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The millennium round: An economic appraisal

by

Nigel Nagarajan

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Executive Summary

This study looks at the potential economic impact of a new WTO trade round. It starts by noting that the essential motivation for launching multilateral negotiations to liberalize trade is economic – there are substantial economic benefits which can be realized from lowering barriers to international flows of goods and services. There are a number of reasons why the expansion of world trade can have a favourable impact on economic growth. In line with the principle of comparative advantage, trade leads to a more efficient allocation of resources. It also facilitates the exploitation of economies of scale, stimulates competition, and can lead to the transmission of technology and knowledge

Countries usually approach trade negotiations with the objective of securing reductions in their trading partners' trade barriers. The economic case for trade liberalization, on the other hand, stresses the fact that the largest part of the gains from multilateral liberalization usually come about as a result of countries' efforts to reduce their own trade barriers. Trade protection shifts the economy to a less efficient mix of production, consumption and investment, and can also create an anti-export bias by encouraging resources which were previously allocated to exporting activities to move into sectors which produce for the protected domestic market. In other words, trade protection slows down growth and reduces economic welfare.

The study looks at the phenomenon of globalization – the process by which markets and production in different countries are becoming increasingly interdependent due to the dynamics of trade in goods and services and flows of capital and technology. By comparing the growth of trade with the growth of output, it would seem that globalization has accelerated over the course of the 1990s. This is also evident from the increasing internationalization of the production process, the expansion in the tradability of services, the emergence of developing countries as producers and exporters of manufactures and the explosive growth of international capital flows. Globalization has brought enormous benefits to both industrialized and developing countries. However, governments need to develop coherent policies to ensure a more equitable distribution of these benefits and to deal with some of the challenges which globalization can bring. The increasing importance of the global economy explains why there have been calls to expand the agenda of the next WTO round beyond traditional market access concerns to also include subjects such as competition and investment.

The study argues that developing countries could emerge as major beneficiaries of a new multilateral trade round. There are two reasons for this. Firstly, their exports tend to face higher trade barriers than the exports of the industrialized countries. They therefore have a greater potential to gain from improved access to foreign markets for their exports. Secondly, they also tend to have much higher levels of import protection than the industrialized countries. Lowering these levels of protection would help to improve the efficiency of resource allocation and would help to correct the significant anti-export bias in many developing countries. However, a central problem for many developing countries, including, in particular, the least-developed countries, is that they suffer from inadequate domestic policy environments. Domestic policy reform is essential in many developing countries if they are to participate more fully in the global economy. In addition, complementary policies are needed to ensure that a larger share of the welfare gains which developing countries can expect from trade liberalization are allocated to tackling poverty.

The standard tool which economists now use to quantify the impact of multilateral trade liberalization is a computable general equilibrium (CGE) model. A CGE model is a computer representation of the economy which can explicitly take into account inter-linkages between different sectors. CGE models can therefore be used to study the economy-wide implications of major policy changes. The study used results generated by the Global Trade Analysis Project (GTAP) CGE model. This is one of the most well known CGE models and is the model which is most widely used to study the impact of changes in trade policy. The version of the GTAP model used by in this paper has nine world regions, each of which are divided into nineteen sectors covering all agricultural, industrial and services production. The sectors allow for a mixture of perfectly-competitive and imperfectly-competitive industries. The simulations were run by an independent expert, Professor Joseph Francois of Erasmus University, Rotterdam, who was responsible for constructing the version of the GTAP model used here.

The results indicate that the global welfare gains from a comprehensive multilateral trade round could be substantial. In the first instance, the study looked at across-the-board cuts in trade protection across all agricultural, industrial and services sectors by all countries. Two scenarios were considered – a 20 per cent and a 50 per cent global cut in protection. Each of these scenarios was combined with a WTO agreement on trade facilitation, which it is assumed leads to a modest reduction (conservatively estimated at 1 per cent) in the transactions costs associated with international trade. The results from the GTAP model indicate that the annual welfare gain for the world as a whole from such a market access plus trade facilitation package could range from $220 billion in the case of the 20 per cent scenario to nearly $400 billion in the case of the 50 per cent scenario. This represents an annual increase in global welfare of between 0.8 and 1.4 per cent, which is roughly equivalent to adding an economy the size of Korea or the Netherlands to the world each year. The figures for the 50 per cent scenario are similar to those produced by a recent study by the Australian Department of Foreign Affairs and Trade, although the latter does not look at trade facilitation. They are also roughly twice as much as the OECD's estimates of the welfare gains which can be expected from full implementation of the Uruguay Round. All regions gain from multilateral trade liberalization, although the distribution of the gains is somewhat uneven because of differences in existing levels of protection. The annual welfare gain for the EU is estimated at roughly $50 billion in the case of the 20 per cent scenario and nearly $100 billion in the case of the 50 per cent scenario. The greater part of the welfare gains accrue outside the major industrialized nations, with the developing countries emerging as major beneficiaries. However, if the developing countries implement less extensive liberalization than envisaged here (e.g. by cutting bound tariffs whilst leaving applied rates broadly unchanged), their expected gains will be substantially reduced.

The study then looked at the possible impact of a WTO agreement on trade and competition. The GTAP model was adapted to allow for oligopolistic markets in which firms can collude between each other. Even if a WTO agreement were to lead to only a modest reduction (of 10 per cent) in the degree of collusion, the model indicates that this would produce a global welfare gain of around $85 billion on an annual basis. Again, all regions gain from the agreement but the distribution is uneven. Developing countries, the majority of whom do not currently have proper competition regulations, are the major beneficiaries. It was not possible to adapt the GTAP model to consider the impact of a WTO agreement on investment. However, independent calculations suggest that even if such an agreement were to lead to only a modest improvement in resource allocation, this could result in an annual increase in global welfare of around $75 billion. The welfare gains should be highest in those countries where the current

investment regime is most in need of improvement. In other words, many developing countries could again be significant beneficiaries.

The figures reported in this paper are intended to illustrate the more fundamental proposition that there are mutual gains from multilateral trade liberalization. It should be remembered that any modelling exercise necessarily rests on assumptions. The assumptions underlying the model have to be taken into account when interpreting the figures. Furthermore, because the model has been used to make predictions, it is subject to the limitations which are common to all forecasting exercises.

In parallel to this paper, a separate study of the potential implications of a new WTO round on sustainable development is being conducted for the Commission by independent consultants. Its focus is on the possible environmental and social impact of the new round.

1. Introduction

1.1. Multilateral trade liberalization: unfinished business

1.1.1. This paper provides an initial appraisal of the potential economic impact of further multilateral trade liberalization which may follow from a new WTO round. The Third Ministerial Conference of the WTO, which is scheduled to take place in Seattle from 30 November to 3 December 1999, is expected to launch new negotiations to extend liberalization and to strengthen and expand further the rules governing international trade. This paper argues that if these negotiations lead to significant and wide-ranging liberalization, the benefits for the world economy could be substantial, with all countries emerging as potential beneficiaries.

1.1.2. It should be pointed out that the motivation for launching negotiations to liberalize trade is ultimately an economic one – there are substantial economic benefits which can be realized from lowering barriers to international flows of goods and services. Economists recognize several channels through which trade liberalization can have a favourable impact on economic growth. In line with the principle of comparative advantage, trade liberalization leads to a more efficient allocation of resources. Trade liberalization can also stimulate growth by facilitating the exploitation of economies of scale, promoting competition, and encouraging the transmission of technology and knowledge.

1.1.3. Throughout the post-war period, the expansion of international trade has served as one of the engines of the global economy. This expansion has been greatly facilitated by the reductions in trade barriers undertaken by both industrialized and developing countries. The eight previous rounds of multilateral negotiations conducted under the auspices of the GATT/WTO have seen industrialized countries' average tariffs come down from over 40 per cent in 1940 to less than 4 per cent today. In recent years, extensive trade liberalization programmes have also been undertaken in a growing number of developing countries, an increasing number of whom are now export-oriented economies. However, whilst considerable progress has been made by both industrialized and developing countries in reducing trade barriers, numerous quantitative studies show that the benefits of further reducing trade protection could be very high. In other words, both industrialized and developing countries are still paying a very high cost for their current levels of trade protection. This cost is usually far higher for the country imposing trade barriers than for its trading partners. This is because trade barriers reduce the efficiency of resource allocation by distorting production, consumption and investment decisions. One important consequence of the distortionary nature of trade protection is that a tax on imports is also, in effect, a tax on exports. High levels of import protection can result in an anti-export bias by creating an incentive for resources devoted to exporting activities to move into sectors which produce for the protected domestic market. This anti-export bias is highest in developing countries who, despite their recent efforts to open up their economies, are still suffering from the legacies of previous import-substitution policies. By encouraging developing countries to continue with trade liberalization, a new WTO round could make a significant contribution to raising their growth prospects.

Agriculture and services: the "built-in agenda"

1.1.4. The precise agenda for the new negotiations to be launched at Seattle has yet to be agreed by the membership of the WTO. Only two areas will definitely be subject to negotiations. These are agriculture and services. Resumption of negotiations in these two areas was agreed to as part of the final package of the previous round, the Uruguay Round.

1.1.5. The rules governing **agricultural trade** were properly discussed for the first time during the Uruguay Round negotiations which were completed in 1994. Despite the achievements of the Uruguay Round in extending multilateral discipline to this sector, world trade in agricultural products remains significantly distorted.[1] Distortions exist in the three key areas of market access, export subsidies and domestic producer subsidies, and are generally higher in the industrialized countries than in the developing countries. A recent study argues that fully one-third of the global welfare gain from eliminating industrialized countries' distortions across all goods sectors could come from liberalization in agriculture.[2] Industrialized countries are likely to gain from a liberalization of world agricultural trade through an enhanced efficiency of resource allocation, reduced budgetary costs and improved consumer welfare. Many developing countries have a comparative advantage in agriculture, and will therefore have a significant interest in reducing distortions in this sector. The impact of liberalization on some least-developed countries who are net food-importers is, however, less clear-cut. Reductions in industrialized countries' agricultural export subsidies will have a negative impact on their terms-of-trade, but this may be compensated by other, positive effects.[3] As a result of the "built-in agenda" established by the Uruguay Round, WTO members have committed themselves to resume agricultural negotiations by 31 December 1999.

1.1.6. The other subject which is included in the so-called built-in agenda is **services trade**. Services are increasingly at the heart of the global economy, and already account for about 60 per cent of world output. In recent years, trade in services has been growing faster than trade in merchandise goods. Technological advances have made many services increasingly tradable. Other services remain difficult to trade, however, and producers must supply foreign markets through commercial presence, which explains why the internationalization of services is closely linked to the growth of foreign direct investment (FDI). Until recently, trade in services has not been subject to the same type of multilateral discipline as that applying to trade in goods. With the adoption of the General Agreement on Trade in Services (GATS) as a result of the Uruguay Round, this is now changing. The GATS establishes a basic framework of rules for liberalizing trade in services and contains national commitments on market access for services provided by foreign firms. Since the Uruguay Round, negotiations have been concluded on basic telecommunications and financial services. Extending liberalization across all services sectors is expected to lead to further welfare gains for both industrialized and developing countries. The gains for the industrialized countries are perhaps obvious, in that they are major suppliers of a wide range of services. However, it is worth emphasizing the gains to developing countries from further services liberalization. Services are becoming increasingly important in the economies of the developing countries. In particular, they are assuming a larger role as inputs to industrial production. By liberalizing their own services sectors, developing countries can therefore improve the competitiveness of their industrial sectors. The scope for developing countries to benefit from further liberalization in services is illustrated by the fact that they made far fewer market access commitments than did the industrialized countries in the Uruguay Round. Under the built-in agenda, WTO members have committed themselves to re-open services negotiations by 1 January 2000.

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[1] The degree of agricultural liberalization achieved by the Uruguay Round is explored in Merlinda D. Ingco, "Agricultural Trade Liberalization in the Uruguay Round: One Step Forward, One Step Back?", Policy Research Working Paper No. 1500, World Bank, 1995.
[2] See Kym Anderson, Bernard Hoekman and Anna Strutt, "Agriculture and the WTO: Next Steps", paper presented at a Centre for Economic Policy Research Workshop on New Issues in the World Trading System, London, 19-20 February, 1999.
[3] This issue is explored in section 4.

Beyond the built-in agenda

1.1.7. In addition to agriculture and services, many WTO members have proposed including other subjects in the agenda for the new round. According to the WTO Secretariat, more than 150 proposals had been tabled by mid-September 1999. The list of additional subjects which have been proposed by WTO members includes industrial tariffs, anti-dumping, subsidies, safeguards, trade and investment, trade facilitation, electronic commerce, trade and competition, trade and environment, government procurement, technical assistance, capacity-building and other development issues.

1.1.8. The analysis in this paper focuses on the several of the areas highlighted here. In other words, it is assumed that the Seattle Ministerial Conference will launch a comprehensive trade round which will extend beyond market access negotiations in agriculture and services. **Industrial tariffs** have been included in each of the previous multilateral trade rounds, resulting in a great deal of liberalization by both industrialized and developing countries. Despite this, the indications are that significant welfare gains could be achieved from further tariff liberalization. Developing countries, in particular, have much to gain from reducing their own trade barriers on industrial products, as well as from securing improved access to industrialized countries' markets for their exports. This is particularly true in relation to manufactured products. The 1990s have witnessed the emergence of developing countries as major producers and exporters of manufactures, and this helps to explain why developing countries are expected to reap significant gains from further liberalization of trade in manufactures.[4] It is also worth emphasizing that most countries' tariff structures are far from uniform. Both industrialized and developing countries can therefore benefit from adopting simpler and more uniform tariff structures, lowering peak tariffs and reducing tariff escalation.

1.1.9. Another subject which may feature in the negotiations to be launched at Seattle is **trade facilitation**. There is widespread agreement that inefficient and unnecessary import, export and customs procedures have impeded trade flows and prevented countries from maximizing the benefits which should follow from liberalization of formal trade barriers. The simplification and harmonization of these procedures through a WTO-based agreement could therefore yield significant benefits. These benefits are likely to be greatest for small and medium-sized enterprises, for whom the costs associated with complicated and cumbersome trade procedures are likely to be disproportionately large. The gains are also likely to be largest for developing countries. The introduction of modern customs techniques in developing countries should contribute to improving the efficiency of revenue collection by customs authorities and should also help to lower the costs faced by importers and exporters. Trade facilitation may therefore be an important complementary policy to the liberalization of tariffs and other trade barriers intended to expand the export potential of the developing countries.

1.1.10. The potentially complementary nature of trade and **competition policy** has been appreciated by economists for some time. Despite this, the majority of the WTO's members do not currently have effective competition regulations. Furthermore, there is, at present, no multilateral framework regulating the application of competition law to anti-competitive practices by firms. Many WTO Members have therefore argued that the lack of such a framework means that anti-competitive practices, such as

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[4] One study suggests that developing countries may capture up to 95 per cent of the global gains from manufacturing trade liberalization. See Thomas Hertel and Will Martin, "Developing Country Interests in Liberalizing Manufactures Trade", paper presented at a Centre for Economic Policy Research Workshop on New Issues in the World Trading System, London, 19-20 February, 1999.

price-fixing and market-sharing arrangements between firms, may seriously impair the ability of countries to benefit from increased trade and investment flows. They believe that the need for a multilateral framework on competition is also reinforced by the increasing globalization of business activities. Multinational firms are increasingly able to exercise market power on a global basis. Furthermore, a growing number of competition cases now have an international dimension. The basic architecture of an international competition framework could include core principles and common rules relating to the adoption and enforcement of competition law, common approaches on anti-competitive practices with a significant impact on international trade and investment, and international co-operation on competition policy. The adoption of such a framework could add significantly to the overall benefits which countries can expect from further multilateral trade liberalization. This is particularly true for the developing countries, since they currently do not have adequate competition policy regulations.

