



Stanford

Center for International
Development

Working Paper No. 1

**Trade Policy and Economic Development:
How We Learn**

By

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March 1997



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By ANNE O. KRUEGER*

The improvement in living standards, life expectancy, and economic growth prospects in developing countries ranks among the most important economic success stories since the Second World War. Growth in some has been dramatic, and while progress has been far from uniform, there are grounds for optimism that future growth prospects can be even better than performance to date.

One factor accounting for that success has been improved understanding and adoption of economic policies much more conducive to satisfactory economic growth than was the case in the 1950's and 1960's. That better understanding, in turn, resulted from a combination and interaction of research and experience with development and development policy.

Ideas with regard to trade policy and economic development are among those that have changed radically. Then and now, it was recognized that trade policy was central to the overall design of policies for economic development. But in the early days, there was a broad consensus that trade policy for development should be based on "import substitution." By this was meant that domestic production of import-competing goods should be started and increased to satisfy the domestic market under incentives provided through whatever level of protection against imports, or even import prohibition, was necessary to achieve it. It was thought that import substitution in manufactures would be syn-

onymous with industrialization, which in turn was seen as the key to development.

The contrast with views today is striking. It is now widely accepted that growth prospects for developing countries are greatly enhanced through an outer-oriented trade regime and fairly uniform incentives (primarily through the exchange rate) for production across exporting and import-competing goods.¹ Some countries have achieved high rates of growth with outer-oriented trade strategies. Policy reform efforts removing protection and shifting to an outer-oriented trade strategy are under way in a number of countries. It is generally believed that import substitution at a minimum outlived its usefulness and that liberalization of trade and payments is crucial for both industrialization and economic development. While other policy changes also are necessary, changing trade policy is among the essential ingredients if there is to be hope for improved economic performance.

And, while there are still some disagreements over particular aspects of trade policy both among academic researchers and policy makers,² the current consensus represents a distinct advance over the old one, in terms both of knowledge and of the prospects it offers for rapid economic growth. While it will no doubt be further refined in light of

[†] Presidential Address delivered at the one-hundred ninth meeting of the American Economic Association, January 5, 1997, New Orleans, LA.

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¹ John Williamson (1994 pp. 26–28) summarized the set of policy prescriptions he believed most policy makers and academics concerned with development subscribed to. An outer-oriented trade policy is prominent on his list. He dubbed this set of views "the Washington consensus."

² Perhaps the key issue on which there remains disagreement regarding appropriate trade policy is whether there is a role for the state in "picking the winners," or selectivity in incentives confronting different industries. Even those advocating such selectivity, however, would be far less protectionist than were advocates of import substitution in the 1950's, while those advocating uniformity of incentives nonetheless point to key roles for appropriate incentives through macroeconomic policy, provision of infrastructure, enforcement of contract, and other public goods.

experience, a changing world economy, and research, there is no question of “going back” to the earlier thinking and understanding of the process.

A number of interesting questions arise about this change in thought and policy. How could it happen that a profession, for which the principle of comparative advantage was one of its key tenets, embraced such protectionist policies? What was the contribution of economic research to the sea change in thinking, policy prescriptions, and politicians’ acceptance of the need for policy reform? What sorts of economic research best informed the policy process? In a nutshell, how did we learn? And what was the contribution of economists and their research to the process?

Attempting to answer these questions is the subject of this lecture. Even with a focus limited to trade and development, analysis of the role of research and its usefulness is at least somewhat conjectural. The issue, however, of what types of research inform good policy is an important one. I suspect that the tentative conclusions I draw here may be relevant for other areas of research-informing policy, but leave that to others to demonstrate or refute.³

In what follows, I first sketch the initial approach to trade policy in early development research and thought. Next, consideration is given to the evolution of thought, research, and experience with respect to trade and development over the next several decades, and to the “conventional wisdom” of the 1990’s. Thereafter, I consider the role of research and the sorts of research that proved most fruitful in guiding policy and changing the consensus.

Before proceeding, two caveats are necessary. First, it is very difficult to disentangle views of the proper role for trade policy in development from views about the appropriate

role for the state. Partly as a legacy of the Great Depression, partly because of the belief that the Soviet Union had succeeded in its developmental and industrial aspirations through central planning, and partly because of the perceived success of wartime controls, there was widespread agreement—in developed and developing countries alike—that the state should play a major role in economic activity, not only in affecting aggregate demand, but also in regulating private markets and indeed augmenting or supplanting them with state-owned enterprise production of manufactured and other goods. Quite clearly, early views about the necessity for a leading role for the state in guiding resource allocation were incompatible with an open trade policy or outer-oriented trade strategy. Yet to attempt to consider the evolution of both views is well beyond the scope of this paper, and focus here is confined to trade policy.

Second, to focus on research that influenced thinking about economic policy is not to denigrate the importance of research that does not appear to have had immediate policy relevance. First of all, basic research often informs more applied research. Second, in some cases of research that provided little of lasting value, that outcome could not be known at the time. Perhaps some of that research served to demonstrate the infeasibility of certain policy paths,⁴ or to demonstrate the futility of further explorations.

Nonetheless, *ex post* it is clear that some lines of research served to hasten the day when policy makers would accept the desirability of removing high walls of protection, while others were irrelevant or served largely to reinforce prejudices and perpetuate the “old wisdom.” Perhaps that is inevitable in the “marketplace of ideas” as new paradigms are brought forth to replace old ones.

³ To name just one example from another field, consider the pioneering work of Theodore W. Schultz (1964), challenging the view that irrational peasants were unresponsive to incentives. Once his work was accepted, it was no longer possible to maintain low prices for agricultural commodities and believe that there would be little or no output effects.

⁴ An example is the line of research, which continued into the 1970’s, improving methodology for planning models. This research certainly contributed greatly to understanding both the functioning of the economy and also to one aspect of what would be necessary in order for the planning approach to succeed. Without those research contributions, it is possible that many would claim that planning failed because it was incorrectly done (rather than, as most would now believe, it was misconceived).

I. Evolution of Theory, Understanding, and Policy

A. *The Early Years*

As developing countries gained independence from their former colonial rulers,⁵ their leaders had a political mandate to achieve higher living standards and rapid economic growth.⁶ It is difficult in the 1990's to recall the extent to which it was then plausible to view the world economy as split into the industrialized countries and the underdeveloped countries, or "first world" and "third world," as they were often called. Underdeveloped countries had markedly lower average educational attainments (including a great deal of illiteracy and a high fraction of the population with no schooling), poor health conditions, and very little infrastructure. They were heavily specialized in the production and export of primary commodities and imported most of their manufactured goods. While differences among the underdeveloped countries were acknowledged, these seemed minor contrasted with the overwhelming realities of their common attributes and widespread poverty.

The new field of development economics was regarded by many as covering underdevelopment because "conventional economics" did not apply (see Albert Hirschman, 1982). Focus on how the developing countries should shape policies for accelerating growth and raising living standards was the central issue.⁷

⁵ Latin America and a few other countries (including China, Thailand, and Turkey), then deemed "underdeveloped," were not formally colonies prior to the Second World War. However, it was widely believed that they had been "economically dependent." The leaders and elite in most poor countries shared the perception that their economies were "different" from industrialized countries and like other developing countries. The G-77 (77 countries), or nonaligned nations, were all developing countries whose leaders perceived themselves to be in a similar economic situation with similar goals of rapid growth and improved living standards.

⁶ As was then conventional, I shall assume here that higher living standards, more rapid growth, and economic development were/are synonymous for purposes of analyzing trade policy.

⁷ There was, to be sure, a growing literature on the contribution of technical change and factor accumulation to

B. *Accepted Stylized Facts and Premises*

Early trade and development theories and policy prescriptions were based on some widely accepted stylized facts and premises about the underdeveloped countries. These were a mixture of touristic impressions, half-truths, and misapplied policy inferences. In hindsight, it is surprising how some then-accepted stylized "facts" were so uncritically accepted and held sway for so long. However, it is not possible to understand what thinking about trade and development was except in light of those premises. Indeed, it can be argued that improved understanding of trade and development came about in large part through research which effectively demonstrated the falsity of these premises.

A first premise was based on the fact—then certainly true—that developing economies' production structures were heavily oriented toward primary commodity production. The dependence on foreign trade was believed to be extreme, as there was virtually no production capacity for manufactured goods outside a few light mass-consumed commodities. However, many observers went further and *attributed* the low living standards in developing countries to dependence on primary commodity production and export.

A second "fact," or premise, was that if developing countries adopted policies of free trade, their comparative advantage would forever lie in primary commodity production. It followed that industrialization and, hence, development would not take place if free trade policies were adopted.

A third premise—termed "export pessimism"—was that both the global income and price elasticities of demand for primary commodities were low. Consequently, it was anticipated that export earnings would not grow very rapidly, if at all.⁸

growth in the industrialized countries. But most development economists saw that research as irrelevant for developing countries.

