

## EXECUTIVE SUMMARY

### TRADE IN A GLOBALIZING WORLD

International trade is integral to the process of globalization. Over many years, governments in most countries have increasingly opened their economies to international trade, whether through the multilateral trading system, increased regional cooperation or as part of domestic reform programmes. Trade and globalization more generally have brought enormous benefits to many countries and citizens. Trade has allowed nations to benefit from specialization and economies to produce at a more efficient scale. It has raised productivity, supported the spread of knowledge and new technologies, and enriched the range of choices available to consumers. But deeper integration into the world economy has not always proved popular, nor have the benefits of trade and globalization necessarily reached all sections of society. Trade scepticism is on the rise in certain quarters, and the purpose of this year's core topic of the World Trade Report, entitled "Trade in a Globalizing World", is to remind ourselves of what we know about the gains from international trade and the challenges arising from higher levels of integration.

The Report explores a range of interlinking questions, starting with a consideration of what constitutes globalization, what drives it, the benefits it brings, the challenges it poses and what role trade plays in this world of ever-growing interdependency. We ask why some countries have managed to take advantage of falling trade costs and greater policy-driven trading opportunities while others have remained largely outside international commercial relations. We also consider who the winners and losers are from trade in society and what complementary action policy-makers need to take in order to secure the benefits of trade for society at large. In examining these complex and multi-faceted questions, the Report reviews both the theoretical trade literature and empirical evidence that can help to give answers to these questions.

### GLOBALIZATION AND TRADE

*The key economic features of globalization constitute deeper integration in product, capital and labour markets.*

Globalization is not a new phenomenon. Since the mid-19<sup>th</sup> century, there have been at least two

episodes of globalization. The most recent period of globalization starting in the immediate post-World War II period, strongly bolstered by new communications and transport technologies, has been marked by a prolonged period of strong trade and economic growth.

### TRENDS IN GLOBALIZATION

*Globalization has caused significant structural changes in parts of the world economy.*

Some countries and economic sectors have been able to take advantage of these structural changes better than others. In the first decades after World War II, Europe and Japan were important beneficiaries of globalization as they sought to restructure their economies. In more recent years, newly industrializing economies have been among the major winners from increasing economic integration.

A long-term shift in the composition of world merchandise trade has occurred, with the share of manufactured goods rising dramatically, against a decline in agricultural products and non-fuel minerals. The domination of developed countries in world exports of manufactures has been greatly diluted, first in labour-intensive goods (such as textiles and clothing) and subsequently in electronic products and capital-intensive goods (such as automotive products).

Global trade growth was less dynamic after the oil crisis of 1973, while migration and foreign direct investment (FDI) flows accelerated, especially from the mid-1980s onwards. Migration differed between the two globalization periods referred to above, as many earlier sources of emigration (especially Western Europe) became destination points. South to North migration flows increased in importance, while South-South flows continued.

Capital flows have always played a prominent role in the globalization process. In the last few decades liberalization and deregulation have contributed strongly to a surge in FDI flows. But regions have been affected differently, with important consequences for the development of technological know-how and the geographical pattern of industrialization.

## MAIN DRIVERS OF GLOBALIZATION

*The main forces driving global integration have been technological innovation, political change and economic policy choices.*

Chief among the technological drivers of globalization are inventions that have improved the speed of transportation and communications and lowered their costs. These include the development of the jet engine, containerization in international shipping, and the revolution in information and communications technology. Equally notable are changes in production methods which have created new tradable products, expanded global production in food and made manufacturing more efficient.

Political developments in the last decades of the 20<sup>th</sup> century sowed the seeds of further economic integration. These include China's economic reforms, the fall of the Berlin Wall and the collapse of the Soviet Union.

Finally, globalization has benefited from economic policies favouring deregulation and the reduction or elimination of restrictions on international trade, foreign investment and financial transactions. Trade opening has been pursued multilaterally through successive multilateral negotiations, bilaterally and regionally through preferential trade agreements and unilaterally. In the case of many developing countries, early commercial policies had an inward-looking focus. But the success of a number of newly industrializing economies in East Asia with exported growth strategies contributed to a more general adoption of industrialization policies that recognized the importance of exports in the process.

## GLOBALIZATION AND PUBLIC ATTITUDES

*Globalization has benefited the world economy but concern has intensified about its potentially disruptive and disadvantageous consequences.*

Global integration in product, capital and labour markets has resulted in a more efficient allocation of economic resources. Economic integration has resulted in higher levels of current output and prospects of higher future output. Consumers have a wider choice of products and services at lower prices. Capital can flow to countries which need it the most for economic growth and development.

Allowing workers to move across national borders can alleviate skill shortages in receiving countries or respond to the needs in rapidly ageing societies while alleviating unemployment or under-employment in countries providing these workers.

