

Trade and Development

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In July of 2007 more than 1,000 economists – including four Nobel prizes – had signed a letter to Congress petitioning it not to impose tariffs on China. The phrasing of the petition is revealing of the extent to which many economists believe in the beneficial effects of free trade:

“As economists, we understand the vital and beneficial role that free trade plays in the world economy. Conversely, we believe that barriers to free trade destroy wealth and benefit no one in the long run...There is no foundation in economics that supports punitive tariffs.”¹

This view of trade is widely shared by the overwhelming majority of economists with a neoclassical training. In a recent survey of graduate students at the six top economics departments in the U.S., only 7% of respondents disagreed with the statement “tariffs and quotas reduce general economic welfare.” (Colander, 2005, p. 189) Of all the policy statements presented in the survey, trade policy was the one that commanded the broadest consensus among students. As Alan Blinder recently commented, in the economics profession “anyone who says anything even obliquely that sounds hostile to free trade is treated as an apostate.”²

This consensus is not due to the absence of theoretical results showing the existence of situations in which greater trade can decrease welfare. Students of international trade are commonly exposed to examples of optimal tariffs, infant industries, and strategic trade policy, all of which can serve to justify intervention in international trade. Rather, the consensus in the profession emerges from the vision that these examples are not relevant in most real-world circumstances and that the dangers from attempting to carry out activist trade policy far outweigh its potential benefits. As one of the architects of strategic trade theory has himself written,

“The gains from intervention are limited by uncertainty about appropriate policies, by entry that dissipates the gains, and by the general equilibrium effects that insure that promoting one sector diverts resources from others... It is possible, then, both to believe that comparative advantage is an incomplete model of trade and to believe that free trade is nevertheless the right policy. In fact, this is the position

¹ [At the moment of writing, the process of signature collection is not yet finished and thus the letter has not been published. The text of the letter was obtained through personal communication with Andy Roth of the Club for Growth. I will substitute a weblink to the final version when it is published.]

² Cohen, Patricia “[In Economics Departments, a Growing Will to Debate Fundamental Assumptions.](#)” *The New York Times*, July 11, 2007.

taken by most of the new trade theorists themselves.” (Krugman, 1987, p. 143)

Deciding whether to accept this conventional wisdom or to question it is a key step in the framing of a country's development strategy. The purpose of this article is to critically analyze the basis for the pro-trade consensus, and to clearly lay out the arguments of supporters and detractors of activist trade policy. Such an exercise requires a dual discussion of the theoretical literature and the empirical evidence, which we present in the next two sections. As we will argue, a careful examination of these two literatures provides grounds for the raising of serious questions about the desirability of outward-oriented trade strategies for development.

What the Theory Says

In its simplest version, the gains from trade theorem (Samuelson, 1962, Kemp, 1962) states that in the absence of distortions and when lump-sum transfers are feasible, all individuals in an economy can be made better off from an appropriate combination of full liberalization and compensating transfers. This result follows from the basic Ricardian insight that it will be more efficient for countries to shift production from goods for which their opportunity cost of production is high to goods for which it is low.

The static intuition can be readily extended to an intertemporal model of growth, as shown by Smith (1979). In such models, the efficiency effects of trade will show up in higher steady state levels of consumption and welfare. This extension can generate considerable confusion as openness will not be associated with higher long-run growth rates. This is more than anything a consequence of the fact that the long-run growth rate in a Ramsey-style model of economic growth is determined by the rate of technological progress and unaffected by any other variables. However, openness does generate higher steady-state levels of income and higher growth rates on the transition to these new steady states.

The intuition readily carries forward to endogenous growth models. In an AK model of growth, static efficiency losses generated by distortions turn up as declines in the level of efficiency captured by the productivity term in the production function. Trade policy thus has an unambiguously negative effect on the growth rate. In more complex endogenous growth models that seek to endogenize productivity as a consequence of decisions to innovate, the public goods nature of knowledge introduces a distortion. The existence of this distortion opens up the possibility of second-best effects in which trade policy can potentially enhance welfare, a possibility that we discuss in more detail below. A full discussion of alternative models of this type is given by Grossman and Helpman (1991).

In all of these renderings, the gains from trade theorem is little more than an extension of the first and second fundamental theorems of welfare economics. The possibility of trading shifts the consumption possibilities frontier outwards, and the competitive equilibrium allows us to attain any

point on that consumption possibilities frontier. The possibility of lump-sum transfers allows us to redistribute the gains from trade in such a way that all individuals can be made better off.

