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Setting the Trade Policy Agenda: What Roles for Economists?

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Economists have influenced the trade policy agenda for establishing multilateral trade rules, disciplines and procedures and for negotiating MFN and preferential reductions in trade barriers and subsidies, in addition to affecting the agenda for unilateral policy reform. These roles are considered in turn, before focusing on the economists' contribution though quantifying the extent and effects of existing trade distortions and alternative reform initiatives. Many trade distortions remain, however, so the article then looks at where trade economists' efforts in agenda setting need to be focused in the years ahead.

I. INTRODUCTION

Trade policy economists, no less than any other social scientists, like to think their research, analysis and advocacy is socially beneficial. Valuing that benefit, and comparing it with its cost, is not easy (Pardey and Smith, 2004), but that is not the purpose of this article. Its more-limited objective is to examine what contribution the economics profession has had in setting the agenda for trade policy formation and its reform at various levels, and what scope there is for strengthening its roles.

On the face of it, trade economists would appear to be ineffective: the gains from trade have been well known since Adam Smith's *The Wealth of Nations* was published 230 years ago—yet almost every country still imposes trade barriers. Arguably international trade barriers are not a lot lower now than they were in the late nineteenth century (Baldwin and Martin, 1999; Bordo, Eichengreen and Irwin, 1999). A shorter time horizon gives a more positive picture though, with substantial reductions in tariffs on most manufactured goods by OECD countries following their hikes in the 1930s, and the lowering of trade barriers by many developing countries from the 1980s (after initial rises in the early postwar, post-colonial years). Attention here is restricted to that shorter post-war period.

Anyone familiar with the history of international trade prior to the mid-twentieth century is acutely aware of its unruliness. Indeed it often took a war between nations before leaders would get together to agree to desist in disrupting each other's trade. Even then it would typically be a limited bilateral agreement, which, if it hurt other

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economies, could exacerbate tensions elsewhere. The historical account of the spice trade from 1553 to 1667 by Milton (1999) is a reminder of the brutal lawlessness with which international trade was conducted in centuries past. Certainly trade relations were relatively tranquil in the five decades to the First World War, but they became unruly again in the interwar period with a new burst of beggar-thy-neighbour protectionism, much of it involving non-tariff barriers. One response was the Ottawa Conference of 1932, but that resulted in preferential tariffs on trade among members of the British Commonwealth and thereby retained a beggar-thy-neighbour character. By the end of the 1930s, protectionism was far more entrenched than in the previous century.

This article begins by examining how economists since the 1930s have contributed to the trade agenda at the multilateral, regional and national levels. In the next two sections the focus is on economists' constitutional contributions to the multilateral rules and their exceptions—which include a tolerance for regional and other preferential trading arrangements. But it is at the national level where most of the action has been, including in helping governments decide how to spread their resources between unilateral trade-policy setting and engagement in preferential and multilateral negotiations for better rules and improved access to markets. Underlying all of the trade liberalization efforts has been the economists' quantification of the extent and effects of trade distortions and reform initiatives, both before and after reforms have been implemented. After an extensive examination of that contribution, the penultimate section looks at where trade economists' efforts in agenda setting should be focused in the years ahead. The final section offers some brief conclusions.

II. The Multilateral Agenda[1]

The trade policy instruments that emerged or grew in the 1930s included quantitative restrictions and prohibitions on trade, exchange controls, and state bureaucracies to overshadow the market with planning and to monitor financial and merchandise transactions. And following the Ottawa Conference of 1932, preferential tariffs on trade among members of the British Commonwealth were imposed, which harmed non-Empire economies.

Out of that inter-war experience came the conviction that a return to the beneficent non-cooperative equilibrium of the nineteenth century was highly unlikely. Instead, leading economists in Britain and the United States were convinced that liberal world trade required a set of multilaterally agreed rules and binding commitments based on non-discriminatory principles. A proposal for such an agreement was put to the British War Cabinet by Meade (1942), and was developed further at the Bretton Woods conference in 1944 (out of which grew also the IMF and World Bank). In the

[1] This section draws on, among others, Anderson and Hoekman (2002, vols 2 and 3), Anderson and Josling (2005) and Hoekman and Ozden (2005).

Anglo-American view, the postwar international economic system was to be constructed in such a way as to remove the economic causes of friction that were believed to have been at the origin of the Second World War. An important element in this vision was the establishment of a stable world economy that would provide all trading nations with non-discriminatory access to markets, supplies and investment opportunities. Economists contributed significantly to the strong perception that there was a positive correlation between trade and peace, and, more specifically, between non-discrimination and good foreign relations.

A. GATT RULES

The efforts in the latter 1940s to create an International Trade Organization (ITO), to complement the International Monetary Fund (IMF) and World Bank, were unsuccessful. The negotiations on the charter of such an organization, although concluded successfully in Havana in 1948, did not lead to the establishment of the ITO because the proposed organization was perceived by the US Congress as taking away too much of its national sovereignty. Nonetheless, many of the key elements of the ITO proposal were encapsulated in a General Agreement on Tariffs and Trade (GATT) that was signed by 23 trading countries—12 developed and 11 developing—in 1947 (before the ITO negotiations were concluded). These countries were anxious to pursue liberalization, and did not want to wait for the conclusion of the ITO talks. They created the GATT as an interim agreement that embodied many of the draft ITO disciplines. As the ITO never came into being, the GATT was the only concrete result of post-war efforts to create an international trade body. It took until the end of the GATT's Uruguay Round to convert that interim institution into the permanent World Trade Organization (WTO), on 1 January 1995.

One of the fundamental pillars of the rules-based multilateral trading system over which the GATT and WTO preside is the most-favoured-nation (MFN) clause. This became enshrined in GATT Article I, as well as in several other WTO Agreements. It is considered fundamental because it reduces transactions costs in negotiating, and it counteracts imbalances in negotiating strength. Critics had pointed out that MFN need not lead to a government being willing to lower tariffs (at least directly), for in its unconditional form it requires a Member to allow the same market access conditions as provided to its most favoured trading partner. Among the early economists to respond to that claim was Viner (1931), who was writing in the midst of the Great Depression in America where reciprocal trade agreements or at most ones that contained conditional MFN clauses had been preferred by the US government. Viner's response was to admit that conditional MFN (each trading partner gets MFN treatment for its exports only if it reciprocates with a similar degree of greater market access for US exports) may sound more equitable and involve less free riding than if only the principal supplying country provides greater market access—but then to point out that it works badly in practice. The reasons, he pointed out, are that conditional MFN increases the likelihood of trade

diversion rather than trade creation; it lowers the tariff revenue collected in the importing country; and in any case it is equivalent (a) to the unconditional pledge when received from a country that practices unconditional MFN and (b) to no pledge at all when received from a country that is also only practising conditional MFN.

Another fundamental rule, enshrined in GATT Article II, is that Members of WTO must submit a schedule of ''concessions'' such as bound tariffs. These legal bindings serve several purposes: they provide a degree of certainty for traders; they make it difficult and costly for a Member to backslide on the degree of its commitment to openness; and they provide the ''currency'' in trade negotiations in which Members exchange market access (Grossman and Helpman, 1991, Hillman and Moser, 1996). Even if every country had applied tariffs that were below its bound rates on average, the fact that international product prices fluctuate means that there are some years in which the bindings bite and so they are welfare enhancing (Francois and Martin, 2004). The reason governments choose to enter trade negotiations has not generally been well understood by economists though. With their fixation on efficiency, many thought countries negotiated to overcome the terms of trade externality associated with large countries setting their tariffs unilaterally: by agreeing to each lower their tariffs, all countries could be better off (Johnson, 1953–54; Bagwell and Staiger, 1999, 2002). The explanation put forward recently by Ethier (2004) is much closer to what negotiators say they do, which is to overcome a political externality: by securing market access abroad for their exporters, they can get more domestic political support from their export sectors than if they assist them only indirectly (and thereby less obviously) by unilaterally lowering import barriers.

Despite the slowness to come to this explanation for trade agreements, since the GATT's inception economists have continued to support the development of the multilateral trading system's rules, disciplines and procedures (Anderson and Hoekman, 2002b, 2005), and to critique the decisions of GATT Contracting Parties when they allowed exceptions to the basic rules (Anderson and Hoekman, 2002).

B. Exceptions to GATT rules

The most egregious exception to GATT rules in terms of sectors relates to agriculture.[2] The most obvious in terms of countries relates to the non-reciprocal trade preferences and other special and differential treatment of developing countries. And then there is the tolerance of reciprocal sub-global trade agreements, including bilateral and regional agreements. We consider all but the last of those in this sub-section, and then turn to the reciprocal preferential agenda in the following section of the article.

[2] Textiles and clothing were equally sidelined throughout much of the GATT's history (Hamilton, 1990). That sector's economic significance has always been far less than that of agriculture though (Anderson *et al.*, 2001, Table 1).