International surveys of public attitudes towards globalization suggest that a majority of people recognize these benefits. But this recognition is accompanied by anxieties about the challenges that come with globalization. While large majorities believe that international trade benefits their countries, they also fear the disruptions and downsides of participating in the global economy. Seemingly, stronger support exists for trade in some emerging economies than in industrial countries. Support for globalization appears to be waning in the industrialized countries even though it still enjoys the support of a majority of the public.

For policymakers who embrace more open markets, survey results indicating overall support for globalization may be encouraging, but disregard for rising public concern about some aspects of globalization threatens to undermine the legitimacy of governments and imperils social support. The answer to this tension lies in a balance between open markets and complementary domestic policies, along with international initiatives that manage the risks arising from globalization.

## THE CAUSES OF TRADE

*Economic theory has identified several sources of gains from trade and thus a number of different causes of trade.*

Traditional trade theory emphasizes the gains from specialization made possible by differences among countries. The main contribution of this strand of thought is that opportunities for mutually beneficial trade exist by virtue of specialization on the basis of relative efficiency – a country does not have to be better at producing something than its trading partners to benefit from trade (absolute advantage). It is sufficient that it is relatively more efficient than its trading partners (comparative advantage). This insight explains why so many more opportunities to gain from trade exist than would be the case if only absolute advantage counted. More recent theories point to other sources of gains from trade not linked to differences among countries, such as economies of scale in production, enhanced competition, access to a broader variety of goods and improved productivity.

## GAINS FROM SPECIALIZATION

*Traditional trade theory comprises a number of distinct but related propositions that are more or less robust and more or less supported by empirical evidence.*

The gains-from-trade theorem, which is the central proposition of trade theory, states that if a country can trade at any price ratio different from its relative domestic prices, it will be better off than if it refrains from trade. The law of comparative advantage predicts that if permitted to trade, a country will gain from specializing in the export of goods in which it has a comparative advantage – that is, goods that it can produce at low relative cost compared to other countries.

Traditional theory distinguishes two main factors that give rise to divergence between autarky – or self-sufficiency – and free trade prices. These are differences in technology and differences in factor endowments (labour and capital). Ricardian theory links technological differences between countries to gains from trade through comparative advantage. The Heckscher-Ohlin model does the same with factor endowment differences.

*While the gains-from-trade theorem and the law of comparative advantage are fairly general and provide robust results, the Ricardian model and some of the main propositions of the Heckscher-Ohlin model are more difficult to generalize.*

In a world of many products and many countries, the Ricardian model only predicts trade under strong simplifying assumptions. With more realistic assumptions, such as the existence of trade barriers, intermediate inputs, and numerous countries and products, it fails to do so. But the fundamental insight of comparative advantage continues to predict and explain gains from trade. In more realistic theoretical formulations, the presence of market imperfections such as monopolistic market power, increasing returns to scale in production and various other market failures will complicate but not invalidate the comparative advantage theorem.

*Real-world complexities combined with the difficulties of isolating and observing relationships makes the validation of trade theories challenging. But improvements are being made in empirical testing methodologies and available evidence sheds some light on the factors that contribute most to our understanding of international trade.*

Evidence generally confirms that alternative theoretical explanations of the causes of trade, as well as the sources of gains from trade, are not mutually exclusive. Patterns of international trade typically reflect the interaction of several different factors. However, we have a limited appreciation of the overall impact of realized comparative advantage on an economy's total income.

Recent work suggests that technological differences are crucial in explaining the commodity composition of trade. More precisely, relative factor abundance – that is, whether a country is endowed with relatively more capital or relatively more labour – can only be shown to explain the commodity composition of trade if technological differences among countries are properly accounted for and if certain other assumptions are relaxed.

The simplest formulations of comparative advantage and the gains from trade disregard the possibility that intermediate inputs can also be traded and production processes fragmented across countries. But the inclusion of this possibility does not undermine basic propositions concerning the gains from specialization. On the contrary, the possibility that production processes may be spread across countries (fragmentation) offers the possibility of additional trade gains. New literature on this issue has emerged in the light of the growing incidence of production sharing and offshoring (see below).

*Exchange among nations involves both trade in products and the movement of factors of production across frontiers. In some theories trade in products is a substitute for factor movements (Heckscher-Ohlin). In other formulations, where trade is driven by technological or other influences, trade in products and factor movements may be treated as complements.*

While the law of comparative advantage can be extended to cover the movement of factors of production as well as trade in products, the formulation tends to be so general that it cannot predict the direction of trade or factor movements. Where technology is also assumed to differ between countries, the analysis is even more complicated.

Moreover, when theories allow for the movement of factors of production it becomes necessary to distinguish between the domestic and national income (welfare) effects of international exchange. In the presence of foreign capital, a shift from

autarky to free trade may reduce national welfare while it increases domestic welfare.