⁸ Another widely held view, closely related to export pessimism, was the proposition that the terms of trade had inexorably deteriorated against primary commodities and would continue to do so. Investigation of this proposition

A fourth premise was that the labor force in developing countries, predominantly engaged in agricultural activities as it was, had a marginal product of labor that was "negligible, zero, or even negative," to quote W. Arthur Lewis (1954 p. 141). The stylized "fact" that there was "surplus" labor, or disguised unemployment in less developed countries (LDCs) was widely accepted.⁹ In many analytical formulations, it was explicitly or implicitly assumed that labor was a free good while capital was the scarce factor of production.¹⁰

Related to the fourth premise was a fifth premise: that capital accumulation was crucial for growth, and in early stages of development it could occur only with the importation of capital goods. Since it was expected that the demand for capital goods imports, and imports of other products used in the production process, would grow rapidly while foreign exchange earnings would not, it appeared that growth could follow only if domestic production of import-competing goods could expand rapidly.

Yet a sixth widely accepted premise was that there was very little response to price incentives in developing countries: peasants were "traditional" in their behavior, and there were "structural" problems within the economy.¹¹

Based on these stylized facts and premises, it was a straightforward step to believe that the process of development was that of industrialization,

by which was essentially meant the accumulation of capital for investment in manufacturing industry and related infrastructure. Moreover, since most manufactured goods were imported, it seemed to follow logically that, as stated by Chenery (1958 p. 463) among many others: "Industrialization consists primarily in the substitution of domestic production of manufactured goods for imports."

C. Initial Policies

Policy prescriptions were derived from these propositions, or stylized facts. Since it was thought that industrialization was necessary for development and that free trade would leave underdeveloped countries specialized in primary commodity production, it followed that there had to be investment in new manufacturing industries whose output would substitute for imports. Further, it was widely believed that new industries in poor countries could not possibly compete with their established counterparts in the developed world. Therefore, industry would have to be protected during its initial phase. Import-substitution policies therefore became the hallmark of development strategies for manufacturing and the underlying rationale for trade policy.¹²

The case for import substitution was based both on the premises outlined above and also on received doctrine: the infant industry argument. The notion that dynamic considerations and externalities might imply that an industry, although economic, would not be established by private agents had been accepted by economists as a legitimate exception to the case for free trade since Hamilton and List.¹³

tended to demonstrate that at the very least the deterioration had been much less than was believed. John Spraos (1980) provided a classic review of the evidence.

⁹ A modern interpretation would be that there are many people in developing countries with very low marginal products of labor. While they are too poor to remain unemployed, the process of development entails equipping people with the capabilities (partly through education) and opportunities to increase their productivity.

¹⁰ To be sure, all analysts recognized the importance of increased provision of education and health services. But for purposes of analyzing trade policy, emphasis was almost exclusively on investment.

¹¹ This gave rise to a great deal of literature based on "structuralism." According to some, it was the absence of responsiveness to price that made developing countries "different." Structuralism was also used as an argument that inflation was necessary in order to achieve growth. See Hollis B. Chenery (1975) for a fuller description.

¹² There were many important subthemes that are not elaborated here, since they are not essential to the main argument. It should, however, be noted that there were many who believed that the situation of developing countries was "structural" and that marginal changes would not matter. It was then concluded that a "big push" was needed, with many new investments simultaneously generating additional demand and then becoming profitable. Ragnar Nurkse's (1958) "balanced growth" prescription reflected the same viewpoint.

¹³ See Robert E. Baldwin's (1969) classic analysis of the argument, which not only sets up the conditions under which there might be an infant industry, but also carefully

It was stipulated that a low-cost producer or producers were already in operation abroad; then, the argument proceeded, a potential entrant in a developing country would be faced with an initial period of high costs, but could in the longer run compete. However, in the presence of dynamic externalities (presumably internal to the industry), it was believed that no individual producer would find it profitable to start production. In these circumstances, the infant industry argument could justify temporary intervention to make entry into the new industry privately profitable provided that, over the longer term, its costs would decline *below* the imported cost by enough to yield an economic return on the intervening loss, which could be viewed as an investment.

Although the infant industry argument was, in a first-best world, an argument for a production subsidy (which would presumably equal the unit value of the externality and might apply as well for production for exports as for the domestic market), it was combined with the appeal for import substitution¹⁴ to yield a justification for protection of newly established manufacturing industries in developing countries.

However, combining the assumptions that industrialization would have to take place through substituting for imports, that there were infant industries requiring initial intervention, and that export earnings were unlikely to increase, the stage was set for trade and industrialization policies.

The premises underlying import-substitution policies were so widely accepted that developing country exceptions were even incorporated into the General Agreement on Tariffs and Trade (GATT) articles. Article XVIII explicitly protected the developing countries from the "obligations" of industrialized coun-

tries and permitted them to adopt tariffs and quantitative restrictions. They also were entitled to "special and differential treatment" in other regards under GATT. That the GATT, the upholder of an open international trading system, would accept an "exception" for developing countries shows how deeply entrenched the views supporting import substitution were. It is arguable that the very existence of this exception not only legitimized developing countries' inner-oriented trade policies, but also removed pressures that might otherwise have been brought to bear earlier for them to adopt trade and payments regimes more conducive to economic growth.¹⁵

D. Resulting Evolution of Policies

In one way or another, provision was made in country after country that, once domestic production became feasible, imports would be restricted. In Brazil, a "Law of Similars" provided that firms importing goods that were similar to those available domestically would lose their government privileges, which included not only access to credit and tax treatment, but also eligibility to bid on government contracts and a variety of other valuable rights. In India, imports were licensed, and in the event that there was domestic production, any would-be importer was required to obtain letters from any supplier government officials thought might be capable of producing the good to the effect that the supplier could not meet the specifications. In Turkey, goods were removed from the list of items for which import licenses could be granted once domestic production capacity was available. Similar provisions, or very high tariffs, were used to encourage import substitution in most developing countries.¹⁶

and critically scrutinizes the various circumstances in which those conditions might hold. Baldwin's article was an important contribution to better understanding of the empirical relevance of the theory, as I shall argue below.

¹⁴ It was also believed that there was a revenue constraint, making the first-best production subsidy infeasible. More recent analyses would also point to the greater potential for corruption inherent in production subsidies as yet another reason why protection might be preferable.

¹⁵ See Kenneth Dam (1970 Ch. 14) for a full discussion.

¹⁶ In Argentina, an effort was made to liberalize the trade regime by lowering tariffs in the late 1970's. To the surprise of officials, there was no apparent effect of the first round of tariff cuts. Subsequent investigation revealed that the tariffs in question had been between 500 and 1,000 percent, and that they had been above the rates at which domestic producers could compete.

In some countries and industries, the trade regime was used as the key policy instrument to provide incentives for import-substituting investment and production by private firms. In other circumstances, state-owned enterprises were established, and investments were made directly by the state sector in new manufacturing activities. In that case, the trade regime provided protection to the state-owned enterprises, although their budget constraints were, in any event, very soft. None of these policies, as adopted, provided means of identifying where dynamic externalities were largest, nor was there any provision for reduction of protection after an initial period. Indeed, protection was virtually automatic for any new import-substitution industry.

A final aspect of early policies also contributed to high and indiscriminate levels of protection. That is, as countries embarked on ambitious development plans, inflation rates rose to levels significantly above those in industrial countries (although far below inflation rates prevailing in many developing countries today). Demand for foreign exchange was rising rapidly in response to the development plans, rising incomes, and domestic inflation. Nonetheless, policy makers in most developing countries chose to maintain their fixed nominal exchange rates. In part, this reflected the perception, noted above, that there was little response to prices and that, indeed, maintaining the nominal exchange rate "taxed" agriculture while simultaneously subsidizing capital goods imports. In part, exchange rates were held fixed because it was believed that so doing made imports of capital goods cheaper and thus increased investment. The net result was, of course, real appreciation of the exchange rate, which further intensified *ex ante* payments imbalances, reduced foreign exchange availability, and induced greater restrictiveness in import licensing.

It will be recalled that the 1950's and 1960's were a time of unprecedented economic growth for the industrial countries and for world trade. Buoyed in part by international markets, and in part by the stimuli of increased investment and other aspects of development programs, the rates of growth of per capita incomes rose markedly relative to historical levels in most developing countries,

although they remained below those in industrial countries with few exceptions. Even the growth of industry itself was fairly rapid, as the "easy" import-substitution opportunities were by and large undertaken first.¹⁷

However, with real exchange rate appreciation and the pull of resources into newly profitable, import-competing industries, the growth of foreign exchange earnings inevitably slowed. It is not widely appreciated that developing countries, which had a 44 percent share of world exports of agricultural commodities in 1955, lost share to the point where they had only 31 percent by 1970.¹⁸

With acceleration in the growth of demand for foreign exchange, and deceleration in the growth of supply, foreign exchange difficulties were inevitable. The export pessimism premise had been self-fulfilling, given the policies that were followed. The drop in primary commodity prices in the early 1950's accentuated the phenomenon, but affected the timing more than the actuality of the result. The initial response by most policy makers was to impose rationing of scarce foreign exchange (and require the surrender of foreign exchange from exports) on imports, and the resulting system had little to do with encouraging infant industries.