1. *Agriculture*[3]

From its inception the GATT has treated agriculture differently from other goods. Even though the rules were quite appropriate for farm products, exceptions were carved out for the use of quantitative restrictions (when domestic supply is also restrained) and export subsidies (with weak imprecation against their use in markets for primary products). Even this was considered by the United States to be inadequate isolation of national agricultural policy from the constraints of multilaterally agreed trade rules. As a result, an export subsidy waiver was granted in 1955 that in essence removed even the weak constraints that had been put in place to that point in time (Dam, 1970, ch. 15).

After a decade of operation the GATT Contracting Parties sought a review of world trade trends by a top-level panel of independent trade experts chaired by Harvard's Gottfried Haberler. The foreword to the panel's report, by the head of the GATT Secretariat, notes that it was concerns about agriculture in particular that warranted attention. The farm trade section of the report (Habeler *et al.*, 1958, pp. 80–102) lays out with clarity the problems that faced the multilateral trading system as a result of agricultural protectionism, and recommended that "There should be some gradual moderation of the degree of agricultural protection in exporting and importing countries; that whenever practicable there should be some shift of the means of protection away from price support and toward deficiency payments systems ...". The report also points out the difficulty of comparing the trade impacts of different types of policies and called for a way to measure the "degrees of agricultural protectionism whenever this would be reasonably practicable". This suggestion was to be taken up later by the Food and Agriculture Organization (FAO) and the Organization for Economic Co-operation and Development (OECD), as discussed below. Notwithstanding the recommendations of the Haberler Report, within a couple of years the EEC was to put in place its Common Agricultural Policy (CAP) that was to increasingly exacerbate the problems identified by Haberler.

The situation did not improve in the 1960s. There was no shortage of ideas (Richter, 1964; Coppock, 1966; Warley, 1967); what was lacking was a common political will to tackle the problems. The Kennedy and Tokyo Rounds ended with weak agricultural agreements based more on the notion of managing world markets (against surpluses in the Kennedy Round and against shortages in the Tokyo Round) than on liberalizing markets. As Davey (1993) concludes in his thorough survey of the attempts to discipline farm policies under the GATT, the rules failed because market access was denied either legally (e.g., through reliance on waivers) or illegally (e.g., by relying on balance of payments exceptions, ignoring the rules, or refusing to comply with dispute settlement decisions).

Economists' input into the rules agenda was ratcheted up when the Uruguay Round offered the prospects of creating a permanent World Trade Organization. That

[3] This sub-section draws on the Introduction in Anderson and Josling (2005).

provided scope to develop new disciplines on agriculture (and on the other goods sector that had been side-lined under the GATT, namely textiles, plus services).[4] The economics profession's major contribution during the Uruguay Round agricultural negotiations was though *ex ante* analysis of the gains that could come from liberalization (see below). Relatively little of their effort was focused on the modalities of the negotiations which created the complex three-pillar structure (market access, export subsidies and domestic support) with bindings far above applied rates—a structure that has since been passed on to the Doha agenda.

2. *Non-reciprocal Trade Preferences*[5]

Despite all the fuss about the importance of non-discrimination and the MFN clause, the multilateral trading system has tolerated non-trivial exceptions to that rule, including non-reciprocal tariff preferences and many other forms of special and differential treatment for developing countries.

Unilateral tariff preferences were sought by Raul Prebish and Hans Singer via United Nations Conference on Trade and Development (UNCTAD) (1964) on behalf of developing countries to assist the expansion of their exports of manufactures as part of their overall industrialization strategy. Such preferences clash with not one but two principles of the GATT-based multilateral trade regime: reciprocity (the main instrument through which free riding is prevented when commitments to lower trade barriers are made), in addition to non-discrimination (the MFN rule).

From the outset economists questioned whether preferences are an efficient way to help the developing countries (Patterson, 1965). Even in sectors where preferences would make a difference, they might lead to specialization in products where the beneficiary country did not have inherent comparative advantage, resulting in socially wasteful investment. Johnson (1967) identifies a number of additional problems, but notes a critical economic difference between infant industry protection and preferences: the former is a transfer from consumers to producers in the developing country, whereas in the latter case the transfer is from the consumers in the developed country. He notes though that the sectors protected most in developed countries (agriculture and textiles) are excluded from deep preferences. Subsequent empirical studies vindicated that early scepticism (Cooper, 1972; Murray, 1973; Baldwin and Murray, 1977).

Despite these early warnings, the Generalized System of Tariff Preferences (GSP) for developing countries prevailed, thanks to temporary waivers from 1971 and permanently in 1979 through the so-called Enabling Clause (part of the Tokyo Round

[4] An Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPs) also emerged from the Uruguay Round. Economists had misgivings about TRIPs being part of WTO (Maskus, 2000; Maskus and Reichman, 2004), but were heavily involved during the drafting of GATS rules for services (e.g., Sampson and Snape, 1985) as well as for the Agreement on Agriculture (Josling, Tangermann and Warley, 1996).

[5] This and the next sub-section draw on Hoekman and Ozden (2005).

set of Agreements).[6] One result of the Enabling Clause and the GSP was that developing countries played only a minor role in the development of the multilateral trading system and in making trade-liberalizing commitments in GATT negotiations. This was further encouraged when selected developing countries received even more favourable treatment (e.g., the EU's arrangement with its former colonies, the so-called ACP countries of Africa, the Caribbean and the Pacific, again covered by a GATT waiver). With the entry into force of the WTO in 1995, however, developing countries became subject to most of the disciplines of the many agreements reached in the Uruguay Round negotiations. This has led to stronger demands for more effective preferences for poor countries. One response has been the EU's initiative to extend preferences to UN-designated "least developed countries" (LDCs) by providing duty- and quota-free access to the EU for their exports of "everything but arms" (EBA). It received in-principle, best-endeavours endorsement by other OECD countries at the WTO Ministerial in Doha in November 2001, and several have since adopted a similar policy.

Liberal though the EBA sounds, note that it does not include trade in services (of which the most important for LDCs would be movement of natural persons, that is, freedom for LDC labourers to work on temporary visas in high-wage countries). Also, a number of safeguard provisions are included in addition to the EU's normal anti-dumping measures. Furthermore, access to three politically sensitive agricultural markets, bananas, rice and sugar, is being phased in by the EU only gradually over the rest of this decade (and will be subject to stricter safeguards).

Several other downsides have been pointed out by numerous trade economists. First, other equally poor but non-LDC/non-ACP developing countries (e.g., Vietnam) are harmed by such preferences. This was made abundantly clear in the 1990s during the infamous dispute-settlement case that was brought to the WTO concerning the EU's banana import regime. One background study showed that for every dollar of benefit that the banana policy brought to producers in ACP countries, the regime harmed non-ACP developing country producers by almost exactly one dollar—and in the process harmed EU consumers by 13 dollars (Borrell, 2004). It is difficult to imagine a more inefficient way of transferring welfare to poor countries, since at no extra cost EU citizens could have been, through official development assistance payments, 13 times as effective in helping ACP banana producers and not hurt non-ACP banana producers at all.[7] Such wasteful trade diversion is avoided under non-

[6] During the 1970s the development community also sought to go beyond preference regimes and create a New International Economic Order (NIEO) that would favour developing countries. In addition to more preferential market access, they sought measures to reduce price volatility and declines in international primary commodity markets, increased foreign aid and technology transfers, and a revision of the international monetary system to finance recurring deficits. Critical assessments of the arguments found that many of the instruments proposed would be ineffective or counter-productive (Finger and Kreinin, 1976; Bhagwati, 1977; Corden, 1979).

[7] The EU is moving by 1 January 2006 to a tariff-only regime for banana imports from non-ACP countries, and in the process more than trebling its tariff from the current US$75 to a proposed 230 euros. That will raise the protective effect of the tariff for ACP countries currently enjoying duty-free access, and yet again harm other developing countries (Borrell and Bauer, 2004).

discriminatory MFN liberalizations that result from multilateral trade negotiations under WTO.

Second, the additional production that is encouraged in those LDCs or ACP countries getting privileged access to the high-priced EU market is not internationally competitive at current prices—otherwise it would have been produced prior to getting that preferential treatment. Indeed the industry as a whole may not have existed in the LDC/ACP country had the preference scheme not been introduced. In that case, its profits are likely to be lean despite the scheme, and would disappear if and when the scheme is dismantled or EU MFN tariffs are reduced. Efforts to learn the skills needed, and the sunk capital invested in that industry rather than in ones in which the country has a natural comparative advantage, would then earn no further rewards.

Third, these preference schemes reduce very substantially the capacity for developing countries as a group to press for more access to developed country markets. When the 48 LDCs/79 ACP countries have been given such preferences, they become advocates for rather than against the continuation of MFN tariff peaks for agriculture and textiles—diminishing considerably the number of WTO Members negotiating for their reduction. Presumably if these schemes and the GSP had not been offered in the first place, developing countries would have negotiated much more vigorously in previous GATT rounds for lower tariffs on agricultural and other imports to developed countries.