## GAINS FROM ECONOMIES OF SCALE, PRODUCT VARIETY AND INCREASED COMPETITION

*While trade predicted by theories based on comparative advantage takes place among industries (inter-industry trade) and can involve countries with highly varied characteristics, in reality much international trade takes place among similar countries and comprises the exchange of products within the same industry (intra-industry trade).*

For many industrialized countries and emerging economies intra-industry trade accounts for more than half of their total bilateral trade flows. It has proven difficult to explain such patterns in international trade on the basis of traditional comparative advantage theories.

By emphasizing the importance of economies of scale at the firm level and of product differentiation, a theoretical framework based on monopolistic competition has provided a simple explanation of the benefits from an exchange of similar goods among similar countries. As a complement to the traditional comparative advantage theorem, this framework is well suited to explain trade among industrialized nations, while differences in terms of resources or technology continue to play an important role in North-South trading relationships.

*The appreciation by consumers of different product varieties, the existence of less than perfectly competitive markets and the possibility for firms to exploit economies of scale are important reasons why countries open up to trade.*

When firms gain access to new markets, they can increase production and reduce their average costs. At the same time, consumers are able to choose from a wider range of product varieties at lower prices. Firms can also realize important gains from having access to more specialized intermediate inputs.

However, in an integrated market, some firms will go out of business as a result of trade. A number of factors may have an influence on where production ultimately takes place, such as a country's resource endowments and market size, as well as the trade costs involved in supplying other markets.

*A number of country studies have confirmed the existence of substantial gains following trade opening, owing especially to increased competition and product variety.*

Measuring the effect of increased product variety on economic welfare is complex and has only been undertaken recently, when more detailed statistics became accessible. Two studies on the United States found that the availability of a larger number of imported product varieties, especially from North American Free Trade Agreement (NAFTA) partners, but more recently also from China, increased real incomes in the United States by 3 per cent on average.

Many more studies have been undertaken on the pro-competitive effects of trade liberalization in both developing and developed countries. Significant decreases in price-over-cost margins have been achieved, particularly in highly concentrated industries – a common phenomenon in a number of developing countries. In certain countries, the impact of a reduction in non-tariff barriers plays an even more important role than falling tariffs in the realization of such benefits.

By contrast, in both developing and developed countries, increases in openness do not seem to be systematically associated with further increases in the scale of production of firms. Instead, observed productivity improvements in sectors open to trade appear to be a consequence of the reallocation of market shares towards more productive plants. This observation has triggered further research into the role of differences in firm characteristics as a rationale for trade.

## PRODUCTIVITY GAINS

*Until relatively recently, trade theorists typically assumed that all firms within a given industry were identical. In the 1980s, however, data sets with detailed information on production and trade at the firm level became available. This new information showed considerable differences among firms and suggested that such differences affected aggregate outcomes. These findings are reflected in the so-called “new new” trade theories.*

The firm-level information shows that only a small number of firms export and that among these, only a few of them export a large fraction of their production. Moreover, at least some firms export

in every industry, with the share of exporting firms being determined by the industry's comparative advantage. The data also show that exporting firms are different from non-exporters in several respects, and that trade liberalization raises average productivity within industries. So far, most of the firm-level evidence is from developed countries. However, available information from developing countries suggests that many of the insights drawn from developed country data may also apply to a wider set of countries.

These findings pose further questions not addressed by traditional trade theories, nor by the advances made by the “new” trade theories, such as the basic monopolistic competition framework. The most recent theories (“new new” theories) focus on the role of firms and explain the above-mentioned empirical findings. These models identify new sources of gains from trade and new ways in which international trade may lead to resource reallocation.

In the “new new” theories, firms typically differ in terms of their productivity and they pay fixed entry costs to enter both the domestic and the foreign markets. Some firms find it profitable to sell only on the domestic market while the most productive export. A reduction in barriers to trade boosts existing exporters and encourages new firms to begin exporting. Through its impact on factor prices, this expansion of the most productive firms pushes some of the non-exporting, lower-productivity firms to exit the market. This selection mechanism leads to an increase in average industry productivity that represents an additional gain from trade. Trade opening may also encourage individual plants, both import-competing and exporting, to upgrade their technology, a key ingredient in stimulating long-term economic growth.

*The new focus on firms has allowed researchers to explain other determining factors for international trade, such as firms' decisions to invest abroad or outsource certain activities at arm's length.*

Besides various types of trade costs, it has been found that differences in the productivity of firms are an important factor determining whether foreign markets are accessed directly through an investment presence or through exports.

Productivity differences also play a role in firms' decisions to offshore parts of the production process

and whether to do so via foreign direct investment (FDI) or through arm's-length trade. These insights allow for certain predictions about how policy changes, such as tariff reductions or institutional improvements, may affect trade volumes.

*When different sources of gains from trade are taken together, it has been shown that protectionist policies may carry significant economic costs. However, the benefits from opening up to trade may not be equally distributed across countries.*

Looking at several of the expected positive effects resulting from trade opening, one study has estimated that if member states of the European Union were in a state of autarky, on average productivity would be lower by 13 per cent, mark-ups and prices higher by 16 per cent, and profits lower by 23 per cent. However, other studies indicate that given that countries are of different size and at different levels of development, some are likely to benefit more than others.