1.1.11. Just as international trade has benefited from the security and transparency provided by the rules-based multilateral system, the argument has been made that similar benefits could be expected from a WTO-based agreement on **investment**. The rapid growth of foreign direct investment (FDI) flows in recent years, particularly to developing countries, suggests the need for more comprehensive rules in this domain. The desire of developing countries to attract increased FDI inflows reflects the view that such inflows may promote economic development by stimulating productivity growth and boosting exports.[5] The growth of FDI flows has been facilitated by the adoption of bilateral investment treaties (BITs). However, the proliferation of BITs in recent years does not guarantee the objective of a stable and predictable climate for investment on a world-wide basis. Many WTO members have therefore argued that a multilateral agreement that grants foreign firms access to such protected markets could be beneficial to both host and source countries. A binding multilateral framework would also enhance the credibility of countries' policy regimes. If potential investors are risk averse, the adoption of more investment-friendly policies may be insufficient by themselves to enable countries to benefit from increased inward flows of FDI. This is especially so in countries with a history of policy reversals. By committing themselves to accept international rules, on the other hand, countries can make credible guarantees against further policy reversals, thus anchoring the expectations of investors.

1.2. The economic analysis of multilateral trade liberalization

1.2.1. The conduct of multilateral trade negotiations tends to be somewhat mercantilistic. Countries regard liberalization of their own trade as a concession which should only be "given up" in exchange for similar concessions from other countries. The mercantilist approach therefore emphasizes the benefits to be achieved from multilateral trade liberalization in terms of improved access to foreign markets for a country's exports. Whilst this may be a useful means of deflecting domestic opposition to lifting barriers to imports in that country, it fails to take into account the costs to that country of its own trade barriers. A great deal of progress has been made by economists in recent years in identifying and estimating the size of these costs. For example, with regard to the European Union, a recent study has suggested that the total costs of its own trade protection policies could amount to as much as 7 per cent of EU GDP.[6] Similar studies exist for the other major industrialized countries as well which also point to major costs from trade protection.[7] The costs to countries of their

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[5] See Magnus Blomstrom and Ari Kokko, "How Foreign Investment Affects Host Countries", Policy Research Working Paper No. 1745, World Bank, 1997.
[6] See Patrick A. Messerlin, *Measuring the Costs of Protection in Europe*, Washington, D.C.: Institute for International Economics, November, 1999. Forthcoming.
[7] See Gary Clyde Hufbauer and Kimberly Ann Elliott, *Measuring the Costs of Protection in the United States*, Washington, D.C.: Institute for International Economics, January, 1994; and Yoko Sazanami, Shujiro Urata, and Hiroki

own trade protection policies tend to be a central feature of economic analyses of multilateral trade liberalization. Economists stress the fact that the greatest part of the gains which a country can expect from a multilateral trade round usually arise from reductions in its own trade barriers. Economic studies show that, other things being equal, countries with higher trade barriers tend to gain more from trade liberalization. This is why quantitative studies often suggest that the largest potential beneficiaries from multilateral liberalization may be the developing countries.[8]

1.2.2. Another difficulty with the mercantilistic approach to multilateral trade is that it risks misrepresenting the true internal distributional effect of liberalization. This is because, whilst it emphasizes the benefits to domestic firms of better access to foreign markets, it fails to take into account the important welfare gains which trade liberalization can bring to domestic consumers. Consumers gain from the increased incentive which trade liberalization creates to substitute inefficient domestic production with cheaper imports. They may also gain through an increase in the variety of products which are available and through the fact that trade can curtail the monopolistic power of domestic firms by subjecting them to increased international competition. Thus, one essential contribution of economic analysis is to underline the benefits from trade liberalization to groups whose interests can often be overlooked in trade negotiations. Economic analysis can therefore help to create a more balanced view of the gains from trade liberalization.

1.2.3. Trade negotiators rely on economists to provide them with analysis of the implications of their efforts to reduce trade barriers. Economists have a different conceptual approach to that adopted by trade negotiators. Trade liberalization for economists is a positive sum-game, whereas trade negotiators tend to regard it as a zero-sum game. Economists certainly recognize that they sometimes have a difficult task in stressing the benefits of trade liberalization to those who do not understand their approach. The idea of mutual gains from trade is one of the few fundamental principles on which nearly all economists agree. It is derived from the theory of *comparative advantage*, which is one of the most centrally important contributions which the discipline of economics has made. Nevertheless comparative advantage remains widely misunderstood even by well informed people.

1.2.4. Although economists have the right conceptual approach to trade liberalization, they have only imperfect tools with which to make their case. To illustrate the idea that there can be gains from trade, economists have increasingly relied on quantitative estimates of the welfare gains which can be realized from reducing trade barriers. During the Uruguay Round, numerous quantitative studies predicted large benefits for the global economy from multilateral trade liberalization.[9] Whilst these estimates were useful for illustrative purposes, they have come up against two major problems. The first problem is that, because they often started out with somewhat different underlying assumptions, the studies sometimes contradicted each other over the scale of the gains which could be expected. For example, a study which assumes immediate liberalization of trade in textiles and clothing is likely to produce a larger estimate of the welfare gain than one which takes as its starting point the actual liberalization schedules which countries adopted after the Uruguay Round, in which barriers to trade are being phased out gradually over a ten-year transition period. The second problem with quantitative studies of the gains from the Uruguay Round is there now appears to be a general scepticism about whether the predicted

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Kawai, *Measuring the Costs of Protection in Japan*, Washington, D.C.: Institute for International Economics, January, 1995.
[8] See, for example, Hertel and Martin, *op. cit.*
[9] These studies are reviewed in Joseph F. Francois, Bradley McDonald and Håkan Nordström, "A User's Guide to the Uruguay Round Assessments", Working Paper No. ERAD-96-003, World Trade Organization, 1996.

welfare gains have genuinely materialized. This is probably explained by the fact that the greater part of the gains from trade liberalization only arise over the medium-term, once a process of adjustment to different patterns of production, consumption and investment has taken place, whereas the public perception at the time the studies were published may have assumed more immediate gains. An additional factor is that the welfare gains from trade liberalization which such studies predict are likely to be thinly diffused across the general population. This contrasts with the adjustment costs which trade liberalization will entail, which are often concentrated among certain groups and regions and which are therefore often more visible than the benefits. Economic models tend not to take adjustment costs into account. The empirical evidence suggests that, when set against the overall benefits from trade liberalization, adjustment costs are typically small. The existence of adjustment costs nevertheless provides a strong argument for countries to develop complementary policies such as social safety nets and education and retraining policies. There is no way to overcome the difficulties associated with the economic modelling of trade liberalization. As far as the first problem is concerned, models are necessarily based on assumptions and these will almost certainly differ across studies, at least in some respects. Regarding the second problem, because the models make predictions, they are subject to the limitations shared by all forecasting exercises. In the present study, an effort has been made to explain the way in which the various estimates have been derived. The limiting nature of some of the assumptions underlying the model should be taken into account when these figures are interpreted.

1.2.5. The figures reported in this paper are intended to illustrate the more fundamental proposition that there can be welfare gains from further trade reform at the multilateral level. They are presented towards the end of the paper in order to emphasize, firstly, the qualitative economic analysis which they are intended to support. The rest of this paper is structured as follows. Section 2 presents the economic case for launching a new trade round. Section 3 discusses the round in the context of the global economy, and stresses both the main features of globalization as well as the link with the environment. Section 4 focuses on the developing countries, for whom the round will be of crucial importance. Section 5 briefly sets out the approach used to model the round and section 6 describes the results generated by the model for the different policy experiments.

2.   The economic case for multilateral trade liberalization

2.1.   Trade as an engine of growth

2.1.1. Revitalizing world trade from its current state is essential to restoring and sustaining balanced growth in the world economy.[10] Throughout the post-war period, the expansion of international trade has served as one of the engines of the global economy. Between 1951 and 1997 the volume of world merchandise exports expanded seventeen-fold, whilst world output quadrupled. Chart 2.1 shows that the expansion of world trade and output was remarkably strong in the 1950s and 1960s. The industrialized countries, in particular, experienced particularly high productivity and real output growth, and countries that recorded a high rate of output growth also experienced large increases in trade growth. Although the links between trade and growth are complex, it is generally agreed that key policy initiatives in the industrialized economies, such as the cuts in tariffs and non-tariff barriers from the very high levels of the inter-war period and the widespread move towards currency convertibility for current account transactions, contributed to these developments.

Chart 2.1. Growth of world trade and output, 1951-1999
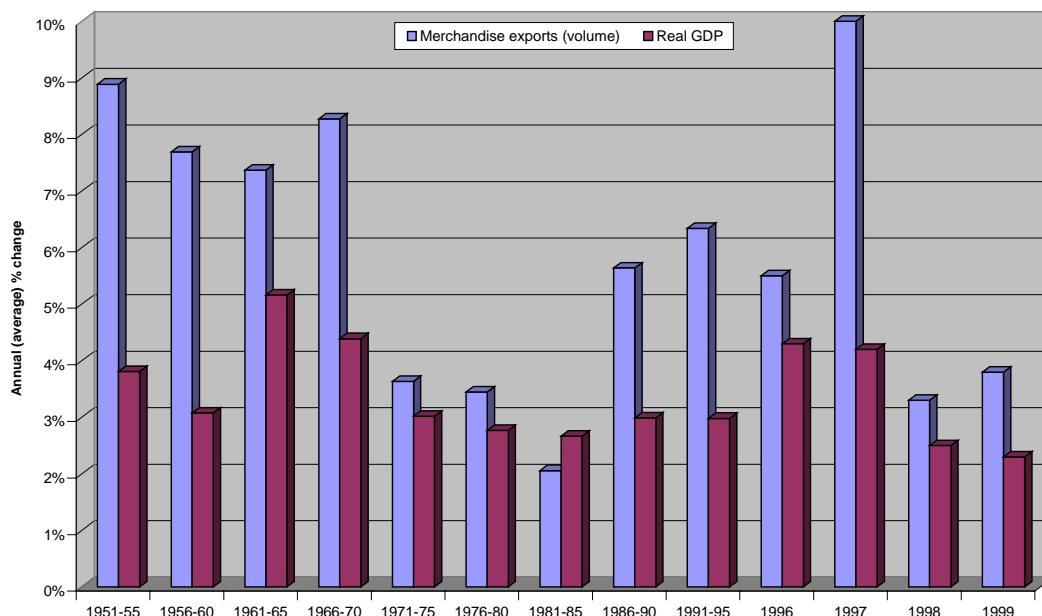
Source: various.

2.1.2. During the 1970s and the first half of the 1980s, trend productivity and output growth slowed significantly in the industrialized countries, as did the growth of trade. This period witnessed the collapse of the Bretton Woods fixed exchange rate system, oil and commodity price shocks and the onset of the debt crisis. The large tariff reductions undertaken in the 1950s may have had their main impact in the previous two decades and therefore provided less stimulus to trade and growth in this period. In addition, many countries partly reversed their previous policy stance by erecting significant non-tariff barriers. This last factor is often cited as providing at least a partial explanation for the slowdown in the rate of expansion of world trade in this period.

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[10] This point is emphasized by the IMF in its latest World Economic Outlook. See IMF, *World Economic Outlook*, October, 1999.

2.1.3. In the period from the mid-1980s to the mid-1990s, the growth of world trade rebounded. A significant development over this period was the increase in the share of developing countries in world trade. This reflects the policy shift which took place in an increasing number of developing countries away from previous inward-oriented development strategies towards a greater openness to foreign trade and investment flows. Not only did many developing countries emerge as major suppliers on world markets for a wide range of products, but they were increasingly serving as a "locomotive" for the world economy through their large and rising share of world import demand. East Asian developing countries were particularly important in this last respect. In value terms, East Asian developing countries doubled their share of world imports from 10 per cent to 20 per cent between the mid-1980s and the mid-1990s.[11]

2.1.4. In 1997, the rate of increase in the volume of world exports reached an impressive 10 per cent – the highest annual increase in trade volumes for around twenty years. In contrast, the last two years have witnessed a slump in trade volumes and a more subdued rate of world output growth. The rate of increase in the volume of world merchandise exports in 1998 fell to only 3.5 per cent – the lowest rate of increase of international trade for thirteen years. The principle explanation for this slowdown was the economic contraction in much of Asia – previously one of the most dynamic regions in world trade – due to the East Asian financial crisis and the continuing recession in Japan. In 1998, import volumes fell by 22 per cent in the five East Asian crisis countries (Indonesia, Korea, Malaysia, the Philippines and Thailand) and by around 8 per cent in Japan. The Russian and Brazilian crises, and their associated spillovers, further added to the depressed state of world import demand.

2.1.5. The recent slump in world trade has had a somewhat different impact on industrialized and developing countries. Outside of Japan, the major industrialized countries have proved remarkably resilient to the slowdown. Indeed, the strong performance of the United States economy has undoubtedly been an important factor in sustaining world import demand. In the majority of developing countries, however, the slowdown in world trade growth has been more detrimental. This is particularly true for commodity exporters, who have suffered important terms-of-trade losses following the slump in world commodity prices. Despite these difficulties, the world economy now seems to be recovering. In particular the prospects for export-led recoveries in many developing countries now look more solid. A crucial factor in helping to restore broad-based, sustainable growth in the crisis countries and the rest of the world has been the resolve which most countries have shown to maintain open markets. Protectionist pressures have nevertheless been mounting, especially since the uneven pattern of growth among the industrialized countries has exacerbated external payments imbalances. Under these circumstances, **the launch of a new trade round could help to contain protectionism by continuing the momentum for ongoing liberalization**.

2.2. Why trade is beneficial

2.2.1. There are a number of reasons why the expansion of world trade has a favourable impact on world growth. In line with the principle of comparative advantage, trade leads to a more efficient allocation of scarce resources across productive activities in different countries. In traditional growth models, this leads to a higher *level* of output by stimulating higher savings and investment. More recently, economists have stressed the fact that trade can also lead to a permanent increase in the rate of *growth*. This can occur because trade facilitates the exploitation of

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[11] East Asian developing countries are defined here as China, Hong Kong and Taipei plus Indonesia, Korea, Malaysia, the Philippines and Thailand.

economies of scale, stimulates competition, and can lead to the transmission of technology and knowledge. The relationship between trade and growth is complex, however, and it is difficult to resolve the issue of whether increased trade unambiguously causes higher growth. Nevertheless, there is at least mounting circumstantial evidence to support such claims (see Box 1).

