

# TRADE, DISPROPORTIONALITY, AND RETROGRESSION

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I shall use the term retrogression throughout this paper to denote a net reduction in the *ex ante* aggregate demand in an economy. Since I shall be mainly discussing not a single good economy, but one characterized by at least two goods, this net reduction will manifest itself in terms of a reduction in the level of demand for one of the sectors, with no change in that of the other. When there is such a net reduction in the *ex ante* demand for any particular sector, not offset by a corresponding increase in the *ex ante* demand for some other sector, i.e. when there is a net reduction in the *ex ante* aggregate demand in my sense, there can be several different adjustment mechanisms: output (and hence employment) adjustment, price adjustment, and inventory adjustment. Each of these has consequences which are harmful for the sector facing such demand reduction, and hence, in terms of certain macroeconomic aggregates, for the economy as a whole, which is why I call such reduction “retrogression”. The purpose of this paper is to argue that trade, except when it gives rise to a net export surplus, and not even *necessarily* then, can, and usually does, have a retrogressive impact on an economy. This proposition of course is established here in the context of a simple single-period model, where, to avoid bringing in the effects of an export surplus, I deliberately assume balanced external trade throughout. But the removal of the simplifying assumptions does not necessarily invalidate the results, which moreover have a certain empirical validity, at least in the Indian context, not just today, but also historically.

The proposition that trade can have a retrogressive effect may appear strange at first sight, since all of us have been taught at length about the beneficent effects of “commerce”, and this is a more or less widely accepted view even today; but that is because our text-books are invariably written by economists located in economies for which “trade” and “colonial trade” were inseparable entities. At a conceptual level, *all of trade theory is based on the assumption of full employment, which rules out any possibility of retrogression in our sense*. This is obvious for the neo-classical or Heckscher-Ohlin-Samuelson theory which assumes full employment of all “factors of production”. But it is even true of the Ricardian system. Even though Ricardo did not talk of full employment in the sense of the labour market “clearing”, he postulated that employment in any period was determined by the magnitude of “stock”, given the wage rate<sup>1</sup>. It could shrink, for any given wage, only through a reduction in the “stock”; and a

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<sup>1</sup> Such a state incidentally would be considered “full employment”, i.e. the absence of involuntary unemployment, by Keynes, as he had expressed in a letter to R.G.Hawtrey.

country's producing such goods as its comparative advantage dictated did not entail a reduction in "stock"<sup>2</sup>. Hence Ricardo could easily prove the benefits of "commerce", as the whole question of aggregate demand never entered his model, just as it did not enter the neo-classical one. But the moment we allow the possibility of variations in aggregate demand, the fact that free trade may give rise to retrogression becomes obvious.

## I

Let us assume an economy with just two sectors, producing agricultural and industrial goods. Let us also, like Ricardo, assume that Say's Law is satisfied, in the sense that all income is spent (or what comes to the same thing, all savings are invested). The system in short is not a demand-constrained one. Let the relative prices of the two goods be given (which will happen for instance if the wage-rate in terms of the agricultural good is given, together with the labour coefficient per unit of output in industry, and the pricing rule followed there is mark-up pricing). We shall therefore denote all value variables in terms of the agricultural good numeraire. Let  $a$  be the magnitude of industrial good demanded from the agriculture sector per unit of agricultural output, and let  $b$  be the magnitude of this good demanded by the industrial sector per unit of industrial output. Then it must be the case that

$$O_a / O_i = b / a \qquad (A)$$

where the terms have obvious meaning. Now suppose with the given capital stock in agriculture and the given conditions of production, the maximum output, which we shall call the capacity output, producible during the period in question, is  $O_a^*$ , and suppose this is the output produced, then the output in the industrial sector must be  $a \cdot O_a^* / b$ . The system as a whole will not be demand-constrained, but while the agriculture sector will not be demand-constrained, but will be capacity-constrained, the industrial sector will be demand-constrained. There will be unutilized capacity in this sector, but it will remain unutilized since the output of the agricultural sector cannot be augmented. Situations like this are referred to as constituting "disproportionality"<sup>3</sup>, the term which figures in the title of this paper.

Now suppose this economy gets opened up to trade. It has a "comparative advantage" in agricultural production, so that the amount of imported industrial good obtained per unit of the agricultural product through trade is preferred to the amount of domestically

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<sup>2</sup> True, a situation could arise where the country's comparative advantage lay precisely in wage goods, in which case its exports of wage goods could give rise to a reduction in "stock" and hence in employment; but an argument similar to the one which Ricardo had advanced about the use of machinery could be advanced here to show that any such reduction could at best be a transitory one, that eventually the economy would do even better than the original path in terms of the time profile of employment. See below for a critique of this argument.