The theorem is thus open to the same caveats as the first and second welfare theorems. In the first place, it is vulnerable to the existence of distortions. One of the earliest recognized distortions in the trade literature is the possibility of the home country being able to affect international prices. In this case the world economy becomes a monopolist in the world market and perfectly competitive levels of production are no longer optimal. In the second place, the result requires the existence of non-distortionary taxes and subsidies that allow the redistribution of the gains from trade. In the absence of these instruments, some individuals may – and generally will – be made worse off by greater openness.

Obviously, in the real world distortions do exist and lump-sum taxes do not. Most of the academic literature's defense of the gains from trade principle as a useful guide to policy action comes from the interpretation of results that appear to indicate that it will generally be suboptimal to deal with distortions through trade policy, and that reasonable approximations to lump-sum transfers exist.

Let us first discuss the issue of distortions. In a set of classic articles, Bhagwati (1971) and Bhagwati and Srinivasan (1969) showed that in the presence of distortions, trade tariffs or taxes will generally not be the optimal way to address the distortions or objectives that are commonly taken as rationales for activist trade policy. The exception is the case in which the distortion is actually generated by the existence of monopoly power in trade, in which the first-best policy is a tariff. But in the case in which there is an externality that leads to underproduction of a given good, the optimal policy is to subsidize the production of that good. A tariff is suboptimal because it is actually a combination of a production subsidy and a consumption tax, and there is generally no reason to expect that one would simultaneously want to increase production and reduce consumption of any particular good. These seminal contributions are thus generally taken as the demonstration that trade policy is a misguided way to address most of the problems generated by the existence of distortions.

The Bhagwati-Srinivasan contributions reflect a vision of policymaking in which the first-best equilibrium can be attained and thus serves as a useful policy benchmark. The ideal policy will be the one that accurately identifies all existing distortions and introduces an optimal intervention to eliminate the effects of each distortion. The existence of a government with the capabilities to carry out this complex exercise is presumed. One way of understanding this presumption is as a reflection of the view that the majority of distortions are policy-induced. In this case, the policy prescription is clear: a *laissez-faire* elimination of all government induced distortions could lead the economy

sufficiently close to its first-best optimum so as to take advantage of the full gains from trade.³

While such a vision of the world is certainly coherent, it is also quite reasonable to hold to an alternative vision of the world as completely ridden with distortions. In this world, interacting complex processes such as innovation, knowledge networks, geographical clusters, public goods, and international market power combine to create an economy in which distortions are a fact of everyday life. The task of identifying all such distortions and crafting interventions to address each one of them is beyond the realm of rationally effective policymaking. Even if one could identify all existing distortions, the design of interventions to eliminate some of them may be out of the sphere of possible policy actions by the government because of institutional or political constraints.

In such a world, policymaking should not try to replicate the first-best equilibrium. Rather, it makes sense to think of policy reforms as taking place in a setting of radical Knightian uncertainty, where the expected effects of removing a policy distortions can only be deduced from local experimentation. Hausmann, Rodrik, and Velasco (2004) have recently proposed such an approach to policy reforms. Rather than attempting to eliminate all distortions at once, they suggest that reformers should concentrate on the reforms that have the greatest expected payoff, given that other distortions are in place. They suggest an empirical method to infer whether certain distortions are in effect binding constraints on growth, and thus to identify whether altering them will lead to greater growth. The resulting method of policymaking is akin to the use of non-linear programming algorithms to search for local maxima, which do so through the search for incremental improvements rather than by the explicit calculation of a global solution.

One of the consequences of taking seriously such a world is that it turns a common free-trade argument on its head. Advocates of trade often argue that even though some level of intervention in trade may be optimal theoretically to address trade-induced externalities, identifying such interventions in a context of considerable uncertainty would be beyond the capacities of most governments (Krugman, 1987). However, if we view the real world as ridden by trade *and* non-trade induced distortions, the same dose of realism that leads us to conclude that the government cannot address all of these distortions also leads us to recognize that we are unavoidably in a second-best world, in which the incremental effects of trade policy on welfare could well be positive.

Let us now turn to the issue of lump-sum transfers. Non-distortionary taxes require conditioning on characteristics that individuals cannot change. It is doubtful whether such taxes actually exist or not in real life, and even if

³ Obviously, even if only a few distortions remain there is no theoretical presumption that the resulting equilibrium will be better than the *pre-laissez-faire* equilibrium. It can be argued that at this point it becomes feasible to target the remaining distortions through optimal interventions. Alternatively, it can be argued that theoretical models are always approximations of the real world, and that a distortion-free model should be a reasonable approximation to a reality in which there is a reduced number of distortions.

they do it would be extremely difficult to design them to redistribute the gains from trade – as the observable characteristics that are out of the control of individuals are unlikely to correlate perfectly or even reasonably well with the benefit/loss from trade that these individuals experience.