Fourth, because these preferential access schemes have not been reciprocal agreements (i.e., the developing countries are not required to open their markets to developed countries' exports) they contribute nothing to the removal of the wasteful trade-restrictive policies of the LDC/ACP countries. This contrasts with market access negotiations under WTO, which are characterized by reciprocity.

3. *Special and Differential Treatment for DCs*

Since most developing countries are late-comers to the multilateral trading system, it is not surprising that WTO rules and disciplines predominantly reflect the interests of developed countries (including the permissive provisions for agricultural and textile products, and the inclusion of services and intellectual property rights in the WTO). To accommodate developing countries' concerns, the Uruguay Round market access commitments required smaller percentage tariff cuts and longer transition periods for developing countries,[8] while the WTO agreements themselves contain no less than

[8] The Uruguay Round was sold to developing countries as offering them increased access to goods markets in developed countries in exchange for disciplines on services and IPRs in developing countries. In the event, both sets of countries reduced merchandise tariffs on about 30 per cent of their imports, but the average depth of cut was greater rather than smaller for developing countries (Finger and Schuk, 2001), even if the implementation period was longer. Meanwhile, the TRIPs, SPS and Customs Valuation agreements of the Uruguay Round imposed real resource costs on poor countries relative to the medium-term benefits to them (Finger and Schuler, 2001).

155 "special and differential treatment" (SDT) provisions. Also, the 2001 Doha Ministerial Declaration and the Doha Work Programme of 1 August 2004 emphasize the importance of SDT as an integral part of future WTO agreements.

Economists have been at pains to point out that slower and lesser protection cut requirements for developing countries—and no cut requirements for least-developed countries—simply reduce the pace at which such economies will develop through integrating into the global economy. It also ensures, through reciprocity, that developed countries are inclined (as they were in the Uruguay Round) to give less in the way of increased market access for developing country export items. As a result, there is the prospect that those countries currently enjoying preferential access to developed country markets could lose following a multilateral trade agreement, because of a terms of trade loss due to preference erosion that cannot be offset by efficiency gains if the LDCs choose not to lower their own trade barriers. This was less of a problem when GSP programmes only involved a preference rather than duty- and quota-free access: if MFN rates were lowered, it was possible to maintain a given preference margin by lowering the preferential tariff and/or expanding the coverage of the scheme, whereas under such duty-free schemes as EBA, *any* reduction in MFN tariffs lowers the preference margin.

C. "New" GATT/WTO issues: trade and environment

There have been many new issues added to the GATT and WTO agendas over the years, including several by civil society groups (Anderson and Hoekman, 2002, Vol. 4). Some NGOs see trade reform as contributing to the spread of capitalism and in particular of multinational firms, and believe those aspects of globalization add to innumerable social and environmental ills in both rich and poor countries (Bhagwati, 2004; Wolf, 2004). But just as the traditional economic arguments for protection have been found wanting, so too have the social and environmental ones both conceptually and empirically. For example, there has not been a systematic "race to the bottom" in environmental or labour standards of rich countries as a result of trade and foreign direct investment growth, and in poor countries foreign corporations often have among the highest environmental and labour standards (Bhagwati and Hudec, 1996). Nor has trade growth been a major contributor to the stagnation of wages of unskilled workers in OECD countries (Greenaway and Nelson, 2001).

Economists have been influential in urging that such issues do not crowd the multilateral trade agenda. The effects of trade reform on the environment in particular have been the focus of much theoretical and empirical economic analysis since the 1970s and especially in the past dozen or so years (Copland and Taylor, 2003; Beghin *et al.*, 2002). While those analysts acknowledge the environmental effects of trade reform will differ across sectors and regions of the world, some positive and some negative, there are many examples where cuts to subsidies and trade barriers would reduce environmental damage (see Irwin, 2002, pp. 48–54). For some time the OECD

has been encouraging analyses of these opportunities, and increasingly environmental NGOs are recognizing them too, with Greenpeace currently focusing on energy subsidies, WWF on fisheries subsidies, and IISD and Friends of the Earth on subsidy reforms more generally. They and the better-informed development NGOs such as Oxfam seem to be coming to the economists' view that the net social and environmental benefits from reducing subsidies and at least some trade barriers may indeed be positive rather than negative, and that the best hope of reducing environmentally harmful subsidies and trade barriers is via the WTO's multi-issue, multilateral trade negotiations process.

Even if the net effect on the environment was negative nationally or globally, economists have stressed that that alone would not be a reason to avoid trade reform. Rather, it should be a stimulus to check that first-best environmental policy measures are in place and set at the optimal level of intervention, for then we know that the direct economic gains from opening to trade would exceed society's evaluation of any extra environmental damage, other things equal (Corden, 1997, ch. 13; Sampson and Whalley, 2005).

Much environmental damage in developing countries is a direct consequence of poverty (e.g., the slash-and-burn shifting agriculture of landless unemployed squatters). In so far as trade reform reduces poverty, so it will reduce such damage. More generally, there are well-observed relationships between per capita income and a wide range of environmental indicators. Because richer people have a greater demand for a clean environment, income rises tend to be associated with better environmental outcomes.[9] Even though more pollutive products are being consumed as incomes rise, many abatement practices have been spreading fast enough to more than compensate. And openness to trade accelerates that spread of abatement ideas and technologies, making their implementation in developing countries affordable at ever-earlier stages of development.

III. The Reciprocal Preferential Agenda

Paralleling the development of the multilateral trading system has been the emergence of a series of regional and other reciprocal preferential trading agreements (RPTAs). Article XXIV of the GATT permitted this anomaly under certain conditions based on customs union theory developed by Viner and others, most importantly that such sub-global agreements among WTO Members should involve "substantially all trade". In practice that condition has not been met, beginning with the most important customs union (the EEC); but of political necessity that had to be tolerated for Europe and hence has not been challenged for subsequent RPTAs (Snape, 1993). Numerous

[9] This is the theme of the recent book by Hollander (2003). For statistical evidence of the extent to which different environmental indicators first worsen and then improve as incomes rise (sometimes called the environmental Kuznets curve), see the special issue of the journal *Environment and Development Economics* (2/4) in 1997 and the more recent papers by and cited in Harbaugh, Levinson and Wilson (2002) and Cole (2003).

RPTAs emerged among developing countries in the 1960s, but most did not come to much and so they received little attention by economists. Only when Europe began its "1992 Single Market" initiative, and the United States moved to join with first Canada and then Mexico to form NAFTA, did economists return to contribute to this agenda item. Some economists saw this development as a stepping stone to freer global trade, others as a stumbling block (Winters, 2000). The huge surge of interest in other RPTAs from the mid-1990s fuelled ever-more theoretical and empirical analysis of the issue, so that by the early part of this decade there was a much better understanding of the conditions under which participants and excluded countries would gain or lose (Schiff and Winters, 2003).

Reciprocal preferential trading agreements are rarely just a simple sentence such as: there shall be free trade between the parties.[10] On the contrary, they can run to hundreds of pages involving long lists of exceptions, complex rules of origin and dispute settlement procedures, differing phase-in periods for different products, safeguard mechanisms, requirements to meet the trade partner's myriad standards, and so on. So complex are such features that it is not uncommon for firms to pay the MFN tariff rather than do all the paperwork necessary to get duty-free access within an RPTA. And while they are potentially able to deliver gains to those who join them, RPTAs do so to some extent at the expense of excluded countries and so they contribute only a small fraction of the gains that can come from WTO-based multilateral reform—and yet they can involve major diversions of trade from other, lower-cost suppliers, and of trade negotiator attention away from WTO negotiations.[11]

Even where the prospects for potential economic gains were shown to be slight, the politics were such that governments typically were undeterred in their drive to sign on to such agreements—especially in the cases of developing and transition countries negotiating with the EU or United States.

Alongside the development of these PTAs has been a move, proposed by a small group of economists in the Asia Pacific region, for non-preferential or "open" regional trade liberalization (Drysdale and Garnaut, 1989, 1993; Garnaut, 1996). In 1989, that led to the emergence of the Asia Pacific Economic Cooperation (APEC) forum. After a series of annual heads of government meetings, APEC member countries agreed in 1994, and have since reiterated that commitment several times, to move to free trade in the Asia Pacific region by 2010 in the case of developed countries and 2020 in the case of developing countries. Even though there is no legal binding on members to achieve that goal and retain that status beyond the deadline, the distinguishing feature of this long-term commitment is that, as with WTO commitments, the market opening is to be provided to all trading partners of each APEC country (MFN reform) and not just to

[10] Such simple agreements do exist, however, as with the Australian Constitution of 1901 which converted several British colonies into a federation of States. The high tariffs on inter-colonial trade at that time were abolished in accordance with Section 92 of the new Constitution, which declares straightforwardly "there shall be free trade between states" (Anderson and Garnaut, 1987).

[11] They can also reduce welfare in the partner developed country through trade diversion, as was shown using CGE analysis as long ago as the 1980s (Brown, 1987, 1989a, 1989b).

other APEC members as in a free trade agreement. That makes it unambiguously a stepping stone to global free trade, albeit no more than a "best-endeavours", non-binding one.