Although initial rationing of imports was usually on a relatively uniform and across-the-board procedure, controls over foreign trade generally became more restrictive and complex over the next two decades, both in

¹⁷ See Raul Prebisch (1984) for the argument. It can be argued that, with uniform incentives, import substitution would have taken place first in those industries with least comparative disadvantage. In fact, the use of import licensing and prohibitions meant that rates of protection were not uniform even across import-competing activities. In addition, monopoly power in the domestic market was conferred to domestic producers, so that profitability hinged more on the price elasticity of the demand curve than on producers' abilities to reduce costs and compete with imports.

¹⁸ Agricultural protection in Japan, Europe, and the United States may have contributed somewhat to this result. But in most developing countries, the demand for food was growing more rapidly than the supply (as producer prices were suppressed relative to the prices of industrial goods) and, thus, the supply (demand) curve for exports (imports) of agricultural commodities was shifting down (up) (see Krueger, 1990 p. 95).

response to growing "foreign exchange shortage," in reaction to the "unfairness" of the undifferentiated controls, and in response to evasion of the regimes.¹⁹ Periodic balance of payments crises arose in reaction to overvaluation of the real exchange rate, increased indebtedness, and the failure of export earnings to grow.

International Monetary Fund (IMF) "stabilization" programs were undertaken, under which import regimes were simplified and rationalized (as import licensing was, in those years, not abolished). The nominal exchange rate was normally altered (but usually to a new fixed exchange rate in the face of continuing inflation).²⁰ Even in IMF programs, however, it was seldom intended that the underlying trade policies related to import substitution be changed: the intent, rather, was to rationalize the trade regime and find ways to induce more foreign exchange earnings to finance the capital goods that would be imported to undertake additional import-substitution investments. Growth proceeded in "stop-go" fashion, as periods of foreign exchange crisis were followed by tight(er) monetary and fiscal policies, a consequent reduction in excess demand for imports, and an increase in foreign exchange earnings. When the trade regime was again relaxed, growth resumed and the demand for imports again mushroomed until the next crisis.²¹

E. *Research Directions and Contributions*

Most research in the 1950's and 1960's was based on the premises outlined above, and supported the basic thrusts of policy. It needs only brief mention here. Some focussed on the possible existence of externalities and the need for "balanced growth," as it was assumed that expansion of any one industry alone would not be feasible because of the limited size of the market.²² This prescription, of course, was

based on the premise that development of manufactured exports was not feasible. Another line of supportive research focussed on planning models, concentrating in large part on interindustry flows and linkages.²³ Empirical research on patterns of development began, focussing on the structure of economies and their growth performance. For more than a decade, the growing disparity between theory and practice was all but ignored.

There was also research providing a rationale for protection of new industries and import substitution. These results demonstrated that domestic distortions could warrant trade intervention²⁴ in a number of situations. Everett E. Hagen (1958), in perhaps the best known of these, set up a model assuming that urban wages exceeded rural wages exogenously, and demonstrated that a tariff could improve welfare by inducing resources into the (artificially) higher-cost urban industries.

Work also continued on structuralist models, as a number of authors found reasons why developing countries' economic structures were "different" and why, therefore, the usual economic analysis would not apply.²⁵ Chenery and Michael Bruno (1962), Chenery and Alan Strout (1966), and Chenery and many other coauthors developed the "two-gap" model, using the stylized fact that foreign exchange was "scarce" in developing countries. In this model, export earnings were exogenously given and growing more slowly than the demand for foreign exchange.

The notion of balanced growth and "big push" in the 1940's and 1950's was associated with such analysts as Paul Rosenstein-Rodan (1943) and Nurkse (1958), among others.

²³ See Chenery and Paul Clark (1959) for an exposition. Economists in India probably carried planning models the furthest into practice. The Indian Second Five-Year Plan was explicitly based on the P. C. Mahalanobis (1955) model, and contained estimates of output levels for the subsequent five years which were used as a basis for granting investment licenses. No licenses were issued once the increased capacity already had been allocated. See Bhagwati and Padma Desai (1970) for an account.

²⁴ There was a huge literature on this subject. See Bhagwati (1971) for a synthesis of many of the papers.

²⁵ See Christopher Bliss (1989 p. 1194) for a modern statement of the proposition that if demand and supply are sufficiently inelastic, prices do not matter.

¹⁹ For a description, see Jagdish N. Bhagwati (1978).

²⁰ See William R. Cline and Sydney Weintraub (1981) for analyses of some of these episodes.

²¹ See Carlos Díaz-Alejandro (1976) for an analysis of the "stop-go" cycle in Colombia.

²² For a modern presentation of the "big push" need for balanced growth, see Kevin M. Murphy et al. (1989).

Investment was limited by the more binding of two linear constraints: the available savings and the available foreign exchange. There were thus two “gaps”—between savings and investment, and between demand for, and supply of, foreign exchange. Growth was constrained either by savings or by foreign exchange availability, and the model demonstrated the high potential productivity of foreign aid (in providing foreign exchange), enabling otherwise redundant domestic savings to be used in capital formation. The model, reflecting the views of the day, had little role for the price mechanism.²⁶

An example of an analytical effort to clarify circumstances under which one of the stylized facts could be realized was Bhagwati's (1958) and Harry G. Johnson's (1967) demonstration of the possibility of “immiserizing growth,” under which a country might increase its output, only to find the price of exports falling so much that the country was worse off. As Bhagwati showed, the conditions under which that might happen were fairly extreme.

An important development was the theory of shadow pricing, which was an offshoot of programming and planning models. It was initially used to demonstrate how reliance on market prices might yield an inappropriate resource allocation. Quickly, however, analysts pointed to the distortions between domestic prices of import-competing and exportable goods because of the trade regime. There is little doubt that cost-benefit techniques improved project selection and enabled improved governmental decision-making with, *inter alia*, the insistence on use of border prices. The publication of the I. M. D. Little and James A. Mirrlees (1969) volume marked a milestone, after which there was almost no question about the appropriateness of using border prices in project evaluation.

In a related and important development, the theory of effective protection was developed by Johnson (1965a), W. M. Corden (1966), Bela Balassa (1965), and others, providing a framework for analyzing the protection ac-

corded to industries engaged in light processing and much higher value-added activities on a comparable basis. The notion of domestic resource costs (Bruno, 1965; Krueger, 1966), showing the uneven allocation of resources to earning and saving a unit of foreign exchange across activities, was developed to meet the argument that market prices failed to reflect opportunity cost. This research provided a tool with which economists could measure the wide disparities in protection accorded to different import-competing industries.

Recognizing that these estimates were based in part on partial equilibrium analysis,²⁷ a number of researchers began work on developing techniques for computing general equilibrium results. Based on newly developed solution algorithms, techniques were developed for models which endogenized prices, and thus moved away from the linear models earlier used for analysis.²⁸

By the late 1960's and 1970's, there were significant contributions which undermined some of the premises on which import-substitution strategies were based. At an analytical level, one line of research focussed on whether the stylized facts of “market failure” in fact warranted the imposition of trade restrictions. Bhagwati and V. K. Ramaswami (1963), Johnson (1965b), Bhagwati (1969), and others demonstrated that a trade instrument (tariff or quota) was usually not a first-best, nor often even second-best, instrument for achieving the objectives in the name of which protection had been granted. The equivalence of tariffs and quotas, an old result in international economics, was revised and refined, as quotas became more frequently used.²⁹

Research also began analyzing other aspects of the ways in which protection actually worked. Here, attention focussed on rent-seeking (Krueger, 1974) as a by-product of protection (and, indeed, as a user of resources

²⁶ See Ronald I. McKinnon (1966), who provided the first demonstration of this important proposition at the time.

²⁷ They did not, in principle, have to be partial equilibrium estimates if shadow prices were known and used in calculations. In practice, however, that was seldom feasible.

²⁸ For an exposition of the development of these models into the 1970's, see Kemal Dervis et al. (1982).

²⁹ See the survey in Bhagwati (1969).

as lobbyists sought protection—see Bhagwati and T. N. Srinivasan, 1980), as resources were used to obtain valuable import licenses, thereby incurring deadweight costs. This, in turn, showed that protection was more costly than earlier, area-under-the-triangle estimates had indicated. It further enabled insights as to the buildup of vested interests that is likely to arise once any policy is undertaken. When policy reforms were attempted, it was clear that those administering earlier policies were in the forefront of those opposing change, alongside the beneficiaries of protection (or other policies).

Related to work on rent-seeking and the tendency for vested interests to spring up around the policies that were adopted, others worked on the theory of overinvoicing and underinvoicing (see Bhagwati, 1974) and smuggling (see Munir A. Sheikh, 1974; Mark Pitt, 1981), again focussing on some of the flaws of the system of protection as practiced in most developing countries.

