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TRADE LIBERALISATION IN DEVELOPING ECONOMIES: MODEST BENEFITS BUT PROBLEMS WITH PRODUCTIVITY GROWTH, MACRO PRICES, AND INCOME DISTRIBUTION*

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Microeconomically, the case for liberalisation is dubious under increasing returns to scale and when firms can invest directly in productivity enhancement. Distributional effects of commercial policy changes can be regressive and large, but the 'rents' they generate can serve as a basis for effective policy intervention contingent on firms' performance. Macroeconomically, the case of liberalisation rests on Say's Law, which is not always enforced. Recent combined current and capital market liberalisations have been associated with strong exchange rates and high interest rates and output and productivity growth have positive mutual feedbacks which liberalisation may well suppress.

Disentangling the effects of trade liberalisation in developing countries is no easy task. Recent moves toward deregulation have often been accompanied by macroeconomic stabilisation packages and removal of controls on international capital movements, and have had visible effects on income and wealth distributions. In any serious assessment the pure theory of international trade, open economy macroeconomics in its 'tropical' version, and a large dose of political economy must come in. To begin, it makes sense to review and criticise what received theory says about the determinants and outcomes of trade flows, first at the microeconomic and then at the macro level.

1. Microeconomics

To this day, as Krueger's (1997) American Economic Association Presidential Address makes clear, the preferred defence of trade liberalisation invokes a general equilibrium model with constant or decreasing returns to scale, built upon the choices of individual agents interacting solely through the market. There is competition in the sense that the agents are price takers, rationally arriving at the usual marginal conditions. When they are partitioned into 'countries' by restrictions on their access to resources, standard notions of static comparative advantage emerge, with trade patterns determined by technology differences in Ricardian models and resource endowments in Heckscher-Ohlin. Insofar as this theory describes observed specialisations in trade, it applies best to sectors or countries in which traditional inputs such as natural resources and/or unskilled labour predominate. Or, to tell the story the other way, once such 'bargain' competitive advantages run out, their

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replacements in the form of infant import-substituting (IS) and export industries have to be created. Historically, in most countries both the private sector and the state have had a hand in this process.

1.1. *Traditional Arguments against Trade Interventions*

Leaving aside such dynamic considerations for the moment, the argument for liberalisation in the static framework boils down to the second theorem of welfare economics, as Chakravarty and Singh (1988) make clear: any Pareto-optimal allocation can be realised as a competitive equilibrium in the presence of all-around 'convexity' provided that suitable lump-sum transfers can be arranged among all participants. Trade distortions imposed upon an otherwise competitive allocation create welfare (and presumably output) losses by driving it away from Pareto optimality.

This first line of defence of economic liberalism is not unbreached, as the whole world recognises. It is interesting to observe the back-up positions regarding scale economies, non-competitive market structures, and the magnitudes of liberalisation benefits that trade theorists have set up in recent decades.

With regard to decreasing costs or increasing returns to scale, the widely shared opinion is that they are ubiquitous in manufacturing and present in other sectors. The existence of such non-convexities invalidates the second welfare theorem and renders the existence of Walrasian equilibrium suspect. Young (1928) and Kaldor (1978) emphasised how increasing returns and cross-firm externalities can lead to cumulative growth processes and different patterns of specialisation across economies. At the industry and enterprise levels, changing 'advantage' is likely to be the rule, as suppliers' input prices shift and differential rates of productivity growth modify cost structures. To a degree, policy can guide such changes.[1]

The main response to decreasing costs on the part of mainstream 'new' trade theory has been to muffle the impact of scale economies by 'convexifying' assumptions, e.g. the Dixit-Stiglitz (1977) model of monopolistic competition in which firms' profitability gains from returns to scale are strictly limited by consumers' desires for product diversity. Protection to force big cost reductions from long product runs cannot pay off. It makes little sense to introduce one more yuppie automobile marque if its intended consumers'

[1] Amsden (1989) draws interesting comparisons among future East Asian miracle economies in the 1950s. At a financially sustainable nominal exchange rate, Hong Kong's wages were low enough to give the city-state an absolute advantage in garment production; for the first couple of decades the colony's rapid output growth was based squarely on cheap labour, its export markets 'protected' from incursion by other producers by pre-existing quota rights. Unlike Hong Kong, South Korea and Taiwan historically had specialised in textiles. With the technologies they had at hand, they could not compete, i.e. their yen-equivalent wage levels were *not* low enough to let them undersell Japan. Hence they initially had to subsidise the capital used in textile production (Amsden's famous recommendation to 'get prices wrong') and push for high productivity growth by hands-on industrial policy. In more recent times, South China's export boom has in many ways resulted from an amalgamation of the Hong Kong and Korea/Taiwan strategies.

preferences for diversity are going to limit sales to an uneconomical 100,000 units per year.

The older literature on development economics, by contrast, recognised that there can be room for substantial benefits from establishing industries with scale economies, especially when transport costs and other factors drive wedges between border prices of imports and exports (Scitovsky, 1954). Moreover, 'local' project analysis undertaken with the current vector of relative prices is not an adequate guide for choosing investments which can radically switch cost structures.

Fig. 1 illustrates these points in a 'buy/make/sell' diagram for an industry open to foreign trade. The prices at which the commodity in question can be imported and exported are P_m and P_e respectively. The domestic supply curve for low levels of output Q is flat – the price sticks at P_1. However, for levels of output above Q^*, an increasing returns technology becomes profitable (perhaps with a jump in Q as techniques shift), and the price falls along a downward-sloping supply curve.

For low levels of domestic demand along curve *DD*, the import price lies well below domestic production cost, and it makes no sense to import-substitute