<sup>3</sup> This term was introduced into the English language discourse on political economy by Paul Sweezy in his book *The Theory of Capitalist Development*, Denis Dobson, London 1946, while discussing the ideas of the Russian economist M. Tugan-Baranovsky.

produced industrial good obtained per unit of agricultural product<sup>4</sup>. The agriculture sector in particular will export a certain amount of its product, say X, and obtain the imported industrial good in return; the rest of its industrial demand will be met from home production. The domestic industrial output will then be

$$(a.O^*_a - X) / b \quad (B)$$

which is clearly less than  $a.O^*_a / b$ . We have had a case of “de-industrialization” (we are clearly assuming output, and hence employment, adjustment, as the mechanism for getting rid of disequilibrium), such as what characterized colonial India<sup>5</sup>. The landlords, and even certain sections of the peasantry, preferred imported mill-cloth over domestically produced handloom cloth, because of which the opening up of the economy to trade resulted in a decline of handloom production and the unemployment of the handloom weavers. These weavers could not be employed in the agricultural sector, as neo-classical theory would have visualized, because this would have needed additional investment to augment the output and employment capacity of this sector. And this investment could not happen even over time, as Ricardo might have suggested (on the basis of his argument on “machinery”), because typically private investment in agriculture is conditional upon a certain amount of complementary public investment, e.g. in irrigation, which was not forthcoming. In formal terms what we can say is that *an improvement in the condition of the surplus owners does not necessarily make them invest more*, which is the fallacious assumption underlying Ricardo. There is in other words no investment function in the Ricardian argument, as far as the sector with the comparative advantage is concerned, other than making investment depend merely upon the real income of this sector. The fact that a higher real income may merely lead to larger consumption rather than to any larger investment, is never recognized by Ricardo. With a specific investment function which, say, keeps investment *ceteris paribus* unchanged when the real incomes in the “comparative advantage sector” increase, we can have de-industrialization, in the sense of a permanent lowering of the time-profile of the output and employment of the other sector, even with balanced trade.

## II

Let us now look at the mirror image of this case. This is where the industrial sector’s output is at “full capacity” and we have

$$O_a = b.O^*_i / a. \quad (C)$$

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<sup>4</sup> I say “preferred” because sometimes while the quantity of the imported good per unit of the agricultural good may not be any larger compared to the pre-trade situation of domestic exchange, the quality of the imported good may be considered superior. Throughout this paper I assume, for the sake of concreteness, that imported goods are preferred because of their quality rather than the exchange ratio. The argument needless to say does not depend upon this assumption.

<sup>5</sup> For a detailed discussion of the theory of such de-industrialization see my paper “Trade as a Mechanism for Economic Retrogression”, *Journal of Peasant Studies* 1996, Special Number in Appreciation of T.J.Byres, edited by Tom Brass and Henry Bernstein.

The same equation holds as before but it is the industrial sector's output that is independently given by full capacity use in the pre-trade situation. A question may be asked here: unlike industrial output which responds to demand through variations in the degree of capacity utilization, agricultural output is not demand-determined. It is the agricultural price that is demand-determined, and while output may respond to price over time, the situation is quite different compared to industry. This asymmetry in fact was expressed by Kalecki through his distinction between "demand-determined prices" and "cost-determined prices", the former characterizing primary commodities including foodstuffs and the latter characterizing finished goods<sup>6</sup>. But since we are concerned here with the difference between the pre-trade and the post-trade situations, how exactly the pre-trade situation came to be what it was need not detain us too long. Suffice it to say that if agricultural prices can change *relative to* industrial prices, e.g. through *money wages* being given in industry which does mark-up pricing, and *money agricultural prices* changing to clear the agricultural goods market, then the terms a and b will change depending upon the terms of trade, to ensure that equation ( A ) holds. In such a case, we may have  $O^*_a = b' \cdot O^*_I / a'$ , where b' and a' correspond to that level of the terms of trade where this equation holds for the independently given  $O^*_a$  and  $O^*_I$ . Since ( C ) can be thus fulfilled in the pre-trade situation, let us continue using ( C ).

