an increase in P_c (with price of exports P_e fixed internationally) would divert resources from exports to home goods, thus alleviating the pressure on income distribution deterioration.

It must also be pointed out that the above model crucially depends on a constant w. If the increased demand for labor induces an increase in nominal wages, the fall in real consumption of the labor sector would be offset. If however, there is an unlimited supply of labor or, more plausibly, if wages are kept artificially fixed and low, then it may be difficult for ΔL_E to offset the fall in the real wage bill in both the consumer and the export sector. Herein lies one important point of the paper. As long as extra-economic power is used to keep wages from responding to market forces (such as increases in labor demand or

increases in labor productivity), then there exists the objective basis
for both an income distribution deterioration at the expense of labor
and a decrease in the real consumption of the major bulk of the popula-
tion. In this last model therefore the assertion in many sectors that
exports is at the expense of domestic consumption can be true if
repressive labor policies are imposed as a promotion of the export-
oriented strategy of the government.

5. Summary and Conclusion

In summary, we have studied a simple economy using very simple
post-Keynesian tools. We deviate from the standard study of export-led
growth by assuming equilibrium in the external sector of the economy
thus enabling us to concentrate on the internal mechanisms that relate
export increases to income distribution.

Our results duplicate some post-Keynesian results except that
export is now the dynamic sector of the economy instead of investments.
We also impose some structural features on the economy, namely:
1) there is no capital goods sector so that the entire export revenue
is spent on importation of capital goods; 2) this, plus other reasons,
may cause the productive capacity of the home good sector to be limited,
thus weakening supply responses to demand increases. Some other reasons
for this weakness may be the monopoly structure in some industrial sectors,
bottlenecks in some areas, particularly foreign exchange and credit
constraints, and government bias towards exports. Given these assumptions,

export expansion will cause the relative wage share and real consumption of labor to decline in the short-run via demand-pull price increases.

This paper also illustrates the obvious point that even if aggregate supply for consumption increases, a strong policy of wage restraint, aggravated by the "enclave" characteristics of our exports, will most probably have an adverse effect on income distribution.

The above points to a seeming paradox in export growth. Exports are vitally needed to finance the importation of capital goods. But as long as there is some gestation period for investments, the increased demand brought about by export expansion will increase the prices of basic goods for laborers. There will therefore be an adverse effect on income distribution in the short-run.

The solution to this dilemma, of course, is not to ban exports. The solution rather is to work towards providing an objective condition so that the production of capital goods and intermediate inputs may be undertaken by the economy.[4] This would free the country from the pressures of having to export a big proportion of its output and/or to enable it to use its export earnings to import basic and essential goods to supplement domestic consumption.

To add to this, the "enclave" characteristics of our export sector should be altered. Forward and backward linkages between our exports and the domestic-oriented industries as well as export diversification should be undertaken.

Finally, given the above structural problems, it must be emphasized that the odds in the economic game would be against labor. It would therefore be exceedingly cruel to impose an anti-labor policy wherein extraeconomic powers are used to keep real wages artificially low and falling.

The above exercise also illustrates one important point. Neo-classical models which assumes free flow of resources among industries in response to relative prices (whether output prices or factor prices) may be limited in the short-run particularly in a developing economy wherein structural defects and bottlenecks prevent this easy flow of resources. This is not to say that neoclassical solutions should be disregarded completely. Rather neoclassical solutions will somehow have to be viewed in a longer (or at least intermediate) run perspective. Meanwhile it may be worthwhile to look at other models that may be more suited for the shorter run.

Footnotes

1. If labor saves a proportion (Sw) of their income, this will not change the results of the paper as long as Sp > Sw. Pasinetti also has a model wherein savings of both workers and capitalists are invested in financial assets and so earn the factor owners additional income. This we shall not pursue here especially since in a developing economy, majority of savings from wages and salaries will not be invested in financial assets.

2. Kalecki was obviously inspired by Marx who divided up the economy into Department I (investment goods) and Department II (consumption goods).

3. Note that this is aggravated if much of the intermediate inputs are imported because only a fraction of export earnings will be used for importation of capital goods that will in turn increase the productive capacity of the economy.

4. In this regard, a deeper study on the tariff structure that seems to be biased against production of capital goods and intermediate inputs should be undertaken. Perhaps more importantly, the interconnection between income distribution and the domestic market should be analyzed. It seems very plausible that the failure of backward and forward linkages in the economy may be due to a narrow and weak domestic market caused by very low rural and urban incomes.

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