2.2.2. **One of the most fundamental insights in the whole of economics is that there can be gains from trade**. First and foremost, "classic" efficiency gains arise from improved possibilities for specialization and exchange. Gains from *specialization* arise because of the increased efficiency of resource allocation. By allowing countries to specialize in those goods which they are relatively well adapted to produce, trade can lead to an increase in the global production of all goods. Suppose, for some reason or other, that Europe can produce motor cars at a lower price than India, whilst India can produce garments at lower price than Europe. International trade allows the global production of both cars and garments to increase, since Europe can specialize in producing only cars whilst India can specialize in the manufacture of garments. This is a rather restrictive example, since each country has an absolute advantage in either cars or garments. Suppose, however, that Europe can produce both cars and garments at a lower price than India. The principle of comparative advantage states that there can still be gains from trade. If the price advantage which Europe enjoys over India is greater in cars than in garments, it will still be beneficial for Europe to channel its resources into the production of cars and for India to again specialize in garments. In this way, global production of both cars and garments will still increase. Trade based on comparative advantage is therefore more efficient than an absence of trade because it increases the world's production possibilities. Gains from *exchange* result from an improvement in the world's consumption possibilities. If Brazil has a comparative advantage in coffee and China has a comparative advantage in tea, then international trade will allow consumers in each country to purchase more of the other good at a lower price.

2.2.3. Comparative advantage typically gives rise to *inter-industry trade* – trade between different countries in the products of different industries. Although this sort of trade is mutually beneficial, it can also be associated with adjustment costs as some factors of production will have to move out of inefficient uses into more efficient ones. As labour and capital move between different sectors, they may be unemployed for some time. This is especially true in countries where labour and capital markets do not operate very efficiently or where workers face obstacles to acquiring new skills. In any event, trade liberalization can facilitate the adjustment process by creating new opportunities in export-oriented sectors which can absorb some of the factors of production released by import-competing activities. The adjustment costs from inter-industry trade must therefore be set against the overall gains from trade liberalization. There is strong empirical evidence to suggest that **adjustment costs typically represent only a small fraction of the overall benefits associated with trade liberalization.**[12] Nevertheless, since adjustment costs may be non-trivial for certain groups and regions, countries may need to develop adequate social safety nets and education and retraining policies in order to cushion the short-run negative impact of trade liberalization.

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[12] A recent survey of more than fifty empirical studies on the adjustment costs of trade liberalization was undertaken by Matusz and Tarr (1999). They found that virtually all the studies which quantified the adjustment costs relative to the overall benefits found the former to be small relative to the latter. There are a number of explanations for this. For example, the costs are typically short-term and end when displaced workers find new jobs, whereas the benefits of trade liberalization grow as the economy does. In addition, normal labour turnover in many industries exceeds dislocation from trade liberalization. This suggests that the adjustment process following trade liberalization need not entail much forced unemployment. See Steven J. Matusz and David G. Tarr, "Adjusting to Trade Policy Reform", Policy Research Working Paper No. 2142, World Bank, 1999.

2.2.4. Inter-industry usually trade takes place when there are differences between countries (e.g. in technology or their relative endowments of capital and labour). However, the largest share of world trade is between the industrialized countries, where such differences are less apparent. Trade between the industrialized countries is therefore more likely to be *intra-industry trade* – trade in similar, possibly differentiated products. Intra-industry trade is associated with economies of scale (also referred to as increasing returns to scale), when production is more efficient the larger the scale at which it takes place. It also does not usually give rise to the same sort of adjustment costs as inter-industry trade, since resources will be reallocated *within* sectors rather than between them. When there are economies of scale, both the variety of goods that a country can produce and the scale of its production are constrained by the size of the domestic market. International trade allows countries to loosen these constraints by taking advantage of an integrated world market that is bigger than any individual national market. Each country can then specialize in producing a narrower range of products than it would in the absence of trade and, by importing those goods which it does not itself produce, each country can simultaneously increase the variety of goods available to its consumers. As a result, **when economies of scale are present, international trade offers an opportunity for mutual gain even when countries are similar in terms of their technology or factor endowments**. Furthermore, this can lead to a permanent increase in a country's growth rate (see Box 1).

2.2.5. The presence of economies of scale implies that firms are operating in an environment which is imperfectly competitive. This means that they will typically restrict their output and raise their prices in order to achieve higher profits. The greater the degree of market power exercised by firms, the more they will be able to do this. Under such circumstances, **international trade can be beneficial by generating pro-competitive effects**. Trade can discipline domestic producers by reducing their degree of market power. The stronger presence of foreign firms on domestic markets will induce domestic incumbent firms to lower prices and increase output. This generates benefits to domestic consumers. Domestic producers may also benefit in a similar way in relation to imported inputs. Empirical evidence confirms the intuition that increased exposure to international trade does indeed lower price-cost margins, thus enhancing the degree of competition in markets which are so exposed.[13] Another beneficial effect of trade is that it can encourage innovation. In traditional growth models, the long-run growth level is determined outside the model by exogenous technological progress. This means that there is no possibility for trade to increase a country's permanent growth rate by stimulating technological change. This is extremely limiting, and newer models of endogenous growth explicitly allow for the fact that **trade may also stimulate growth by promoting technological progress through the transfer of technology and the diffusion of knowledge**. Technology and knowledge which are embodied in good and services may often only be able to cross borders through trade and foreign direct investment flows.[14]

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[13] In the EU, this pro-competitive role seems to be played more by extra-EU imports. See Alexis Jacquemin and André Sapir, "Competition and Imports in the European Market" in L. Alan Winters and Anthony Venables (eds.), *European Integration: Trade and Industry*, Cambridge: Cambridge University Press and Centre for Economic Policy Research, 1991. A similar pro-competitive effect has been found in developing countries which have opened up to international trade. See, for example, Pravin Krishna and Devashish Mitra, "Trade Liberalization, Market Discipline and Productivity Growth: New Evidence from India", *Journal Of Development Economics*, (56)2 , pp. 447-462, 1998.
[14] See Gene M. Grossman and Elhanan Helpman, *Innovation and Growth in the Global Economy*, Cambridge, MA: MIT Press, 1991.

Box 1: Trade and growth

In traditional, neo-classical growth models the long-term growth rate is explained by exogenously-determined technological progress.[15] Trade liberalization, by generating resources for increased investment, can raise the *level* of output but not its long-term *growth* rate. The reason is that these models assume constant returns to scale at the aggregate level to all inputs and, hence, diminishing returns to capital. Consequently, each addition to a country's capital stock will generate diminishing amounts of extra output. By emphasizing only a one-off, comparative static increase in output, such models may significantly underestimate the potential impact of trade on growth. In so-called *endogenous growth models*, on the other hand, trade may permanently increase economic growth.[16] Rather than treating technological progress as an unexplained external, these models allow for it to be determined endogenously. They also relax the assumption of constant returns to scale at the aggregate level. There are a number of different ways in which trade can then permanently raise economic growth. Firstly, since technology and knowledge are often embodied in traded goods and services, greater exposure to trade can promote technological progress and allow countries to economize on research and development activities. Secondly, by promoting the international integration of increasing returns sectors, trade can raise output without requiring additional inputs. Thirdly, trade promotes economic efficiency by encouraging resources to be reallocated across sectors in line with comparative advantage. Rather than simply treating this as leading to lead to a one-off increase in output, the new growth models allow for the fact that greater efficiency can free extra resources for research and development activities.

Despite these theoretical advances, the links between trade and growth are not straightforward at an empirical level. Many studies find an association between openness to trade and growth, but they come up against two central difficulties. The first is establishing an acceptable measure of trade openness. Typically, there are a myriad of variables (average tariffs, non-tariff barriers, the black market exchange rate premium) which can influence whether or not a country is open to trade. Combining these different variables into a single index of trade openness is not easy. Sachs and Warner (1995) conducted a study of per capita income growth in 89 developing countries over the period from 1970 to 1989.[17] They found that average per capita income growth per annum in open economies exceeded that in economies which were not always open by nearly four percentage points. However, a problem with this study is that it is based on a somewhat arbitrary definition of what constitutes a closed economy (e.g. one with a black market exchange rate premium of at least fifty per cent). The second difficulty relates to causality. As pointed out by Rodrik (1995), even if one accepts the association between openness to trade and growth, this does not imply that greater openness causes higher growth.[18] Those countries which adopt liberal trade policies may also adopt sound macroeconomic policies or have better functioning institutions or invest more in education and training. How can one disentangle the contribution of trade openness from these other factors? A recent attempt to overcome this difficulty is provided by Frankel and Romer (1999), who use countries' geographical characteristics to study the effects of trade on income.[19] These characteristics are unlikely to be correlated with other determinants of income. Their study suggests that a one per cent rise in the ratio of trade to GDP increases per capita income by at least half a percentage point. This and other studies should nevertheless be taken as strengthening the case for the benefits of trade rather than providing decisive evidence for it.

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[15] The traditional, neo-classical growth model is derived from Robert M. Solow, "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics*, 70, pp65-94, 1954.

[16] See, for example, Paul M. Romer, "Increasing Returns and Long-Run Growth", *Journal of Political Economy*, 94, pp1002-37, 1986; and "Endogenous Technological Change", *Journal of Political Economy*, 98, ppS71-102, 1990.

[17] See Jeffrey D. Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration", *Brookings Papers on Economic Activity*, 1, pp1-118, 1995.

[18] See Dani Rodrik, "Getting Interventions Right: How South Korea and Taiwan Grew Rich", *Economic Policy*, 20, pp53-97, 1999.

[19] See Jeffrey A. Frankel and David Romer, "Does Trade Cause Growth?", *American Economic Review*, 89, pp379-399, 1999.

2.3. Why protection is costly

2.3.1. Trade distortions, such as tariffs, quotas and subsidies, result first and foremost in a cost to the country that imposes them. These distortions shift the economy to a less efficient mix of production, consumption and investment. The imposition of a tariff, for example, leads to both a production distortion and a consumption distortion. The former arises because the tariff causes more of domestic demand to be met from domestic supply than would be the case without the tariff. The latter arises because the tariff leads to a lower level of consumption than would be the case without the tariff. Furthermore, countries typically have non-uniform tariff structures, which distort the pattern of incentives to produce and invest between different sectors. With regard to import quotas, these are not necessarily equivalent in their effects to import tariffs. There are two main reasons for this. Firstly, a quota generates a scarcity rent because of the fact that restricted sales take place at higher prices. The effects on income distribution can be quite different from the case of a tariff which generates revenue for the government. Secondly, quotas are much more rigid instruments than tariffs. Suppose that the world price of the imported good falls. A tariff allows the domestic price to fall so that domestic consumers benefit. Under a quota, on the other hand, the only benefit may go to domestic importers who can capture more quota rents. The costs associated with a country's own trade restrictions need to be taken into account by its trade negotiators. **Although countries usually approach multilateral trade negotiations with the objective of seeking improved access to each other's markets, most of the gains which they can expect to achieve come from removing their own trade barriers**.

2.3.2. An important lesson from the theory of international trade is that a tax on imports is also a tax on exports. Thus, **another reason why import protection is harmful is that it results in an anti-export bias**, as resources are pulled away from exporting sectors into sectors which produce for the protected domestic market. Import substitution policies may also have contributed to an over-appreciation of the real exchange rate in many developing countries. This, coupled with the general pull of resources out of exporting industries into import-competing industries, contributed to the slowdown in many developing countries' foreign exchange earnings. As a result, these policies were widely blamed for contributing to periodic foreign exchange crises. Since the mid-1980s the trend has been for developing countries to reverse these policies and adopt an outward-oriented strategy with a more neutral pattern of incentives between exporting and competing for the domestic market. Nevertheless, many developing countries are still paying a very high price for the mistakes of the past.[20]

2.3.3. An additional source of the costs associated with restrictive trade policies arise from what is known as the "political economy" of protection. Inefficient trade policies often come about because economic agents have spent resources to lobby for them. Resources spent on so-called "rent-seeking" behaviour cannot be used for productive activities. Rent-seeking may therefore be classified as a form of directly-unproductive profit-seeking (DUP) activities.[21] The costs of rent-seeking behaviour associated with trade protection are additional to inefficiencies already discussed. Empirical research suggests that this cost may be very high for some countries.[22] Nevertheless, it is usual to exclude the benefits from reduced rent-seeking in estimates of the welfare gains from trade liberalization.

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[20] For a review of these policies see Anne O. Krueger, "Trade Policies in Developing Countries" in Ronald W. Jones and Peter B. Kenen, *Handbook of International Economics*, volume 1, Amsterdam: North Holland, 1984.

[21] Jagdish N. Bhagwati, "Directly Unproductive Profit-Seeking Activities", *Journal of Political Economy*, 90, pp988-1002, 1982.

[22] Krueger (1974) estimated the welfare cost of protectionist rent-seeking for import quotas in India during the late 1960s to have amounted to 7 per cent of GDP. See Anne O. Krueger, "The Political Economy of the Rent-Seeking Society", *American Economic Review*, 64, pp291-303, 1974.

3. The global economy: some economic considerations

3.1. Trade and globalization

3.1.1. The trend towards globalization – the process "by which markets and production in different countries are becoming increasingly interdependent due to the dynamics of trade in goods and services and flows of capital and technology" – is undoubtedly one of the key features of the evolving world economy.[23] Globalization is often measured by looking at how much faster world trade expands compared to world output. This gives an indication of the increasing degree to which national economies rely on international trade. On this basis, the evidence suggests that globalization has been occurring for the past two hundred and fifty years, with the brief exception of the inter-war period. However, the speed of globalization also seems to have increased in the 1990s. Between 1980 and 1989, the average annual growth rate of the volume of world merchandise exports was 3.8 per cent, whilst world output grew on average by 2.6 per cent (implying a ratio of trade to output growth of less than one and a half). Between 1990 and 1997, however, the volume growth of world merchandise exports averaged 6.5 per cent, whilst the average growth of world GDP was 1.8 per cent (implying a ratio of trade to output growth of just under three and three-quarters). **The increase in the speed of globalization over the course of the 1990s has led to a greater recognition on the part of governments of the need to develop coherent policies to deal with some of the challenges which globalization can bring and to ensure a more equitable distribution of the benefits which are associated with it**. It is also argued that as a consequence of globalization there is a need for multilateral discipline to extend beyond trade in goods and services to rules covering competition and investment. Some key features of the globalization phenomenon are explored in this sub-section.

3.1.2. As part of the trend towards globalization, **the past decade has witnessed an increasing internationalization of the production process**. This has been driven largely by reductions in transport costs, improvements in communications and a growing preference for liberal trade and investment environments among countries. However, with rapid technological change in the 1990s, modern manufactures have become increasingly sophisticated and their production can be broken down into ever more stages. This "slicing up of the value chain" is now taking place on a much more global basis. The extent of global production sharing over the past decade can be assessed from the fact that trade in components and parts within the machinery and transport equipment category has been growing faster than finished goods in this sector. It is also estimated that in the mid-1990s some 30 per cent of world manufacturing trade is accounted for by such semi-finished goods.[24] It is therefore increasingly inappropriate to think of modern products as having a distinct national identity. The increasing internationalization of production has been accompanied by a similar **expansion in the tradability of services**. Given the rising service-intensity of production in general, access to efficient services will be increasingly important in promoting economic growth in both industrialized and developing countries.