Now, suppose the economy gets opened up to trade and its comparative advantage lies in the industrial good, which gets exported. Per unit of the industrial good, the bundle of the agricultural good that is imported is preferred to the bundle that was earlier available domestically. Then there will be an *ex ante* deficient demand for the domestically produced agricultural good, that will cause "retrogression" in this sector and in the macroeconomy. Farm prices will fall relative to the pre-trade situation, farm production will be curtailed, causing distress and destitution. We have in short a situation that can be described as *de-agriculturalization* as a mirror image of colonial de-industrialization. The work-force thrown out of agriculture as a result of the closure of unviable farms cannot be absorbed in industry which is running at full capacity. (Neo-classical economics evades this issue by postulating an infinite number of techniques involving different capital-output ratios in each sector, and assuming that instantaneous shifts can occur between these techniques to ensure full employment in any period).

As for investment in the industrial sector being stepped up as a consequence of such trade opening, there is no reason to believe that this would happen. True, the real income of the industrial sector agents would have gone up as a result of trade, but this would not necessarily mean larger *investment*. For instance if the product wage in the industrial sector is given, then an increase in the real wage, will not make any difference to the rate of profit of this sector; and if investment is a function of the rate of profit, then there would be no change in the investment profile of this sector compared to the pre-trade situation. It follows that for the traditional conclusion about the beneficent effects of trade to hold, it is necessary not only that Say's Law must hold, but also that any sector whose participants experience an increase in real income through trade must experience an increase in its investment profile. There is simply no reason to assume this.

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<sup>6</sup> M.Kalecki, *Selected Essays on the Dynamics of the Capitalist Economy*, Cambridge University Press, Cambridge, 1971, p. 43.

The general conclusion can be stated as follows: *if an economy has a comparative advantage in that sector which constitutes the bottleneck sector in the pre-trade situation then it is likely to experience retrogression in the non-bottleneck sector and hence in a macroeconomic sense through exposure to international trade.*

An issue needs to be clarified here. The argument we have advanced so far consists in saying that in the non-bottleneck sector, in this case agriculture, trade will bring about a decline in prices that is retrogressive. But, is it not possible that in the pre-trade situation the price of the agricultural good was extremely high, so that trade, while lowering this price, causes no real retrogression as far as this sector is concerned, only a reduction in its exorbitant price, and only an improvement in the real incomes of those engaged in the industrial sector? This question may be answered as follows. Industrial sector workers typically will not have their real wages, i.e. wages in terms of the agricultural good commanded (which is actually the wage good), pushed down below some minimum level (for any given labour productivity). This minimum real wage entails, in a world of mark-up pricing, a minimum level of the inter-sectoral terms of trade for industry. The terms of trade for industry may be above this level but never below, for otherwise there will be either continuous inflation, i.e. no price-equilibrium, or a curtailment in capacity use in industry (as a means of achieving price-stability) so that industry cannot be the capacity-constrained sector, and we shall be in the world of section I above. *If industry is the capacity-constrained sector, then it must follow that the pre-trade inter-sectoral terms of trade for industry is above this minimum level, which means that pre-trade agricultural prices can not be exorbitant. A reduction in such prices therefore will hurt the agricultural sector.*

A second point needs to be noted. We have assumed that when industry has a comparative advantage and its good is exported, it is the agricultural good that is imported. This need not happen. *Even if the export of the industrial good is accompanied by the import, not of the agricultural good, but of any good that substitutes for agriculture in industry's demand, the conclusion about the retrogression of the agricultural sector will still hold.*

### III

This conclusion appears pretty obvious. But then the crucial question arises: does it hold in a setting where the sector having comparative advantage is itself demand-constrained to start with? Rather surprisingly, the answer is "Yes". Let us therefore set out this case clearly, since it points to an important conclusion, namely *that in any economy of the sort we are discussing there are two quite distinct types of multiplier in operation, only one of which has been captured in (Keynesian) economic theory.*

We shall specifically assume that it is the industrial sector which has a comparative advantage, which corresponds to the case of India and China. (India of course has been more successful as an exporter in IT-related services rather than in industrial goods, but

since the services sector is not featuring separately here and is lumped together with manufacturing, taking both India and China as successful industrial exporters is a permissible short-cut). To give effect to the fact of this sector being demand-constrained, we shall abandon our assumption that in each sector the income accruing from production is all spent, which is the same as assuming that all savings are invested, i.e. that Say's Law holds. I shall continue with this assumption for the agricultural sector, but in the industrial sector investment in any period is autonomously determined. We shall also bring in government expenditure explicitly and assume that it is financed entirely by borrowing. Industry has mark-up pricing. With the base wage cost in terms of food commanded (given at whatever level), the mark-up determines the terms of trade between industry and agriculture (which must be above the "floor" level for industry mentioned in the last section). Finally we assume, for simplicity, that all industrial wages are consumed and all industrial profits are saved.