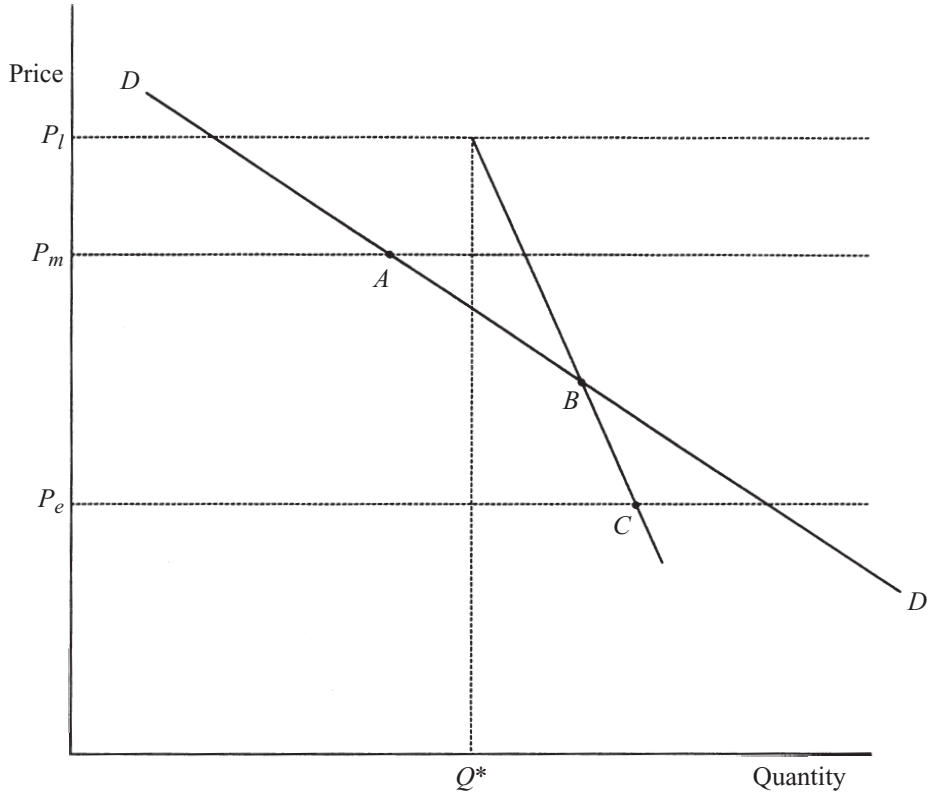


Fig. 1. *The Buy/make/sell Decision in Partial Equilibrium*

the good. Foreign products can satisfy local needs at point *A*. However, it is also in principle feasible to produce with decreasing costs at point *B* – instead of being bought, the good is made. To get from *A* to *B*, a non-marginal change is required. The private sector might or might not recognise and be capable of making the transition; the same is true of exporting in volume in the 'sell' option (another non-marginal change), with production at *C*. As discussed below, choices like those illustrated in the diagram open room for policies aimed at promoting both import substitution and export growth.

Intersectoral linkages can further complicate matters, especially for widely used intermediates such as metal products or chemicals. In the older development literature the need to attain minimum viable scales of operation was at the heart of Hirschman's (1958) recognition of the significance of cross-sectoral demand and supply linkages. His logic goes together well with Young's vision of the growth of an 'infant economy', a striking generalisation of the standard Mill-Bastable criteria to which the mainstream literature consistently adheres.

1.2. *Effects of Trade Interventions in Practice*

To deal concretely with the issues raised by Young and Hirschman, one has to bring in imperfectly competitive market structures and the means by which firms operating in them can be induced to raise their productivity and reduce costs. Following Ocampo (1997), consider an established IS firm which may also have the possibility to export. It can cut its unit costs by investing T_C in improved technology, and enhance its ability to penetrate export markets by investing T_X (with both investment activities subject to decreasing returns to additional outlays).

Solving the firm's profit maximisation problem (details in the appendix) shows that it will undertake more T_C as the sum of its outputs for the domestic market (Q) and export (X) is greater, because the investment cost can be 'spread' over a bigger production run. If its costs are low enough to make exporting profitable, it will also choose a positive value for T_X. Fig. 2 depicts the situation for a pure IS firm for which exports are not profitable. The TT schedule shows that technological investment rises with the volume of output for the reason just given. Moreover, by reducing costs more investment permits higher output levels along the QQ curve. In such a situation, shifting QQ to the right by providing protection can help induce a productivity increase. Indeed, if the resulting cost reduction is strong enough the firm may be able to export, adding another positive feedback via X and T_X to Fig. 2's 'win-win' mutual crowding-in scenario.[2] As discussed later, at the macro level such phenomena can underlie sustained output growth *à la* Young and Kaldor.

[2] There is obviously room in the model for productivity enhancement by both import protection and export promotion. As discussed more fully below, they are not just symmetric and mutually offsetting, as in mainstream interpretations of South Korea's deployment of both sorts of interventions.

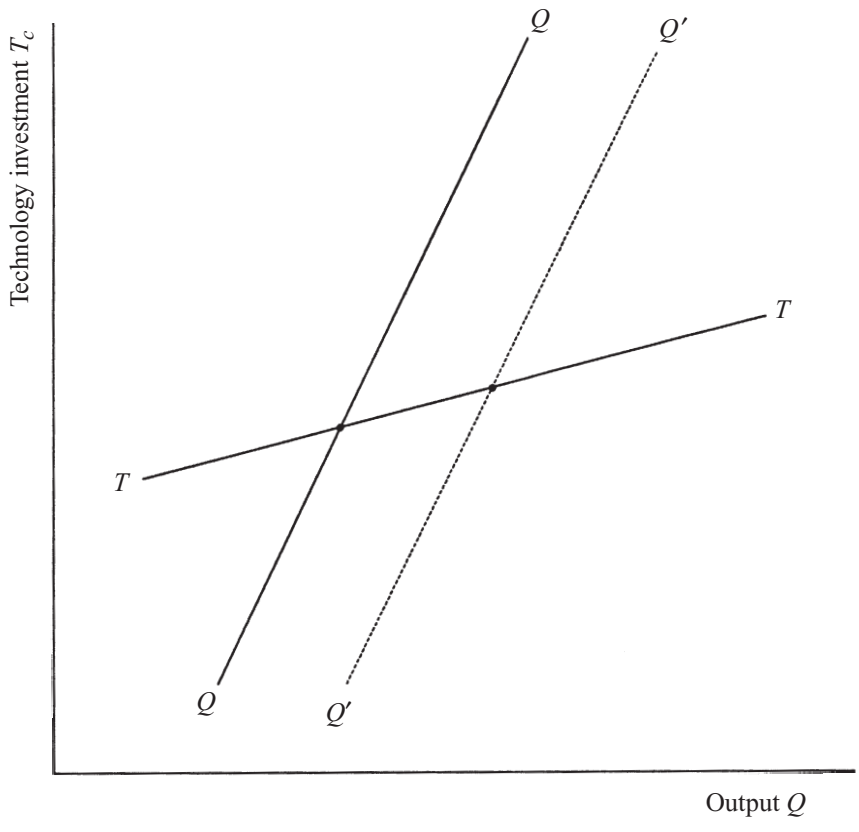


Fig. 2. *Effects on Output and Technological Investment of Import Protection*

1.3. *Little Welfare Triangles and Big Distributional Shifts*

If decreasing costs and crowding-in of productivity growth are assumed away or convexified into irrelevance, a second problem with the standard model emerges – the welfare losses associated with trade and other distortions do not signify. The negligible size (1 or 2% of the relevant output indicator, once off) of 'little triangle' welfare gains from liberalisation has been apparent ever since Harberger (1959) began cranking the numbers 40 years ago.[3] What has not been stressed in the literature, however, is that the income transfers associated

[3] At times, computable general equilibrium models such as the one constructed ex ante to evaluate a Canada/US free trade agreement by Harris and Cox (1984) do generate large welfare gains from trade liberalisation under conditions of decreasing cost – the model's number for Canada was around 7% of GDP. However, as Hazeldine (1990) demonstrates, the results of the Harris-Cox exercise depend crucially on assumptions of very strong scale economies, facile entry and exit from monopolistically competitive industry, and high sensitivity of the national price level to the cost of competitive imports. Cutting protection then reduces national prices, drives out entrants who have 'crowded' into production and are operating at small, inefficient scales, and thereby generates decreasing costs. A positive macroeconomic feedback through an appreciating exchange rate due to lower export prices stimulates even more cost reductions and output growth. There is no reason to expect such a long chain of consequences to work themselves out in practice.

with liberalisation or imposition of regulation are measured by rectangles – not triangles – and can be large (Rodrik, 1994).

For example, consider the effects of an import quota in Fig. 3, which shifts the supply curve faced by domestic consumers from SS to $S'S'$ and corresponds to an internal price P above the world price P^*. Removing the quota gives a 'triangle' welfare gain of $BFG + CDE$, the difference between 'rectangle' overall gains of $ACDH$ and losses of $ABGH$ to import-competing producers and $BCEF$ to owners of the rights to the quota. Such distributional effects of liberalisation programmes have recently emerged as a major topic of debate.