3.1.3. One of the key developments in the world economy during the 1990s has been the growing importance of **developing countries as producers and exporters of manufactures**. Developing countries now account for around 20 per cent of world manufacturing output, compared to around 12 per cent in 1970. Over the period 1990 to 1997, industrialized countries' imports of manufactures from developing countries grew faster than their total merchandise imports from all third countries. The progress

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[23] The definition of globalization used here is taken from OECD, *Intra-Firm Trade*, 1993, p7.
[24] See Alexander Yeats, "Just How Big is Global Production Sharing?", Policy Research Working Paper No. 1871, World Bank, 1998.

of developing countries in this respect has, of course, been extremely uneven. The newly-industrializing economies (NIEs) have been the pioneers, given their early head start in pursuing export-led industrialization. On the other hand, many of the least-developed countries, particularly those in sub-Saharan Africa, continue to play only a very limited role in international trade and enjoy only a marginal share of the benefits of globalization. This issue is examined in more detail in section 4.

3.1.4. In the industrialized economies, **increased trade competition from the developing countries has not been without some frictions**. This factor has been blamed for the growth of wage dispersion between skilled and unskilled workers in the United States, and for the rise in unemployment among unskilled workers in Western Europe. However, the economic evidence does not support the view that trade with developing countries has been a significant factor behind the deteriorating labour market position of unskilled workers in the industrialized countries.[25] Part of the reason may be that whilst wages are lower in the developing world than in the industrialized countries, so are productivity levels. The empirical research suggests that the main factor behind the worsening labour market situation of unskilled workers in the industrialized countries is technological change which requires a more skilled labour force.[26] Structural impediments to the operation of labour markets are likely to hinder a country's ability to adapt to these developments. The appropriate policy response in most industrialized countries may therefore require a combination of structural reforms and the implementation of adequate social safety nets and other flanking policies to cushion the impact of these developments on those who find it most difficult to adjust.

3.1.5. It is clear that the **rapid pace of technological change** is playing a key role in the continuing evolution of the global economy. Not only has technology facilitated increased flows of trade and investment, it is also reshaping the ways in which firms and customers interact. Nowhere is this more evident than in the growth of **electronic commerce**. This is a fundamentally new way of conducting business which has shrunk the distance between consumers and producers and created the need for new forms of intermediaries (traditional wholesalers and retailers are replaced by network access providers and electronic payment systems). There is currently no international legal framework for such transactions. However, it is estimated that the share of value-added that potentially lends itself to electronic commerce is around 30 per cent of GDP.[27]

3.1.6. Another important development in the modern global economy is the **explosive growth of international capital flows** and financial transactions. International transactions in bonds and equities in major industrialized countries increased to well over 100 per cent of GDP in 1995 compared with less than 10 per cent in 1980. In many developing countries, the trend towards liberalization of capital markets has also contributed to higher investment, faster growth, and increased living standards (net private capital flows to developing countries increased to more than $150 billion a year during 1995-97, compared with around $50 billion a year during 1987-89). However, the recent experience of Mexico, the East Asian countries, Russia and Brazil illustrates the fact that capital-market liberalization needs to proceed in an

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[25] The evidence as far as the European Union is concerned is reviewed in the chapter on 'Trade, Investment and Employment' in European Commission, *The European Union as a World Trade Partner*, European Economy Reports and Studies, No. 3, 1997.

[26] For example, studies have shown that in Europe, workers' individual characteristics, such as skill level, appear to play the dominant role in explaining long-term unemployment. See Mathias Dewatripont, André Sapir and Khalid Sekkat, "Labour Market Effects of Trade with LDCs in Europe" in Mathias Dewatripont, André Sapir and Khalid Sekkat (eds.), *Trade and Jobs in Europe: Much Ado About Nothing*, Oxford: Oxford University Press, 1999.

[27] See Ludger Schuknecht and Rosa Pérez-Esteve, "A Quantitative Assessment of Electronic Commerce", Working Paper No. ERAD-99-01, World Trade Organization, 1999.

orderly, properly sequenced manner. When this is not the case, removing capital controls can be costly for countries, since it can expose weak corporate governance, poor management and inadequate supervision of financial sectors, and, possibly, an inconsistent macroeconomic framework. The complementary relationship between capital-market liberalization and other structural reforms is highlighted by the fact that there is strong evidence that the liberalization of financial services can result in less distorted and less volatile capital flows, and can thereby promote financial stability.[28]

3.1.7. One particularly interesting feature of the recent increase in international capital flows has been the growth of **foreign direct investment** (FDI). In 1997, the world stock of FDI was around $3.5 trillion.[29] In recent years the ratio of the volume of world FDI stocks to world GDP has grown twice as fast as the ratio of world trade to world GDP. The expansion of international production, through FDI by multinational corporations (MNCs), has therefore deepened the integration of the world economy beyond that achieved by international trade alone. The industrialized countries obviously dominate global FDI flows, accounting for more than two-thirds of the world inward FDI stock and around nine-tenths of the outward stock. However, developing countries have been increasing their share in these flows. Much of the increase in FDI inflows to developing countries is, of course, linked to export-oriented manufacturing activities. There is evidence that FDI inflows promote economic development by stimulating productivity growth and boosting exports in the host country.[30] In the modern global economy, FDI is increasingly associated with intra-firm flows of goods and services and with inter-firm alliances of various kinds. Related to this is the importance of cross-border **mergers and acquisitions** (M&As), which now account for the bulk of FDI flows. In 1997, world-wide cross-border M&A transactions amounted to some $342 billion. The dramatic increase in M&A activities in recent years is explained by the strategic considerations of MNCs, but liberalization and de-regulation (e.g. the conclusion of the WTO financial services negotiations in December 1997) have also played a significant role.

3.2.   Trade and the environment
3.2.1. As the pace of globalization has increased in the 1990s, policy makers have also been confronted by increased public concern about the impact that trade liberalization may have on other policy areas. One such area is the environment, where the WTO has been required to mediate in disputes concerning trade-related measures taken by governments for environmental purposes and where there has also been much discussion about the interface between international trade rules and the provisions of different multilateral environmental agreements (MEAs). More generally, the WTO Committee on Trade and Environment has been mandated to "identify the relationship between trade measures and environmental measures in order to promote **sustainable development**". It is important to stress that as trade liberalization has been a powerful engine for the growth of the global economy, it has helped to make available the resources which are needed to advance environmental protection and promote sustainable development. In contrast, trade barriers and domestic policy distortions have constrained the development potential of many countries and led to serious environmental spill-overs.

3.2.2. Thus far, there is little evidence to support the view that trade liberalization is incompatible with countries' sustainable development. On the contrary, trade

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[28] See Masamichi Kono and Ludger Schuknecht, "Financial Services Trade, Capital Flows and Financial Stability", Working Paper No. ERAD-98-12, World Trade Organization, 1998.
[29] Figures in this paragraph are drawn from United Nations, *World Investment Report: Trends and Determinants*, 1998.
[30] See Magnus Blomstrom and Ari Kokko, "How Foreign Investment Affects Host Countries", Policy Research Working Paper No. 1745, World Bank, 1997.

liberalization may provide an important means of decreasing pollution levels. There are three reasons why this may be so. Firstly, trade liberalization can reduce economic distortions which may encourage pollution. For example, one area where environmental problems seem to have risen in recent years is agriculture. The environmental effects of producing additional food to support the world's growing population are influenced by the incentives available to farmers. In many countries, these incentives are distorted by government policies (e.g. tariffs and subsidies). The overuse of agricultural chemicals could be limited by appropriate changes in these policies (e.g. reductions in export subsidies). In addition, reducing tariff escalation in the industrialized countries can relieve pressure on developing countries to specialize only in exploiting their natural resources. Secondly, open economies may be more likely to adopt clean and efficient technologies. One of the reasons why this is so is that increased trade is likely to promote the diffusion of pollution abatement technology and cleaner production techniques. Thirdly, poverty may be at the core of many environmental problems – a clean environment may be too much of a luxury for poorer countries. Insofar as trade promotes economic development, it will contribute considerably to the demand for a clean environment and will also provide the resources to meet this demand. Indeed, if one believes that there is an income-dependent path of pollution that eventually turns downward as countries reach a certain level of development, then increased trade may be essential for tackling environmental problems in poorer countries.[31] It would be wrong, however, to assume that there is an automatic positive link between trade and the environment. Trade liberalization, by promoting economic growth, may be linked to associated environmental problems such as increased CO_2 emissions. To avert the possibility of global warming, current emission trends in many countries will have to be reversed through the use of efficient instruments. Trade barriers will rarely be efficient instruments for dealing with such problems, but there would seem to be a need for better multilateral rules for the environment.

3.2.3. The present paper focuses on the economic impact of a new trade round. Thus, the implications of a round for countries' sustainable development is not a central concern of this paper. Instead, it is explored in more detail in a separate Sustainable Impact Assessment conducted for the European Commission.[32]

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[31] In other words, there may be an Environmental Kuznets Curve (EKC), so that pollution increases at the early stages of development but decreases after a certain income level has been reached. The literature on the EKC is reviewed in Håkan Nordström and Scott Vaughan, *Trade and Environment*, WTO Special Studies, 4, World Trade Organization, 1999.

[32] See Colin Kirkpatrick, Norman Lee and Oliver Morrissey, "WTO New Round Sustainability Impact Assessment Study", 2 volumes, paper prepared for the European Commission, forthcoming.

4. Multilateral trade liberalization and the developing countries

4.1. The developing countries in previous trade rounds

4.1.1. In principle, developing countries should be among the main beneficiaries of a multilateral trade round. There are two reasons for this. Firstly, their exports tend to face higher trade barriers than those of the industrialized countries, and so they have more to gain from multilateral reductions in protection. Secondly, their own levels of import protection tend to be higher than those of the industrialized countries. By reducing these levels of protection, they can therefore benefit from a reallocation of resources away from inefficient sectors towards those in which they have a comparative advantage. Until relatively recently, however, **the developing countries have not been important actors in multilateral trade negotiations**. In the Kennedy and Tokyo Rounds, for example, virtually all the liberalization commitments were made by the industrialized countries. Not only were most developing countries not members of the GATT/WTO, but the majority were pursuing import-substitution policies and were consequently reluctant to dismantle trade barriers. This began to change in the early to mid-1980s, as an increasing number of developing countries began to adopt a more outward-oriented strategy. Nevertheless, the significant trade opening which these countries started to implement was usually based on *unilateral* liberalization, typically as part of structural adjustment programmes supported by the World Bank and the IMF, rather than on *multilateral* liberalization at the GATT/WTO. The fact that they were not major players in multilateral trade negotiations had both advantages and disadvantages for the developing countries. On the one hand, the most-favoured nation (MFN) principle allowed them to "free ride" on other countries' tariff concessions. On the other hand, their lack of participation in multilateral trade rounds may have encouraged the industrialized countries to leave the sectors of greatest interest to the developing countries out of the negotiations.[33]

4.1.2. The Uruguay Round marked the first occasion in which the developing countries were significantly involved in multilateral trade negotiations. Sectors which were of key interest to developing countries featured prominently. One such sector was textiles and clothing, where developing countries secured a phase-out over a ten-year time horizon of the bilateral export restraints agreed under the Multifibre Arrangement (MFA).[34] In agriculture, developing country interests were split between agricultural exporters, who favoured a liberalization of world agricultural trade, and food importers, who were concerned about the potential negative impact of a reduction in industrialized countries' export subsidies on their terms-of-trade. In the end, however, the extent of actual liberalization of agriculture was quite limited.[35] With

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[33] Panagariya (1999) suggests that this was one reason why the Multifibre Arrangement lasted as long as it did. See Arvind Panagariya, "The Millennium Round and the Developing Countries: Negotiating Strategies and Areas of Benefits", paper presented at the Conference on Developing Countries and the New Multilateral Round of Trade Negotiations, Harvard University, 5-6 November, 1999.

[34] Opinions differ as to whether or not this can be regarded as a successful outcome for the developing countries, given that the progress achieved thus far in actual liberalization by many importing countries has not lived up to the expectations of some developing countries. Finger and Schuknecht (1999), for example, argue that "The agreement to remove MFA-based quantitative restrictions on imports of textiles and clothing is of itself a major accomplishment" (p1). However, they then go on to examine the actual implementation of the Uruguay Round Agreement on Textiles and Clothing (ATC) and find that most importing countries have weighted liberalization towards products that were not previously restrained. The complaints of many developing countries as far as implementation of the ATC are summarized by Croome (1998): "They (the developing countries) feel that the importing countries…have disregarded the spirit of the agreement by applying its letter in ways that have brought little or no liberalization so far… They fear that so much liberalization is being left to the final years of the transition period that full integration may in fact not be achieved", (p23). See J. Michael Finger and Ludger Schuknecht, "Market Access Advances and Retreats: the Uruguay Round and Beyond", paper presented at the WTO/World Bank Conference on Developing Countries and the Millennium Round, Geneva, 21-22 September, 1999; and John Croome, "The Present Outlook for Trade Negotiations in the World Trade Organization", Policy Research Working Paper No. 1992, World Bank, 1998.

[35] Ingco (1995) notes that the "tariffication" of non-tariff barriers in agriculture was a major achievement of the Uruguay Round. However, the extent of actual liberalization was limited by binding tariffs to the base period of 1986-1988 (a period when border protection was historically high) and by the problem of "dirty tariffication" (in many countries the new base tariffs resulted in higher protection than the non-tariff barriers they replaced). See Merlinda Ingco,

regard to industrial tariffs, the Uruguay Round resulted in a considerable increase in bindings by developing countries (the share of developing countries' imports of industrial products under bound tariffs rose from 14% to 59%). Developing countries also made significant tariff cuts.[36] However, calculations indicate that in terms of tariff concessions received, they may have done less well than the industrialized countries.[37] Despite these factors, the evidence suggests that the developing countries did make significant gains from the Uruguay Round.[38] These gains probably exceeded what could reasonably have been expected before the negotiations began.[39] Nevertheless, it is fair to say that the developing countries did not make the most of the opportunities which the Uruguay Round presented.

4.1.3. A further difficulty in the Uruguay Round was the **weak participation of the least-developed countries**. For example, it has been calculated that of all the written proposals and comments circulated at the WTO during the Uruguay Round, less than 3 per cent were submitted by sub-Saharan African countries.[40] Part of the explanation for this is that most sub-Saharan African countries have only a minimal representation at the WTO's headquarters in Geneva.[41] In addition, officials from the least-developed countries' often lacked technical expertise in the new topics which were included on the Uruguay Round agenda (e.g. customs valuation, intellectual property rights, sanitary and phytosanitary measures). It is also argued that many least-developed countries may have accepted commitments under the Uruguay Round without fully comprehending their development implications. For example, estimates suggest that for many least-developed countries, the administrative cost of implementing new WTO rules emerging from the Uruguay Round agreements may have amounted to the equivalent of a year's development budget.[42] This is not to suggest that the least-developed countries cannot gain from adopting new WTO rules, but that if such rules are to make a difference they must be accompanied by the infrastructure and institutions which are needed to facilitate development. Trade negotiators in the next round will need to address this issue, perhaps by increasing the coherence between the work of the WTO and that of the IMF and the World Bank. The least-developed

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"Agricultural Trade Liberalization in the Uruguay Round: One Step Forward, One Step Back?", Policy Research Working Paper No. 1500, World Bank, 1995.