The existence of compensation to losers is particularly relevant precisely because trade theory predicts stark effects on income distribution from trade openness. Absent compensation, the Stolper-Samuelson theorem predicts that the real return to a country's scarce factor will decrease with greater openness. In this case developing country unskilled workers would actually benefit from greater openness, so that trade may be distributively beneficial for poor countries with abundance of unskilled labor. However, the factor endowments model of trade appears to have little empirical support (See Feenstra, 2004, chapter 2), so that this may not be the most appropriate theory to think about the distributive effects of trade. Alternative theoretical frameworks can produce different predictions concerning income distribution. For example, a set of recent theoretical and empirical contributions (Rodrik, 1997, Dube and Reddy, 2000, Ortega and Rodríguez, 2006) have argued that trade can diminish the bargaining power of unions and thus lead to a decline in labor shares.

In the case of compensation, the literature's optimism comes from the belief that while lump-sum taxes do not exist, reasonable approximations can be constructed in practice to carry out the necessary compensations to losers. Indeed, it has been shown that lump-sum taxes are not even theoretically necessary in this respect: factor and income taxes will suffice to enact the desired redistribution (Dixit and Norman, 1980, p. 79-80). This result appears intuitive even if the real world setting is much more complex than that of our models: it is generally possible to identify – at least *ex post* – the key groups that gain and lose from trade openness and to design transfer programs to redistribute the gains.

The key question regarding compensation is not whether it is feasible in a technical and operational sense to design and implement such compensation, as it almost certainly is, but whether this compensation is likely to take place in practice. There are a number of political economy reasons why one may expect that such compensation is unlikely to take place. One is that while it may be optimal for the gainers to promise to compensate the losers before the reforms are carried out, such promises are likely to be time-inconsistent, particularly if their gains are protected by some degree of irreversibility in trade reforms. Furthermore, as has been emphasized by political scientists such as Ronald Rogowski (1987), increased trade alters the political landscape, making owners of abundant resources much more powerful and assertive, and thus much less likely to accept demands for compensation.

In sum, whether one considers the free trade case a reasonable one or not on theoretical grounds depends on whether one considers two basic assumptions of the gains from trade theorem reasonable. The first one is that the extent of distortions is sufficiently restricted so that the government can identify them and deal with them through policies designed on the basis of the theory of optimal intervention. The second one is that redistributive policies

can and will be implemented to compensate the losers from trade liberalization, particularly when these are the most disadvantaged groups in society.

The decision of whether these two assumptions are reasonable or not on purely theoretical grounds is far from clear-cut. What should be clear is that a critical vision, which is based on skepticism about the appropriateness of the first-best model as a guide for policy and the likelihood of implementation of appropriate redistributive strategies, cannot be deemed insensible on a purely theoretical basis. The belief in the optimality of free trade should thus be based on the belief that the empirical evidence decisively points in favor of a beneficial effect of trade on growth. We turn now to that issue.

What the Data Say

Broadly speaking, the empirical literature has studied the effect of openness on growth has taken one of two vantage points. The first one is to analyze the correlation between openness and growth in data sets that cover a large section of developing and developed countries, in the tradition of cross-country growth empirics initiated by Robert Barro (1991). The second one is to concentrate on country or region-level analytical case studies of economic growth. Both literatures have been appealed to by proponents and detractors of trade-oriented development strategies. In what follows, I will attempt to shed some light on the reasons behind these differences in interpretation.

The empirical literature on openness and growth is voluminous indeed. I will not attempt to provide a full survey of the main contributions (the interested reader may consult Rodríguez (2007a)). Broadly speaking, however, a number of findings appear to emerge from this literature.

First, there is no strong unconditional or conditional correlation between economic growth and a number of direct measures of trade policy, such as weighted or unweighted tariffs, import quotas, or other non-tariff barriers. This point was first made by Rodríguez and Rodrik (2000) and generated some surprise in the literature. It has since been confirmed by, among others, DeJong and Ripoll (2006), who argue that there may be a non-linear relationship where the effect of tariffs on growth depend on the initial level of a country's income and may be positive or negative. In Rodríguez (2007b), I have also shown evidence in favor of a non-linear effect, although I have argued that the precise form of that effect may be difficult to discern.