1.4. *Intersectoral Distributional Complications*

In particular, much discussion has centred on two trade theory warhorses, the Stolper-Samuelson (1941) theorem and factor-price equalisation (Samuelson, 1948), applied to 'skilled' and 'unskilled' labour as opposed to the more traditional labour and capital. Following Wood (1994), there has been substantial debate about the Stolper-Samuelson proposition that trade liberalisation

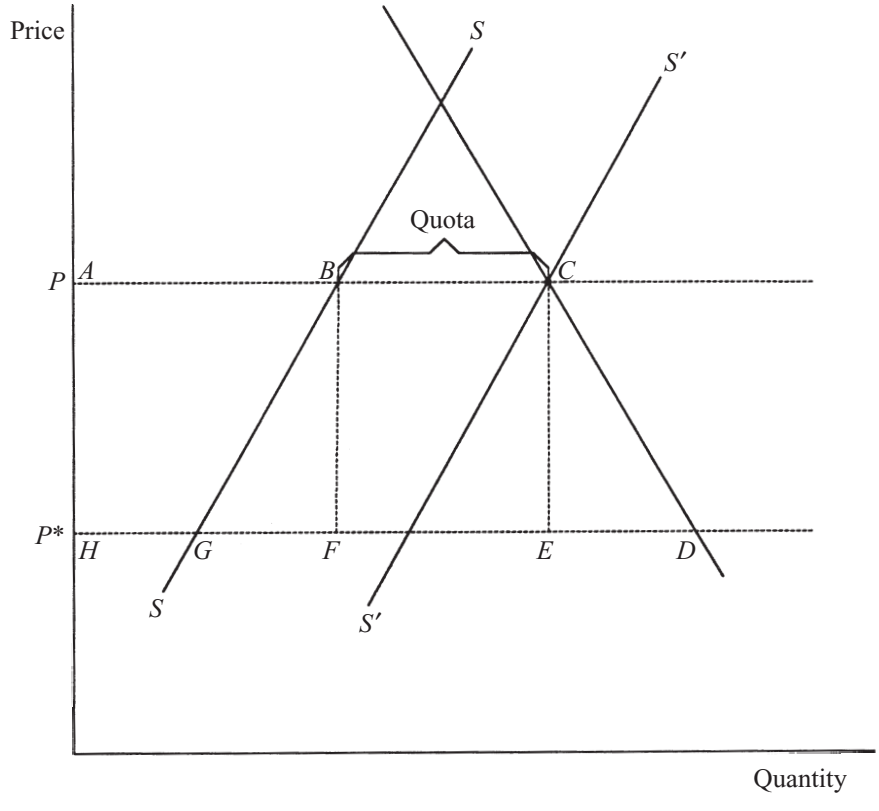


Fig. 3. *Distributional Effects of Removing an Import Quota*

in advanced economies should benefit the input intensive in production of their exports, i.e. skilled labour. In developing countries, on the other hand, the unskilled should benefit. Discussion around the OECD attributes some part (say in the range of 10–20%) of that region's increasing wage inequality to trade effects, more to a 'skill twist' against low-paid workers induced by computerisation, and a significant part to a changing social perceptions of 'fair pay' and lagging aggregate demand (Howell *et al.* 1998). In developing economies, a distributional shift in favour of the low paid remains to be observed.

With regard to factor price equalisation, the real question is whether the standing Heckscher-Ohlin hypothesis that all countries have access to the same technologies is even remotely correct. It is argued below that Verdoorn's (1949) Law is a crucial determinant of economy-wide productivity growth. Across sectors within an economy, it implies that labour productivity levels should converge, i.e. technologies differ between countries (Milberg, 1997). Even more damaging to the standard factor price equalisation argument is the fact that recent moves toward (not just trade) liberalisation in developing countries have been associated with striking divergences in patterns of productivity growth overall (Pieper, 1997).

1.5. *Rent-seeking and Austrian Competition*

The mainstream response to the existence of little triangle welfare loses from trade interventions has been to try to expand them in one way or another. There are two main, related lines of thought: rent-seeking and Austrian-style assertions about the powers of liberal policies to unleash entrepreneurship. We take up basic arguments here, postponing their empirical consideration to Section 3.

In a competitive model, the real costs to society of economic actors trying to gain the rents generated by distortions were first pointed out by Tullock (1967) in a paper on 'The Welfare Costs of Tariffs, Monopoly, and Theft'. Presumably many more economic actors seek such income flows than gain them, while others have to pay for self- or social protection. All such efforts consume resources but do not produce 'goods'. In the case of theft, expenditures for alarms, security services, gated suburban enclaves, police, courts, and jails must greatly exceed the incomes received by the thieves.

In the trade and development literature while still assuming perfect competition, Krueger (1974) dropped monopoly and theft (private sector activities, largely) to focus on government interventions aimed at regulating trade, especially import quotas which generate rents as illustrated in Fig. 3. Numerous estimates of large welfare losses due to trade interventions have been made (e.g. deMelo and Robinson, 1982) but are difficult to accept at face value. If quotas cover only a fraction of imports and imports are a fraction of GDP, associated rents and rent-seeking outlays cannot be huge. More fundamentally, rents are a form of exploitation, a notion mainstream economists find difficult to swallow. Marxists, of course, have been trying to quantify exploitation for a

long time. Even with great ingenuity – as in Baran and Sweezy (1966) – they rarely raise their estimates of surplus values to large fractions of GDP. The same seems likely to be true with regard to rents and even their pursuit.

If perfect competition is not present, further complications come in. Following the discussion in section 1.2 and anticipating the macro analysis of Section 2, we mention just two. First, standard rent-seeking models suppose that tariffs or quotas always generate higher prices. But in fact, firms may take advantage of protection to build up a stable clientele by adjusting prices to bid up sales in Okun's (1981) 'customer markets'. If resources are not fully utilised or there is a binding external constraint, the additional income flows associated with a larger volume of sales (if they can be called 'rents' at all) do not generate welfare losses. The second point is that rents in the right hands may speed capital accumulation, as discussed more fully below. This possibility does not arise in standard trade theory models, which implicitly assume that all incomes (including rents) are consumed.

Austrian arguments concentrate on competition as a process instead of an exercise in comparative statics. Subject to one key reservation, the central point is that imperfect competition in all its forms – oligopolies, efficiency wages, externalities, indivisibilities, and so on – is doomed to disappear in some not very lengthy run. It will be undone by entrepreneurial forces. Through entry of firms into oligopolised markets, mark-ups will be driven toward zero. Unemployed workers will toil at low pay to bid down efficiency wages until every willing hand finds a job. Economic externalities or production indivisibilities will be 'internalised' through bargained market solutions until socially optimal marginal benefit = marginal cost equalities applies.[4]

The reservation, of course, is that ham-handed public interventions can frustrate even this process, blocking entrepreneurship and (more importantly) discouraging people from thinking in an entrepreneurial way. Far reaching liberalisation may break these barriers down and permit the economy to jump to a much faster pace of economic growth (or, in Schumpeterian terminology, to a vastly improved configuration of circular flow). Chile since the mid-1980s is often cited as proof for this assertion (Solimano, 1996). This story has an element of truth – scions of the present-day Chilean bourgeoisie are far more obsessed with profitable business undertakings than were their parents a generation past – but completely ignores the complicated history of the Chilean transition (Fanelli *et al.*, 1992) and the inconvenient fact that exchange rate devaluation was much more important than import liberalisation in driving Chile's export success (Helleiner, 1995a).