[36] Finger and Schuknecht (1999) calculate that tariff cuts by developing countries were actually deeper than those of the industrialized countries. Nevertheless, developing countries' bound rates are still substantially higher than those of the industrialized countries and they also have a larger gap between their bound and applied rates.

[37] See Finger and Schuknecht (1999), *op. cit.*

[38] Studies put the purely static gains for developing countries from the Uruguay Round at around 3 and 4 per cent of GDP. These static gains are likely to be dwarfed by longer-run, dynamic gains. See Joseph F. Francois, Bradley J. McDonald and Håkan Nordström, "The Uruguay Round: A Numerically Based Qualitative Assessment", in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Economies*, World Bank Discussion Papers No. 307, 1995; and Glenn W. Harrison, Thomas F. Rutherford and David G. Tarr, "Quantifying the Uruguay Round" in Martin and Winters (*op. cit.*).

[39] See, for example, Anne O. Kreuger, "Developing Countries and the Next Round of Multilateral Trade Negotiations", Policy Research Working Paper No. 2118, World Bank, 1999.

[40] See E. Olawale Ogunkola, "African Capacity for Compliance and Defence of WTO Rights", paper presented at the African Economic Research Consortium Conference on Africa and the World Trading System, Yaounde, Cameroon, 17-18 April, 1999.

[41] 19 of 42 African WTO member countries have no permanent trade representative at the WTO headquarters in Geneva. In contrast, the average number of permanent Geneva-based trade staff for OECD countries is seven, whilst the average for all developing countries is three and a half. Source: World Bank, *Entering the 21st Century – World Development Report 1999/2000*, Oxford: World Bank, 2000.

[42] Finger and Schuler (1999) review World Bank project experience in the areas of customs reform, the application of sanitary and phytosanitary standards, and the installation of systems of intellectual property rights. They argue that the scope of what the WTO regulates is narrower than what must be done to encourage development. For example, they contrast customs *valuation* with customs *reform*, arguing that it is of little help to change customs valuation procedures if containers stay on the dock for sixty days. They also argue that the WTO reforms generated no sense of "ownership" among the least-developed countries. Instead, they were seen as being imposed by the major trading powers. However, World Bank experience in developing countries highlights the importance of ownership of reforms by the government and the population if they are to have a chance of long-term success. See J. Michael Finger and Philip Schuler, "Implementation of Uruguay Round Commitments: the Development Challenge", paper presented at the WTO/World Bank Conference on Developing Countries and the Millennium Round, Geneva, 21-22 September, 1999.

countries themselves could also consider pooling their negotiating resources in future negotiations.

4.2.   Have the developing countries been marginalized?

4.2.1.   Concerns about the participation of the least-developed countries in the WTO are, in part, a reflection of a wider debate about whether or not developing countries have benefited from the exceptional increase in global trade and investment flows in recent years. Some have argued that globalization has not benefited the developing countries at all, but has instead led to their marginalization. This claim is based on the perception that global trade and investment flows are becoming increasingly concentrated. With the notable exception of East Asia, many developing regions have seen their share of world trade decline over recent decades. For example, Sub-Saharan Africa's share has fallen from around 3 per cent in the mid-1970s to around 1 per cent today. However, this is to ignore the fact that absolute levels of trade (and investment) flows have increased enormously. Thus, **even developing regions which have seen their relative share in world trade decline have experienced an increase in absolute trade**. A recent study shows that, if one corrects for the increase in the absolute levels of trade, the concentration of world trade has actually fallen strongly over the period from 1976 to 1995.[43] Furthermore, trade concentration has fallen amongst relatively open economies but has risen amongst relatively closed economies. This suggests that the weak participation of some developing regions in the global economy may instead be due to inadequate domestic policy environments. Many least-developed countries, in particular, suffer from unstable, unpredictable and inconsistent policy environments which may hinder their ability to participate in, and benefit from, the international economy.[44] Improving the quality of governance in the least-developed countries and increasing the coherence between their trade, development and macroeconomic policies is therefore crucial to enhancing their economic performance.

4.2.2. Far from leading intrinsically to their marginalization, the increased participation of developing countries in the global economy should be enormously beneficial. The channels through which trade liberalization, in particular, can bring about benefits for developing countries can be summarized as follows: "improved resource allocation in line with social and marginal costs and benefits; access to better technologies, inputs and intermediate goods; an economy better able to take advantage of economies of scale and scope; greater domestic competition; availability of favourable growth externalities, like the transfer of know-how; and a shake-up of industry that may create a[n] . . . environment especially conducive to growth."[45] Static gains from increased economic efficiency as a result of resource reallocation are likely to be very high in developing countries, since many start out with relatively highly distorted economies. However, these gains are likely to be dwarfed by dynamic gains over the longer run as economies adjust to factors such as technological innovation and greater competition. Taken together, **the benefits of trade liberalization will raise the returns to productive investment in developing countries, thus enhancing their growth prospects over the medium-term**.

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[43] See Patrick Low, Marcelo Olarreaga and Javier Suarez, "Does Globalization Cause a Higher Concentration of International Trade and Investment Flows?", Working Paper No. ERAD-98-08, World Trade Organization, 1998.

[44] There is strong empirical support for the contention that inappropriate domestic policy environments and the poor quality of governance have retarded trade and growth in sub-Saharan Africa. See Francis Ng and Alexander Yeats, "Good Governance and Trade Policy: Are they the Keys to Africa's Global Integration and Growth?", Policy Research Working Paper No. 2038, World Bank, 1998.

[45] Dornbusch (1992), pp73-74. See Rudiger Dornbusch, "The Case for Trade Liberalization in Developing Countries", *Journal of Economic Perspectives*, 6(1), pp69-85, 1992.

4.3. Key issues for the developing countries in the next round

4.3.1. One of the key objectives for developing countries in the next trade round will obviously be to secure **improved access to industrialized countries' markets for industrial products**. Despite substantial progress by the industrialized countries in lowering trade barriers, there is still considerable scope for developing countries to benefit from further improvements in access to their major export markets. Indeed, Table 4.1 shows that industrialized countries tend to impose much higher trade barriers on imports from developing countries than on imports from other industrialized countries. This reflect differences in the product composition of exports between industrialized and developing countries. For example, labour-intensive manufactures feature more prominently in the exports of developing countries and these tend to face higher trade barriers. This table also shows that developing countries themselves also impose much higher levels of trade protection on imports from other developing countries than on imports from industrialized countries. The share of developing-country manufacturing exports going to other developing countries has been increasing steadily over time. It has been calculated that if current trends continue, developing-country markets will account for over half of developing-country exports of manufactures within the next decade.[46] These trends should be taken into account by developing countries as they approach the next trade round. It is clear that reductions in developing countries' rates of protection have helped to stimulate mutual trade in manufactures between the developing countries themselves.[47] Thus, an increasingly important component of developing countries' market access strategies should be to seek further **improved access to other developing countries' markets**.

Table 4.1. Estimates of MFN applied rates of protection in manufacturing trade by source and destination

	Importing region		
Exporting region	Industrialized countries	Developing countries	World
Industrialized countries	0.8	10.9	3.8
Developing countries	3.4	12.8	7.1
World	1.5	11.5	4.7

Source: Hertel and Martin (1999).

4.3.2. A related industrial market-access objective for developing countries in the next round will be to reduce the degree of **tariff escalation** facing their exports to major markets. Tariff escalation is a feature of most countries' tariff systems. It occurs when higher tariffs are levied on goods at more advanced levels of processing. Thus, raw materials and intermediate products generally have relatively low levels of tariff protection, whilst finished goods produced from those materials generally have relatively high tariffs. This results in high effective protection of the later stages of production. In such circumstances, the nominal tariff can be a misleading indicator of the degree of protection. Tariff escalation is highest in the developing countries, reflecting the legacy of previous import-substitution policies which were designed to foster the manufacture or further processing of natural-resource based products previously exported in primary form. However, most industrialized countries' tariff structures are far from uniform. In practice, industrialized countries' tariff systems can work against developing countries' efforts to move into the later stages of production

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[46] See Thomas Hertel and Will Martin, "Developing Country Interests in Liberalizing Manufactures Trade", paper presented at a Centre for Economic Policy Research Workshop on New Issues in the World Trading System, London, 19-20 February, 1999.
[47] See T.N. Srinivasan, John Whalley and Ian Wooton, "Measuring the Effects of Regionalism on Trade and Welfare", in Kym Anderson and Richard Blackhurst (eds.), *Regional Integration and the Global Trading System*, London: Harvester Wheatsheaf, 1993.

and replace some of their exports of rudimentary goods with those of more finished goods.[48]

4.3.3. Services negotiations will be a major component of the Millennium Round. The services negotiations are likely to focus on widening and deepening the specific commitments on market access and national treatment made in the General Agreement on Trade in Services (GATS). Traditionally, developing countries have been somewhat reluctant to include services in the multilateral trade framework.[49] Today, however, there is increasing recognition that **developing countries could stand to make considerable gains from the further liberalization of trade in services**. Services are becoming increasingly important in the economies of the developing countries. In particular, they are assuming a larger role as inputs to industrial production. By liberalizing their own services sectors, developing countries can therefore improve the competitiveness of their industrial sectors. In the Uruguay Round, the developing countries made far fewer commitments for services liberalization than did the industrialized countries. The GATS agreement covers only 16 per cent of sectors in the developing countries, compared to 47 per cent in the industrialized countries. Furthermore, only 7 per cent of services sectors in developing countries will experience full international competition compared to 25 per cent in industrialized countries.[50] There is therefore significant potential for developing countries to benefit from a further opening-up of their services sectors.

4.3.4. **Agriculture will also be of significant importance** to developing countries in the Millennium Round. In general, industrialized countries' agricultural policy distortions exceed those of developing countries in the three key areas of market access, export subsidies and domestic producer subsidies. It is generally thought that the welfare gains from reducing industrialized countries' distortions in each of these areas could be substantial. One study has suggested that fully one-third of the global welfare gain from eliminating industrialized countries' distortions across all goods sectors could come from removing distortions in agriculture.[51] This study also indicates that the welfare gains to developing countries from removing industrialized countries' distortions in agriculture and processed food are more than twice as large as those which arise from eliminating industrialized countries' distortions in textiles and clothing, and that the cost of these distortions to developing countries are almost as large as the cost of developing countries' own distortions across all goods sectors. Whilst agricultural exporters have the potential to gain from a reform of world agricultural trade, concern has been expressed that food-importing countries may suffer a deterioration in their terms-of-trade should industrialized countries reduce trade-distorting measures in agriculture. Similar concerns were raised during the Uruguay Round, especially in relation to many African and some Middle Eastern

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[48] Laird (1999) notes that "an analysis of tariff escalation by industrial countries in the post-Uruguay Round era shows a substantial loading against imports from developing countries, making it more difficult for them to develop downstream processing. Thus, how to reduce or eliminate . . . tariff escalation is one of the key questions to be addressed in a new round" (p2). See Sam Laird, "Patterns of Protection and Approaches to Liberalization", paper presented at a Centre for Economic Policy Research Workshop on New Issues in the World Trading System, London, 19-20 February, 1999.

[49] Bhagwati (1985) highlights three concerns of developing countries in this respect: that the benefits of multilateral trade rules in services would accrue mainly to the industrialized countries owing to their comparative advantage in services; that the new focus on services would distract the attention of trade negotiators away from trade in goods, especially those where the developing countries enjoy a comparative advantage; and that services include politically sensitive infrastructure activities. See Jagdish Bhagwati, "Trade in Services and Developing Countries", 10th Annual Geneva Lecture delivered at the London School of Economics, 1995.

[50] See Bernard Hoekman, "Assessing the General Agreement on Trade in Services", in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Economies*, World Bank Discussion Papers No. 307, 1995.

[51] Anderson, Hoekman and Strutt (1999). See Kym Anderson, Bernard Hoekman and Anna Strutt, "Agriculture and the WTO: Next Steps", paper presented at a Centre for Economic Policy Research Workshop on New Issues in the World Trading System, London, 19-20 February, 1999.

countries.[52] In fact, supply developments since the conclusion of the Uruguay Round have not borne out these fears. Furthermore, it is increasingly recognized that **even net food-importing countries may gain from a liberalization of world agricultural trade**. This could happen if, following the increase in the price of food, the country switches from being a net importer to being a net exporter of food.[53] It should also be remembered that many net food-importing developing countries have highly distorted agricultural sectors. Recent analysis indicates that when a distortion effect operates alongside the standard terms-of-trade effect, the former can often reverse the impact of the latter.[54] Reducing distortions can also help to stimulate domestic production and even turn some net food-importing countries into net food exporters. Whilst this last beneficial effect cannot be directly attributable to trade liberalization, it illustrates the point that countries need to use the opportunity of global trade reform to tackle domestic policy inadequacies if they are to maximize the potential for gains.

4.3.5. This last point has a more general validity for the discussion of how developing countries can gain from the Millennium Round. **Developing countries' own policies, including their trade policies, are usually the most significant barriers to the expansion of their exports**, and may therefore curtail growth prospects and contribute to marginalization. In many developing countries, the legacy of previous import-substitution policies has created an anti-export bias that still persists. In recent years, the progress made by developing countries in reversing this situation has been substantial. An increasing number of countries which have reduced import protection have managed to benefit from higher levels of export growth. This is not a painless exercise, as there can be adjustment costs arising from resource reallocation across sectors. However, the weight of the evidence suggests that the adjustment costs arising from trade liberalization are typically small for developing countries relative to the overall benefits.[55] Trade liberalization may also have a positive effect on wages and employment, and *ceteris paribus*, on poverty as well, as developing countries shift away from inefficient capital-intensive production towards more efficient labour-intensive production. The increased tendency to adopt outward-oriented trade strategies in the developing countries is to be welcomed. However, **liberal trade regimes are not sufficient** in themselves to ensure higher, sustained growth rates over the medium term. Other ingredients are necessary. These other ingredients include sound macroeconomic policies (including appropriate exchange rates), investment in human capital, improvements in domestic infrastructure and the promotion of good governance and the rule of law. It should also be recognized that trade liberalization is not a panacea for the challenges facing developing countries. In particular, complementary policies are needed in many developing countries to ensure that a larger share of the welfare gains which they can expect from trade reform are allocated to tackling poverty.

4.3.6. Developing countries also need to alter the way in which they approach multilateral negotiations, shifting away from their previous defensive stance towards engaging positively in the mutual exchange of concessions with other WTO members. One issue where developing countries have often adopted a defensive stance in the

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[52] See Ian Goldin and Dominique van der Mensbrugghe, "The Uruguay Round: An Assessment of Economy-wide and Agricultural Reforms" in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Economies*, World Bank Discussion Papers No. 307, 1995.

[53] These and other possibilities for net food-importing countries to gain from agricultural trade liberalization are discussed in Anderson (1992). See Kym Anderson, "Analytical Issues in the Uruguay Round Negotiations on Agriculture", *European Economic Review*, 36, pp519-526, 1992.