IV. The National Agenda

In the absence of a global government, initiatives to negotiate multilateral or plurilateral/bilateral trade agreements come from national governments. Those governments also determine their own country's trade policy and its unilateral reform agenda, albeit with actual or potential international agreements and other aspects of foreign relations in mind. It is therefore in influencing national governments that economists have their greatest impact. Most have done so from within their own country or region, especially in the developed countries. But some have done so via international financial institutions or United Nations agencies whose mandate is to assist developing countries (including those in transition from communism).

The economists' influence on national trade policy agendas has come in two key ways: through promoting a paradigm (this section), and (see next section) through disseminating results from quantitative analysis (including empirical work aimed at helping national government's decide on how many resources to allocate to unilateral, preferential and multilateral trade reform initiatives).

A. Paradigm promotion in developed countries

The free trade doctrine has a long history. Irwin (1996, p. 16) quotes an early statement of it from the fourth century AD by Libanius:

> "God did not bestow all products upon all parts of the earth, but distributed His gifts over different regions, to the end that men might cultivate a social relationship because one would have need of the help of another. And so he called commerce into being. That all men might be able to have common enjoyment of the fruits of the earth, no matter where produced."

However, numerous groups argued for interventionist policies during the centuries that followed, including the merchantilists who exaggerated the importance of manufacturing and the physiocrats who embellished the importance of agriculture. It took until 1776 before Adam Smith's *Wealth of Nations* provided a systematic treatise of the *laissez faire* paradigm, and a further four decades before David Ricardo published his theory of comparative costs in 1817.

Since then, various arguments for protection have arisen at different times and depending on the circumstances of particular countries (Irwin, 1996, chs 7–14). Torrens pointed out that a unilateral freeing of trade could have an adverse impact on a country's terms of trade. Mill raised the issue of infant industry protection in the mid-nineteenth century and it had continued to have some influence until the seminal paper by Baldwin in 1969. In the 1920s Graham raised the increasing returns argument. Brigden *et al*. (1929) developed the "Australian" case for protection, suggesting that the

country's European population would shrink if tariffs on manufactures were cut. Even Keynes weighed into the argument in 1930, believing tariffs were necessary to deal with Britain's unemployment in the presence of downwardly inflexible wages and the government's commitment to retain a fixed exchange rate. Then in the early 1980s, strategic trade theory suggested intervention might be warranted in the presence of imperfect competition, although the grounds for such intervention were soon shown to be rather tenuous. But by and large, most economists believe that a liberal trade policy is appropriate for developed countries, and that concerns such as with employment, balance of payments, the environment and so on can best be dealt with by more-direct policy instruments (Corden, 1997).

B. Paradigm promotion in developing countries

For developing countries (DCs) post-Second World War, by contrast, a different paradigm was proposed as those largely agrarian economies sought independence from their former colonial masters. Prebisch and Singer developed an import-substitution industrialization strategy in the early 1960s (UNCTAD, 1964), built on the infant industry argument plus a series of premises: low living standards are the result of dependence on production and exports of primary products; trade openness would entrench them in that position because that is their comparative advantage; the low price and income elasticity of demand for primary products ensures their exports would grow only slowly; their export supply elasticity in the primary sector is low; and the marginal product of labour in agriculture is near zero. Not only did many developing countries adopt this strategy (notable exceptions being in East Asia), but it got recognition in the GATT via special and differential treatment.

Despite its divergence from the conventional free-trade wisdom as applied to developed countries, the demise of that paradigm as applied to developing (and also communist) countries was only gradual. The bits of economics that helped were the theory of domestic distortions from the late 1960s, which showed trade policy was almost never a first-best way to overcome a domestic divergence (Bhagwati, 1971), and the theory and practice of the rent-seeking behaviour that protectionism bred, which was shown to be hugely wasteful (Krueger, 1974). Loan conditionality by international financial institutions, which required borrowing countries to practice liberal trade policies, probably helped only a little since non-reforming governments were rarely sanctioned. Probably the biggest influence on other developing countries' unilateral decisions to liberalize their trade policies was the spectacular economic growth performance from the late 1960s of the East Asian economies (including China from the late 1970s), which adopted an export-oriented trade strategy.

How did development economists get it so wrong? Krueger (1997) suggests one reason is the misapplication of trade theory: by thinking of the two-factor, two-good trade model instead of a three-factor, many-good model, the possibility was not envisaged of economies becoming competitive suppliers of first unskilled labour

intensive products and gradually more capital intensive ones (as in Krueger, 1977, and Leamer, 1987, building on Jones, 1971). Another reason is that their premises were not based on facts. Schultz (1964), for example, debunked the premises that farmers are not price responsive and that the marginal product of farm labour is zero in developing countries; and his later work stressed that for economic growth, investments are needed also in human, not just physical, capital. A third possible reason was the absence until more recently of convincing quantitative policy analysis to show the cost and other consequences of protectionist policies (see next section).

V. Quantifying Trade Distortions and Their Effects[12]

The international economics profession is no longer in its infancy in terms of measuring the extent and effects of trade policy distortions, but its rapid progress has only been recent and it still has some way to go. Extensive reviews of the literature can be found in Corden (1975) and Feenstra (1995), so all that is attempted here is to provide a sense of the distance the profession has travelled from a trade policy practitioner's viewpoint since the 1950s.

A. Measuring the extent of protection

Trade policy distortions can be due to taxes or subsidies on imports or exports, or quantitative restrictions on trade. Trade can be also distorted by interventions in foreign exchange markets, and of course by myriad domestic policy interventions such as output, input and factor taxes and subsidies. But over recent centuries perhaps the most common trade distortionary measure has been the import tariff.

To measure the extent of a country's aggregate tariff protection against import competition, attention focused initially on developing tariff level indexes (League of Nations, 1927). One of the problems with any aggregate measure, however, is that it cannot serve equally well all purposes simultaneously. Domestic uses for the index could be as an indication of the aggregate degree of resource reallocation towards protected industries and/or of taxation of consumption of importables, or of foregone welfare gains from trade. International uses such as by trading partners could be as an indication of the degree of restriction on import market access.

In terms of indicators of resource re-allocation, substantial progress followed a paper on Canada's protection by Barber (1955), from which Corden (1963) developed and applied to Australia the concept of the effective rate of protection (ERP). The distinction between nominal and effective protection is that the former measures the extent to which the tariff raises the domestic price of a producer's output whereas the latter indicates the extent to which the producer's value added is enhanced, taking into

[12] This section draws on Anderson (2003a).

account any tariffs on importable intermediate inputs and the share of the industry's value added in the value of final output.

The ERP concept gained immediate recognition as a practical way of indicating more appropriately the level of industry protection against import competition not only in aggregate for a country but also—and more importantly—between industries within a country. Its first official use was by the Australian government with the publication of the Vernon *et al*. (1965) report, to which Max Corden contributed; and the first major academic journal publication with cross-country estimates came out the same year (Balassa, 1965). The next few years saw an avalanche of both theoretical and empirical ERP papers and reports (see Corden, 1971, 1975). The early empirical work includes numerous comparative studies of both industrial countries (Balassa *et al*., 1967) and developing countries (Little, Scitovsky and Scott, 1970; Balassa *et al*., 1971), a testament to its widespread popularity. A striking feature of this literature is the genuine interaction between theory and empirical work, and between academic researchers and the policy community including the GATT (see, e.g., the conference proceedings volume edited by Grubel and Johnson, 1971).

These studies reveal many things, but four points in particular are worth mentioning. First, the estimated ERPs far exceed nominal rates of protection (NRPs), suggesting that the resource pulls and hence costs of protection are much greater than the NRPs on their own might suggest. Second, the differences between NRPs and ERPs are not constant across countries, so that ERPs are to be preferred to NRPs for cross-country comparisons of the extent of protection. Third, while the NRP and ERP rankings of industries within countries are not greatly different when the degree of aggregation is fairly high, the rank correlation falls as the degree of disaggregation increases. This means ERPs are also better than NRPs for across-industry comparisons within a country, since the resource-pull cost of protection tends to increase with the range of ERPs, particularly within sub-sectors where substitution in production is high. And fourth, the ERPs expose a non-trivial number of industries where value added has been negative at international prices even though those activities were privately profitable because of the height of protection on the final product—clearly extreme cases of resource wastefulness.

The ERP is not relevant, however, as an indicator of the tariff's distortionary effect on consumption, where simple comparisons of the domestic wholesale price and the border price are more appropriate. The OECD has developed the latter further to calculate its so-called consumer subsidy equivalent (CSE) of agricultural policies (taking into account any direct government subsidies or taxes on consumers of the product concerned in addition to the tariff), to match its producer subsidy equivalent (PSE) measure.[13] While this is useful for simple comparisons between commodities, it has a similar weakness to the rate of producer protection concept in that the consumption,

[13] The PSE attempts to take into account all forms of support to producers, not just the producer price-raising effect of a tariff on import-competing products. The concept was first developed by Tim Josling for the FAO (1973, 1975).

trade and economic welfare costs of that distortion due to the tariff depend not only on the price wedge but also on the own- and cross-price elasticities of demand, or the elasticities of substitution in consumption. And how any particular household's spending is affected depends also on the share of expenditure on each item in the household's consumption bundle.