Aggregating on the basis of the base level terms of trade and using the industrial good as the numeraire, we can express the pre-trade situation by the following equations:

$$C + I + G = O_a + O_I \quad (1)$$

$$C_a + I_a = O_a \quad (2)$$

$$W_i + P_i = O_I \quad (3)$$

$$W_i = C_i \quad (4)$$

$$C = C_a + C_i \quad (5)$$

$$I = I_a + I_I \quad (6)$$

$$I_I = I_I^* \text{ (given)} \quad (7)$$

$$G = G^* \text{ (given)} \quad (8)$$

$$O_a / O_i = b / a \quad (9)$$

where the subscripts attached to C and I refer to the consumption and investment demand *originating from that particular sector*, and a and b refer to the base-level ratios which are functions of the terms of trade. (If we assume output adjustment in agriculture then a and b can be taken as constants, but, if there is price adjustment as well, then this constancy cannot be assumed. But since we are concerned with the difference between the pre-trade and the post-trade situations, what determines a and b in the pre-trade situation need not concern us). In other words we can either assume (9) alone with a and b as constants, or assume (9) and (9') together in which case b/a becomes a variable and agriculture is assumed to produce its capacity output:

$$O_a = O_a^* \quad (9')$$

And finally we have, because of mark-up pricing

$$P_i / O_i = \mu \quad (10)$$

It follows from the above that

$$O_i = (I_i + G) / \mu, \text{ and } O_a \text{ is determined either by (9) or by (9')}.$$

Now, suppose the economy gets opened up for trade, and trade is balanced. The industrial good is exported and the agricultural goods (*or something else that substitutes for it in the demand of the industrial sector*) is imported, the bundle of it available through trade per unit of the industrial good being preferable to what was available of the domestically produced agricultural good at the base terms of trade. Since trade is balanced, there is no change in equation (1). Hence it is still the case that

$$O_i = (I_i + G) / \mu$$

But now, the amount of domestic agricultural good purchased by the industrial sector per unit of its output (at the base terms of trade) is lower than it was prior to trade. In other words  $b$  must fall, and so *ipso facto* must  $b/a$ . With  $O_i$  unchanged and  $b/a$  falling, it must be the case that there is a reduction in the *ex ante* demand for the agricultural sector at the pre-trade level of the inter-sectoral terms of trade. This causes retrogression in the agricultural sector: if there is a cut back in the agricultural output then that generates unemployment, which is not absorbed elsewhere in the economy. If there is a fall in the agricultural price then that contributes to the unviability of the agricultural sector, increasing farm debt and also causing farm closures (which reduce output). And as regards the absorption of unemployment over a period of time through a higher time-profile of investment and hence a higher time profile of output and employment in the exporting sector, our example clearly shows why this does not happen: since the level of industrial output remains unchanged, so does the level of capacity utilization in industry. Any investment function where investment depends upon the level of capacity utilization will entail that the profile of investment remains unchanged over time.

Even in a world where the exporting sector has demand-constrained output, it is clear that the opening up of trade causes (according to our model) retrogression: while the output of the exporting sector does not go up compared to the pre-trade situation, its demand-effects on the other sector goes down, causing *ex ante* demand reduction there. Putting it differently there are two multipliers in this system, one determining the magnitude of the industrial output and the other determining the magnitude of demand for the agricultural sector for any level of industrial output. Trade leaves the first one unchanged and lowers the second.

The foregoing argument has serious implications. Trade disarticulates economies, delinking sectors from one another. This gives rise either to de-industrialization as in the

colonial period, or to “de-agriculturalization” as is happening in the Indian economy now. This de-agriculturalization is not something to celebrate, since it is not accompanied by any shift of the work force from agriculture to industry; it simply leaves behind a vast pauperized mass of destitute peasants and agricultural labourers, which is a cause for concern not only for its misery, but also because it constitutes a potentially highly explosive, socially destabilizing force. No discussion on income inequality in an open economy will be complete unless we take cognizance of this phenomenon which can be alternatively seen as a destruction of petty production.