[54] See Anderson (1997) and Ingco (1997). James E. Anderson, "The Uruguay Round and Welfare in Some Distorted Agricultural Economies", National Bureau of Economic Research Working Paper No. 5923, February, 1997; and Merlinda D. Ingco, "Has Agricultural Trade Liberalization Improved Welfare in the Least-Developed Countries? Yes", Policy Research Working Paper No. 1748, World Bank, 1997.

[55] Evidence in this respect is reviewed in Matusz and Tarr (1999). See Steven J. Matusz and David G. Tarr, "Adjusting to Trade Policy Reform", Policy Research Working Paper No. 2142, World Bank, 1999.

past is over tariff preferences, such as those granted by all industrialized countries to imports from developing countries under the Generalized System of Preferences (GSP), or those granted by the EU to imports from the African, Caribbean and Pacific (ACP) group of countries. The value of these tariff preferences will be eroded by further multilateral trade liberalization, since importing countries will reduce their MFN tariffs. The erosion of tariff preferences is likely to be strongly resisted by some developing countries. However, the evidence suggests that **the negative impact on developing countries of preference erosion is likely to be small**.[56] The small negative impact needs to be balanced against the large potential gains to developing countries from global trade reform. Furthermore, developing countries will also gain from an erosion in the preferences granted between industrialized countries through free-trade areas and customs unions. A related area where developing countries have maintained a defensive stance is in the practice of so-called "special and differential" treatment. In practice, this has meant that developing countries enjoy more freedom to undertake policies which limit access to their markets or provide support to domestic producers or exporters in ways which are not allowed to other WTO member countries. Whilst this makes accepting the obligations of WTO membership less burdensome for developing countries, it should also be remembered that many of the benefits from the multilateral system only come about because countries have committed themselves to obligations which are difficult to renege upon (the advantages of "tying one's hands"). The rules-based system of the WTO, under which countries must accept binding commitments, offers developing countries the potential to increase the credibility of their trade reforms. The private sector, and international investors in particular, will then be more likely to react favourably to such reforms. This suggests that "special and differential treatment" should focus more on appropriate transition periods rather than allowing countries to permanently escape binding WTO commitments.

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[56] See Raed Safadi and Sam Laird, "The Uruguay Round Agreements: Impact on Developing Countries", *World Development*, 24(7), pp1223-1242, 1996.

5. Modelling multilateral trade liberalization

5.1. The GTAP modelling framework[57]

5.1.1. As the global economy becomes increasingly integrated, there is a greater need to develop tools to study the impact of major policy proposals – such as multilateral trade liberalization through a new WTO round – which are likely to give rise to significant interactions between sectors as well as between countries and regions. Partial equilibrium models, which focus on a single sector in isolation, may be useful for some purposes but they suffer from a key limitation in that they cannot consider inter-linkages between sectors. As a result of this limitation, attention has focused more on general equilibrium models. In the latter, the prices of all goods and factors of production adjust simultaneously until all markets are in (general) equilibrium. The improvement in the quality of economic statistics and the rapid progress which has been made in recent years in the theory and practice of computable general equilibrium (CGE) modelling makes the use of such models an attractive prospect. CGE models were widely used to assess the potential impact of the Uruguay Round negotiations, and it is therefore natural to extend their usage to explore some of the policy issues which will arise in the next WTO round.

5.1.2. Like any economic model, a CGE model is an abstraction from reality that is both complex enough to capture the essential features of an economic situation, yet simple enough to be tractable. A CGE model is a computer representation of a national economy, or a group of national economies, in which the behaviour of economic agents is modelled according to standard assumptions from economic theory (e.g. that firms aim to maximize profits, that households aim to maximize utility). A central feature of CGE models is their input-output structure. Industries are explicitly linked through a value-added chain from primary goods, over continuously higher stages of intermediate processing, to the final assembling of goods and services for consumption. The link between sectors may be direct, like the input of steel in the production of motor vehicles, or indirect, via intermediate usage in other sectors. Sectors are also linked through a number of economy-wide constraints, such as the availability of factors of production. A common assumption in CGE modelling is that all productive resources are fully employed. In this case, all sectors cannot expand simultaneously unless there is technological progress or factor accumulation. The basic way of working with CGE models is through a "comparative static" approach. There involves two stages. Firstly, the model is calibrated so that it reproduces observed patterns of consumption, production and trade in the real economy. This involves constructing simple functional forms to describe the behaviour of representative economic agents and then working backwards from the data so that the transactions of these agents replicate those observed for the real world. This is known as the model's base-case equilibrium. Secondly, the policy experiment is implemented by altering key variables (commonly called a policy shock) and a new equilibrium is calculated. One can then compare the situation before and after the policy change and study the implications for welfare and resource allocation in general.

5.1.3. In order to study the implications of world-wide policy changes on different countries and regions, one needs to rely on a global CGE model. Global CGE models have an underlying structure that is multi-regional as well as multi-sectoral. The Global Trade Analysis Project (GTAP) model is perhaps the most widely used modelling framework for studying the implications of trade policy shocks.[58] The simulations for

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[57] This section draws on Richard E. Baldwin and Joseph F. Francois, *A Computable General Equilibrium Assessment of EU-US Liberalization Measures*, mimeo, European Commission, 1998.
[58] See the volume Hertel, Thomas, W., (ed.), *Global Trade Analysis: Modelling and Applications*, Cambridge: Cambridge University Press, 1996.

the present analysis were run by an independent expert, Professor Joseph Francois of Erasmus University, Rotterdam, who was also responsible for constructing the version of the GTAP model used here. Since different variations of the GTAP model exist at the present time, the remainder of this section is devoted to describing the key features, underlying assumptions and structure of the model used here. The present model has a nine-region, nineteen-sector structure. The classification of the nine regions and nineteen sectors is shown in Tables 5.1 and 5.2. Input-output data for this structure were derived from the GTAP Version 4 database. This combines detailed bilateral trade, transport and protection data characterizing economic linkages among forty-five global regions together with individual country input-output tables which account for linkages among fifty agricultural, industrial and services sectors. The input-output tables include, in turn, information on all intra-industry transactions, payments to factors of production and final demands for goods. Detailed estimates of post-Uruguay Round trade protection rates for each of these regions and sectors are now available and were incorporated into the analysis.

Table 5.1. Model regions

Region	Corresponds to (in GTAP version 4 database)
EU	United Kingdom, Germany, Denmark, Sweden, Finland, Rest of European Union
USA	United States of America
Japan	Japan
Brazil	Brazil
India	India
ASEAN	Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam
Africa	Morocco, Rest of North Africa, South African Customs Union, Rest of Southern Africa, Rest of Sub-Saharan Africa
Other Latin America and Caribbean	Mexico, Central America and the Caribbean, Venezuela, Colombia, Rest of the Andean Pact, Argentina, Chile, Uruguay, Rest of South America
Rest of the World	Australia, New Zealand, Korea, China, Hong Kong, Taiwan, Sri Lanka, Rest of South Asia, Canada, Iceland, Norway, Switzerland, Central European Associates, Former Soviet Union, Turkey, Rest of Middle East, Rest of World

5.1.4. Each region has a single representative, composite household which allocates expenditures over personal consumption and savings (future consumption). The composite household owns endowments of the factors of production (capital, skilled labour, unskilled labour and land) and receives income by selling these to firms. It also receives income from the receipt of tariff revenue and, where applicable, rents from the sale of import/export quota licences. Part of this income is distributed as subsidy payments to some sectors, primarily agriculture. In all sectors, firms employ domestic factors of production as well as intermediate inputs from domestic and foreign sources to produce outputs in the most cost-efficient way that technology allows. The so-called Armington assumption involves treating goods in the same sector but produced by firms in different regions as imperfect substitutes for each other in consumer demand – in other words, there is product differentiation by country of origin. [59] Thus, wheat produced in the European Union is a close but imperfect substitute for wheat produced in the United States. An advantage of the Armington specification is that it allows for differing degrees of substitution among domestic and imported goods and also permits changes in the relative prices of different imported goods. Until relatively recently, most of the CGE-based assessments of multilateral trade liberalization scenarios have been derived from models which have assumed constant returns to

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[59] See Paul A. Armington, "A Theory of Demand for Products Differentiated by Place of Production", *IMF Staff Papers*, 16, pp159-178, 1969.

scale and perfect competition in all sectors. This is obviously somewhat limiting. The model used for the present analysis has a somewhat more sophisticated theoretical structure in that it allows for a mixture of constant returns/perfect competition sectors and sectors which are characterized by increasing returns to scale and imperfect competition (the latter are shown in italics in Table 5.2). In imperfectly-competitive sectors, product differentiation between firms within the same region becomes possible. Imperfect competition also allows for gains from trade through the greater exploitation of economies of scale and through pro-competitive effects. Imperfectly competitive sectors are assumed to display scale economies which are internal to each firm, depending on its own production level. Furthermore, increased specialization at intermediate stages of production yields returns due to specialization, where the sector as a whole becomes more productive the broader the range of specialized inputs. These gains spill-over through two-way trade in specialized intermediate goods. With these spill-overs, trade liberalization can lead to global scale effects related to specialization.

Table 5.2. Model sectors

Sector	Corresponds to (in GTAP version 4 database)
Paddy rice	Paddy rice
Cereals	Wheat, cereal grains
Vegetables, fruit, nuts	Vegetables, fruit, nuts
Oil seeds	Oil seeds
Sugar (raw)	Sugar cane, sugar beet
Plant-based fibres	Plant-based fibres
Other agriculture and forestry	Crops n.e.c., Bovine cattle, sheep and goats, horses, Animal products n.e.c., Raw milk, Wool, silk-worm cocoons, Forestry
Fishing	Fishing
Energy and other minerals	Coal, Oil, Gas, Minerals n.e.c.
Processed agricultural products	Bovine cattle, sheep, goat, horse meat products, Meat products n.e.c., Vegetable oils and fats, Dairy products, Processed rice, Sugar, Food products n.e.c., Beverages and tobacco products
Textiles and clothing	Textiles, Wearing apparel
Motor vehicles and parts	Motor vehicles and parts
Wood products	Wood products
Metals and metal products	Ferrous metals, Metals n.e.c., Metal products
Machinery and equipment	Transport equipment n.e.c., Electronic equipment, Machinery and equipment n.e.c.
Other manufactures	Leather products, Paper products, publishing, Petroleum, coal products, Chemical, rubber, plastic products, Mineral products n.e.c., Manufactures n.e.c.
Trade and transport services	Trade, transport
Business services	Financial, business, recreational services
Other activities	Electricity, Gas manufacture, distribution, Water, Construction, Public administration, defence, education, health, Dwellings

N.B. Sectors in italics are modelled according to the assumptions of imperfect competition and increasing returns to scale. All other sectors are modelled on the basis of perfect competition and constant returns to scale, but with international product differentiation based on the standard Armington assumption.

5.1.5. In the first instance, sectors with positive scale elasticities are assumed to be characterized by Chamberlinian large-group monopolistic competition. Each firm is then a "tiny monopolist", producing a good over which it has a limited degree of market power since it is a close, but imperfect, substitute for the output of many other firms in the same sector. As with perfect competition, the possibility of entry and exit of firms is allowed. This means that excess profits are driven to zero in the long-run. To allow for a more sophisticated treatment of imperfect competition, the Chamberlinian

assumption is replaced by the assumption of Cournot behaviour between oligopolistic firms, i.e. the assumption of large-group behaviour is replaced with one of small-group behaviour. The Cournot assumption is one of the standard means of treating oligopolistic rivalry, in which firms take their rivals' supply of output to be fixed when determining their own output. Since market equilibrium with the Cournot assumption can be interpreted as an equilibrium which has been reached as a result of collusion between the firms in that market, this has obvious advantages over the Chamberlinian approach in terms of its ability to capture anti-competitive practices. Once allowance is made for the possibility of collusion between a relatively small number of large firms rather than competition between a large number of small firms, it becomes possible to study the potential impact on firm behaviour of the introduction of a global competition policy framework. This is done by constructing indices of market power on the basis of price-cost margins, and making the assumption that a WTO competition policy agreement leads to a modest reduction in these market power indices. Because of the assumption of Cournot behaviour, the results from this policy experiment will not be strictly comparable with those from other experiments where monopolistic competition is assumed.

5.1.6. The model allows for steady-state trade-investment linkages through a capital market closure rule which involves fixed net capital inflows and outflows. There is therefore a limited dynamic link between trade and investment. The static or direct income effects of trade liberalization can induce shifts in the regional pattern of savings and investment.[60] These effects relate to classical models of capital accumulation and growth. Depending on factors such as the marginal product of capital and underlying savings behaviour, these "accumulation effects" can compound initial output and welfare gains over the medium-run, and can magnify income gains and losses. However, the sort of important endogenous growth mechanisms discussed in section 2 are not captured here, since new trade-growth linkages have not yet been widely incorporated into applied economic models. The limited manner in which global trade models treat investment flows means that it is not possible to use the present model to study the potential impact of a WTO agreement on investment. Instead, the quantitative analysis presented in section 6 relies on a somewhat crude estimate of the gains from such an agreement which has been derived from an independent source. Other limitations of the model also deserved to be mentioned. One is that rent-seeking behaviour is not captured. Thus, the model may underestimate the gains from trade liberalization by failing to take into account the potential impact of reduced rent seeking. In addition, one of the principal limitations of the present model is that, like almost all CGE models used for assessing multilateral trade liberalization, it starts with the basic assumption of full employment of all productive factors at all times. This assumption has to be modified to take into account adjustment costs.

5.2.   The protection data

5.2.1. In order to run a global CGE model it is necessary to employ a database which is exhaustive in its coverage of regions and sectors. The GTAP Version 4 database takes 1995 as its base year, and compatible post-Uruguay Round tariff vectors are now available for this. [61] The main source of information on import tariffs for industrial products in the GTAP Version 4 database is the WTO Integrated Database (IDB), which contains the basic records of the outcome of the Uruguay Round negotiations. It

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[60] This is described in more detail in Joseph F. Francois, Bradley J. McDonald and Håkan Nordström, "Capital Accumulation in Applied Trade Models", in Joseph F. Francois and Kenneth A. Reinert (eds.), *Applied Methods for Trade Policy Analysis: A Handbook*, Cambridge: Cambridge University Press, 1997.
[61] See Joseph Francois and Anna Strutt, "Post-Uruguay Round Tariff Vectors for GTAP Version 4", mimeo, January, 1999.

contains information on the *ad valorem* equivalents of specific tariffs. The IDB data is used to calculate averages of MFN applied tariffs obtained at the tariff line level and aggregated up to the GTAP concordance using trade-weights. Because of the fact that there can be considerable variations in tariff rates at the tariff line level within a GTAP sector, trade-weighting can sometimes give rise to very large differences in bilateral tariffs. Imports from two countries which would normally be subject to the same MFN tariffs at the tariff-line level need not, therefore, be subject to the same bilateral tariff at the GTAP sectoral level. In addition, some regional tariff preferences are included in the bilateral tariff data (corresponding to the major regional trading arrangements). The GTAP protection data also include a limited amount of information on industrial non-tariff barriers, the tariff-equivalents of which are derived by calculating the wedge between domestic and world prices.