[4] Empirical support for these assertions on the part of the Austrian school elite is rather casual. In fancy terminology, Austrian economists view the socioeconomic system as an evolutionary game in which the forces of entrepreneurship will finally prevail, leading to a socially optimal competitive resource allocation. However, no formal convergence proofs are offered. Hayek (1988) argued that the existence and benefits of a trend toward capitalism worldwide are demonstrated by the rapid expansion of the human population observed over the last two hundred years. The correlation exists, but the assertion of causality is more than most people can swallow.

1.6. *Contingent Interventions*

A final point is that by making their pay-offs contingent on performance state interventions also can induce entrepreneurship. Two steps are required (Hikino and Amsden, 1994; Mohanty, 1996). One is to define the criteria on which contingency is based; East Asian experience suggests that export performance can serve, along with other indicators such as output growth, technological upgrading, etc.

Second, the state has to have leverage over firms, e.g. via control of allocated credits, so that non-performing recipients of publicly created rents can be chastised. Manipulation of 'rectangle' rents like those illustrated in Fig. 3 is the instrument at hand; the political question is whether the authorities can use it to discipline capital effectively. Circumstances are bound to vary with time and place. Neither interventionist nor liberalisation packages can be evaluated outside history, contrary to the main thrust of mainstream economic theory.

2. Macroeconomics

Macroeconomic considerations must also be brought in to assess the effects of trade liberalisation. We first take up a mainstream narrative, and then go on to implications of simultaneous liberalisation of the capital and trade accounts. The importance of the dynamics of aggregate productivity growth and how they can be influenced by policy are the closing themes.

2.1. *A Implications of Say's Law*

True to its Walrasian roots, the standard model presupposes full employment of all resources (or Say's Law) and balanced trade, subject to existing restrictions on imports. If not all commodities are traded, the local currency/foreign currency exchange rate e serves as a relative price between traded and non-traded goods (Dornbusch, 1974, sets out a convenient model). It enters as the key variable in a 'symmetry' argument of the type originally advanced by Lerner (1936) which, on its own assumptions, shows that liberalising imports will promote export growth.

To see the details, assume that import protection is reduced, leading to an incipient trade deficit. To close the gap, imports must be pushed back down or exports up. If the exchange rate, e, adjusts to clear a current account imbalance (which may or may not be the case), then a higher (i.e. depreciated) value of e will stimulate production of exportables and import substitutes with resources transferred from the non-traded sector. In other words, liberalisation pays off in the form of faster export growth. The underlying Say's Law assumption assures that local resources can be deployed to produce *something* and balanced trade assures it will find an external market (Stanford, 1995). Historical observations of liberalisation experiences are rendered irrelevant by theory.

But what happens if resources are not automatically fully employed or if the country in question can borrow abroad? Then income as well as substitution effects of both trade liberalisation and exchange rate changes matter. They can easily be associated with output losses and a wider trade deficit. As Orchard and Stretton (1997) point out, these are two of the cases – structural unemployment and rising foreign debt – in which Adam Smith observed that protection can generate welfare gains. The other two (highlighted above) were industries with acquired rather than natural advantages, and with high cost production thresholds. Arguments in support of trade liberalisation have to overcome objections familiar from *The Wealth of Nations*.[5] They have not succeeded fully to date.

2.2. *Capital Market Liberalisation*

The next macro linkage that bears on the liberalisation debate is the fact that in many cases in the past decades, both the trade and capital accounts of the balance of payments have been deregulated simultaneously. The exchange rate is allowed (at least dirtily) to float, responding to developments in financial markets instead of imbalances in the current account. In countries where this package has been applied (more in Latin America and Asia than sub-Saharan Africa), almost uniformly a combination of a high local interest rate and a strong exchange rate has emerged, diluting whatever benefits concomitant trade liberalisation was supposed to bring and often leading to a balance of payments crisis in the medium run. It of interest to explore why this particular combination of macro prices has been so common. The answer is fairly complicated.

Uncovering it is not made easier by the fact that the standard portfolio balance model for 'home' and 'foreign' interest rates (say i and i^*) and the exchange rate (e) between the two countries has been treated incorrectly in the literature (Taylor, 1998). Two key misinterpretations stand out. First, when proper wealth accounts are derived from it, the model can be shown to determine only two of the variables just mentioned – not all three as has been assumed for the past 20 years. Second, devaluation reduces home and raises foreign wealth, contrary to the usual assumption.[6]

If stable asset market adjustment in response to interest rate changes is

[5] Smith's reasoned defense of tariffs in certain circumstances appears in the latter part of Book IV, Chapter II of *The Wealth of Nations*.

[6] Standard presentations (Branson and Henderson, 1985; Isard, 1995) get these results wrong because they do not take into account the dependence of asset demands on wealth levels, and of the latter on the exchange rate. Substitution of reduced form expressions for home and foreign wealth into demand balances for national and foreign bonds and money and a little algebra show that each country has only one independent balance, so that there are two in the system. The wealth effects of devaluation cited in the text emerge from the reduced forms directly. The facts that devaluation can reduce both national wealth and real income (as in the contractionary devaluation literature *à la* Krugman and Taylor (1978) tend to be underplayed in the formal economics literature, but in most countries do not escape the attention of the general public and its political representatives.

assumed in the short run, these wealth effects show directly that devaluation will lower home and increase foreign interest rates. With lower wealth induced by a higher value of e, home asset demands fall, so that i must decrease as well. The opposite occurs abroad. To take the discussion a step further (particularly when capital markets have been liberalised), it makes sense to endogenise the exchange rate over time by bringing in an uncovered interest rate parity (UIP) differential equation of the form[7]

$$de/dt = e(i - i^*) = e\delta, \tag{1}$$

in which for analytical simplicity myopic perfect foresight is invoked to set the actual equal to the expected rate of devaluation on the left-hand side.

In a stationary state, $i = i^*$ and $de/dt = 0$ at an initial exchange rate e. Now suppose that the home country permanently reduces its money supply, making i rise and i^* decline. At the ruling exchange rate, the right-hand side of (1) suddenly becomes positive. This sets up a well-defined initial value problem in de/dt and e.

Differentiating the right-hand side of (1) shows that $\delta(de/dt)/\delta e < 0$ unless asset preferences themselves are highly sensitive to changes in de/dt (that is, a condition of the form $e[\partial\delta/\delta(de/dt)] < 1$ is required). When stability applies, a simple dynamic process unfolds. If i exceeds i^*, the expected forward exchange rate will be high according to UIP. As the expected devaluation turns into reality, home wealth falls. Demand for home money goes down, and the interest rate differential narrows. The change in the exchange rate, de/dt, will go to zero at a new stationary value of e. Unlike most models incorporating perfect foresight, the one here does not require the use of jump variables and transversality conditions to demonstrate stability. Some might find the dynamics plausible on such grounds.