As trade regimes became more chaotic, empirical work began to document these problems, bolstered by the development of the measurement tools embodied in the concepts of effective rates of protection and domestic resource costs. Researchers focussing on Pakistan discovered that there was actually negative value added in some circumstances, suggesting that it would have been cheaper to pay workers to stay home and import the final product.³⁰

The Organization for Economic Cooperation and Development (OECD) sponsored a series of country studies on industrialization led by Little et al. The three synthesized (1970) the results and provided estimates of effective rates of protection in a number of developing countries. These showed how high and indiscriminate protection levels were and demonstrated the extent to which import substitution had failed to achieve many of the objectives set for it. A later series of country studies undertaken under the auspices of the National Bureau of Economic Research, synthesized in works by Bhagwati (1978) and

Krueger (1978), provided further systematic empirical evidence of the economic wastefulness and irrationality of the inner-oriented trade regimes.

F. East Asian Experience

At the same time as evidence of the high costs of import-substitution regimes was accumulating, another important development occurred. Starting first in Taiwan, several East Asian economies began growing rapidly under policies diametrically opposite those prevalent under import substitution. Interestingly, the Taiwanese government seems to have listened carefully to the views of S. C. Tsiang,³¹ a professor at Cornell University specializing in international economics. Following the precepts of comparative advantage, Tsiang advocated growth through industrialization, but with industrialization taking place through increased capacity for exports, as well as for the domestic market. Taiwan's transformation from a high-inflation, inner-oriented, aid-dependent economy to a major exporting economy is well known.

Korea, whose initial conditions appeared, if anything, even less conducive to growth than those of Taiwan, followed the same pattern. In the late 1950's, Korea's exports had averaged only 3 percent of gross domestic product (GDP) and were growing slowly, if at all, while imports represented 13 percent of GDP. The current account deficit was financed largely by foreign aid, and the domestic savings rate was virtually zero. Major policy reforms took place in Korea in the early 1960's, which greatly increased the return to exporters. There were fairly uniform incentives to all exporters and assurances that the real exchange rate would not appreciate to their detriment. Reforms also reduced the protection to import-competing producers and permitted exporters duty-free importation of needed intermediate goods and raw materials.

The Korean economic performance was transformed, as growth rates entered the double-digit range and living standards

³⁰ See Corden (1971 p. 51) for a summary of that literature.

³¹ For an account of Taiwan's turnaround, see Tsiang (1985).

improved rapidly. Hong Kong and Singapore also became part of the East Asian "miracle" through policies designed to encourage exporting. Growth rates exceeded those previously thought to represent an upper bound on attainable performance.³²

It was not until the 1980's, however, that the importance of the differences became unarguable. After the second oil price increase of 1979, the worldwide recession of 1980-1982, and the accompanying "debt crisis," the East Asian net importing countries (NICs) rapidly resumed growth, whereas other heavily indebted countries were unable to service their debts and were hard hit by events in the international economy. Research undertaken in attempting to understand the impact of the debt crisis on the developing countries made it abundantly evident that the debt-GDP ratios were not significantly different between the two groups of countries. What was significantly different was the debt-export ratios, as the East Asian countries were able to maintain debt servicing and resume growth because of the greater flexibility of their economies.³³ It also emerged that, even prior to the debt crisis, the rates of growth of inner-oriented developing countries had not increased despite substantial increases in their savings rates.³⁴

This is not the place to enter into the debate as to the factors contributing to the success of the East Asian "tigers." For, while there is debate about whether government intervention in "picking the winners" was a key component of the growth strategy,³⁵ all recognize that

³² Chenery and Strout (1966) actually had a third constraint, "absorption," which restrained growth to 8 percent of GDP or less, on the grounds that more rapid growth would not be feasible.

³³ See Jeffrey Sachs (1985) for an early development of the argument.

³⁴ The World Bank (1983) documented that this phenomenon of a greatly increased average savings rate with no increase in the growth rate and, therefore, a presumed relatively sharp increase in the incremental capital output ratio, affected most developing countries.

³⁵ It can be argued that this is a difference between those who see the East Asian trade policies as "free trade" and those who see them as intervention, but of a different type, from that under import substitution. The critical difference is probably between those who would stress uniformity of incentives for earning or saving foreign exchange (and, therefore, would argue that the East Asian

the reversal from an import-substitution strategy, the opening up of the economy, and the relative uniformity of incentives across the board were necessary, if not sufficient, for success. Indeed, there is an irony in the fact that the East Asian experience has stimulated some to attempt to identify the "dynamic" factors in exporting that are absent from production for the domestic market. Thus, we have a complete turnaround: in the 1950's and 1960's, the neoclassical argument for an open trade regime was rejected on the grounds that it was "static" and ignored "dynamic considerations"; in the 1990's, there appears to be widespread agreement that the benefits of an open trade regime are largely "dynamic" in nature, and go well beyond the gains from trade under "static" models of an open economy. Just as was the case with the infant industry argument, however, there is a question as to how to identify and measure these "dynamic" gains.

II. How Did Economists and Researchers Go Wrong?

The "Washington consensus" is very different from the policy consensus that led to the adoption of import-substitution policies in the 1950's and 1960's. While there will no doubt be refinements in that consensus with further experience and research, it is highly unlikely that the ideas of the 1950's and 1960's will be revived.

One can raise three questions about the change in viewpoints. First, how could it be that the economics profession, whose consensus on the principle of comparative advantage was at least as great as that on any other policy issue, endorsed a highly protectionist policy stance?³⁶ Second, what factors contributed to

NICs were arbitrarily close to a free trade regime), and those who believe the "dynamic externalities" earlier associated with infant industry protection really call for the "right kind" of intervention and argue that the trade strategy was really one of "export substitution."

³⁶ It can also be asked why it took so long for policy makers in countries such as India to recognize that import substitution (and other policies) as a strategy for development was not delivering the hoped-for results and that a preferable path existed. That is an important question that is well beyond the scope of this paper.

changing the entrenched views of the 1950's and 1960's? Finally, what types of research were most (and least) productive in bringing about better understanding of the role of trade and trade policy in development? I address these questions in turn.

The first is the issue of how the principle of comparative advantage could have been so blithely abandoned. With hindsight, it is almost incredible that such a high fraction of economists could have deviated so far from the basic principles of international trade. What led them to do so? Can any lessons be drawn to avoid (or shorten the duration of) similar mistakes in other applied fields when new policy problems arise?

But, recall the stylized facts that were widely accepted. People were thought not to respond to incentives; exports earnings were thought to be predetermined and slowly growing at best; industrialization was necessary for development; supply response was lacking; and so on. These stylized facts, which were at best simplistic and in most instances simply wrong, permitted economists to conclude that developing economies were "different."

However, it took theory to support these conclusions. Here, one can distinguish several failures. First, there was misapplication of good theory. Second, there was what I shall call the "theory of negative results," which essentially could be used to provide a rationale for virtually any trade intervention. Third, there was good theory harnessed to erroneous stylized facts.

A. *Misapplication of Good Theory*

Misapplication of good theory was significant.³⁷ The identification of comparative advantage with the two-factor, two-good model, and the assumption that free trade would imply that developing countries would forever specialize in primary commodities, was an important misapplication. One of the

puzzling aspects of the evolution of thinking about policy is the degree to which proponents of open trade regimes failed to refute the allegation that free trade would forever leave developing countries specialized in production of agricultural commodities.³⁸

It was not until the 1970's (see Ronald W. Jones, 1971b; Krueger, 1977) that models—motivated in part by the East Asian experience—were developed in which three factors of production (land, labor, and capital) were allocated among sectors, each of which could produce many commodities. As the three-factor models demonstrated, comparative advantage lies within manufacturing and within agriculture, and not between them. Thus, poor unskilled, labor-abundant countries have a comparative advantage in labor-intensive agricultural *and* unskilled labor-intensive manufactured commodities, while countries with a much higher land-labor ratio have a comparative advantage in more land-using agricultural commodities and their comparative advantage in manufacturing lies more in goods with higher capital-unskilled labor ratios. In these models, the overall trade balance in manufactures is a function of the size of the manufacturing sector, itself a function of past capital accumulation and the land-man ratio.

A second serious misapplication of good theory arose because of the nonoperational nature of the theory itself, and the failure to identify circumstances under which policy implementation might be incentive compatible *and* potentially increase welfare. A key culprit in this case was the interpretation of the infant industry argument. As I already discussed, it was widely touted as a basis for import substitution, and generally recognized as a "legitimate" case for a departure from free trade.

One can hardly argue with the proposition that the presence of a positive externality gives rise to a basis for intervention; if the externality is dynamic and temporary, then temporary

³⁷ Another example of misapplication of good theory was the early defense, such as that of Hagen (1958), of protection because of a domestic distortion. But it took the development of the theory of domestic distortions to correct that, as is discussed below.

³⁸ Some of Johnson's (1958) research on trade and growth went some way toward refuting this proposition, but still in a 2×2 framework. Moreover, Johnson's work implied that labor-abundant countries would, while accumulating capital, undergo "ultra anti-trade biased" growth, which seemed to support import substitution.

intervention, such as infant industry protection, can be called for.