5.2.2.   In relation to agricultural products, the information on protection and support in the GTAP Version 4 database is based on the latest available OECD estimates of Producer Subsidy Equivalents (PSEs). The PSE provides a concise measure of the transfers to producers resulting from government policies, capturing both market price support and subsidies. The market price support component of the PSE is calculated using the wedge between domestic and world prices, and captures the effects of import tariffs and equivalent measures as well as export subsidies. Some developing countries also make use of import subsidies for key agricultural products which form part of the staple diet of their populations. An import subsidy in effect constitutes negative protection and will give rise to a negative figure for the market price support component of the PSE measure. The production subsidy component of the PSE captures direct and indirect transfers to producers as a result of government policies. This includes such transfers as the EU's area and headage payments. It should be noted that the PSE measure is not the same as the Aggregate Measure of Support (AMS) which was used in the Uruguay Round negotiations on agriculture. The AMS is not an economically meaningful estimate of producer support because certain types of subsidy involving direct payments to farmers were deliberately excluded from its calculation. It should also be pointed out that the OECD has recently changed the PSE classification, principally in order to take better account of different types of direct payments.[62]

5.2.3.   In relation to services trade, the task of deriving estimates of protection rates (in terms of tariff-equivalents) is made extremely difficult by the different nature of the trade barriers which apply to this form of trade as opposed to trade in goods.[63] Barriers to international trade in services do not take the form of import tariffs, but rather of a complex variety of prohibitions, quantitative restrictions and government regulations. An example of the latter are the regulations on the movement of persons. Some types of services rely on physical movement of workers. However, it is very difficult to have a clear idea of the tariff-equivalents of such measures. Until now, empirical researchers have tended to use "guesstimates" of the degree of protection afforded by countries to their services sectors which are derived from the commitments made in countries' GATS schedules.[64] Despite the usefulness of these guesstimates, there is a widespread view that they may have overestimated the degree of protection in services markets.[65] For the present study, a different approach

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[62] It has, at the same time, changed the name of this measure to Producer Support Estimate. The main components of the old and new PSE measures are, however, basically the same.
[63] This issue is discussed in Bernard Hoekman and Carlos A. Primo Braga, "Protection and Trade in Services", Policy Research Working Paper No. 1747, World Bank, 1997.
[64] The guesstimates are derived in Bernard Hoekman, "Assessing the General Agreement on Trade in Services", in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Economies*, World Bank Discussion Papers No. 307, 1995.
[65] Many researchers have chosen to scale down the guesstimates. See, for example, Australian Department of Foreign Affairs and Trade, *Global Trade Reform: Maintaining Momentum*, 1999.

was used to derive estimates of the degree of protection applying to services. This was based on results generated by a gravity model of services trade. The resulting estimates of protection rates are somewhat more modest than the more commonly used guesstimates. However, as in any exercise of this sort, it is difficult to determine the accuracy of the figures used. Given the importance of services sectors in both industrialized and developing countries, this provides an important caveat for the results generated by the model.

6. Quantifying the benefits

6.1. The policy experiments

6.1.1. Two different policy experiments were conducted in order to quantify the potential impact of key areas of multilateral liberalization which might feature in the sort of comprehensive trade round which the EU is proposing. **Experiment 1 focuses on the core issues of market access and trade facilitation**. In relation to market access, the effects of "across-the-board" reductions in protection in all agricultural, industrial and services sectors are modelled. An attempt is made to quantify the impact of both a 20 per cent and a 50 per cent cut in applied protection by all regions in each of these three areas.[66] Both the 20 per cent and 50 per cent global liberalization scenarios are each combined with estimates of the potential impact of a multilateral agreement on trade facilitation. This is done by assuming that such an agreement leads to a modest reduction of 1 per cent in international trade costs.

6.1.2. **Experiment 2 considers the potential benefit to be derived from a WTO agreement on trade and competition policy**. For this experiment, a change in the model's underlying assumptions regarding the nature of imperfect competition is required. It is assumed that sectors are either perfectly competitive or oligopolistic (rather than, as previously, perfectly competitive or monopolistically competitive).[67] It is further assumed that a WTO agreement leads to a modest reduction in the degree of collusion between firms operating in oligopolistic markets. This is done by deriving indices of market power which are constructed from estimates of mark-ups of price over marginal costs. The index ranges from $i = 0, . . . , 1$, where 0 is perfect competition and 1 is full collusion (equivalent to monopoly). The policy experiment involves reducing this index by 10 per cent, i.e. a figure of 0.5 would become 0.45 after the policy experiment.[68]

6.1.3. There are a number of important areas of potential liberalization which may feature in a comprehensive Millennium Round which are not covered by the policy experiments in the present study. An attempt is nevertheless made to quantify the potential impact of an WTO agreement on investment, although this cannot be done within the framework of the model. There is also a brief discussion of the possible environmental implications of the Millennium Round. The inclusion of other topics in the agenda for the Millennium Round (e.g. agreements on intellectual property and government procurement) could add significantly to the round's overall impact on global welfare. In this respect, the results presented below may underestimate the full welfare gains which the round could generate.

6.1.4. Before proceeding, it is perhaps useful to highlight the fact that **there are a number of important caveats which should be borne in mind when interpreting the results generated by the model**. The first such caveat applies to the protection data. The model has been run with the most recent estimates of post-Uruguay Round protection rates for agricultural and industrial sectors. However, the accuracy of these estimates is likely to vary somewhat across countries and sectors. In relation to services trade, an attempt has been made to improve on the standard "guesstimates" of the tariff equivalents of protection which are commonly used in empirical work. The figures used in the present study appear to be more reasonable than these guesstimates. However, as in any exercise of this sort, it is difficult to determine the

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[66] The underlying assumption is that all countries participate in the liberalization of trade barriers. This is equivalent to assuming that countries such as China and the Russian Federation have joined the WTO.

[67] The behaviour of firms in oligopolistic markets is modelled according to the *Cournot* assumption, whereby firms compete on the basis of quantities.

[68] Note that because of the differences in the model's underlying assumptions about the nature of imperfect competition, the results generated for the competition policy experiment are not strictly comparable with the results from the market access/trade facilitation experiment.

accuracy of the figures used. A second caveat applies to the model's underlying assumptions and, in particular, to the categorization of different sectors as exhibiting either perfect competition and constant returns to scale or imperfect competition and increasing returns to scale. Clearly, the definition of sectors in this model involves applying rather aggregate labels to describe often very varied industries. It is inevitable that a certain amount of detail will be lost in this process. Many industries which are described according to one categorization may contain many branches where the other categorization is more appropriate. Furthermore, it may not be appropriate to apply the same categorization of a particular sector across all countries. A final caveat concerns the estimates of the various elasticities which are contained in the model. These parameters correspond more or less to a certain consensus which exists among applied researchers, given the estimates which have been derived from empirical work. However, it is worth emphasizing that they are still only estimates. The above concerns may tend to cancel out at a more aggregate level. This implies that one may have somewhat more confidence in the model's overall results than on its more detailed estimates.

6.2.   Experiment 1: market access negotiations and trade facilitation

6.2.1. The results from experiment 1 indicate that the welfare gains from further improvements in market access and from a modest reduction in trading costs due to an agreement on trade facilitation could be substantial. It is estimated that **the global welfare gain from the market access plus trade facilitation package could be close to $400 billion**. In order to put this figure in context, it should be pointed out that it is the equivalent of adding an economy the size of the Netherlands or the Republic of Korea to the world economy each year. Another way to appreciate the magnitude of the gains from further multilateral trade liberalization is to note that the figure of $400 billion is around twice the OECD estimate of the benefits of full implementation of the Uruguay Round.[69] The model also predicts that **all regions stand to benefit from further multilateral liberalization, although the distribution of welfare gains is likely to be somewhat uneven**. To a large extent, this reflects the large differences between countries in their existing levels and patterns of trade protection. An important point to bear in mind is that the greatest gains from multilateral trade liberalization are usually derived when countries dismantle their own trade protection.

6.2.2. The negotiations on market access for agricultural, industrial and services products will be at the core of the Millennium Round negotiations. Agriculture and services will certainly feature in the talks, as these issues were included in the "built-in agenda" of ongoing liberalization established at the end of the Uruguay Round. Industrial products have featured in every previous multilateral trade round, and seem very likely to be included in the agenda for the Millennium Round. In addition to these core market access negotiations, there is also considerable support for including trade facilitation on the agenda of a new round. Table 6.1 presents the results generated by the CGE model for the impact on welfare of a 20 per cent and a 50 per cent "across-the-board" reduction in applied rates of protection by all countries in agriculture, industrial products and services coupled with an agreement on trade facilitation which results in a 1 per cent reduction in the transactions costs of international trade. The results are presented in terms of 1995 US dollars.[70] As can be seen from this table, the model suggests that the global annual welfare gain could range from $219 billion, in the case of the 20 per cent scenario, to $385, in the case of the 50 per cent

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[69] The OECD estimates that liberalization under the Uruguay Round has generated an a global welfare gain of around $200 billion per annum. See OECD, *Open Markets Matter: the Benefits of Trade and Investment Liberalization*, 1998.
[70] Figures derived from the GTAP Version 4 database are all in 1995 US dollars. Presenting the figures in these terms also facilitates comparisons with other similar studies.

scenario. This would be the equivalent of an annual increase in global welfare of between 0.8 per cent and 1.4 per cent.

Table 6.1. Experiment 1: Market access and trade facilitation
Estimates of medium-run annual welfare gains

	20 per cent global cut in applied protection in agriculture, industrial products and services, plus trade facilitation agreement		50 per cent global cut in applied protection in agriculture, industrial products and services, plus trade facilitation agreement	
	1995 US $ Billions	Welfare %age	1995 US $ Billions	Welfare %age
EU	46	0.7%	92	1.4%
USA	28	0.5%	45	0.7%
Japan	25	0.7%	47	1.3%
Brazil	11	2.0%	28	4.9%
India	5	2.1%	11	4.4%
ASEAN	27	6.6%	43	10.4%
Africa	3	0.9%	6	1.6%
Other Latin America and Caribbean	22	2.8%	50	6.3%
Rest of the World	51	1.4%	63	1.7%
TOTAL	219	0.8%	385	1.4%

Source: Commission services.

Note – the results in this table are derived on the basis of an underlying assumption that sectors are either perfectly competitive and exhibit constant returns to scale, or are monopolistically competitive with increasing returns to scale.

6.2.3. The estimates in Table 6.1 indicate that the potential welfare gain for the **European Union** from the market access plus trade facilitation package could amount to an annual windfall of between $46 billion and $92 billion. This is equivalent to an annual welfare gain of between 0.7 and 1.4 per cent. In percentage terms, the welfare gains to the EU are similar to those enjoyed by Japan but larger than those which accrue to the United States. A number of factors explain the large gains for the EU. Firstly, agriculture is currently rather highly protected in the EU and liberalization in this area could provide important benefits for EU consumers. Secondly, EU producers of industrial products would stand to make gains from improved access to foreign markets, especially in developing countries, where they currently face relatively high trade barriers. One important difference between the EU and the United States is that, because of NAFTA, the latter already conducts a much larger share of its trade on a relatively free basis. This means that, in relative terms, the impact of further *multilateral* liberalization on the degree of access to foreign markets is likely to be more important for the EU than for the United States. Thirdly, given that the EU is the world's largest exporter of commercial services, and given also the high share of services in EU GDP, it is hardly surprising that the simulations suggest that the EU stands to make large gains in services sectors. However, it is important to stress the fact that the prediction of potentially large welfare gains for the EU derives mainly from its current pattern of protection. Agriculture currently benefits from a relatively high degree of protection in the EU compared to other sectors. An important general equilibrium effect of EU liberalization will therefore arise from the incentive for resources to move out of relatively highly protected sectors and into sectors in which the EU has a comparative advantage or which benefit from scale economies. With multilateral liberalization, EU industrial and services sectors would then be in a

relatively stronger position to expand and take advantage of improved access to foreign markets. Also of interest is the potential impact of a trade round on employment in the EU. Unfortunately, this experiment does not lend itself to estimating employment effects since the underlying model assumes full employment. A version of the model has been adapted to allow for wage rigidities and, thereby, unemployment. This generates an employment effect in the EU from trade liberalization, but this is modest.

6.2.4.   For the **United States**, the results suggest that the annual welfare gain from the market access plus trade facilitation package could be between $28 billion and $45 billion. This is equivalent to an annual welfare increase of between 0.5 and 0.7 per cent. The benefits for the US are therefore large, but not as large as in the case of the EU. To a large extent, the explanation for this difference lies in the current pattern of US trade protection. This is currently highest in industrial sectors (e.g. textiles and clothing) which are, for the most part, treated as exhibiting increasing returns to scale under the assumptions made here. Thus, as the US reduces protection, the scope for it to benefit from resource reallocation into sectors with scale economies is not as large as in the case of the EU. In addition, as has already been noted, the US already conducts a relatively high share of its foreign trade on a close to free basis. Further improvements in access to foreign markets are therefore worth less to the US than to the EU. **Japan** presents the opposite case to the US in terms of its current pattern of protection. Japanese protection is currently most severe in the agricultural sectors. Indeed, the Japanese agricultural sectors have the highest level of protection among the major industrialized economies. Japanese consumers therefore stand to make large welfare gains as these sectors are opened up to foreign competition. However, Japan can also benefit from a more neutral pattern of incentives which would encourage resources to move out of agriculture and into industrial sectors, where it can benefit from increased specialization and the exploitation of economies of scale. These factors provide the main explanations for the model's prediction of large potential welfare gains to the Japanese economy from a global cut in protection of between $25 billion and $47 billion on an annual basis (the equivalent to an annual welfare increase of between 0.7 and 1.3 per cent).

6.2.5.   The results in Table 6.1 indicate that over half the global welfare gains from the market access plus trade facilitation package will accrue to regions outside the major industrialized countries. In particular, a large share of the global welfare gains will go to developing countries. Among the various developing regions, the **ASEAN countries** could emerge as major beneficiaries from a new trade round. The annual welfare gain for these countries could be between $27 billion and $43 billion, depending on the scale of the multilateral increase in market access. This would be the equivalent of an annual welfare change of between 6.6 and 10.4 per cent. The potential for very large gains from the market access and trade facilitation package is explained by these countries' very high trade to GDP ratios compared to other developing regions, and by their existing patterns of trade protection. The former implies that the ASEAN countries stand to make large gains from an agreement on trade facilitation, whilst the latter implies that they have a significant potential to benefit from a reallocation of resources out of currently highly protected sectors into sectors in which they have a comparative advantage.

6.2.6.   Table 6.1 model also suggests that there could be large gains for Brazil and other Latin American countries from the market access plus trade facilitation package. In recent years, many countries in this region have made significant progress in adopting comprehensive trade reforms as part of wide-ranging structural adjustment programmes. However, the results from the present analysis indicate that further market opening on a multilateral basis would yield significant additional benefits for

the region. In the case of **Brazil**, there is still relatively high protection in a number of industrial sectors, with a very high degree of tariff escalation in some cases.[71] Additional trade reform offers Brazil the opportunity to benefit from more efficient allocation of resources across sectors which would follow from a lower and more uniform structure of protection. The predicted annual welfare gain for Brazil ranges from $11 billion, in the case of a 20 per cent global reduction in protection, to $28 billion, under a 50 per cent global cut. In percentage terms, this is equivalent to an increase in welfare of between 2 and 5 per cent. A similar story applies to **other Latin American countries**, for whom the annual welfare gains from the market access plus trade facilitation package could be even larger. The predicted annual welfare gain for these countries ranges from $22 billion, which is equivalent to a 2.8 per cent increase in annual welfare, to $50 billion, which is equivalent to a 6.3 per cent increase in welfare.