Second, there appears to be a reasonably strong correlation between growth or productivity and the ratio of trade in GDP, especially when the latter is measured in prices of a constant base year (Dollar and Kraay, 2002, Alcalá and Ciccone, 2002). Some attempts have been made to discern whether this correlation actually embodies a causal relationship. The most well-known attempt, formulated by Frankel and Romer (2000), consists in using instrumental variables estimates of the effect of trade volumes on growth where the latter is instrumented with its geographic determinants as derived from the estimation of gravity equations. These results are controversial – as Rodríguez and Rodrik (2000) and Irwin and Tevio (2000)

have shown, they are not robust to controlling for the direct effect of geographical variables on income or productivity. Other attempts to discern causality using alternative methods to instrumental variables do not confirm the existence of causal effect (Rodrik and Rigobon, 2004).

A drawback of using the trade to GDP ratio as an indicator of openness is that it may capture many non-policy induced changes in trade openness which are largely irrelevant if one is preoccupied with designing a developing country's trade strategy. Natural resource booms, the emergence of new export sectors, changes in other countries' trade policies, and changes in foreign aid can all have an effect on the trade to GDP ratio without necessarily having an obvious link to trade policy. In sum, the key problem of the trade/GDP ratio is that it is an indicator of results and not of policy actions. To take just one example, if the infant industry argument for protection were correct, initial levels of trade protection would lead to the development of productive, competitive domestic industries that would later on be capable of competing internationally. Tariffs would be associated with higher growth, but so would exports. A correlation between trade volumes and growth may thus not be very informative about the desirability of activist trade policies.

Some authors have tried to produce compound measures of trade policy that capture the different ways in which an economy can be closed to international trade. According to these authors, one would not expect to observe a simple correlation between simple measures of trade policy such as tariffs and economic growth because countries can use many policy devices to impose trade protection, of which only one is import tariffs. The most famous of these measures was provided by Sachs and Warner (1995) and recently updated by Wacziarg and Welch (2003). What these indices actually measure is very controversial. Rodríguez and Rodrik (2000) argue that the Sachs and Warner variable's effect on growth was purely driven by two subcomponents of the index – black market premia and export marketing boards – which are not obviously linked to trade policy. For example, they argue that the effect of export marketing boards on growth in the Sachs-Warner study comes from the fact that the variable was taken from a 1994 World Bank study called *Adjustment in Africa* that covered only 29 African economies undergoing adjustment programs during the eighties, leading to the exclusion of non-African or African non-adjusting economies from the sample and strongly biasing the results in favor of a trade-growth correlation. Rodríguez (2007a) levies similar criticisms at the Wacziarg and Welch (2003) exercise.

In recent years, there has been growing skepticism of the possibility of establishing strong conclusions regarding causal growth effects using the cross-country regression framework. A growing consensus appears to have emerged around the belief that the problems of causality, robustness, and specification are simply too pervasive and difficult to solve in the context of highly aggregated cross-national empirical data. This skepticism has led authors such as Bhagwati and Srinivasan (1999) to discount the aggregate growth evidence altogether, and to call for concentrating exclusively on the evidence from case studies. While these criticisms should be taken seriously, it is important to note that even if one takes the cross-country evidence at face

value accepting without questioning the framework, it does not appear to lend the strongest of supports to the pro-trade view. As in the case of the theoretical literature, it appears to be open to multiple interpretations, some of which are consistent with the view that protection is not unequivocally harmful for growth.

Country-level studies of openness and growth are also open to multiple interpretations. Bhagwati and Srinivasan (1999) cite the OECD and NBER studies of more than a dozen major developing countries carried out in the 1960s and 1970s, which uncovered key differences between the constraints on economic performance in countries that pursued import substitution strategies and those that pursued export promotion. A revised interpretation of this view was given by the World Bank's 1993 study *The East Asian Miracle*. Broadly speaking, the key argument of this study was that the openness to trade and reliance on market forces of East Asian economies played a fundamental role in making possible their sustained growth acceleration.

The World Bank's characterization of the high-growing East Asian tigers as economies that followed a strategy of free trade has, however, been strongly questioned by several authors. Some of these criticisms were collected in a 1994 volume published by the Overseas Development Council (Fishlow et al., 1994) in which Dani Rodrik, Robert Wade and Stephen Haggard disputed the key findings of the World Bank study. In Robert Wade's words, "the [World Bank's] report uses standards of inference so elastic that practically anything could be confirmed." (2003, p. xix)

One of the key points of dispute concerns whether East Asia can adequately be characterized as a region that followed a non-activist trade policy. The World Bank study had concluded that East Asia's relative prices were closer to international averages than those of other regions, supporting the contention that its international trade was relatively undistorted. Wade pointed out that this is only true when one uses an unweighted average that includes the island economies of Hong Kong and Singapore, where price distortions were necessarily negligible. In contrast, during the 1976-85 period, relative prices in Japan, South Korea, and Taiwan deviated more from international prices than those of countries which are generally perceived to have had strong records of intervention, such as India, Pakistan, Brazil, Mexico, and Venezuela in the period 1976-85. Similarly, Alice Amsden's (1992) in-depth study of South Korea's industrialization contends that the success of its industrial policies was largely due to a active intervention in the determination of relative prices, a strategy that she labels "getting relative prices wrong."