The problem with the argument, as a basis for policy, is that it fails to provide any guidance as to how to distinguish between an infant that will grow up and a would-be producer seeking protection because it is privately profitable. It is not even clear how one could begin, empirically, to identify the domain of the externality. Moreover, even if there were a producer or producers whose increased production would generate dynamic externalities, it does not follow that any level of protection is warranted. And there is nothing in the infant industry argument to provide guidance for quantifying or estimating the likely magnitude of the externality.

Indiscriminate protection in developing countries was defended on infant industry grounds with arguments of capital market failure, labor market failure (as the costs of training, presumably, would be borne by first entrants into industries and then not recouped as others hired workers away), costs of investments in technology, and uncertainty all used. It was not until Baldwin's (1969) seminal article that it was demonstrated that, even when the presumed imperfection existed, it was unlikely that infant industry protection would help correct it. As Baldwin cogently argued, later entrants to an industry might speed up their investments if protection made domestic production more profitable, and the first entrant might even be worse off! It was only after critical examination of these circumstances that the defenders of the infant industry case for import substitution became less vehement.

The infant industry argument also is an excellent example of a theory that is nonoperational because criteria for bureaucrats to identify cases have not been put forward. Quite aside from the unpredictability and immeasurability of the future time path of costs in new factories and the moral hazard associated with asking individual entrepreneurs to indicate how much protection they need, there is nothing to my knowledge in the literature specifying how the policy maker might instruct a bureaucrat to identify (much less measure) a dynamic externality if it were present, how an incentive-compatible mechanism might be de-

vised for improving welfare, how the bureaucrat might measure the height of warranted protection, nor how policy makers might credibly commit to temporary protection. Even *ex post*, it is not entirely clear how one might identify an industry as a successful infant: simply because a firm became profitable and exported does not prove that there was either an externality or a dynamic process at work!³⁹

B. Negative Results

Much of the theorizing that took place was concerned with what I call "negative results." That is, analysts sought to find reasons why, for example, an exception to free trade should be made. Once the principle of comparative advantage was laid down as a basis for policy, there was little left for theorists to prove supporting an open trading system, so the challenge to theorists was to find conditions under which the free trade precept did not hold. As theory, these findings were significant, but for policy they were unhelpful, and probably served to perpetuate inappropriate policies.

In most real-world circumstances, one strongly suspects that protection exists where theoretical exceptions do not justify it, and that moves to first-best policies would on average lower, and not raise, protection. Judged by that metric, research output relevant for policy would consist more of attempts to measure the costs of these excess levels of protection. In practice, it would be interesting to review the literature and ascertain how many articles, or pages, or other measures of research output were devoted to finding exceptions to the proposition that comparative advantage should form the basis for trade policy, contrasted with those focussing on circumstances where protection was too high! In undergraduate inter-

³⁹ The same is true of the optimum tariff argument. In the presence of many goods with varying degrees of monopoly power, the formula becomes hopelessly complex. It is certainly true that many tariff structures would lead to lower, rather than higher, welfare in the presence of monopoly power in trade. Yet, in practice, many policy makers have been misled into thinking that they could defend very high tariffs (sometimes even on goods that their countries import in small quantities) on optimum tariff grounds.

national economics courses, sections on trade policy spend considerable time addressing national defense exceptions, the optimum tariff argument, the infant industry argument, second-best arguments, and other arguments for protection. While attention is paid to the reasons why these arguments may not be correct, focus nonetheless centers on the exceptions to the case for free trade, rather than on the reasons for it. While this may be inevitable as a way of reasoning, the temptation to draw inappropriate inferences seems high.

An example will illuminate the argument. Whereas theory suggests criteria for departures from laissez-faire free trade which normally would result in different levels of protection for different industries, a widely used prescription for policy makers is that, if there is to be protection, a uniform tariff is usually preferable to any alternative structure. This proposition rests on several considerations. First, only a uniform tariff can generate a uniform rate of effective protection in the import-competing sectors and, if different goods are subject to different rates of tariff, the resulting differences in effective rates of protection will lead to resource misallocation even within the import-competing industries and have no relation to underlying "dynamic" or market-failure considerations. Second, a uniform tariff simplifies customs administration, making evasion and/or bribery of customs officials more difficult than a varying rate structure. Third, a uniform tariff greatly reduces the opportunities for resource losses in rent-seeking and lobbying. Fourth, given international prices, international value added is more likely to be maximized under a uniform tariff structure than under a variable one.

None of these arguments is sufficient to prove that a uniform tariff is optimal. And, indeed, it is straightforward to develop models in which a uniform tariff is nonoptimal, especially in the presence of income-distribution considerations. In theory, the costs of protection can be minimized by imposing higher tariffs or taxes on goods whose supply and demand is relatively more price inelastic.

Those arguments, as put forward, are all couched in terms of demonstrating the "falsity" of the proposition that a uniform tariff is preferable to variable tariff rates and that there is a

departure from uniformity that can potentially improve welfare. But the difficulty with that formulation is that it does not provide a criterion for which departures from uniformity might improve welfare, because a model considering, for example, income-distribution considerations, cannot simultaneously address issues of corruption and administration. And, the fact that income-distribution considerations can warrant a nonuniform tariff structure does not prove that any nonuniform tariff structure is preferable to a uniform one! As such, a negative result gives little or no guide for policy. Nonetheless, it arms lobbyists and others with ammunition to discredit technocrats' efforts to maintain a less irrational structure of protection.

Some good theoretical papers would have done less damage, or at least given less aid and comfort to policy positions that were clearly not those intended in the analyses, if the authors had taken greater pains to note the limitations to their analyses, and the other factors that would have to be taken into account, before their results were applied to policy.

In that regard, it is often overlooked that most policy implementation is carried out by government officials who cannot be expected to have advanced degrees, and sometimes even undergraduate degrees, in economics. In many instances (including formulae for optimal tariff differentiation), the degree of sophistication needed to interpret research results is well beyond that which most bureaucrats will have. As pointed out by Johnson (1970 p. 101):

...The fundamental problem is that, as with all second-best arguments, determination of the conditions under which a second-best policy actually leads to an improvement in social welfare requires detailed theoretical and empirical investigation by a first-best economist ... it is therefore very unlikely that a second-best welfare optimum will result based on second-best arguments.

C. *Good Theory Assuming Counterfactual Situations*

The final abuse of theory was primarily a fault of inappropriate stylized facts. Nonetheless, in many instances, analysts *assumed* signs of variables that were certainly question-

able, modelled the situation neatly, and then drew policy conclusions that could hold only if the posited signs were valid. Yet their claims often went beyond the assertion that "if these facts ... then" variety.

As an example to illustrate the point, I have deliberately chosen a good, widely cited paper, because the paper represents good theory, but interprets it, for policy purposes, with dubious "stylized facts." Sudhir Anand and Vijay Joshi (1979) considered a world, such as that envisaged by Hagen (1958), in which workers in the advanced sector receive a higher wage than in the rest of the economy due to unions or other (presumably unalterable) circumstances. They then asked whether maximizing international value added for given employment of domestic resources is an appropriate criterion when income-distribution considerations cannot be separated from productive-efficiency considerations.

In their setup, the clear answer is no, because tradeables are produced by the advanced (presumably unionized) sector, and hence maximizing international value will pull more resources into that sector at the cost of a deteriorating income distribution. Interestingly, they do not address the question of whether the advanced sector is labor or capital intensive. If, as is true for outer-oriented developing countries, the exportables are labor intensive relative to import-competing activity, removing protection to induce a move of more workers to the "advanced" high-wage sector would presumably increase wages of those workers and also those in the rest of the economy: a more equal income distribution would be obtained at the expense of lower real wages for all. Without regard to factor intensity, however, Anand and Joshi (1979 p. 350) conclude that:

The motivation behind the theory of distortions has been to criticise and to guide trade and industrialisation policies ... Our analysis emphasises the need for caution ... Departures from technical efficiency may be called for as part of the rational response by governments to the limitations they face in carrying out desirable income distribution policies ...⁴⁰

⁴⁰ Another example of the "negative results" research arises from early findings (see Bhagwati and Srinivasan,

Anand and Joshi (1979) assumed that moving toward economic efficiency in tradeables requires paying higher wages because of a distortion. Yet, in fact, the evidence suggests that it has been the highly protected, import-competing industries which have been able to pay above-average wages; removing protection has led to rapid expansion of employment in labor-intensive industries. If the latter stylized fact is correct, and if income-distribution considerations are important, it would suggest that the policy implications of the Anand-Joshi analysis are the opposite of what they suggest—namely, that policy makers should encourage, even beyond the optimum, a shift of resources out of protected industries (presumably by removing protection) and into exportable industries.⁴¹

III. What Research Contributed to Improved Policies

Policies that were not consistent with policy makers' growth objectives were cloaked in respectability in the 1950's and 1960's by theory and stylized facts of the type I have already described. I have so far discussed properties of some theories that made them susceptible to misapplication or misuse.