Turning to the effects of capital market liberalisation, an immediate question arises. If deregulation induces a shift in desired foreign portfolios toward the home market (the goal of the whole exercise in the first place), then its asset prices should rise or interest rates fall. Reversing the argument just presented, the home currency should begin to appreciate. This result is consistent with experience, but where do the high interest rates often observed in the wake of market liberalisation come from?

One possible explanation is that economic actors at home may pull back from the local market in a dynamic process. For example, the authorities might well tighten monetary policy in an attempt to keep the current account deficit under control. (In the Latin American context, inflation stabilisation would be a complementary objective.) If $D(i, e)$ is the deficit, their response could take the form

[7] By way of derivation, if UIP holds then it should be true that $e(1 + i) = f(1 + i^*) = (e + \varepsilon)(1 + i^*)$, where e is the spot and f is the expected forward exchange rate with ε as the expected change. If the product term εi^* is negligible, then (1) follows immediately with myopic perfect foresight which sets $\varepsilon = de/dt$.

$$dM/dt = \beta\{D^t - D[i(e, M), e\}, \quad (2)$$

where M is the money supply and D^t is a target level for D.

Equations (1) and (2) make up a simple dynamic system in e and M. In (2), $\partial(dM/dt)/\partial M < 0$ because a bigger money supply reduces the home interest rate, increases the external deficit via a higher level of economic activity, and makes international reserves decline. The exchange rate influences D directly and through i. If the direct effect dominates, then $\partial D/\partial e < 0$ and $\partial(dM/dt)\partial e > 0$, i.e. the monetary authorities think that a weaker exchange rate gives them room to raise growth of the money supply.

Fig. 4 illustrates a possible scenario, with the exchange rate schedule corresponding to $de/dt = 0$ and the money curve representing $dM/dt = 0$. An increase in foreign preferences for home assets shifts the exchange rate schedule to the left, i.e. a lower or more appreciated value of e is consistent with $de/dt = 0$ when external demands for local assets rise. For a given e, M has to go down to hold $dM/dt = 0$ in (2) when liberalisation happens; a reduction in the target trade deficit would accentuate this effect. As shown in

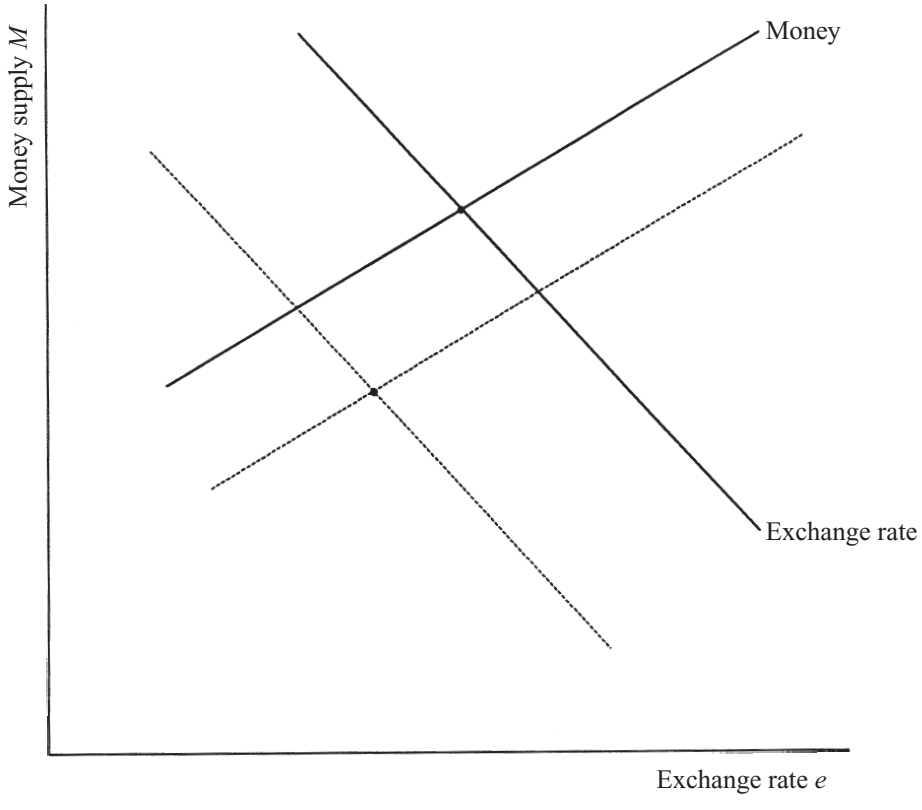


Fig. 4. *Asset Market Adjustment to a Switch in Foreign Preferences Toward Home Assets ('Capital Market Decontrol') Accompanied by More Restrictive Monetary Policy*

Fig. 4, the outcome could be a new stationary state with a lower e and a level of M sufficiently reduced to raise i. Analysis of parameters would be necessary to give a definite result, but the uncomfortable high interest rate/strong currency combination is compatible with the present model. It does not provide a solid base for improved trade performance or investment to support economic growth.

What is worse, the continuing trade deficit can lead ultimately to a dynamically unstable situation, which can be characterised by an underestimation of risk as in a classic model by Frenkel (1983). At some point, the underestimation reverses, leading to massive capital outflow, devaluation, and stagflation. Mexico in 1994 and East Asia in 1997 are the most striking recent examples. The adverse effects of capital market liberalisation can easily overwhelm whatever small triangle benefits trade deregulation may bring.

2.3. *Trade Policy and Productivity Growth*

The final macroeconomic questions to be addressed are long-term. It is well-known that productivity growth[8] is far more important for the creation of income gains than the resource reallocations of static models, even with increasing returns. Productivity gains lead to a win-win set of dynamic interactions, of the sort already illustrated in Fig. 2.

On the one hand, more rapid output growth tends to speed up productivity increases, i.e.

$$d\xi/dt = f_{\xi}(\xi,\ g) \tag{3}$$

with first and second partial derivatives of f_{ξ} being negative and positive respectively (the former condition simply states that accelerations in productivity growth are not explosive). Rationales have been provided by authors as diverse as Verdoorn (1949), Okun (1962), and Kaldor (1978), as well as 'new' growth theorists.

Positive feedback emerges from a stimulating effect of ξ on g,

$$dg/dt = f_{g}(\xi,\ g) \tag{4}$$

in which the first and second partials of f_g are positive and negative respectively.

At least three channels have been emphasised by different schools of thought. First, technical change promotes investment and (by reducing costs) additional exports. Unless effective demand is strongly wage-led so that overall spending is held down in Luddite fashion by job losses associated with rising productivity (Taylor, 1991), the outcomes are greater capacity utilisation and faster output growth. Second, aggregate supply will expand more rapidly, as emphasised by mainstream growth theory. Finally, if the economy is con-

[8] Productivity growth should be understood here as the 'residual' in traditional calculations, figured with respect to either labour or total factor inputs. It includes scale economies (both static and dynamic, as it is impossible to differentiate the effects of one from the other over time) but omits price shifts due to changing mark-ups over time.

strained by foreign exchange along the lines emphasised by Chenery and Bruno (1962) and subsequent two- and three-gap models (Taylor, 1994), a supply effect through the relaxation of 'import compression' is added to demand growth from the exports and import substitution permitted by lower production costs.