Useful though the ERP and CSE concepts are, they do not give policy-makers and trade negotiators very reliable indications of the trade and welfare effects of distortionary policies. Certainly partial and general equilibrium modelling can provide that, as discussed in the next sub-section, but those models can require a great deal of information and analytical input that until very recently has not been readily available, particularly in developing countries. With that in mind, a single indicator of the trade-distorting and welfare-reducing effects of price and trade policies was developed in the 1990s for the World Bank, by Anderson and Neary (1994). Their trade restrictiveness index (TRI) requires somewhat more computation than just the NRP, but it provides a much more accurate indication of the effects on trade and welfare than can be guessed from NRP, ERP or PSE/CSE estimates. It suggests that a more satisfactory approach to measuring trade restrictiveness is to find the uniform tariff for the two goods that would be equivalent—in the sense of yielding the same domestic welfare loss—to the actual tariffs applied. This welfare-equivalent uniform tariff takes into account that tariffs on relatively elastic goods are more trade-restrictive than tariffs on relatively inelastic goods. The only additional pieces of information required to calculate this simplest of TRIs in addition to the NRP, or PSE and CSE, are the price elasticities of domestic demand and supply or the excess demand elasticity for each good.[14] Like partial and general equilibrium modelling, the TRI is more likely to become a supplement to rather than a substitute for the NRP or PSE/CSE and ERP calculations, as its estimation may involve relatively little additional work and it still has the virtue of being a single indicator that can be described in plain words.

The phasing down of bound tariffs since the first GATT round of multilateral trade negotiations, from above 40 percent to less than 4 percent for imports of manufactures by OECD countries over the past 55 years (Irwin, 1995), has reduced dramatically their relative importance over time. Applied tariffs have fallen even more than the rates bound in GATT/WTO schedules. Non-tariff trade barriers (NTBs), on the other hand, have been slower to eradicate, and new NTBs are being added or threatened each year (Laird and Yeats, 1990; Baldwin, 1991; Laird, 1997). Particularly difficult to measure are technical product or process standards when products are heterogeneous, because domestic-to-border price comparisons are inadequate when there are not "like" products to compare (see Maskus and Wilson, 2001). Barriers to services trade are even more difficult to measure, although progress is being made (Findlay and Warren, 2000; Stern, 2002).

[14] Anderson and Neary (1994) have gone further in showing how it is possible to generate more complex TRIs, including general equilibrium versions, that are increasingly more satisfactory in terms of their theoretical basis and internal consistency.

Distortions to exchange rates also affect the domestic price of tradables relative to nontradables (Corden, 1981; Sjaastad and Clements, 1982). Drawing on a World Bank multi-country study of distortions to agricultural incentives, Krueger, Valdes and Schiff (1988) were able to show that for their sample of 18 developing countries, overvalued exchange rates have been far more significant anti-agricultural and anti-trade instruments than tariffs, import quotas, import licensing and other direct forms of assistance or taxation of farm products combined. Even in Sub-Saharan Africa where direct taxation of agricultural exports had been huge (averaging 23 percent during 1960–1984), the indirect discrimination against farming because of overvalued exchange rates was even larger, at 29 percent on average for the studied countries of that region. In total those taxation and foreign exchange policies meant that farmers in that poor continent received less than half the gross earnings of their exports—a huge rate of taxation by any standard.

B. Measuring the cost of protection

The cost of protection, or more generally of industry assistance/taxation, refers to the losses imposed by all policy-induced distortions affecting directly the tradables-producing sectors of the economy. Those distortionary measures could be not only trade taxes or subsidies but also production or consumption taxes or subsidies on products, on intermediate inputs, or on factors of production.[15] The cost is usually measured against free markets, including free international trade in final products and intermediate inputs (though not usually in productive factors). In the absence of distortions and if all factors are perfectly mobile between sectors, this is the optimal policy setting.[16] An alternative perspective is to measure it against the first-best policy instrument for achieving the particular "non-economic" objective of society that the tariff is ostensibly targeting (although this is difficult if several objectives are being targeted simultaneously). An additional literature measures the benefits of liberalizing markets,[17] in which case the reform usually is measured against either current policies or what those policies otherwise would be. The latter is appropriate if, for example, protection was rising over time and the measurement of its effects was calibrated for a future year. If the experiment involves bilateral or multilateral reform, any terms of trade changes associated with other countries' reforms need to be included in the calculus.

Three of the early attempts to measure the cost of protection were for sectors where rates of protection were very high by international standards: Australian

[15] A comprehensive taxonomy is provided in Bhagwati (1971).

[16] However, to the extent trade in factors is complementary with rather than a substitute for trade in products, the counterfactual should be broadened to include unrestricted factor trade too. Compare, e.g., Mundell (1957) with Markusen (1983); but note that the outcome when both product and factor trade are opened up is not obvious (Michaely, 2003).

[17] Major efforts to examine the effects of trade liberalizations in developing countries include Bhagwati (1977), Krueger (1978), and Michaely, Papageorgiou and Choksi (1991).

manufacturing (Brigden *et al.*, 1929), German agriculture (Gerschenkron, 1943) and Canadian manufacturing (Young, 1957). In critiquing the Brigden study, Corden (1957) developed what might be considered the first comprehensive methodology which, with the seminal paper by Johnson (1960), has provided the foundation for subsequent empirical analysis of the cost of protection in both partial and general equilibrium.

The cost of tariff protection consists primarily of a production component and a consumption component (in partial equilibrium the Harberger (1959) deadweight welfare cost triangles). Such measures are an improvement over earlier calculations that measured just the cash value of the producer subsidy equivalent or consumer tax equivalent. They usually ignore the costs of lobbying for and then administering the tariff, and of "leakages" in such forms as corruption at the customs post and smuggling. The vast majority of empirical studies also usually assume that perfect competition and constant returns to scale operate, thereby underestimating the cost of protection in so far as imperfect competition and increasing returns are present. Nonetheless, this basic approach has been the workhorse of countless partial equilibrium studies of the cost of protection and, as the popularity of studies such as those sponsored by the Institute for International Economics shows, they have great appeal to the policy community. That appeal no doubt is partly because the approach is relatively easy to explain.

When import quotas or voluntary export restraints (VERs) are used as the protective instrument instead of a tariff, the costs of a given level of protection are higher. What would have been the tariff revenue becomes the quota rent, which, in the case of VERs, is transferred to the foreigner. In the numerous cases where large countries are imposing such quantitative trade barriers, there are also terms of trade effects to consider (as there are also with a tariff). They can lead to efficiency losses for the exporting countries that more than offset the quota rent transfer—as found in several of the US studies of VERs surveyed by Feenstra (1992). They also lead to extra losses (a) if the quotas are volume based because that measure encourages the exporting of more-processed or higher-quality products within the product group for each quota, (b) if the quotas are allocated (rather than auctioned) but not to the lowest-cost exporting countries, (c) if the licences to fill an exporting country's quota are allocated (rather than auctioned) but not to the lowest-cost firms in that country, (d) if the quota leads to additional lobbying, in this case for an allocation of the quota, that erodes the rent transfer, and (e) if the VER encourages inefficient foreign direct investment (FDI) in the importing country in lieu of exporting the product to that country, or FDI in another (higher-cost) exporting country.[18]

[18] On the relative inefficiency of quotas over tariffs, see Anderson (1988).

C. Measuring other economic effects of protection

With the growth in computing power, the economics profession has been able to go well beyond measuring just the cost of protection. Single-commodity, single-country partial-equilibrium studies have been supplemented and often superseded by the development of multi-commodity industry or sectoral models of world markets in partial equilibrium, and economy-wide single- or multi-country computable general equilibrium (CGE) models. Agricultural modelling in the 1980s is discussed below as a good example of the former, before attention turns to CGE developments.

1. *Partial Equilibrium Global Modelling: the Case of Agricultural Markets*

The impetus to develop global models of agricultural markets came in the early 1980s as it became clear that agriculture was likely to be included in a substantial way in the up-coming (Uruguay) round of multilateral trade negotiations—for the first time since the GATT began in the late 1940s. The first such model, by Valdes and Zietz (1980), was a direct application of the Corden–Harberger–Johnson partial equilibrium methodology for a large number of agricultural products.[19] However, each product market was considered independent of the others (zero cross-price elasticities). A model that took interdependence into account was developed by Tyers (1984) for grain and meat markets and applied initially to analyse the European Community's Common Agricultural Policy (Anderson and Tyers, 1984). That model was subsequently expanded to include the highly protected sugar and dairy sectors and became the basis for the empirical work reported in the World Bank's 1986 *World Development Report* in time for the launch of the Uruguay Round in September that year (Tyers and Anderson, 1986). Meanwhile, several international agencies and the US Department of Agriculture began building similar models,[20] but they were mostly comparative static and deterministic. By contrast, the Tyers–Anderson model was dynamic and stochastic, and it also included international-to-domestic price transmission elasticities to capture the effect of agricultural trade policies in insulating the economy from international price fluctuations, in addition to their protective effect.[21]

Even though these models did not distinguish internationally traded products by country of origin, as proposed by Armington (1969), they were very influential in raising public awareness during the Uruguay Round of the impact of growth of agricultural protection levels in the 1980s on farm production, consumption and trade, on the mean and variance of domestic and international food prices, and on national and global economic welfare (as measured by equivalent variations in income).