## DYNAMIC GAINS

*A distinction can be made between the comparative static analysis which seeks to compare the situation before and after a given change, and an analysis that tries to capture the dynamic gains from change. The general presumption of most theoretical literature is that trade yields dynamic as well as static gains, although several analyses point to the existence of offsetting effects.*

International trade can affect the growth process through its effects on the accumulation of capital and on technological change. In a standard “neoclassical” growth framework, where technological change is determined externally (exogenously), international trade affects factor and product prices and, through this channel, incentives to accumulate capital. Within this framework, the effect of international trade on growth depends on the nature of trade taking place.

An analytical framework that explicitly considers the determinants of technological progress (endogenous growth models) yields conflicting predictions about the relationship between trade and growth. Some studies stress the risk that trade may have different effects because of the conditions prevailing before trade. Under particular conditions, the removal of trade barriers could encourage some countries to specialize in sectors of the economy with low growth potential. These studies, however, generally disregard

the possibility that international trade is accompanied by the flow of knowledge (knowledge spillovers).

Many studies that have focused on how trade might stimulate firms to innovate have uncovered several new mechanisms that could associate trade liberalization with higher growth rates. Examples of such mechanisms include increased market size, knowledge spillovers, greater competition, and the improved quality of the institutional framework. Several studies have pointed to possible offsetting effects resulting from differences in human capital across countries, imitation of foreign technologies, a worsening of policies affecting trade, and so on.

Nevertheless, many studies focusing on knowledge spillovers and firm productivity demonstrate a high correlation between growth rates and trade volumes. But this does not necessarily imply that trade leads to growth. Does trade cause faster growth or do economies that grow quickly also trade more? Several studies try to address this causality issue and find a positive effect of different indicators of international trade (measuring volumes of trade or commercial policy) on economic growth. However, these studies have come under recent criticism. Critics argue that this approach is unable to isolate from other effects the direct effect of trade on growth.

An alternative strategy is to estimate the importance of international knowledge spillovers, which are crucial for the realization of the dynamic gains from trade. Recent studies point to the presence of “direct” (i.e. bilateral) research and development (R&D) spillovers, which are related to the level of R&D produced by the trading partner, and “indirect” knowledge spillovers, which result from participating in international trade more generally.

Finally, recent studies that use firm-level data find that trade liberalization has a positive effect on firm productivity and that “learning by exporting” effects (externalities) exists in several emerging market economies.

## TRADE, THE LOCATION OF PRODUCTION AND THE INDUSTRIAL ORGANIZATION OF FIRMS

*New work on “economic geography” and offshoring explains the location decisions of firms and why some firms choose to spread their production processes across different countries.*

The trade theories and the models we have examined so far have little to say about the location decisions of firms and their industrial organizational structure. In the work reviewed here, decisions on both of these matters are taken to be internal to the firm. By internalizing the location and organizational decisions of firms, the economic geography and offshoring literature provides explanations of why we observe the geographical concentration of production in some locations and the process of international fragmentation of production through the breaking-up of the supply chain.

## INTERNATIONAL TRADE COSTS

*Reductions in trade costs can be an important cause of both agglomeration of production in a location and the fragmentation of the production process. But the extent to which the trade costs story renders these two phenomena compatible has not yet been explored.*

In the new economic geography literature, the size of trade costs is a major determinant in the decision of a firm on where to locate. In the literature on international fragmentation of production, trade costs have been seen as influencing the choice between outsourcing or in-sourcing, and sourcing inputs through intra-firm or arm’s-length trade.

The new economic geography literature predicts that a fall in trade costs leads to an initially greater geographical concentration of production and a subsequent reduction of concentration as trade costs fall to a sufficiently low level. Recent theories of fragmentation predict that a reduction in trade costs leads to greater fragmentation of production, with firms geographically spreading the different stages of their production process. When trade costs of intermediate inputs fall, different stages of the production process can take place in different places.

*Empirical evidence shows a downward trend in overall trade costs in the last half century. Particularly significant is the reduction in air transport costs to far-away destinations and the reduction in the time cost of transport.*

Trade costs have fallen for policy-related reasons (such as the reduction of tariffs and non-tariff barriers) as well as for technological reasons associated with transport and communications. The latter is especially true when quality improvements are taken into account. For example, although no

clear direct evidence exists of a downward trend in the cost of ocean transport, the reduction in shipping times – because of faster ships and reduced loading and unloading times – has cut trade costs. In the case of air transport costs, it is the price of long-haul flights that has fallen the most.

Advances in communication technologies have allowed the development of efficient logistics services, reducing both the time and uncertainty of delivery. This has led to a significant improvement in production processes relying on “just-in-time” delivery of inputs, which has prompted fragmentation.