A second question is equally important, however. That is, how did the change in economists' policy prescriptions come about? What led to the reversal to recognition of the importance of an open economy after the conversion to advocacy of import substitution in the 1950's and 1960's? I can address this question more rapidly because much of the answer was implicit in the description of the evolution of developing countries' trade policies.

1973; Jones, 1971a) that the resource pulls associated with raising an effective rate of protection did not necessarily accord with those associated with increasing a nominal rate of protection. These findings did not significantly affect research efforts in part because the authors made clear the relatively extreme conditions necessary to generate the "perverse" resource pull, and partly because other researchers were able to demonstrate that there seemed to be few, if any, empirical counterparts to the perverse pull cases.

⁴¹ See Pranab Bardhan (1996), tracing how the presumed "efficiency-equity" trade-off has been shown to be false in considerable measure.

Three sets of research efforts can be singled out as having been particularly useful in informing changes in policy, although others, no doubt, also contributed.⁴² First, there was research analyzing how import-substitution policies were actually working. Second, and not unrelated to the first, there was the refinement and more appropriate interpretation of theory. Third, there was research demonstrating the feasibility of the alternative.

A. Challenging the Stylized Facts and Understanding How Import-Substitution Regimes Worked

Analyses of the evidence regarding the key stylized facts were in hindsight important steps in undermining the intellectual consensus. Demonstration that there were significant responses to incentives undermined the policy case for ignoring prices. Proof that the terms of trade had deteriorated very little, if at all, began to undermine export pessimism.

Empirical work on the ways in which import-substitution regimes functioned was crucial. Comparative analyses such as those of Little et al. (1970), Bhagwati (1978), Krueger (1978, 1983), and Michael Michaely et al. (1991) clearly contributed significantly to awareness that the effects of import-substitution policies were not idiosyncratic to individual countries. The comparative studies provided a great deal of evidence as to the shortcomings of reliance on import substitution. Evidence that protection was not temporary, that protection levels were high and idiosyncratic, that there was very great discrimination against exports, and that "foreign exchange shortage" was a function of policies and not an exogenously given datum, were all important in challenging the protectionist trade

policies still prevailing in most developing countries in the 1980's.

If one considered the evidence regarding the workings of trade policies in any one country taken alone, there were ample grounds for criticism of inner-oriented trade policies, with the monopoly positions they conferred on domestic producers, the high costs of doing business, rent-seeking low quality of products, and so on. It was possible, however, to recognize that and nonetheless conclude that policy makers in that particular country had been inept, or had simply failed to implement policies appropriately. As evidence mounted across countries, the similarity in the evolution of regimes and their consequences was striking. It was increasingly difficult to dismiss the evidence from a particular country as being *sui generis* or the failing only of the particulars of policy execution in that country.

But, underpinning the analyses of individual country situations, either in the comparative studies or individually, were agreed-upon measurement tools. The empirical studies could not have had their impact without the development and use of measurement tools. As cost-benefit techniques were used, it became increasingly difficult to justify some highly uneconomic projects. And, as measurement of effective rates of protection was undertaken in country after country, the high and erratic nature of protection became evident. Techniques for cost-benefit analysis and measurement of effective rates of protection were important, first of all, in providing analysts with tools with which to demonstrate the chaotic nature of import-substitution policies. In addition, even before the policy consensus changed, there is little doubt that some of the earlier extreme irrationalities of policy were curbed through use of these tools. It became extremely difficult to defend the high average of, and wide variance in, effective rates of protection.

At an empirical level, it seems clear that early demonstrations of the great range of variation in rates of effective protection were useful both in demonstrating some of the problems with trade regimes and also in preventing at least a few of the worst excesses that might otherwise have occurred. More generally, recognition and reinroduction of the proposition that there is a

⁴² The ideas and events influencing policy makers in one country may not have been precisely the same as those in the next one. And, of course, no precise measurement of the relative influence of research results and of experience is possible. There is also the question of the role of research, relative to the role of experience itself. However, in fact, the ways in which people in other developing countries learned about the East Asian experience was largely the consequence of research efforts.

response to incentives that cannot be overlooked in policy formulation, combined with the evidence on the erratic and arbitrary nature of incentives provided by trade regimes, forced a reexamination of the premises on which import-substitution policies were based.

Yet another contribution of empirical research was to focus upon the actual workings of policy implementation. In early policy prescriptions, there had been something of a naive tendency to assume that enunciating a desired outcome was itself sufficient to achieve it. This naivete was dispelled, as the theories regarding bureaucratic behavior, rent-seeking, smuggling, and overinvoicing and underinvoicing all enabled observers to examine more critically the ways in which alternative policy prescriptions might have side effects that had earlier been unanticipated.

B. *Refinement and More Appropriate Interpretation of Theory*

As already seen, some of the intellectual underpinning of import-substitution policies was provided by inappropriate interpretation of theory, or the failure of theory to take into account key institutional or behavioral variables. Analytical developments focussing on conditions under which these interpretations were valid, or examining the ways in which results had to be modified to take into account these institutional and behavioral aspects, were clearly important in improving understanding.

The entire literature on optimal interventions in the presence of domestic distortions is one important example of a demonstration that earlier interpretations of theory had failed to examine the relevant alternatives. It was invaluable in demonstrating clearly that in most circumstances, the presence of a distortion warranted a first-best policy intervention other than a tariff.⁴³ For example, in the case of Hagen's (1958) employment-generating case for protection, the optimal intervention literature demonstrated clearly that a first-best in-

tervention would be in the labor market, and that a tariff or quota could not achieve a first-best outcome.

Similarly, developments showing that the comparative advantage results were not the simple "specialize forever in primary products" precept proved significant in enabling policy makers to contemplate alteration in trade strategy. Baldwin's (1969) critical examination of the infant industry argument provides yet another example of an analytical contribution that was important in making those concerned with policy consider carefully the effectiveness of the policies they had adopted in achieving their desired goals.

Finally, there was theory that was developed in response to the functioning of import-substitution regimes. Here again, the theory of rent-seeking, as it pointed to the ways in which bureaucrats and others made protection very costly, was important. Further, when it was recognized that bureaucrats, businessmen, and others attempted to capture or thwart policy initiatives not in their self-interest and that they acquired an interest in maintaining the system, once established, and that resources were expended in operating the system, it had to be recognized that changing the system would be politically difficult.

Development of a better understanding of the incentives for underinvoicing and overinvoicing of exports and imports and for smuggling under exchange-control regimes worked in the same direction: not only could these activities prove costly to the exchequer and in terms of resource drains, but the very recognition of their presence served to remind policy makers of the limitations of their instruments.

Finally, good analyses demonstrating how individual import controls actually worked contributed to understanding and made empirical work more effective. The further refinement of theory showing tariff-quota equivalence has already been mentioned. Rent-seeking again comes to mind. But, in addition, individual mechanisms for encouraging import substitution each had their own, often idiosyncratic, incentive effects. A good example is Gene Grossman's (1981) classic analysis of domestic content regulations and their effects.

⁴³ However, those advocating import substitution seized upon the infeasibility of first-best policy as a defense for following the policies they wished in any event to follow.

C. *Demonstration of the Viability of Alternative Trade Policies*

Research on the contrast between East Asian and other developing countries and reasons for it obviously turned out to be a major contributing factor in influencing thinking about policy. In a way, research on East Asian experience provided a final blow to the earlier uncritical acceptance of the stylized facts. For, the East Asian experiences demonstrated, as nothing else could have, the feasibility and viability of alternative trade policies: it was no longer possible to associate comparative advantage with reliance on primary commodity exports, and the East Asian experience certainly put an end to the belief that developing countries could not develop rapidly when relying on integration with the international economy.⁴⁴

The experience of the East Asian exporters did several things. Most important, it provided concrete evidence that a developing country could achieve industrialization without relying on domestic markets to absorb almost all additional output. That demonstrated the fallacy of the earlier view that industrialization could take place only through import substitution.⁴⁵ Also, the East Asian trade regimes offered significant opportunities for empirical research, and the evidence mounted that properties formerly thought to be those of all developing countries were, in fact, properties resulting from inner-oriented trade and payments regimes.

⁴⁴ To be sure, there are still doubters. Some claim that South Korea and Taiwan were major recipients of foreign aid, which is said to account for much of their rapid growth (although the announcement that foreign aid would diminish was what triggered policy reform in Korea). The status of Hong Kong and Singapore as city-states is alleged by some to render their experience of little relevance. Even today, those resisting policy changes assert that conditions in the 1950's and 1960's were conducive to export expansion in ways in which the world market of the 1990's is not—despite the rapid expansion of exports from China and Southeast Asian countries.

⁴⁵ Some have argued that the East Asian outer-oriented trade strategy might not have succeeded without an earlier stage of import substitution. In that view, East Asia moved away from import substitution at the "right time," whereas other countries stayed with the strategy too long. See Gustav Ranis (1984) for one such argument.