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[19] Earlier pioneering studies of a single commodity, sugar, were provided by Snape (1963, 1969).

[20] They included the USDA's SWOPSIM model (Roningen, 1986), IIASA's model (Parikh *et al.*, 1988) and the OECD's Trade Mandate Model (Huff and Moreddu, 1989).

[21] Full details of the model including the welfare calculus, and its database and protection estimates, are provided in Tyers and Anderson (1992). A survey of these models is provided in Tongeren, Meijl and Surry (2001).

The estimated costs of protection as captured by those models was probably a reasonable economic welfare measure for advanced industrial countries, because agriculture is a small part of those economies and the distortions to non-farm tradable sectors is small relative to those for agriculture. For poorer countries, however, agriculture is a much larger share of GDP and employment, and their industrial and service sectors are often highly protected from import competition. In such cases, a cut in low levels of agricultural protection could actually worsen national economic welfare, yet such partial equilibrium models would suggest there would be an economic gain (Martin, 1997, Anderson, 2002a). Also, multilateral agricultural reform is not undertaken in isolation but—since the Uruguay Round at least—as part of a package of trade reforms affecting all sectors. For these reasons, partial equilibrium global models began to be superseded from the early 1990s as CGE models became more disaggregated with the growth in capacity and speed of computers and in the quality of the needed data. Initial efforts to apply CGE models to agricultural protection issues are reported in Goldin and Knudsen (1990), but the quality of the models and applications rose dramatically over the 1990s.

2. *Computable General Equilibrium (CGE) National and Global Models*

The first CGE models began appearing in the 1970s, and by the early 1980s they were being used routinely for policy analysis in a number of OECD countries. For example, building on Evans's (1972) pioneering work, the first detailed model built for Australia, known as ORANI (Dixon *et al.*, 1982), produced results for a wide range of policy issues and made a major impact on policy debate during the microeconomic reform decade of the 1980s (Powell and Snape, 1993; Anderson, 2003b). As noted in the surveys by Shoven and Whalley (1984) and Robinson (1989), models were also beginning to be built at that time for developing countries, an early example being Dervis, de Melo and Robinson (1982). Since then many of these national models have become far more sophisticated, and in particular have added regional, occupational and household disaggregations and have become dynamic (as, e.g., in the transforming of the Australian ORANI model into the MONASH model—see Dixon and Rimmer, 2002). The latter feature allows forecasting through time and hence can show paths of adjustment to shocks—something about which politicians are especially anxious.

Global CGE models were slower in coming, since they require so much more data than national or regional models. Early examples are Whalley (1985) and Deardorff and Stern (1986, 1990), with the latter having more country and commodity detail. The Australian government's Industry Commission also began building a global CGE model for trade negotiating purposes (the SALTER model—see Jomini *et al.*, 1991). A copy of that model was taken to Purdue University and, since the early 1990s, it has been improving constantly and been made publicly available as the so-called GTAP model and database (Global Trade Analysis Project—see Hertel, 1997). The extraordinary efforts by Tom Hertel to train users and recruit willing helpers to

revise and update the production, trade and protection data and improve the theory in the model has resulted in hundreds of people becoming persistent users and thousands of simulation experiments being published since its creation (see <www.wto.org>). That openness, which has been characteristic of some other CGE modelling groups too, has been a great spur to modelling innovations.

The basic global GTAP model is similar in architecture to the Australian ORANI model, but more complex versions are being developed all the time. Among the modifications that have been incorporated for particular applications are scale economies and imperfect competition (Francois, 1998), dynamics through capital accumulation (Francois and McDonald, 1996), and those plus foreign direct investment (Dee, Hanslow and Phamduc, 2000). In addition, computational tools for practical policy analysis have been developed to enable systematic sensitivity analysis (Pearson and Arndt, 2000) and decomposition of economic welfare results (Huff and Hertel, 2001). Trade and related policy analysis is now possible for any of the 86 countries or country groups in Version 6 of the GTAP model and any of its 57 sectors of production (20 agricultural and processed food sectors, 22 other manufacturing sectors, and 15 services sectors). Since Armington elasticities are included, bilateral as well as total trade effects can be explored. This enables far more sophisticated analyses for preferential and multilateral trade negotiations than was possible only a few years ago.

The Global Trade Analysis Project is of course not the only such global CGE model, but it is certainly the most widely used. Others were also used in the *ex-post* analysis of the Uruguay Round (see the various chapters in Martin and Winters, 1996) and are now being used for *ex ante* analyses of the current WTO round of trade negotiations and the numerous bilateral and regional free-trade-area proposals that have become fashionable again in recent years.

Another popular family of models arose from expanding a global macro model by adding some sectoral detail (McKibbin and Wilcoxen, 1995). While having far fewer sectors and regions than GTAP, and while relying heavily on the GTAP database, the McKibbin family of models includes capital markets and is dynamic and so is able to generate paths of adjustment to simulated shocks. As in dynamic national CGE models, the latter feature has obvious appeal to policy-makers concerned with the short- to medium-term effects of reform on their constituents.

3. *Adjustment Costs*

The private costs of adjustment for firms and workers to trade reform are paramount in many people's minds, as reform forces some industries to downsize or close so as to allow others to expand (Matusz and Tarr, 2000; Francois, 2003). There are also social costs to consider, involving social safety net provisions in so far as such schemes are developed/drawn on by losers from reform (e.g., unemployment payments plus training grants to build up new skills so displaced workers can earn the same wage as before), and perhaps increased costs of crime in so far as its incidence rises with

transitional unemployment. Those one-off costs, which need to be weighed against the non-stop flow of economic benefits from reform, tend to be smaller, the longer the phase-in period or smaller the tariff or subsidy cut per year (Furusawa and Lai, 1999).[22] They also appear to be small relative to the benefits from reform. An early study by Magee (1972) for the United States estimated the cost of job changes including temporary unemployment to be no more than one-eighth of the initial benefits from tariff and quota elimination. Even assuming that transition took as many as five years, he estimated a benefit/cost ratio of 25. A subsequent study that examined a 50 percent cut in US tariffs (but not quotas) came up with a similar benefit/cost estimate (Baldwin, Mutti and Richardson, 1980). In more recent debates about trade and labour, analysts have not found a significant link between import expansion and increased unemployment (see Greenaway and Nelson, 2001).

For developing countries also the evidence seems to suggest low costs of adjustment, not least because trade reform typically causes a growth spurt (Krueger, 1983). In a study of 13 liberalization efforts for nine developing countries, Michaely *et al.* (1991) found only one example where employment was not higher within a year. A survey of 18 Latin American countries for the period 1970–1996, by Marques and Pages (1998), found some increases in short-term unemployment, but mainly in countries where the real exchange rate appreciated as a result of capital inflows that had accompanied the reforms. That small short-term negative effect soon reversed as production became more labour intensive following reform, according to studies by de Ferranti *et al.* (2001) for a wide range of Latin American and Caribbean countries over the 1990s.

4. *Tariff Revenue Effects*

A further practical impact of trade policy reform about which concern is often expressed is the loss of tariff revenue for the government. This is of trivial importance to developed and upper middle-income countries where trade taxes account for only 1 percent and 3 percent of government revenue, respectively. For lower middle-income countries that share is 9 percent, and it is more than 20 percent for more than a dozen low-income countries for which data are available. How concerned should those poorer countries be? The answer depends on whether/how much that revenue would fall and, if it does fall, on whether/how much more costly would be the next best alternative means of raising government revenue.

On the first of those two points, government revenue from import taxes will rise rather than fall with reform if the reform involves replacing, with less-prohibitive tariffs, any of import quotas or bans, or tariffs that are prohibitive (or nearly so) or which

[22] The adjustment required also tends to be small when compared with the changes due to exchange rate fluctuations, technological improvements, preference shifts and other economic shocks and structural developments associated with normal economic growth (Anderson *et al.*, 1997; Dixon, Menon and Rimmer, 2000).

encourage smuggling or under-invoicing or corruption by customs officials. It is possible even in a tariff-only regime that lower tariffs lead to a sufficiently higher volume and value of trade that the aggregate tariff collection rises. Examples of recent trade policy reforms that led to increased tariff revenue are Chile and Mexico (Bacchetta and Jansen, 2003, p. 15) and Kenya (Glenday, 2000).[23] Since opening up enlarges the economy, income and consumption tax collections will automatically rise too.