## GEOGRAPHICAL CONCENTRATION

*The new economic geography provides additional insights into the location of production and the pattern of trade.*

Much of the theory underlying the new economic geography is familiar from trade theory based on imperfect markets. Three important predictions about the pattern of production and trade are associated with this theory. First, a country will export products for which there is a large domestic demand (the home market effect). Second, a reduction in trade costs will amplify the home market effect (the magnification effect). Finally, falling trade costs will produce an initial period of divergence among countries, with manufacturing production becoming concentrated in a “core” while the “periphery” specializes in non-manufactures (core-periphery effect). However, a further reduction in trade costs will eventually reverse this process, with manufacturing production becoming increasingly dispersed among countries in the periphery.

*A country will export those goods for which it has a large domestic market.*

The home market effect predicts that a country will export those goods for which it has a large home market. In effect, the large domestic market serves as a base for developing a competitive export sector. A large market size provides more room for increasing returns to scale to operate, helping to drive down the production costs of domestic producers and giving them a price edge in world markets. Empirical evidence supports the hypothesis of a home market effect. The effect is strongest for manufactured goods which are differentiated and subject to scale economies.

*Falling trade costs accentuate the home market effect.*

If trade costs are very low, even small differences in the size of the two countries can lead to a large concentration of manufacturing in the larger country. A reduction in trade costs means that the large country’s advantage is increased as it can export manufactured goods to its partner at an even lower price than before. These are the magnification and core-periphery effects.

*The geographic concentration of firms can create productivity spillovers (agglomeration).*

Many industries tend to be concentrated in certain places, reflecting the economic benefits to firms of being located in close proximity to one another. These benefits can arise from knowledge spillovers between workers and firms or as a result of the development of specialized inputs tailored to the needs of a large number of similar firms who are present in one place.

The agglomeration effect, operating through the widespread use of intermediate inputs in manufacturing production, makes the total output of firms larger than if each one had been operating in a different region. The linkages relate both to output and inputs, allowing firms’ improved sales and savings in input costs to be transmitted through the whole manufacturing chain. Since firms are geographically close to their suppliers, this also saves on transport costs and further lowers the costs of production. At the same time, the large market makes it easier for the firm to sell more of its final products to other firms. Moving to a large market not only benefits the firms that do so but also firms that are already established in the region. In other words, a “virtuous circle” is created by the interaction of input-output linkages, increased variety, savings on transport costs and increasing returns to scale.

*But there are also forces acting against concentration.*

Forces that work against agglomeration effects include changes in factor prices (wage rate) and greater product competition. An expansion of the manufacturing sector requires it to employ more workers. If it is to continue to expand, it must pay a higher price to persuade workers to move. This tends to reduce the incentive for further expansion of the manufacturing sector.

A second factor working against agglomeration is the increase in product competition. Consumers demand variety. While manufactured goods are differentiated and therefore not substitutes, the appearance of a new product should nevertheless lead to a decline in the demand for all other varieties of manufactured goods. This makes further expansion of the manufacturing sector more difficult.

*This interaction of forces explains the core-periphery outcome.*

As trade costs fall, there is an initial phase where agglomeration effects dominate and produce a concentration of manufacturing in the core (“industrialized countries”). A nearly opposite process takes place in the periphery (“non-industrialized countries”). Its manufacturing sector shrinks as manufactured goods are supplied by the core. Exports from the core become increasingly dominated by manufactures while exports from the periphery are increasingly made up of agricultural products.

But beyond a certain point, a continued reduction in trade costs will allow other forces to emerge. In this second phase, changes in wage rates and greater product competition in the core become counteractive and ultimately reverse the agglomeration effects. The wage differential between the core and the periphery begins to attract more manufacturing production away from the core.

*But the empirical evidence for this core-periphery process is rather sparse.*

Little statistical testing exists of the core-periphery theory. Instead, numerical simulations are employed to see whether reasonable parameter values can replicate the results predicted by the new economic geography. Some simulations find a non-linear relationship between trade costs and concentration, while others find that a reduction in trade costs only leads to the dispersion of all industries. One explanation for the difference appears to be the nature of the industries involved. It is in industries with significant increasing returns to scale and strong intra-industry linkages where the non-linear relationship between trade costs and concentration is observed.

## FRAGMENTATION OF PRODUCTION

*Direct evidence on the worldwide incidence of offshoring is scarce due to a lack of data. But proxy measures indicate that the phenomenon is on the rise.*

A major problem with measuring the magnitude and trend of offshoring of goods and services is that the economic definition of offshoring does not easily match officially collected data. Therefore, estimates of the pattern and the size of offshoring have to rely on substitute or proxy measures.

To the extent that trends in trade in intermediate goods and trade in “other commercial services” are a satisfactory proxy for offshoring, data suggest that in the last two decades offshoring in both intermediate goods and services has grown faster than trade in final goods, and that the growth in services offshoring has accelerated since 2000.