Fig. 5 illustrates the effects of alternative policies in a diagram wherein the schedules along which $d\xi/dt = 0$ and $dg/dt = 0$ are represented by TT and GG respectively. The presentation is of course similar to the one Kaldor used in discussing his technical progress function, and is the obvious macroeconomic analog to the micro analysis of Fig. 2. Abstracting from the growth of the labour force, a long-run equilibrium at which $g = \xi$ and $dg/dt = d\xi/dt = 0$ emerges at the intersection of TT and GG; it will be stable if TT has the shallower positive slope.[9] One way to shift the equilibrium point is through protection to infant industries. When successful, it can stimulate technological investment, shifting the TT schedule upward in Fig. 5*a*. If output growth is limited by aggregate demand or available foreign exchange, GG will move to the right, raising both ξ and g.

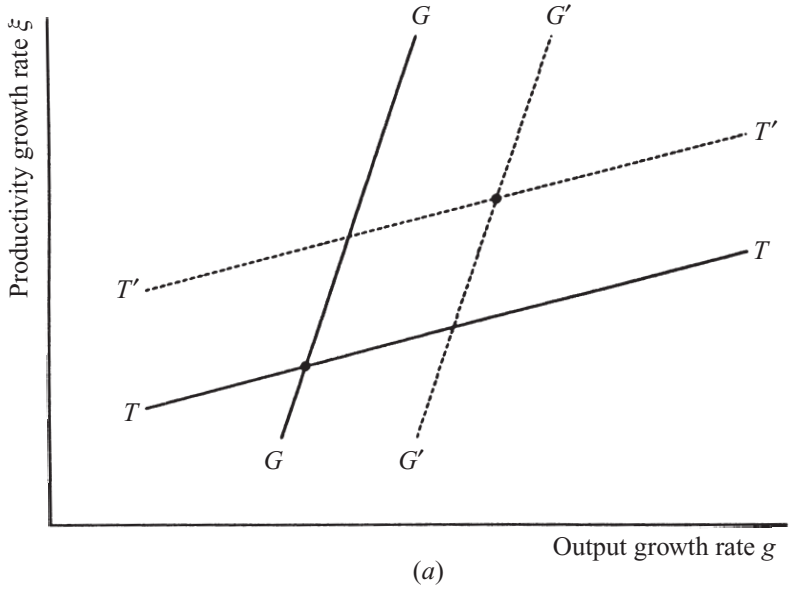
Two potentially important offsetting factors should immediately be pointed out. If the infants produce capital or intermediate goods, adverse effects on user sectors due to more expensive or lower quality inputs have to be taken into consideration (that is, negative linkage effects due to increasing costs predominate).[10] Second, it may not be possible for the state to make the benefits of import protection contingent on performance for well-ensconced 'mature' IS firms. Their non-competitive response to extra protection might be to reduce x-efficiency. Overall productivity growth could decline and aggregate demand and supply effects could be weak, as in Fig. 5*b*. As the diagram is drawn, economic growth does not slow but technological advancement falters.

In such circumstances, contingent incentives might be created through export promotion via subsidies or import liberalisation for intermediate inputs. The TT function could rise while export dynamism could shift GG to the right – we are back to Fig. 5*a*. This possibility of helping domestic firms overcome the fixed costs of breaking into external markets reflects the importance of an 'infant export industry' argument.

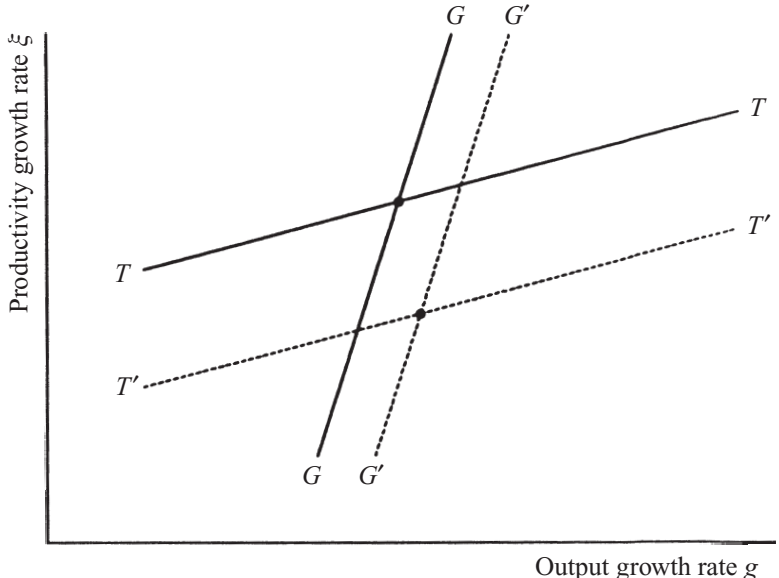
By contrast, an overall reduction of protection can cut back on economic growth. The effects on the GG function in a demand- or (especially) a foreign exchange-constrained economy are clearly adverse. Its leftward movement in Fig. 5*c* can be accompanied by an indeterminate shift in TT. Removing protection should ameliorate the negative effects of restricted competition on productivity growth in domestic markets, while export sectors can benefit from

[9] One interpretation of endogenous growth theory is that TT is steeper than GG. Saddlepoint dynamics emerge around the point at which the curves cross, leading to ever-increasing or ever-decreasing rates of output and productivity growth. We leave such fireworks aside, preferring to concentrate on more traditional analysis of stable comparative dynamics.

[10] Taylor (1991) sets up a non-Say's Law growth model in which higher profitability in a sector producing intermediate goods resulting from G protection may or may not induce enough additional investment across sectors to raise the economy-wide rate of economic growth.

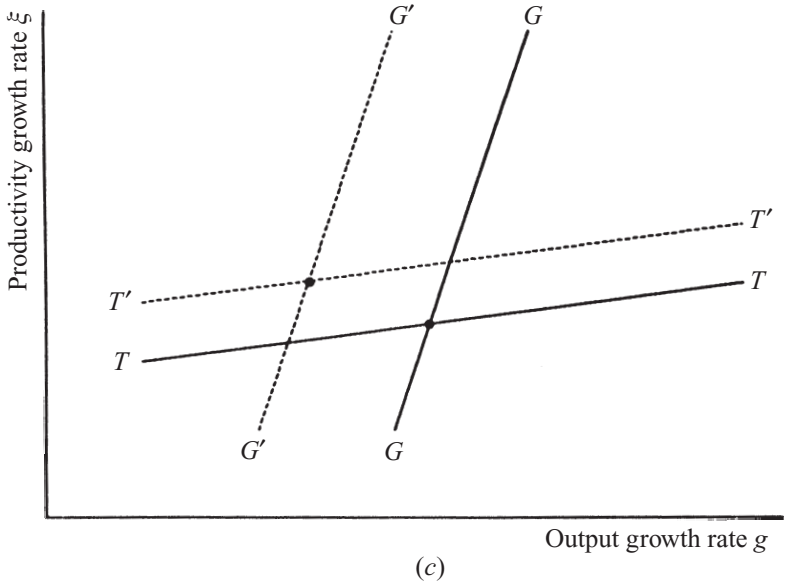


(*a*)