On the second point, about the cost of raising government revenue by other means if tax revenue does fall, Corden (1997, ch. 4) makes it clear that in all but the poorest of countries it will be more rather than less efficient to collect tax revenue in other ways. Even countries as poor as Cambodia have managed to introduce a value added tax. Hence from a global viewpoint there is no significant cost that needs to be included in response to this concern. To the extent subsidies are also cut as part of the reform, the chances of government revenue rising are even greater. Income and consumption tax revenue also will rise as the economy expands following reform. In any case CGE modellers typically alter those other tax rates when trade tax revenues change so as to keep the overall government budget unchanged.

VI. How Can Trade Economists Contribute More?

A. Counter the next wave of calls for government intervention

Despite the convergence of opinion among economists that liberal trade is desirable, including for developing and transition economies,[24] there will always be some who side with interventionists. The burst of anti-globilization sentiment in the late 1990s led to books such as *Has Globalization Gone Too Far?* by Rodrik (1997), and to a questioning within institutions such as the World Bank of whether "one-size-fits-all" is appropriate when referring to trade policy.

Books countering those tendencies (e.g., by Bhagwati, 2004; Wolf, 2004) have since helped. So too has the recognition that loan conditionality failed to ensure developing country governments stuck with agreed trade and other reform plans (World Bank, 1998) such that aid and lending institutions are now targeting their funds selectively, rewarding more those countries with good economic governance (Dollar and Levin, 2004). Nonetheless, continual vigilance by economists is required to scrutinize and respond to new calls for intervention. More than that, economists need to continue to press for unilateral liberalization and for the phasing out of important exceptions to the WTO rules aimed at encouraging liberalization (e.g., a ban on export subsidies, enforcing the requirement that reciprocal preferential trade agreements

[23] See also Greenaway and Milner (1993) and Nash and Takacs (1998).

[24] In the early 1990s this became known as "the Washington consensus", a term coined by Williamson (1990) to refer to liberal economic policies. He meant it as a form of description, although it became thought of as a prescription used by international financial institutions.

involve substantially all trade, the replacement of special and differential treatment for developing countries and non-reciprocal preferences for the least-developed with first-best ways of promoting their sustainable development).

B. Better quantitative analysis

Notwithstanding the enormous progress that has been made in quantitative modelling in the past two decades, much scope for improvement remains. Theoretical developments have been running well ahead of empirical modelling, as the Feenstra (1995) survey and the final six chapters of Francois and Reinert (1997) make clear. Data developments and parameter estimation have been relatively slow (an international public good problem), as have efforts to specify well the policy instruments being modelled in both the base and reform scenarios. We begin with the latter, since it has been a major source of criticism of Uruguay Round modelling.[25]

1. *Improving the Specification of Existing and Alternative Policy Measures*

Several mis-specifications of policy measures are clear from the *ex post* and especially the *ex ante* modelling of Uruguay Round (UR) reforms. First, UR (as with past GATT and future WTO) commitments relate to reductions in bound tariff rates, not applied rates, and bound rates can be higher (in agriculture's case often several times higher) than applied rates. Yet many modellers used applied rates in calibrating their models and then reduced them by the extent of the promised bound tariff cuts, thereby overstating the magnitude of reform—in some cases by a huge margin, given the dirty agricultural tariffication that occurred. Recent concerted efforts by GTAP consortium member institutions and others have ensured both sets of tariffs are available from late 2004. Care is also needed in specifying reform options when non-linear tariff and subsidy cuts are to be implemented (Francois and Martin, 2003; Jean, Laborde and Martin, 2005)

Second, wide arrays of tariff preferences operate for various groups of developing country exporters and among members of preferential-trade areas. In the past most modellers have ignored these, because such data have not been available in a form that they could readily use. That too has been rectified with the Version 6 GTAP database. The expansion in the number of LDCs separately represented in the GTAP database also aids quantitative analysis of this sensitive issue.

Third, it is in agriculture where most of the remaining gains from goods trade liberalization are to be found.[26] Reforming that sector should have been straightforward

[25] Criticism has come even from within the international economics profession. See, for example, Panagariya (1999).

[26] According to GTAP modelling results reported in Anderson *et al.* (2001) using Version 5 of the GTAP database, fully two-thirds of the gains from eliminating all merchandise import barriers globally in 2005, after full implementation of Uruguay Round commitments, would come from agriculture. New results using Version 6 suggest a slightly lower but still massive share (Hertel and Keeney, 2005).

following the promised tariffication of many nontariff agricultural trade barriers following the UR, but such is not the case. The reason is that governments agreed to allow countries to set their bound tariff at excessively high levels so long as they promised at least existing levels of imports to come in at low tariffs. That triggered the use of so-called tariff rate quotas (TRQs). Tariff rate quotas add considerable complexity to modelling empirically even the domestic impacts of agricultural trade policies and their reform, let alone their trade effects. Again, they are better handled in the new Version 6 GTAP database.

Fourth, an additional complication for modelling agriculture is that many countries impose quarantine restrictions and even bans on imports of farm products. Hence even if the bound rates and TRQs had been correctly modelled, the results may still overstate what would actually happen following tariff cuts and TRQ expansions if those quarantine restrictions begin to bite. It will be a long time before we have a comprehensive usable data base showing the extent of protection afforded by these and other technical barriers to trade, even though such barriers may be even larger than that due to the bound tariff on numerous farm products. This problem will escalate as and when food safety process standards (e.g., for GMOs) become more widespread, since the concept of "like product" will come under challenge. Similar protective effects result from technical barriers to trade on non-farm products (Baldwin, 2001). The Uruguay Round's Sanitary and Phytosanitary Agreement and Technical Barriers to Trade Agreement have only gone a small way towards disciplining the abuse of these forms of trade protection.

Fifth, safeguards may be applied under certain circumstances such as import surges. That may well be how the United States and/or EU respond when the present voluntary export restraints on textile and clothing trade are removed under the UR Agreement on Textiles and Clothing at the end of 2004 (or a few years later for China and possibly other WTO accedants such as Vietnam). That possibility has to be kept in mind when modelling manufacturing liberalizations.

Sixth, most models have ignored or at best captured only very crudely the distortions to services trade and investment flows. Those barriers are considerable, but are difficult to measure and represent in standard CGE models (see Hoekman, 1996; Findlay and Warren, 2000; Dee *et al.*, 2000; Stern, 2002; Whalley, 2003; Winters *et al.*, 2003). Yet when those distortions are not included, there is the same problem with interpreting the welfare effects of goods trade reform generated by a CGE model as there is from a partial equilibrium model of a subset of markets in the presence of distortions in other markets of that economy. That is, if services distortions greatly exceed goods protection then decreasing the latter could worsen national economic welfare even though a CGE model which specifies zero distortions for services markets will suggest a welfare gain from a goods protection cut. The only solution to this problem is to continue to build on the pioneering work reported in Findlay and Warren (2000) on measuring the extent of distortions to markets for services and that of Jensen, Rutherford and Tarr (2004) and others in incorporating those measures into CGE models.

Seventh, most modellers assume the counterfactual is the status quo, when in fact it could be rising protectionism. In the latter case, traditional measures of the gains from reform will underestimate the benefits that could flow. To suggest the most likely alternative path requires a fuller understanding of the political economy forces at work that analysts normally have, however.

Finally, modellers also often fail to compare the adjustment required because of policy reform with that required per year in the course of normal structural changes that accompany economic growth. Such a comparison typically reveals that trade reform causes very little structural adjustment per year compared with the myriad other forces at work in the economy (Anderson *et al*., 1997; Dixon, Menon and Rimmer, 2000).

2. *Effects of Trade Reform in the Presence of Other Domestic Divergences*

In addition to services markets being distorted at the border (e.g., barriers to foreign direct investment and immigration), many other domestic markets are typically distorted by government policies (including myriad domestic taxes and price-cap regulations on privatized utilities), or arrangements between labour unions and management). Ideally, those policy instruments and distortions should all be specified in each model, but that is a formidable task. In the meantime, in describing model outputs there should always be the caveat that the results are exaggerated to the extent that there are domestic impediments to actual market adjustments to reduced trade barriers.

As well, there may be divergences (to use Corden's (1997) term) in the form of environmental or social concerns that the government has not optimally addressed. That too can lead to smaller actual social welfare gains than our economic models might suggest, or even to losses, from trade liberalization (e.g., if there is a sufficiently large and uncorrected negative environmental externality associated with producing more exportables). Proponents of the idea that agriculture is ''multifunctional'', and for that reason deserves government support, try to make that claim (Anderson 1998). Distinguishing between genuine widespread environmental or social concerns, and the claims of self-serving vested interests, is not always easy in practice.