Research based on firm-level data for the United States has confirmed these patterns. Offshoring has expanded rapidly via arm’s-length trade and via trade within firms. Services offshoring has been increasing faster than goods offshoring in recent years. These trends have been widespread across sectors and type of inputs. Offshoring of service inputs is smaller than offshoring of goods inputs for all sectors and countries. Small countries tend to offshore more than large countries.

*Economic theory suggests that the decline in the absolute costs of trading goods and services as well as recent advances in telecommunications technology are driving forces in the process of fragmentation.*

Economic theory provides a very simple explanation for the increasing fragmentation of production. It might be the case that the various stages of production require different types of technology or skills, or they may require inputs in different proportions. Under these conditions, the benefit of fragmenting production across countries is that the firm can locate different stages of the production process in the country where there is a relative abundance of the type of skill or input used relatively more intensively in that stage of production. In so doing, the firm can lower costs of production. The standardization, geographical separability and tradability of tasks are key factors determining the prevalence of offshoring in particular areas of activity.

However, production fragmentation also carries costs. Separate production stages need to be coordinated and monitored. Furthermore, this implies incurring transportation and communication costs, insurance costs and other connecting services costs. All these costs have decreased, thus fostering fragmentation and offshoring.

*Together with the traditional factors of comparative advantage (such as factor prices and the availability of skills), recent literature on offshoring has highlighted new sources of comparative advantage that can influence decisions about where to offshore. These include the quality of the institutional framework, the costs of setting up a business and the quality of infrastructure. Data show that low-income countries are at a strong disadvantage in participating in international production networks.*

The quality of the institutional framework matters because institutions play a crucial role in determining the effectiveness of contract enforcement. If institutions are good, the contract between the final good producer and the supplier of the intermediate good is enforceable, and this reduces the risk associated with outsourcing.

The quality of infrastructure matters because it is an important determinant of transport and communications costs. These are both important factors in ensuring an efficient production structure.

A comparison across low-, middle- and high-income countries in terms of infrastructure, as well as the time required to start up a business and to exchange goods, reveals significant disadvantages for low-income countries. This is likely to limit the participation of low-income countries in production networks despite their advantage in terms of factor prices.

*The organization of production processes influences how trade takes place. A growing body of literature looks at the factors that determine whether a firm acquires inputs through vertical integration (i.e. through its own company structure) or through arm's-length contracts. Choices here depend on the "thickness" of the market, the quality of the institutional framework, and sector-specific characteristics. Few rigorous empirical studies exist on these issues, but case studies in areas such as computer manufacture and financial services help to clarify the issues.*

The thickness of the market (that is, the size of the market for a certain product) is an important factor in determining the costs of searching for an appropriate supplier of intermediate goods. The thicker the market, the easier business-to-business matching becomes and the more likely it is that firms opt for outsourcing rather than vertical integration.

As already noted, institutional quality helps to determine offshoring location decisions, and it is also a factor in the choice between outsourcing and vertical integration. In particular, where the fixed costs of vertical integration are higher than the fixed costs of outsourcing, arm's-length trade will increase relative to trade within a firm. The latter set of costs is influenced by the quality, reliability and enforceability of contracts.

Among the sector-specific factors influencing the choice between arm's-length trade and vertical integration include the degree of product standardization and the factor-intensity of an industry. Outsourcing tends to prevail in labour-intensive sectors, and component-intensive sectors, and in respect of products at later stages of the production process.

## THE DISTRIBUTIONAL CONSEQUENCES OF TRADE

*In the face of overwhelming evidence that countries gain from opening up to trade, why do countries often hesitate to liberalize trade or mitigate the liberalization?*

The unequal distribution of the gains from trade may be one of the reasons. Understanding the potential distributional consequences of trade may help to anticipate and manage resistance to income-enhancing liberalization.

## TRADE AND INEQUALITY

*Where trade has contributed to increased inequality, its impact has generally been minor to other factors, most notably technological change.*

Numerous studies on trade and inequality have focused on the question whether trade is one of the main drivers of changes in inequality or only one among many others. The literature appears to have converged to the view that international influences only contributed to about 20 per cent of rising wage inequality and that other forces – most prominently technological change – have been more important than trade in leading to changes in income distribution.

*Trade has sometimes contributed to increasing inequality in developing countries.*

A question that continues to intrigue researchers is the relationship between trade and inequality in

developing countries. It was originally expected that trade would contribute to a reduction of inequality in these countries. As such, trade would reduce poverty through two mechanisms – its positive effects on growth and on income distribution. Empirical research has shown, however, that the second mechanism has not always been triggered by trade reform.

*The fact that trade liberalization may trigger technological change is one of several explanations for the association in developing countries of more open trade with greater inequality. Other factors include the timing of policy change and pre-existing protection levels.*

The timing of trade liberalization, the degree of protection in place before liberalization and technological change are some of the elements that explain why certain developing countries have experienced increases in the skill premium – that is, the difference in wages between high- and low-skilled workers after trade liberalization.