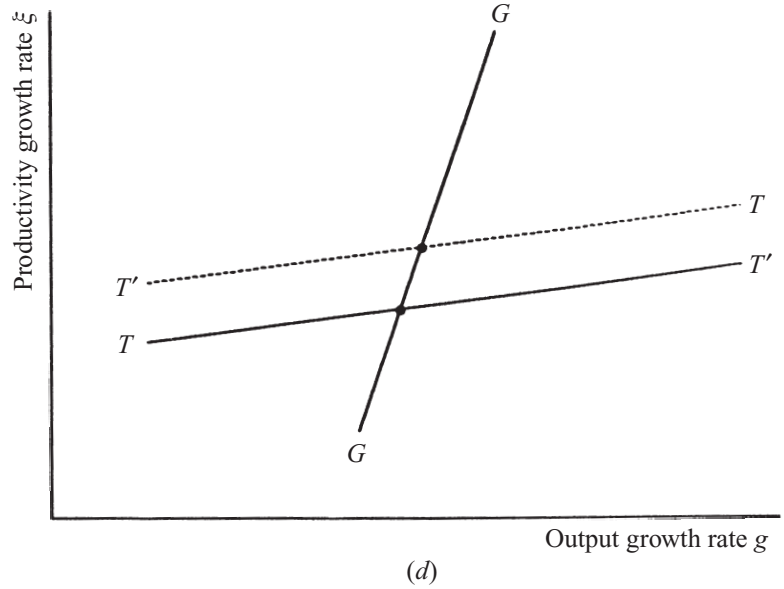


(*b*)

Fig. 5. *a: Infant Industry Protection or Export Promotion in Mature IS Industries. b: Increased Protection to Mature IS Industries, with X-inefficiency and Weak Effects off Growth. c: Import Liberalisation with Favourable Productivity Effects but Adverse Impacts on Growth. d: Devaluation with Neutral Long-run Effects on Aggregate Demand.*



(*c*)



(*d*)

Fig. 5. *Continued*

cheaper intermediate inputs (these are basically little triangle welfare gains). But viable infant industries may be strangled, while national firms' financial base for penetration of export markets is eroded. In Fig. 5*c*, the *TT* function shifts upward along neoclassical lines, but the leftward shift of the *GG* schedule reduces the growth rates of both output and productivity in the long run.

As we have already noted, devaluation has complex effects. For purposes of the present discussion, it can be seen as a means of cutting costs for both export and IS industries in conjunction with macroeconomic repercussions that can be far-reaching. In Fig. 5*d*, devaluation is assumed to stimulate productivity growth while leaving the *GG* locus unchanged (the contractionary short-run impact often observed in developing economies may be offset by a neutral or expansionary long-run effect). Under these conditions, long run growth and productivity performances improve. The implication is that the effects of a package mixing liberalisation and devaluation (that is, combining Figs 5*c* and *d*) are indeterminate. The benefits of devaluation have to be weighed against the likely adverse effects on long-term growth of thoroughgoing deregulation. If the exchange rate appreciates for the reasons discussed previously, the situation becomes that much more perilous.

Four final considerations: First, different sorts of trade regimes may induce different patterns of technical change. Long-run liberal regimes may well promote static comparative advantage, with infant IS and export industries with their 'created' advantages being underrepresented. If created advantage is what matters at the global level, then a liberal strategy may encourage an output mix with adverse effects on productivity growth. Offsetting factors are the possibilities for product upgrading and downstream expansion from a natural resource base, and the costs of infant industry protection (especially for small countries in an advanced import substitution phase). Dynamic learning economies increase the benefits of import substitution, but also its costs if globally competitive industries do not emerge.

Second, the implication is that promoting IS industries can be a desirable strategy on growth grounds, if policy tools can be deployed to push import substitution into export promotion. Sectors which never mature in this sense may not even satisfy Mill-Bastable criteria for success.

Third, if the economy becomes overloaded with 'immature' producing units, their transformation into exporters becomes an urgent matter. Wide-scale import liberalisation is unlikely to be up to the task, even combined with devaluation. Incentives contingent on successful penetration of foreign markets may be needed to make 'infant export industries' reach maturity.

Finally, possibilities for faster productivity growth depend crucially on specific national and sectoral characteristics. Trade policy reforms in general and trade liberalisation in particular appear to have modest leverage on technological advance in developing economies. Productivity is likely to respond much more to accumulation of human capital and the development of public and private institutions to facilitate the transfer, adaptation, and diffusion of more productive technologies.

3. Empirical Evidence

In this section, we briefly review the empirical evidence regarding several points raised above – the overall impacts of trade liberalisation, distributional changes, and productivity growth.

3.1. *Overall Impacts*

Two historical accidents heavily influence discussion of the effects of trade liberalisation. The first is that when neoclassical economists turned their attention to the problems of development in the late 1960s they were led by trade specialists.[11] The analysis of trade interventions has been central to the debate ever since, overwhelming discussion of the production-related factors just mentioned.

Not long after, the World Bank began to invest heavily in economic research, under the leadership of Hollis Chenery. For better or for worse, the methodologies he installed relied on cross-country regression analysis and computable general equilibrium (or CGE) models. Very little effort was devoted to historical and institutional studies of specific countries, undertaken by people with enough local knowledge to know what they were talking about. CGE models with causal structures or 'closures' predetermined to favour liberalisation[12] and meaningless regressions do not shed a lot of light on how trade policy really operates.

By now, there are scores if not hundreds of econometric studies of the impacts of exports on economic growth (either directly or via creation of a higher capacity to import), the relationships between 'openness' (defined in terms of trade shares or the prevalence of protection) and growth, and (in the CGE models) the growth and output effects of specific policy changes.

The regression equations typically leave a substantial part of total variance unexplained, so that even if they point to 'modest' positive effects of liberalisation or openness on growth, such conclusions cannot possibly hold for all the countries included in the sample. For this and similar reasons, surveys such as Edwards (1993), Rodrik (1995), and Helleiner (1995*a*) broadly conclude that trade policy changes do not matter very much. Helleiner, in particular, argues that a stable (and preferably weak) exchange rate is the best single explanation of successful trade performance in the medium run. He also observes on the basis of the country studies he organised that an overly complex set of incentives can frustrate even the most entrepreneurial of potential traders, an Austrian point forcefully argued by Kaldor (1959) in a famous study of Chile long ago.

Historically based country analyses like those undertaken by Amsden (1989), Wade (1990), and the scholars collected in Helleiner (1994, 1995*b*)

[11] The most important early contributions were the studies of trade and industrial policy organised by Little *et al.* (1970). Significantly, they relied heavily on the (then) high tech analysis of effective protection to show that trade distortions were rampant in a sample of a half-dozen semi-industrialised economies.

[12] Much of the Bank's case for liberalisation is based on Say's Law models of the type sketched in Section 2.1, e.g. user-friendly computer packages incorporating a specification illustrated by Devarajan, *et al.* (1995) which are heavily used to flog trade deregulation throughout the developing world. The models' reliance on the exchange rate to 'clear' the current account stands in curious contrast to Bank/IMF efforts to decontrol capital accounts, causing exchange rate movements to reflect financial forces.

share this agnosticism, but also single out the historical importance of certain trade, industrial, and macro policy maneuvers in specific institutional contexts. They emphasise the role of interventions contingent on performance (Section 1.6 here) and the fact that in an environment unregulated by Say's Law there is ample room for protection of both IS and export activities by the same firm or industry – the symmetry theorems are not relevant (Section 2.1).[13] The details are messy and successful interventions may not replicate easily across national frontiers, but the evidence for their existence is clearly present.