3. *Imperfect Competition and Scale Economies*

A more-widespread incorporation in CGE models of imperfect competition and scale economies (following the example set by modellers of the European Union's Single Market in the 1990s) would accelerate if we had better empirical estimates of the mark-ups firms impose and the extent of economies of scale in different industries. These modifications are especially crucial for the services sector, as is the incorporation of foreign direct investment flows. Hence the more these models are going to be used to analyse services policy reforms, the more important are those inclusions. Also needed are better data on services trade and better specifications of services policy measures,

particularly if the GTAP database (which many other non-GTAP global modellers also depend on) is to be disaggregated beyond the 15 services sectors in the current Version 6.

4. *Asset Values and Dynamics of Trade Liberalization*

Including capital accumulation and thereby making global CGE models dynamic is a tall order (see, e.g., Grossman and Helpman, 1991), but it would open up opportunities to address additional issues. One is inter-generational transfers that could result from tariff reforms affecting asset values. Those effects would depend on any terms of trade changes and hence are affected by whether a small economy's liberalization is unilateral or part of a multilateral reform package. Another issue such a model could handle better than present ones is selective temporary protection (of which anti-dumping is perhaps the most notorious). A third issue, and one that is important for poorer countries, is the greater scope there would be to assess ways of accommodating the revenue consequences of tariff changes, including via debt financing (Keuschnigg and Kohler, 1997). And fourth, estimates of the costs of adjustment over time could be more-easily incorporated.

But perhaps the most important contribution that dynamic models could make is to show how much greater are the gains from trade liberalization than is apparent from comparative static models, and how little are the adjustments needed because of trade reform relative to those due to the normal pace of structural changes that accompany economic growth.

5. *Effects on Factor Markets and Especially Wages and Employment*

The evident concern about the possibility that trade reform could have adverse impacts on wages and/or employment for lower-skilled workers in developed countries attracted considerable interest of analysts in the latter 1990s (see Greenaway and Nelson, 2001) but less interest from empirical CGE modellers than one might expect even though in principle CGE models are well served to provide insights. The problem in practice is that the factor market assumptions used by many modellers are often rather simplistic (and horrify labour economists): full employment before and after the policy shock, a perfectly inelastic supply curve for labour, few if any skill differentials or sector-specific skills, costless adjustment to shocks, and often no minimum wages or any other factor market distortions. Parading factor market results would require exposing those assumptions (and those assumed for land and capital markets). Clearly these factor market issues should be being dealt with for the sake of getting better trade and welfare results anyway, so if greater demands for such modelling results lead to more-realistic specifications of factor and especially labour markets, that will be a doubly good thing.

In many people's eyes the private and social costs of adjustment for firms and households to trade reform are paramount. Those one-off costs need to be weighed

against the non-stop flow of economic benefits from reform, even if they tend to be small when there are long phase-in periods or small tariff or subsidy cuts per year. Even so, they are of great significance to communities and hence to politicians, and estimates for them have been provided much less than have estimates of the gross benefits from reform.

6. *Effects on Household and Regional Income Disparities and Poverty Alleviation*

The Seattle debacle in late 1999 and the protests at numerous global economic leaders' meetings since then make clear that there is a strong demand for empirical modellers to say something also about the impact of shocks such as trade policy reform on the distribution of incomes across households and regions within each country, and in particular on the incidence of poverty, especially in poorer countries. That requires going beyond calculating just factorial income distributional effects. It requires including utility and earnings functions for several instead of just a single household. Inputs into that specification could be household survey data for urban and rural areas, from which it may be possible to estimate the shares of different (say) quintiles or deciles of households' incomes from different productive factors and from government transfers net of taxes, and the shares of their expenditure on different products.[27]

7. *Effects of Domestic Policy Responses to Trade Reform*

Having identified the gainers and any losers from a trade policy change, one could draw on our understanding of the political economy of economic policy formation to anticipate what additional policy changes might be forthcoming in response to the trade liberalization. Those responses could then also be modelled.

At the same time, the likely effects of other potential domestic policy changes that might be needed to meet society's economic, social and environmental objectives could be presented alongside results for the trade reform, to show how any adverse effects from that reform might be most-efficiently dealt with. This step may be very important if the results of the *ex ante* trade reform simulation are seen as politically unpalatable, because otherwise the government may choose simply to abandon its trade reform plan.

C. CONTRIBUTE MORE TO DISPUTE SETTLEMENT PROCEDURES

The Uruguay Round included an agreement to greatly strengthen the GATT's dispute settlement procedures. While economists were not instrumental in its establishment, they have begun to join with lawyers in being involved as WTO

[27] Early examples of modelling exercises along these lines are Friedman (2000), Hertel *et al*. (2002) and Bhattasali, Li and Martin (2004). Hertel and Winters (2005) will report the results from a multi-country World Bank research project along similar lines, focusing on the poverty effects of a likely Doha Round outcome.

Dispute Settlement Panelists, and in critiquing its procedures, including those involving remedies (Anderson, 2002b). A particularly unfortunate development has been the tendency in difficult cases for the Respondent to refuse to alter an offending measure found to be inconsistent with the Member's obligations. Retaliation has been authorized in such cases, typically involving the Complainant imposing restrictions on imports from the Respondent and so moving the world away from rather than towards freer trade. Bagwell, Mavroidis and Staiger (2004) have suggested one possible solution to this problem (allow WTO Members to bid for the right to retaliate against a Respondent who is unwilling to reform), but more analysis and debate in this area could have a high payoff.

VII. Conclusions

Clearly, while trade policy theorists and empirical trade modellers within the international economics profession have come a long way since the late 1950s, plenty of exciting challenges remain for those interested in having an impact on the real world of trade policy reform. If economists are to be any more influential in the trade policy arena, however, they need to understand better why governments intervene in markets the way they do, for as Stigler (1975, p. xi) says, "Until we understand *why* our society adopts its policies, we will be poorly equipped to give useful advice on how to change those policies." Theoretical progress has been made in recent years using new political economy insights (see Grossman and Helpman, 2001, 2002); and the availability of CGE models (especially if they are embellished with household data so that distributional effects can be explored, as in Hertel and Winters 2005) make it easier to address empirical such questions as why some industries or sectors are assisted or taxed more than others and why and how the pattern of industry assistance changes in the course of economic development or in response to major shocks. But there is no substitute for individual policy analysts building stronger relationships with policy advisors and their masters. Indeed trade policy advisors, whose behind-the-scenes activities put into practice what they have learnt from the research community, are the ones who deserve much of the praise for actual reform.[28]

Better empirical *ex ante* measures of the likely effects of trade reform will add transparency to the process. In the case of the Doha Development Agenda, the attention of analysts needs to focus on better modelling of the policy instruments to be used, of the modalities of the negotiations (e.g., which formulae are to be used for cuts to tariff and subsidy bindings as distinct from applied rates),[29] and of how the net gains from reform will be distributed within and between countries from multilateral versus regional/preferential agreements. The latter, and the associated effects on employment,

[28] See Harberger (1993). One recent and dramatic example, reported in detail by Mallaby (2004), is the role of a single bureaucrat (now head of the central bank) in the wholesale reforming of economic policy in Uganda in the 1990s.

[29] See, e.g., the careful analysis by Jean, Laborde and Martin (2005).

trade flows, inequality, poverty, and the environment are of much more interest to policy-makers than simply net national or global economic welfare effects.

The advocacy skills of members of the economics profession also matter. Vested interest groups seeking protection specialize in advocacy skills, so equally skilled advocates for liberal markets need to be active in political markets if protection increases are to be avoided. While public interest groups and think tanks seek to provide such services, a persistent problem is that academics get rewarded far more for success in publishing in quality journals than for having a policy impact though effective advocacy.

Beyond that, timing matters. The right ideas can be present, the right people can be available to advise a visionary leadership, but politicians may require a crisis or a strong mandate to act.[30] The Second World War, following the Depression of the 1930s, stimulated the signing of the GATT in the latter 1940s. Likewise, the atmosphere following 11 September 2001 made it possible for WTO Members to agree to launch the Doha round of multilateral trade negotiations in November that year, in contrast to the experience at the Seattle meeting of trade ministers two years earlier when such an attempt failed spectacularly in the wake of anti-WTO protests. In between those episodes, the farm export subsidies war and its impact in depressing international food prices was what triggered the launch of the Uruguay Round in 1986 and the success of keeping agriculture high on its agenda, in contrast to all previous GATT rounds. So pertinent advice based on sound economic analysis is not sufficient for good policy outcomes—but it is a necessary condition, so having the analysis ready for those serendipitous moments in history will ensure the economics profession earns its keep.

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[30] For an attempt to test 15 hypotheses about national policy reform, see Williamson (1994). Few of the hypotheses were supported by the case studies examined. Rodrik (1996) also concludes that clear lessons are difficult to draw. One reason is the uncertainty of reform outcomes. As Fernandez and Rodrik (1991) point out, when a voter is uncertain as to whether she/he will be among the minority of losers from a policy change, the status quo will be preferred even when the majority know they will each gain more than those in the minority will each lose.

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