It cannot be said that either research results or the contrast in economic performance alone led to the change in policies in other developing countries.⁴⁶ Both research (especially that which brought the sharply contrasting experiences of the East Asian exporters and the import-substituting countries into focus) and experience contributed.

Whether one should regard the East Asian experience as entirely separate from economic theory, however, is an interesting question. As already mentioned, Tsiang (1985) was himself an international economist, and it was in significant part his efforts that led the Taiwanese authorities to abandon inner-oriented policies and attempt to develop through exports. The theory of comparative advantage was, at least in that instance, a pillar on which policy was built. And, while a variety of factors no doubt contributed to the Korean adoption of outer-oriented trade policies after 1960, the favorable experience of Taiwan undoubtedly facilitated the willingness of decision makers to try the new approach.

The East Asian exporters put to rest the mistaken belief that developing countries relying on the international market would forever be specialized in the production of primary commodities. They also showed that rates of growth well above those realized even in the most rapidly growing import-substitution countries such as Brazil and Turkey could be realized.

IV. **What Lessons Can Be Learned for Research in New Applied Fields?**

It is difficult to draw generalizations based on the evolution of analysis, empirical research, and policy in one applied field. Nonetheless, in the hope that insights from other applied areas may reinforce or amend the list, the effort seems worthwhile.

Perhaps the most obvious generalization from the various factors that have been discussed is that empirical research which tests for the presence and order of magnitude of stylized facts which are used in modelling and

⁴⁶ For that matter, trade policy reform is still resisted in many countries, notably most of Sub-Saharan Africa.

policy formulation can be invaluable. If the right stylized facts can be used as a basis for theory, and theorists have good indications of the relative quantitative importance of various phenomena, it is clearly far more likely that the theory itself can make a useful contribution.

In the case of trade policy and development, the demonstrations that there were responses to incentives and that developing countries could expand export earnings and did have comparative advantage in other than primary commodities, were clearly crucial to improved understanding of the relationship of trade to development.

For that reason, high marks must go to the analytical research that pointed to measurement techniques such as effective protection and cost benefit, which enabled policy makers and their analysts to obtain empirical quantification, however rough, of the relevant magnitudes.⁴⁷

In like manner, the empirical demonstration of the similarity of policy responses across developing countries, and of the wide and largely irrational variation in incentives for import-competing industries, increased understanding of what was wrong with existing policies.

Overtaking, or more accurately interpreting, the accepted stylized facts, therefore, was a first prerequisite for developing a better theory of trade policy for development. But theory was important in many ways, in addition to pointing to appropriate measurement tools. First of all, good policy-relevant theory provided blueprints for those windows of opportunity in which governments genuinely sought to improve economic performance, as was the case in Taiwan and Korea in the early 1960's, and in Chile, Mexico, and India in later decades, to name just a few.⁴⁸ Having the "blue-

prints" on hand from good theory is obviously a major contribution. As already noted, however, that theory is often relatively dull—such as comparative advantage—rather than the more exciting and refined results of complex models.

Second, theory was invaluable when it showed why simple interpretations of received doctrine were in fact wrong. This was the case with the theory of first-best intervention in the case of domestic distortions, and in the case with comparative advantage as interpreted to mean developing countries would specialize in the production of primary commodities, and with the infant industry argument.

These considerations suggest that research results, in order to be most likely to be amenable to policy relevance, should be interpretable into phenomena that are observable, hopefully quantifiable, and recognizable by the policy maker. A negative result, such as that theory does not *always* tell us, can be counterproductive precisely because the policy maker is informed only that a certain generalization (such as comparative advantage and the value of free trade) is not without exception; the generalization can then be ignored.

A more general statement of the problems inherent in theorems which show that major propositions are "not generally true" would encompass all of that theory which is cast in terms of "anything can happen." While it is certainly true that there are conditions under which a wide range of outcomes (Pareto-inferior, a bad equilibrium, Pareto-superior, etc.) are possible from the same policy instrument, it would have challenged the skills of even the most superb theorist to attempt to develop a case for the sorts of chaotic policies prevalent in Turkey in 1957, in Ghana in 1983, and in Argentina in the late 1980's. It is far too easy for analysts to ignore the fact that "an exception" does not rationalize all possible policy alternatives to free trade.

There is a criterion for efficient resource allocation, equating domestic and international marginal rates of transformation. Even if there are "dynamic" factors which contravene part of the static efficiency criterion, they too are measurable. Yet the "anything can happen" theories do not provide guides as to how the

⁴⁷ There is another example from a related field. As is well known, multilateral negotiations with regard to agricultural protection were completely stalled until the 1980's. In the 1980's, economists at the OECD proposed the use of a "producer subsidy equivalent" to measure the degree of government intervention in various agricultural commodities across countries. That tool permitted negotiations to begin restricting and dismantling agricultural protection.

⁴⁸ See Arnold C. Harberger (1993) for a discussion of the roles played by economists in some key policy reform episodes.

phenomena under examination may be quantified, and thus provide rationalizations (admittedly for those who want them) for policies that cannot by any realistic test pass muster.

Perhaps the lesson is that there is a significant danger that economic theory will be misinterpreted in the policy arena, and researchers could productively take more pains to distance themselves from policy conclusions that are not warranted by their analysis. Theoretical papers which end with "it has been shown that, under conditions x and y , policy z may no longer represent an optimum ... Therefore policy should ..." are obviously overstepping their bounds when the empirical relevance of x and y are not yet established, and even more so when conditions other than x and y also may be important (as, for example, with rent-seeking).

But many good theory papers are written where the authors assume that their audience will consist entirely of other theorists. In such instances, good theory may be misused, and it certainly will be in the self-interest of some to harness it to their own ends. It behooves applied economists, as well as the theorists, to be careful to interpret the policy relevance of results in ways which minimize the scope for misinterpretation. This is as true for those seeking to find "dynamic" aspects of exporting, or endogenous aspects of a "big push," as it should have been for those developing the infant industry or optimum tariff arguments. Complex results, such as those noted by Johnson (1970), are particularly suspect in that they can be interpreted in whatever ways suit the decision maker or lobbyist.

Finally, there is theory which provides no guidance as to when or how to observe the phenomenon. In such instances, it is difficult to find policy implications that will not be captured. One possible challenge for theorists might well be to ask for at least one plausible incentive-compatible mechanism under which the inefficiencies they identify might be improved upon by policy makers and bureaucrats. The existence of infant industries, of cases in which there are rents that *might* be captured by appropriate strategic trade policy, and of informational asymmetries and other market imperfections cannot be doubted. But until the magnitude of these phenomena can

somehow be measured, or incentive-compatible mechanisms for correcting them can be devised, theorists asserting their presence are simply providing a *carte blanche* for policy makers and bureaucrats to intervene in whatever ways they like, and this will simultaneously be seized upon by special interests to bolster their causes.

No matter how careful economists are, special interests always will seize their research results in supporting their own objectives. And, no matter how sophisticated and careful research findings are, there always will be politicians formulating, and non-economists administering, policies. Recognition of these propositions could do much to increase the degree to which economists' research results can contribute (positively) to policy formulation.

REFERENCES

- Anand, Sudhir and Joshi, Vijay. "Domestic Distortions, Income Distribution and the Theory of Optimum Subsidy." *Economic Journal*, June 1979, 89(354), pp. 336-52.
- Balassa, Bela. "Tariff Protection in Industrial Countries: An Evaluation." *Journal of Political Economy*, December 1965, 73(66), pp. 573-94.
- Baldwin, Robert E. "The Case Against Infant-Industry Protection." *Journal of Political Economy*, May/June 1969, 77(3), pp. 295-305.
- Bardhan, Pranab. "Efficiency, Equity and Poverty Alleviation: Policy Issues in Less Developed Countries." *Economic Journal*, September 1996, 106(438), pp. 1344-56.
- Bhagwati, Jagdish N. "International Trade and Economic Expansion." *American Economic Review*, December 1958, 48(5), pp. 941-53.
- _____. "On the Equivalence of Tariffs and Quotas," in Jagdish Bhagwati, ed., *Trade, tariffs and growth*. Cambridge, MA: MIT Press, 1969, pp. 248-65.
- _____. "The Generalized Theory of Distortions and Welfare," in Jagdish Bhagwati, Ronald Jones, Robert Mundell, and Jaroslav Vanek, eds., *Trade, balance of payments and growth*. Amsterdam: North-Holland, 1971, pp. 69-90.