6.2.7.   Table 6.1 also indicates that **India** could potentially stand to make large gains from a global reduction in protection across agricultural, industrial and services sectors, and a multilateral agreement on trade facilitation. The annual welfare gain for India from this package is estimated at between $5 billion and $11 billion – which, in percentage terms, is equivalent to an increase of between 2 and 4.4 per cent in annual welfare. Like the reforms which the country undertook in the early 1990s, multilateral trade liberalization offers India the chance to benefit from reversing its traditional stance of favouring inefficient import-competing sectors and penalizing exporting activities, particularly in labour-intensive manufactures.[72] As India gains improved access to foreign markets from a new round, its manufacturing industries will therefore be in a stronger position to benefit from increased specialization in sectors in which it has an underlying comparative advantage. Finally, Table 6.1 indicates that **Africa**, too, would benefit from further multilateral trade liberalization over the medium run. The predicted gains for Africa range from $3 billion to $6 billion. In percentage terms, this is equivalent to an annual welfare gain of between 1 and 1.6 per cent. To appreciate the significance of the potential welfare gain for Africa, it is worth noting that the upper figure is equivalent to adding an economy the size of Ghana to Africa's GDP on an annual basis. Nevertheless, the gains for Africa from the market access plus trade facilitation package are more modest than is the case for most other developing regions. There are two main factors underlying this result. Firstly, although many African countries have made important strides in opening up their economies in recent years, protection remains high, especially in some sectors.[73] There is therefore scope for Africa to benefit from further reducing its own levels of protection. However, since its exports to industrialized countries already face relatively low tariff barriers compared to other developing regions, it does not stand to gain as much as the latter from further improvements in market access. Secondly, Africa is at present heavily reliant on food imports. Since the liberalization scenarios considered here involve substantial cuts in agricultural price distortions among major supplying nations and consequent reductions in subsidized exports, they necessarily give rise to

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[71] Tariff escalation in Brazil and other Southern Cone countries is discussed in Sam Laird, "MERCOSUR: Objectives and Achievements", Working Paper No. TPRD-97-002, World Trade Organization, 1997.

[72] India's inward-oriented trade and investment regime seems to have been a major contributory factor to its extremely disappointing productivity performance over much of the post-war period. See, for example, Jagdish Bhagwati, *India in Transition: Freeing the Economy*, Oxford: Oxford University Press, 1993. As a result of reforms begun in the early 1990s, India was able to attract larger inflows of foreign investment and also increased its participation in international trade. As a result, India achieved annual average growth rates of GDP of 7 per cent between 1993 and 1996. Economic growth has slowed since then, however, and this has prompted calls for India to renew the impetus for trade and investment liberalization (see WTO Secretariat, *Trade Policy Review Mechanism: India*, WTO, 1998) as a means of revitalizing the economy. The present analysis suggests that increased multilateral opening of the Indian economy as part of a global package of trade reform could be of immense help in this respect.

[73] See, for example, Jeffrey Sachs and Andrew M. Warner, "Sources of Slow Growth in African Economies", *Journal of African Economies*, October, 1997. It should be noted that, following economic reforms in many sub-Saharan African countries, the pattern of protection differs significantly between sub-Saharan Africa and North Africa. Africa is therefore a very heterogeneous region as far as the present model is concerned.

an increase in world prices. This will obviously have negative repercussions on food-importing regions, but the potential positive supply response to higher world prices from African producers is not fully taken into account. The key question for African governments is whether they can seize the opportunities which a new trade round will provide. If multilateral trade liberalization in agriculture were to be accompanied by key structural reforms in African economies, the welfare gains to Africa could be significantly higher than those presented in Table 6.1. However, experience from the Uruguay Round shows that there is nothing automatic about this happening.

6.2.8. A final point should be stressed in relation to the model's predictions of significant welfare gains from the market access plus trade facilitation package. There is an important distinction to be made between applied rates of tariff protection and bound rates (also known as tariff ceilings). Applied rates are those tariffs which are actually levied. Bound rates, on the other hand, refer to the maximum levels which countries have committed themselves at the WTO not to exceed. In most cases, the distinction between bound and applied tariffs is unimportant for the industrialized countries, since the difference between the two is usually not significant. For developing countries, on the other hand, the difference between bound and applied rates is often very large. Not only does this reduce the degree of certainty which can be attached to developing countries' trade policies, it also means that many developing countries could conceivably agree to make significant reductions in tariff bindings without actually changing their applied rates of protection by very much. The problem is that WTO negotiations usually focus on achieving reductions in bound tariff rates. When countries agree to reduce their bound rates, it is assumed that applied rates adjust by the minimum amount necessary to ensure that they do not exceed the former. If developing countries were to only agree to minimal reductions in bound rates which did not lead to a significant liberalization of applied rates, this would obviously reduce the benefits which they might obtain from the Millennium Round. This is due to the fact that most of the benefits which countries can expect from multilateral trade liberalization are usually obtained from reductions in their own levels of trade protection.

6.3.   Experiment 2: trade and competition

6.3.1. If the Millennium Round is to be truly comprehensive in scope, it will need to go beyond traditional market access concerns and address other issues which are of importance to the global trading system. One such issue is trade and competition. The EU supports the adoption by the WTO of a binding framework of multilateral rules on competition. The basic architecture of such a framework could include core principles and common rules relating to the adoption and enforcement of competition law, common approaches on anti-competitive practices with a significant impact on international trade and investment, and international co-operation on competition policy. In order to model the potential impact of such a multilateral framework, it is necessary to make change some of the underlying assumptions in the CGE model. Firstly, sectors which were previously modelled as monopolistically competitive are now treated as oligopolistic.[74]   Secondly, it is assumed that the adoption of a multilateral framework of rules on trade and competition leads to a very modest reduction in the degree of collusion between firms in oligopolistic sectors. This second assumption is implemented by constructing market power indices on the basis of price-cost mark-ups. The indices range from $i = 0, . . . , 1$, where 0 is perfect competition and 1 is full collusion (equivalent to monopoly). The policy experiment involves reducing these indices by 10 per cent, i.e. a figure of 0.5 would become 0.45

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[74] In particular, oligopolistic firms are assumed to adopt Cournot behaviour. In other words, they compete over quantities.

after the policy experiment. Table 6.2. presents the results of this experiment in terms of welfare gains for the regions in the model. Because of the differences in the underlying assumptions about the nature of imperfect competition, the results in this table are not strictly comparable with those shown in Table 6.1. for the market access plus trade facilitation experiments.

Table 6.2. Experiment 2: Trade and competition policy
Estimates of medium-run annual welfare gains

	1995 US $ Billions	Welfare %age
EU	7	0.1%
USA	9	0.2%
Japan	12	0.4%
Brazil	6	1.1%
India	1	0.5%
ASEAN	5	1.2%
Africa	4	1%
Other Latin America and Caribbean	10	1.2%
Rest of the World	30	0.8%
TOTAL	**84**	**0.3%**

Source: Commission services.

Note – the results in this table are derived on the basis of an underlying assumption that sectors are either perfectly competitive or oligopolistic.

6.3.2. As can be seen from Table 6.2, the global welfare gain from a multilateral agreement on trade and competition which results in a modest reduction in the degree of collusion between firms in oligopolistic markets is potentially large. Such an agreement could add an estimated $84 billion to global welfare on an annual basis. As in the previous policy experiment, the benefits are distributed somewhat unevenly between regions. This reflects the fact that regions differ in terms of the relative importance of oligopolistic sectors in their economies. In addition, the degree of presumed oligopolistic collusion (calculated on the basis of price-cost mark-ups) also varies between regions. As one would expect, regions which already benefit from well established competition policy frameworks gain least. Only one-third of the global welfare gains accrue to the major industrialized countries. The percentage change in welfare for the EU and the United States from the agreement is only between 0.1 and 0.2 per cent. For Japan, on the other hand, the potential welfare gains is somewhat larger, at 0.4 per cent. For the developing regions, the benefits of a WTO agreement on trade and competition increase still further. For the ASEAN countries, for example, the potential annual welfare increase is estimated to be 1.4 per cent. This reflects the relatively high exposure to international trade of ASEAN countries coupled with the estimated high degree of collusion in oligopolistic sectors (computed from estimates of price-cost margins). The fact that developing regions are the major potential beneficiaries of a multilateral agreement on trade and competition should be borne in mind when considering what are the appropriate transition periods for countries to adopt such a framework.

6.4.   A WTO agreement on investment

6.4.1. Another issue which could feature on the agenda of a truly comprehensive trade round is investment. The rapid growth of FDI flows in recent years, particularly to developing countries, has reinforced the need for more comprehensive rules in this domain. The desire of developing countries to attract increased FDI inflows reflects the view that such inflows may promote economic development by stimulating

productivity growth and boosting exports.[75] The growth of FDI flows has been facilitated by the adoption of bilateral investment treaties (BITs). However, despite the proliferation of BITs in recent years, this does not guarantee the objective of a stable and predictable climate for investment on a world-wide basis. There are sound economic reasons for seeking to establish such a climate through a rules-based multilateral investment regime. For example, if incumbent firms in potential host countries are able to block the entry of foreign firms, they may be able to capture producer rents but these are likely to be offset by the welfare losses to consumers resulting from reduced competition. This is because the basic problem when firms have a monopoly position is one of under-production – the price at which monopolists sell their output exceeds marginal cost. A multilateral agreement that grants foreign firms access to such protected markets could be beneficial to both host and source countries. Consumers in the host country would benefit from reducing domestic firms' monopoly power. This would promote economic efficiency – the benefits to consumers from the additional units of output that would then be supplied would outweigh the resource cost of producing them. A binding multilateral framework would also enhance the credibility of host countries' policy regimes. If potential investors are risk averse, the adoption of more investment-friendly policies may be insufficient by themselves to enable countries to benefit from increased inward flows of FDI. This is especially so in countries with a history of policy reversals. By committing themselves to accept international rules, on the other hand, countries can make credible guarantees against further policy reversals, thus anchoring the expectations of investors.

6.4.2. There is already some history of this issue being discussed at the WTO. The Uruguay Round negotiations led to the WTO Agreement on Trade-Related Investment Measures (TRIMS). The TRIMS agreement is not intended to regulate investment as such, but rather to prevent countries from introducing trade-distorting investment measures, such as local content requirements. The WTO has also established a Working Group on the Relationship between Trade and Investment. The WTO would therefore seem to be a logical place to begin negotiations on a multilateral investment framework. This is especially true given the difficulties encountered by the industrialized countries in seeking to negotiate a Multilateral Agreement on Investment (MAI) at the OECD. One obvious advantage of conducting negotiations at the WTO rather than the OECD is that it would enable both industrialized and developing countries to shape the agreement. There is nevertheless a reluctance on the part of some countries to include investment in the new WTO negotiations.[76] Perhaps part of the explanation for this reluctance can be found in the fact that it is difficult to arrive at a quantitative estimate of the benefits from a multilateral investment framework. Because of this, countries may not have a clear idea of what would be at stake in such negotiations and of what the potential benefits to themselves could be.

6.4.3. Trade and investment linkages in global CGE models are treated in a somewhat simplistic manner. This applies even to models, such as the present one, with an endogenous capital stock. Thus, it is not possible to use this version of the GTAP CGE model to study the potential economic impact of the introduction of a WTO agreement on investment. Instead, the present analysis relies on an independent estimate of the possible welfare gains which has been produced in a somewhat crude manner. This independent estimate puts the annual welfare gain for the world as a whole from adopting such an agreement at around $75 billion.[77] This

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[75] See Magnus Blomstrom and Ari Kokko, "How Foreign Investment Affects Host Countries", Policy Research Working Paper No. 1745, World Bank, 1997.

[76] See Bernard Hoekman and Kamal Saggi, "Multilateral Disciplines for Investment-related Policies?", paper presented at the Istituto Affari Internazionali Conference on Global Regionalism, Rome, 8-9 February, 1999

[77] See Edward M. Graham, "Trade and Investment at the WTO: Just Do It!", in Jeffrey J. Schott (ed.), *Launching New Global Trade Talks: An Action Agenda*, Washington, D.C.: Institute for International Economics, Special Report N° 12, September, 1998, p37.

estimate is derived by noting that a conservative estimate of the value-added by overseas affiliates of multinational firms is in excess of $1.5 trillion annually. This figure is considered to be a conservative underestimate because it does not take into account the value-added created by suppliers to these affiliates or by parent operations. Nevertheless, it can be taken as approximately correct. Thus, if the adoption of a WTO investment framework results in improved resource allocation to the extent of a 5 per cent additional benefit, this would give an annual welfare gain of $75 billion. One would expect the welfare gains to be concentrated more among those countries where the current investment regime is most in need of improvement. In other words, many developing countries could be significant beneficiaries.

6.5. The impact on the environment

6.5.1. Because of data limitations it is difficult to capture the environmental impact of trade liberalization measures through the use of applied economic models.[78] Whilst data is available for the pollution content of different industries in the case of specific countries, there is currently no general database of industry-specific pollution data on a country-by-country basis.[79] If such a database were available, it would be possible to use a CGE model to simulate changes in production and consumption patterns that are likely to arise from trade liberalization and then to use these results to calculate the associated changes in pollution by different industries. Such an exercise can capture what is referred to as the *composition effect* of trade liberalization on the environment (if expanding export sectors are less polluting on average than contracting import-competing sectors, the impact of trade liberalization on local environmental quality will be positive). It can also capture the *scale effect* of trade liberalization (by stimulating growth, trade liberalization may be associated with greater use of resources and increased pollution). However, it cannot capture the crucially important *technique effect* (the income-induced reduction in pollution per unit of output). To capture this latter effect one also needs to know how different governments will respond to income growth in terms of upgrading their environmental standards. Working within these limitations, empirical researchers have constructed numerical models which can be used to study the impact of trade liberalization on environmental quality. These models show that trade liberalization may be detrimental to the local environment in countries with a comparative advantage in more pollution-intensive industries, but may improve local environmental quality elsewhere. However, a key result of these models is that the welfare gains associated with trade liberalization are likely to be sufficiently large to pay for additional abatement costs in order to undo any harmful repercussions on the environment and still leave a significant net surplus. This finding helps to illustrate the more general point that trade barriers are not a substitute for sound environmental policies. Trade liberalization can be combined with improved environmental policies and enhanced co-operation at the international level to enhance sustainable development.

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[78] This paragraph draws on Håkan Nordström and Scott Vaughan, *Trade and Environment*, WTO Special Studies, 4, World Trade Organization, 1999.
[79] A tentative analysis of the pollution content of EU manufacturing trade can be found in the chapter on 'Trade and Environment' in European Commission, *The European Union as a World Trade Partner*, European Economy Reports and Studies, No. 3, 1997.