Renewed interest has emerged recently in the evolution of inequality in industrialized countries and the role of trade in this evolution. Whereas “inequality” tended to be discussed in the 1980s and 1990s in terms of “high-skilled” versus “low-skilled” workers, more recent studies make a distinction between “high-”, “medium-” and “low-skilled” workers, reflecting some concern about the evolution of wages of medium-skilled workers. Other studies try to make even more nuanced distinctions between different types of skills. There has also been increased interest in the evolution of the relative income of the “super rich” and in the evolution of labour’s – as opposed to capital’s – share of income.

*Trade theory predicts that increases in inequality in industrialized countries lead to increased calls for protectionism and that small and well-organized industries that stand to lose from trade tend to be successful in lobbying against trade liberalization. Both predictions have been confirmed by empirical analysis.*

Trade theory has been used to predict the voting behaviour of individual households and the lobbying behaviour of private interest groups. One type of analysis shows that voters tend to prefer the *status quo* – that is, to vote against trade reform – as they may not know in advance whether they will be among the winners or losers from reform. Another type of analysis, the so-called median

voter model, predicts that increased inequality is associated with more restrictive trade policies in industrialized countries but with more open trade policies in developing countries. Empirical analysis has confirmed this expectation.

As the gains from trade liberalization tend to be distributed widely within a society, the individual gains from trade may be relatively small. The losses from trade reform, on the other hand, tend to hit relatively small groups, and losses may therefore be quite significant at the individual level. Even though overall gains from trade opening exceed overall losses, individual losers have a higher incentive to lobby against trade reform than the winners. There is evidence that relatively small industries have received a lot of protection in industrialized countries.

## TRADE AND STRUCTURAL ADJUSTMENT

*If trade reform is introduced, economic changes need to be made. Import-competing firms appear to adjust by reducing mark-ups, increasing efficiency and often by reducing firm size.*

Trade literature has provided some evidence of the “import discipline hypothesis”. A number of studies have assessed firm-level reactions to trade liberalization in countries as diverse as Brazil, Canada, Chile, Côte d’Ivoire, India, Mexico and Turkey. They generally point to three consistent results. First, firm-level mark-ups of price over marginal cost tend to fall. Second, plants that survive competition from imports improve efficiency. Third, competing firms tend to shrink in size. It remains the case, however, that researchers have not yet addressed adequately the question of the short- and long-term costs associated with these efficiency gains.

*Exporting firms often grow after trade reform, but there is no systematic tendency for productivity to increase. Some examples have been encountered of firms that learn from exporting.*

A fundamental question is whether there is any evidence of “learning by exporting”. Until very recently, most evidence was in the negative. While more productive firms were the ones involved in exporting to begin with, there was little to suggest that they became more productive as a result of exporting.

Some new evidence to the contrary comes from a study on Canadian firms. The authors of the study suggest, however, that “learning by exporting” appears limited only to plants that were initially low-productivity producers, so not all plants learn from exporting. They nevertheless suggest potential mechanisms through which the learning may be taking place – for example, the “learning” plants engaged in more product innovation and displayed higher adoption rates of advanced manufacturing technologies after exporting than did other plants.

*Trade reform does not appear to trigger significant levels of sectoral reallocation of workers, nor is there consistent evidence on the effect of trade reform on the size of the “informal economy” in developing countries.*

Evidence about how labour markets adjust to trade reform is generally taken from studies of countries that have undergone a substantial import market liberalization “shock”. For example, in the case of Colombia, researchers have found surprisingly little labour reallocation across industries after liberalization, and this result is confirmed in cross-country studies as well.

Nevertheless, in the case of Colombia, evidence suggests larger reductions in the wage premium in sectors with larger tariff cuts. This suggests that some of the “rents” (additional income) associated with import protection that were going to workers have been dissipated by increased foreign competition. Surprisingly, this research fails to find much evidence of a link between trade liberalization and the shift of individual workers into the “informal economy”. This result is found in studies of Brazil and Colombia.

*According to US data, individuals experiencing job loss for “trade-related” reasons do not appear to be systematically different from workers who experience job loss for “other” reasons.*

While it is difficult to pinpoint exactly the reason for any individual’s job loss, some studies have adopted statistical techniques to allow them to address this issue. Using US data, it does not appear that these two types of workers are very different. On average, import-competing workers who lose their jobs are slightly older but they have similar levels of job experience as well as educational attainment as those put out of work for other reasons.

The primary difference between workers who lose their jobs for trade-related as opposed to other reasons is gender. Trade-displaced workers in manufacturing are much more likely to be women than are workers displaced for non-trade reasons. However, this should not be interpreted as an example of gender discrimination as it is mostly an industry composition effect. In the United States, import-competing industries use relatively more women, so as these industries shrink and displace workers, relatively more women will lose their jobs.

