REFERENCES


Are International Growth Rates Constrained by the Balance of Payments? A Comment on Professor Thirlwall *

In a recent issue of this Review, Professor Thirlwall (1979) derived what he termed a "fundamental law" which he argued explains the disparate post-war growth rates of the advanced countries. Thirlwall contends that "the model and empirical evidence lends strong support to the advocates of export led growth" (p.52). In other words, it is argued that the law supports the view that the long term growth rates of the advanced countries are fundamentally demand constrained. The most important determinant of the growth of demand is the impact of the growth of exports operating through Harrod's foreign trade multiplier. This position stands in marked contrast to the supply orientated approach which sees export growth as being determined by the growth of output which in its turn is limited by the maximum growth of factor inputs.

In this note, we take issue with Thirlwall and show that the model together with the empirical evidence adduced by him is not capable of discriminating between the two hypotheses. This is due to a circularity in the argument and the problem of the direction of causality.

The law is derived from two equations that describe the growth of exports ($x_t$) and imports ($m_t$), namely

$$ x_t = e x_{t-1} $$

and

$$ m_t = n m_{t-1} $$

where $x_t$ and $y_t$ are the growth of world and domestic incomes, respectively. $e$ and $n$ are the relevant world and domestic income elasticities of demand. Since, in the long run, no country is able to run a permanent balance of payments surplus or deficit that is large compared with the total volume of

* I am grateful to Maurore Pike and John Treble for their helpful advice. I should also like to acknowledge the helpful comments of Professor Thirlwall although, naturally, differences in opinion remain.
exports or imports, $x_t$ equals $m_t$. Consequently, from equations (1a) and (1b) the fundamental law is obtained, namely

$$Y_t = \frac{X_t}{\pi}$$

where $Y_t$ is the growth of output consistent with balance of payments equilibrium.

Thirwall attempts to test the export led growth theory by calculating $Y_t$ for each of the advanced countries over the period 1950-1973 using equation (2), the observed values of the growth of exports and the estimates of $\pi$ obtained by Houthakker and Magee (1969). The latter were obtained by using annual time-series data. The close correspondence that is found between $Y_t$ and $y_t$ (the actual growth of output) leads Thirwall to conclude that the application of equation (2) to "the international data gives a remarkable approximation to the growth experience over the last twenty years, and ipso facto provides an explanation of why growth rates differ" (p. 50).

However, this close fit is hardly surprising. The exponential growth rates $y_t$, $x_t$, and $m_t$ are approximately equal to $\frac{dy}{dt}/Y_t$, $\frac{dx}{dt}/X_t$ and $\frac{dm}{dt}/M_t$ (where the upper case denotes the level of the relevant variable). We may, therefore, define the income elasticity of demand for imports as

$$\eta_{M} = \frac{m_t}{y_t}$$

and, given $x_t = m_t$, $\eta_{M} = \frac{x_t}{y_t}$.

Values of $\eta_{M}$ may thus be simply obtained for each country by the use of equation (3) and the observed growth rates of domestic income and exports.

Equivalently, we may obtain estimates for $\eta_{M}$ by time-series regression analysis, namely, by estimating

$$\ln M_t = C + \rho \ln Y_t + \mu_t$$

where $C$ will be approximately equal to $\eta_{M}$. (This is, of course, the procedure adopted by Houthakker and Magee.)

Houthakker and Magee, in fact, specify the import elasticity function as

$$\ln M_t = C + \rho \ln Y_t + \gamma (\ln P_t - \ln P_{ref}) + \theta$$

where $P_t$ and $P_{ref}$ are the price index of imports into a particular country and the country's wholesale price indexes respectively. They found that for many countries $\gamma$ was statistically insignificant. In this case, the only difference between equation (4) and (4a) is that the introduction of the relative price term decomposes the error term $y_t$ in equation (4). The estimates of $\gamma$ in the two specifications will of course be similar. An implication of the importance of relative prices is also that $x_t$ equals $m_t$ when they are measured in real terms. For the important point to note is that this is how means incompatible with a supply dominated explanation of economic growth.