During the 1990s, the set of liberalization experiences that could be the subject of in-depth studies expanded dramatically. Between 1990 and 2002, the average tariff rate in the world went down from 10.5% to 6.0% between and the ratio of imports plus exports in GDP rose from 75.2% to 86.8% (World Bank, 2005a). In 1990, the General Agreement on Tariffs and Trade had been signed by 96 countries: between 1990 and 2005, 65 countries joined it either as the GATT or in its most recent incarnation as the WTO.

While the result of these liberalization experiences has not yet been fully analyzed, what is clear is that aggressive trade liberalization proved to be very far from a necessary condition for a growth take-off. Some of the most aggressive liberalizers of this period were former Communist economies such as Mongolia, Ukraine, and Moldova, which suffered some of the deepest growth collapses in postwar history. But openness did not only fail to pay off in the former Soviet Bloc. With the exception of Cuba, the evidence suggests that virtually all Latin American economies moved in a direction of greater trade liberalization during the 1990s. Yet the region's growth performance during the post-reform period has been disappointing to say the least, with per-worker GDP and total factor productivity growing respectively at annual rates of only 0.1 percent and 0.2 percent between 1990 and 2002 (Ocampo, 2005). The region is said to have entered an era of "reform fatigue" (Lora, Panizza, and Quispe-Agnoli, 2003) in which voters are increasingly willing to vote for political platforms to roll-back reforms.

In sum, neither cross-national empirical studies nor country-level case studies seem to give strong support to the idea that openness is unequivocally good for growth. A reading of the evidence in support of activist trade strategies is certainly possible and indeed has been carried out by reputable mainstream economists. These conclusions mirror our interpretation of the theoretical literature, which can also be interpreted as supporting a case for intervention in trade policy.

Concluding Comments

One way to explain the apparent divorce between the favorable view that the majority of economists have about free trade and the lessons given by the empirical and theoretical literature is by thinking about free trade as one of the components of our discipline's "hard core" (in the sense of Lakatos, 1976), a set of beliefs and methodological assumptions that are not considered the appropriate subject of empirical tests. Since these core beliefs are never tested without auxiliary assumptions, any failure to explain the evidence can be handled by altering the assumptions but not the core belief. As a senior faculty member once quipped after seeing a presentation of my work, "if the data does not say that trade is good for growth, then the data must be wrong."

It is not easy for a discipline to abandon or even begin to question a hard core belief, but neither is it impossible. To take one example, during the last fifteen years the assumption of rationality has made the transition from a hard core belief to an auxiliary hypothesis that is not even taken very seriously most of the time. This change has opened up a burgeoning new area of research in behavioral economics which has transformed our understanding of individual economic behavior.

Signs that this may be starting to happen in the study of the relationship between trade and development are beginning to appear. In 2005, the World Bank published a comprehensive assessment of the experience of the nineties with economic reforms (World Bank, 2005b). The sobering assessment of this disappointing period recognizes that the results of economic reforms were far

below what its proponents had expected and rejects the one-size-fits-all approach to reform that the institution espoused during great part of the period in question. On the concrete matter of trade policy, the report concludes that “[w]hile trade reforms can help accelerate integration in the world economy and strengthen an effective growth strategy, they cannot ensure its success,” and “the distributive effects of trade liberalization are diverse, and not always pro-poor.” (pp.131-2) On the fairness of the world trading system, it states that “global markets are the most hostile to the products produced by the world’s poor.” As Dani Rodrik wrote in his review of this volume, “occasionally, the reader has to remind himself that the book he is holding in his hands is not some radical manifesto, but a report prepared by the seat of orthodoxy in the universe of development policy.” (Rodrik, 2006, pp. 974-5)

A reconsideration of the role of openness in countries’ development strategies would fundamentally alter the nature of the debate on generating and sustaining growth. Whether this occurs will probably depend not only on the internal dynamics of academia, but also on the extent to which outside reality exerts pressure for such a change. Political discontent with the experience of the nineties is undoubtedly a key reason for the World Bank’s reappraisal of the reform experience. In the same way, the results of the current reassertion of state involvement in much of the developing world are likely to deeply influence the direction that development research will take in the future. Perhaps, to turn Keynes on his head, economists are nothing more than the slaves of long-defunct practical men.

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