- _____. "On the Underinvoicing of Imports," in Jagdish Bhagwati, ed., *Illegal transactions in international trade*. Amsterdam: North-Holland, 1974, pp. 138–47.
- _____. *Foreign trade regimes and economic development: Anatomy and consequences of exchange control regimes*. Cambridge, MA: Ballinger Press, 1978.
- Bhagwati, Jagdish N. and Desai, Padma.** *India: Planning for industrialization and trade policies since 1951*. London: Oxford University Press, 1970.
- Bhagwati, Jagdish N. and Ramaswami, V. K.** "Domestic Distortions, Tariffs, and the Theory of the Optimum Subsidy." *Journal of Political Economy*, February 1963, 71 (1), pp. 44–50.
- Bhagwati, Jagdish N. and Srinivasan, T. N.** "A General Equilibrium Theory of Effective Protection and Resource Allocation." *Journal of International Economics*, August 1973, 3(3), pp. 259–81.
- _____. "Revenue Seeking: A Generalization of the Theory of Tariffs." *Journal of Political Economy*, December 1980, 88(6), pp. 1069–87.
- Bliss, Christopher.** "Trade and Development," in Hollis B. Chenery and T. N. Srinivasan, eds., *Handbook of development economics*, volume 2. Amsterdam: North-Holland, 1989, pp. 1187–1240.
- Bruno, Michael.** "The Optimal Selection of Export-Promoting and Import-Substituting Projects," in *Planning the external sector: Techniques, problems and policies*. New York: United Nations, 1965.
- Chenery, Hollis B.** "The Role of Industrialization in Development Programmes," in A. N. Agarwala and S. P. Singh, eds., *The economics of underdevelopment*. Bombay: Oxford University Press, 1958, pp. 450–71.
- _____. "The Structuralist Approach to Development Policy." *American Economic Review*, May 1975 (*Papers and Proceedings*), 65(2), pp. 310–16.
- Chenery, Hollis B. and Bruno, Michael** "Development Alternatives in an Open Economy: The Case of Israel." *Economic Journal*, March 1962, 72(285), pp. 79–103.
- Chenery, Hollis B. and Clark, Paul.** *Interindustry economics*. New York: Wiley, 1959.
- Chenery, Hollis B. and Strout, Alan.** "Foreign Assistance and Economic Development." *American Economic Review*, September 1966, 56(4), pp. 679–733.
- Cline, William R. and Weintraub, Sydney,** eds. *Economic stabilization in developing countries*. Washington, DC: Brookings Institution, 1981.
- Corden, W. M.** "The Structure of a Tariff System and the Effective Tariff Rate." *Journal of Political Economy*, June 1966, 74(3), pp. 221–37.
- _____. *The theory of protection*. Oxford: Clarendon Press, 1971.
- Dam, Kenneth.** *The GATT: Law and the international economic organization*. Chicago: University of Chicago Press, 1970.
- Dervis, Kemal; de Melo, Jaime and Robinson, Sherman.** *General equilibrium models for development policy*. Cambridge: Cambridge University Press, 1982.
- Díaz-Alejandro, Carlos.** *Foreign trade regimes and economic development: Colombia*. New York: Columbia University Press, 1976.
- Grossman, Gene.** "The Theory of Domestic Content Protection and Preference." *Quarterly Journal of Economics*, November 1981, 96(4), pp. 583–603.
- Hagen, Everett E.** "An Economic Justification of Protectionism." *Quarterly Journal of Economics*, November 1958, 72(4), pp. 496–514.
- Harberger, Arnold C.** "Secrets of Success: A Handful of Heroes." *American Economic Review*, May 1993 (*Papers and Proceedings*), 83(2), pp. 343–50.
- Hirschman, Albert.** "The Rise and Decline of Development Economics," in Mark Gersovitz and W. Arthur Lewis, eds., *The theory and experience of economic development*. London: Allen and Unwin, 1982, pp. 372–90.
- Johnson, Harry G.** *International trade and economic growth*. Cambridge, MA: Harvard University Press, 1958.
- _____. "The Theory of Tariff Structure, with Special Reference to World Trade and Development," in Harry G. Johnson and Peter B. Kenen, eds., *Trade and development*. Geneva: Librairie Droz, 1965a, pp. 9–29.

- _____. "Optimal Trade Intervention in the Presence of Domestic Distortions," in Robert E. Baldwin et al., eds., *Trade, growth and the balance of payments—Essays in honor of Gottfried Haberler*. Chicago: Rand McNally, 1965b, pp. 3–34.
- _____. "The Possibility of Income Losses from Increased Efficiency or Factor Accumulation in the Presence of Tariffs." *Economic Journal*, March 1967, 74(305), pp. 151–54; reprinted in Harry G. Johnson, ed., *Aspects of the theory of tariffs*. Cambridge, MA: Harvard University Press, 1972, pp. 177–80.
- _____. "The Efficiency and Welfare Implications of the International Corporation," in I. A. McDougall and R. H. Snape, eds., *Studies in international economics*. Amsterdam: North-Holland, 1970, pp. 83–103.
- Jones, Ronald W.** "Effective Protection and Substitution." *Journal of International Economics*, February 1971a, 1(1), pp. 59–82.
- _____. "The Three-Factor Model in Theory, Trade, and History," in Jagdish Bhagwati, Ronald Jones, Robert Mundell, and Jaroslav Vanek, eds., *Trade, balance of payments, and growth*. Amsterdam: North-Holland, 1971b, pp. 3–21.
- Krueger, Anne O.** "Some Economic Costs of Exchange Control: The Turkish Case." *Journal of Political Economy*, October 1966, 74(5), pp. 466–80.
- _____. "The Political Economy of the Rent-Seeking Society." *American Economic Review*, June 1974, 64(3), pp. 291–323.
- _____. *Growth, factor market distortions, and patterns of trade among many countries*, Princeton Studies in International Finance, No. 40. Princeton, NJ: Princeton University Press, 1977.
- _____. *Foreign trade regimes and economic development: Liberalization attempts and consequences*. Lexington, MA: Ballinger Press, 1978.
- _____. *Trade and employment in developing countries*. Chicago: University of Chicago Press, 1983.
- _____. "Trends in Trade Policies of Developing Countries," in Charles S. Pearson and James Riedel, eds., *The direction of trade policy*. Cambridge, MA: Blackwell, 1990, pp. 87–107.
- Lewis, W. Arthur.** "Economic Development with Unlimited Supplies of Labour." *Manchester School*, May 1954, 22(2), pp. 139–91.
- Little, I. M. D. and Mirrlees, James A.** *Manual of industrial project analysis in developing countries*. Paris: Organization for Economic Cooperation and Development, 1969.
- Little, I. M. D.; Scitovsky, Tibor and Scott, Maurice.** *Industry and trade in some developing countries*. London: Oxford University Press, 1970.
- Mahalanobis, P. C.** "The Approach of Operational Research to Planning in India." *Sankhya*, December 1955, 16, pp. 3–62.
- McKinnon, Ronald I.** "Foreign-Exchange Constraints in Economic Development and Efficient Aid Allocation." *Economic Journal*, March 1966, 76(301), pp. 170–71.
- Michaely, Michael; Papageorgiou, Demetris and Choksi, Armeane.** *Liberalizing foreign trade: Lessons of experience in the developing world*. Cambridge, MA: Blackwell, 1991.
- Murphy, Kevin M.; Shleifer, Andrei and Vishny, Robert W.** "Industrialization and the Big Push." *Journal of Political Economy*, October 1989, 97(5), pp. 1003–26.
- Nurkse, Ragnar.** *Problems of capital formation in underdeveloped countries*. Oxford: Blackwell, 1958.
- Pitt, Mark.** "Smuggling and Price Disparity." *Journal of International Economics*, November 1981, 11(4), pp. 447–58.
- Prebisch, Raul.** "Five Stages in My Thinking on Development," in Gerald M. Meier and Dudley Seers, eds., *Pioneers in development*. New York: Oxford University Press, 1984, pp. 175–91.
- Ranis, Gustav.** "Typology in Development Theory: Retrospective and Prospects," in Moshe Syrquin, Lance Taylor, and Larry E. Westphal, eds., *Economic structure and performance*. Orlando, FL: Academic Press, 1984, pp. 23–44.
- Rosenstein-Rodan, Paul.** "Problems of Industrialization in Eastern and South-Eastern Europe." *Economic Journal*, June/September 1943, 53(210/211), pp. 202–11.
- Sachs, Jeffrey.** "External Debt and Macroeconomic Performance in Latin America and

- East Asia." *Brookings Papers on Economic Activity*, 1985, (2), pp. 523–64.
- Schultz, Theodore W.** *Transforming traditional agriculture*. New Haven, CT: Yale University Press, 1964.
- Sheikh, Munir A.** "Smuggling, Protection and Welfare." *Journal of International Economics*, November 1974, 4(4), pp. 355–64.
- Spraos, John.** "The Statistical Debate on the Net Barter Terms of Trade Between Primary Commodities and Manufactures." *Economic Journal*, March 1980, 90(357), pp. 107–28.
- Tsiang, S. C.** "Foreign Trade and Investment as Boosters for Take-Off: The Experience of Taiwan," in Vittorio Corbo, Anne O. Krueger, and Fernando Ossa, eds., *Export-oriented development strategies*. Boulder, CO: Westview Press, 1985, pp. 27–56.
- Williamson, John.** "In Search of a Manual for Technopols," in John Williamson, ed., *The political economy of policy reform*. Washington, DC: Institute for International Economics, 1994, pp. 9–28.
- World Bank.** *World development report*. New York: Oxford University Press, 1983.