If changes in relative prices are significant then the observed and estimated output growth rates will diverge in a predictable manner. However, once again this has no implications as to whether growth is supply or demand constrained. For reasons of space we shall not pursue this last point further but following Thirwall (1975, p. 79) confine our discussion to the case where relative prices are unimportant.
A Reply to Mr. McCombie

Mr. McCombie seems to imply that the 'law' I derive from the empirical evidence relating export growth and output growth is somehow spurious because "the analysis borders on circular reasoning". This is not so, and he does less than justice to the model. He misleads when he says that the law is derived from the two equations: \( x_t = c_t \) and \( m_t = x_t \), and that it is estimated as simply the regression of \( \ln M_t \) on \( \ln Y_t \). Both the import and export demand functions have relative prices in them, and the Houthakker and Magee import demand equations, from which the rhs are estimated, also include a relative price term. If relative prices were to change there is no reason why \( x_t \) and \( m_t \) should be equal for a moving balance of payments equilibrium through time and therefore no reason why the 'law' should hold. The fact that the growth of many countries seems to have approximated to the simple rule \( y = x + m \) is not indicative of circular reasoning; it is indicative that relative prices in international trade measured in a common currency must have remained relatively stable over the long period taken and that capital flows have either been relatively unimportant in allowing growth to deviate from the rule, or that for countries in permanent disequilibrium on current account (like the United States) the rate of growth of real capital imports was approximately equal to the rate of growth of export volume.¹

¹ This is the condition for the simple rule to hold starting from initial balance of payments disequilibrium. For a formal proof, see my paper "Balance of Payments Constrained Growth, Capital Flows and Growth Rate Differences Between Developing Countries", Oxford Economic Papers, forthcoming.

Although I did not say so in my original paper, the rule that \( y = x/m \) is the dynamic analogue of the Harrod trade multiplier, \( Y = X/m \), where \( m \) is the marginal propensity to import.² The empirical evidence suggests, therefore, that the Harrod trade multiplier works, at least for many advanced countries. In other words, it is income that tends to adjust in the face of imbalance between exports and planned imports, not relative prices.

There are, however, countries which are exceptions to the rule, the most notable being Japan, which grew much slower than its balance of payments equilibrium growth rate as determined by \( x/m \). This result has a bearing on the question of supply constrained versus demand constrained growth. For countries that are demand constrained, we should expect to observe growth rates equal to, or in excess of, their balance of payments equilibrium growth rate, and with a growing amount of unused resources at home. If their balance of payments could be relieved, by raising exports or reducing the propensity to import, they would have the resources to grow faster. By contrast, for countries that are constrained by domestic supply, we should expect to observe growth rates below the rate consistent with balance of payments equilibrium indicating an inability to use foreign resources productively. By this criterion, Japan was clearly not demand constrained in the 1970s and 1960s, just as the oil producers today cannot use all the foreign exchange they have at their disposal. By the same token, the presumption must be that most of the counterpart deficit countries in the 1970s and 1960s were demand constrained and could have grown faster had their balance of payments been stronger. If these countries, such as the United Kingdom, for example, were constrained by supply before the balance of payments constraint on demand became important, why did they not experience (like Japan) growing balance of payments surpluses? Thus, while the simple model itself may not be able to discriminate easily between the demand and supply led growth hypotheses, I think the results of applying the model, combined with judgement, can; and there is little doubt in my own mind that a balance of payments constraint on demand is a far more plausible explanation of international growth rate differences (as long as any one country or bloc of countries is in surplus) than differences in domestic resource constraints on output. The latter view of the world implies that factor supplies are mainly exogenous to an economic system, which is an assumption very difficult to swallow when we know that capital is a produced means of production; that there are vast reserve armies of labour all over the world, and that most technological progress is endogenous. This is not to deny, of course, that an important determinant of demand is the supply characteristics of goods.

--,  "Harrod's Trade Multiplier and the Importance of Export Led Growth" (unpublished, available on request).