3.2. *Distributional Shifts*

Two questions arise: Can we charcterise the overall directions of distributional changes under liberalisation? If so, what can be said about the channels via which they occur? With regard to the first query, UNCTAD (1997) demonstrates that globalisation has been associated with increasing income inequality in several countries, both developed and developing. Berry (ed., 1997) adds complemetary evidence for Latin America. More generally, Berry *et al.* (1997) conclude that in the wake of (not just trade) liberalisation, 'Countries with abundant labour, sufficiently educated (and with other necessary conditions present) to take advantage of international markets to expand labour-intensive manufactured exports, showed some tendency for improving income distribution.[14] In contrast, middle-income countries with comparative advantage in some skill-intensive products, and upper income countries, with comparative advantage in capital and skill-intensive areas, showed a definite tendency for worsening in income distribution. African economies whose comparative advantage lay in peasant production were expected to show an improvement ... but there mostly appears to have been a worsening in income distribution ...'

With regard to channels, debate is open. In one survey, Robbins (1996) finds evidence for a skill twist against low wage labour in developing economies. In another, Milberg (1997) stresses the breakdown of Stolper-Samuelson predictions outside the OECD, and the fact that they provide at best a partial explanation for distributional changes within. What do matter, he argues, are labour market institutions and employment growth. The latter responds to growth of aggregate demand, and feeds back into productivity increases along the lines of Figs. 2 and 5. Some final observations about this crucial linkage are an appropriate way to conclude the present discussion.

[13] Of course, symmetry (or, better, asymmetry) applies in the sense that not everyone can benefit from state intervention. In the short run in Korea, for example, both IS and export industrial activities were subsidised, while domestic food prices were kept high. The price system was clearly biased against urban consumers and some productive sectors, but the former still benefitted over time from steady productivity increases. Draconian controls, however, made sure that they had a long wait before they got access to imported 'luxury' consumer items (Chang, 1997).

[14] But, it might be added, there are always exceptions. Berry *et al.* (1997) emphasise a visibly worsening income distribution in Thailand since the mid-1980s.

3.3. *Sectoral Shifts and Productivity Growth*

Chenery *et al.* (1986) remain a fundamental source on the dynamics of productivity and strutural change. Using data through the early 1980s, they concluded that total factor productivity (TFP) growth contributed more to overall output growth in developed than developing countries, with factor accumulation thereby contributing more to output expansion in the latter.[15] An outlier group of 'success stories' (Japan, Israel, Spain, and East Asian NICs) was characterised by high TFP growth *and* factor accumulation.

Havrylyshyn (1990) later observed that rapid TFP growth was characteristic of these countries prior to their adoption of export-oriented strategies. Moreover, Chenery *et al.* pointed out forcefully that at the sectoral level, export expansion was almost uniformly preceded by a phase of successful import substitution. As detailed by Ocampo (1997) subsequent studies have demonstrated that in several countries, industries began to export even though their import protection was maintained.

Has this picture changed after the mid-1980s, broadly the period of liberalisation all 'round the world? On the basis of a 30-country sample of data at the nine-sector level for output and employment, Pieper (1997) shows that post-1985 only five Asian countries maintained growth rates of better than 3% per year in *both* overall employment and labour productivity.[16] Their productivity expansion was balanced across sectors, with the rate in agriculture remaining high.

Off this Asian 'high road', the typical Latin American pattern was rapid employment but slow productivity growth, while in Africa both rates were under 3%. In these regions, productivity performance dropped off sharply after 1985 in comparison to the previous period. Finally, in almost all countries aggregate productivity growth correlated closely with the evolution of the output/labour ratio in manufacturing, with other sectors presenting no clear pattern.

The links between this evidence and trade and other forms of liberalisation are not direct (especially since many countries were still struggling with the after-effects of massive external shocks in the late 1980s) but are still suggestive.

First, manufacturing has always been the main focus of protection and economists in the Verdoorn-Kaldor tradition argue that productivity growth in that sector drives changes in the rest of the economy. Insofar as this argument is correct, the deindustrialisation observed in much of the developing world due to liberalisation, exchange rate appreciation, and high interest rates and other symptoms of austere policy could have far-reaching adverse consequences.

Second, they could play out over an extended time period if a prior phase of

[15] This particular stylised fact was well-known to Chenery-style development economists for years before its recent rediscovery by Young (1994)– a good example of Schumpeter's (1954) oft-repeated lament that 'Economists don't read!'

[16] They are Indonesia, Korea, Malaysia, Singapore, and Thailand, with India having rapid productivity growth but less robust job expansion.

import substitution is needed to lay the base for subsequent export success. Countries with exploitable natural resources and/or cheap labour are partial exceptions to such a generalisation, but such windfalls do not last forever.

Finally, the good productivity performance in the Asian economies has been associated with outward-oriented, but distinctly *not* liberal trade regimes. Indeed, they have practiced the sorts of policies sketched in the model of Section 1.2 with great diligence. Their histories show that trade and other interventions are not always harmful; indeed, at least in terms of economic performance, they can promote substantial good.

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Appendix

Following Ocampo (1997), the model underlying the analysis of Section 1.2 at the firm level is quickly sketched here.

The demand function the firm faces is

$$Q = Q[P/(1 + t)], \tag{A1}$$

where P is the domestic price of its product, and t is the tariff rate on its closest foreign substitute (the foreign price is normalised at unity).

The firm's inherited technology allows it to produce a unit of its product with b_0 units of a unique input, purchased at price P_b . It can lower b_0 by investing on a flow basis in a cost-reducing technology T. Unit costs are thereby

$$C = P_b b_0[1 - \tau(T_c, b_0)] \tag{A2}$$

where τ has a positive first and negative second partial derivative with respect to T_c, and may well increase with b_0 (there is more room for cost- cutting when initial input requirements are high).

The firm may also sell in the foreign market as a price-taker. It can undertake technological investments T to learn international quality and marketing standards, and to project its product's existence abroad,

$$X = g(T_x), \tag{A3}$$

where g has positive first and negative second derivatives.

The firm chooses P, T_c, and T_x to maximise profits Π,

$$\Pi = (P - C)\,Q + (1 - C)\,X - (T_c + T_x)$$

subject to non-negativity constraints on Q, X, T_c, and T_x. After some manipulation the first order conditions can be written as

$$P = (1 + \mu)\,C \tag{A4}$$

where $\mu = 1/(\varepsilon - 1)$ and ε is the (negative of the) price elasticity of demand from (A1);

$$d\tau/dT_c = 1/[P_0 b_0 (Q + X)] \text{ or } T_c = 0; \tag{A5}$$

and

$$dX/dT_x = 1/(1 - C) \text{ or } T_x = 0. \tag{A6}$$

Equation (A4) is the usual price determination rule for a monopolist. In (A5), T_c

will be higher insofar as technological outlays can be 'spread' over a bigger output volume $Q + X$. In (A6) the firm will only invest in export technology T_x if its domestic costs C are already below international prices.

In the graphical representation in Fig. 2, the TT schedule represents (A5). The QQ curve shows how higher investments reduce costs (A2), which bid down prices in the domestic market (A5) and thereby increase sales (A1). Second order conditions for a profit maximum are satisfied when the slope of TT is less than that of QQ.

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