## TRADE AND POVERTY

*One of the biggest challenges facing the world community today is how to address poverty.*

Trade reform could potentially help to alleviate poverty. The long-term benefits from improved resource allocation and efficiency resulting from trade liberalization are well documented. Openness to trade is believed to have been central to the remarkable growth of developed countries since the mid-20<sup>th</sup> century and an important factor in alleviating poverty, as shown by the experience of the East Asian countries.

*Trade affects the poor in many ways. For example, it has an effect on growth, employment, revenue, consumer prices and government spending.*

Although much attention has been paid in recent years to the relationship between trade liberalization and poverty, establishing the precise link between changes in trade policy and levels of poverty has proven to be a difficult task.

One of the difficulties lies in the fact that trade affects individuals in many ways. It may affect their income through effects on employment, distribution and/or growth, and it may affect their expenditure through prices of consumer goods. Trade reform may also affect the poor through its impact on government revenue and spending. The combined impact of these different effects tends to be difficult to assess and most economic studies have focused on one or two elements.

*Overall the economic literature indicates that trade has helped to alleviate poverty but some poor households have been affected negatively.*

Trade is expected to increase growth and several empirical studies have examined how growth affects

poverty. These studies tend to find a positive relationship between growth and poverty alleviation but the poverty-reducing effect tends to be more pronounced in some countries or regions than in others. Initial conditions appear to matter.

Poor households may also be affected differently depending on their source of income. As trade may trigger job losses or wage reductions for some, those affected may lose out from trade reform even if poverty levels are reduced on average.

The price effects of trade liberalization will have different impacts on individual households. Several studies have, for instance, found that rural households adjust better to agricultural price increases (triggered by trade reform or other events) than urban households. This is because rural households can fall back on subsistence farming for consumption or even turn into net suppliers of agricultural products.

The effect of trade liberalization on government revenue has been identified as one of the key concerns for many developing countries. Indeed, the share of trade taxes in total revenue is negatively associated with the level of economic development, with many low-income countries earning half or more of their revenue from trade taxes.

One response to declining government revenues resulting from trade reform is to seek alternative sources of revenue. Governments may want to take into account the effect on poor households when choosing other sources. Empirical evidence appears to indicate that developing countries have not managed always fully to recover lost tariff revenues. But empirical evidence so far does not provide reason to believe that these net revenue losses have resulted in reductions of social expenditure.

## POLICY IMPLICATIONS OF GLOBAL INTEGRATION AND THE WTO

*A number of factors have the potential to reduce the gains from trade.*

Despite continuing gaps in our knowledge and understanding, the theoretical and empirical case for the gains from trade continues to be strong. But certain economic factors have the potential to reduce those gains or to skew their distribution. High trade costs can inhibit the participation of

more countries in international trade and reduce the potential volume of trade transactions. Many poor countries face supply constraints that make it difficult to increase trade even when market access is not an obstacle. Significant costs may be generated by adjusting to trade liberalization. Trade can create winners and losers in a country. Recent technological changes make it more difficult to predict winners and losers from liberalization, which is likely to add to anxieties about market opening.

## TRADE COSTS AND SUPPLY CONSTRAINTS

*High trade costs and supply-side constraints may prevent countries from taking advantage of trading opportunities.*

The post-World War II era has been marked by falling trade costs and this has undoubtedly played a large role in global trade expansion. But trade costs continue to be at much higher levels in low-income countries. The absence of physical infrastructure or its poorly developed state in these countries is a major reason for high trade costs. Government policies and regulations that adversely affect the provision of infrastructure and the supply of its services exacerbate the situation.

*National measures are needed to address these problems.*

At the national level, two broad types of actions could be taken to reduce trade costs and to expand the export supply capacity of low-income countries. The first involves increased public investments in physical infrastructure essential to carrying out production and trade and to allowing traders cheaper access to international markets. Given that governments in low-income countries lack sufficient tax revenue for this purpose, they will need to tap official development assistance and private sector financing (both foreign and domestic).

A second and equally important action relates to regulatory reform. Poorly developed policies and unwarranted regulatory burdens can prevent the efficient use of already existing infrastructure, deter private sector infrastructural investments, or simply act as “red tape”. Appropriate reforms can improve the use of existing infrastructure and increase incentives for private investors, whether local or foreign, to contribute to the provision of vital infrastructure.

*But there is a role too for international cooperation and institutions.*

The international community can help draw attention to the problems faced by low-income countries, mobilize or direct resources, and provide expertise through technical cooperation. Some changes in policy and regulations may need to be negotiated with foreign partners. In this case, international institutions can serve as forums for negotiations and vehicles for implementing international accords.

*In the WTO, the Doha negotiations, technical assistance and implementation of multilateral agreements provide a means of reducing trade costs.*

The Doha negotiations provide members with the opportunity to bind current market access and to make new market-opening commitments in those areas that can contribute significantly to reducing trade costs and to increasing the productive capacity of low-income countries. Among the most relevant areas are services, especially maritime transport, telecommunications, distribution and trade facilitation.

Since the beginning of the Doha Round, the WTO's technical cooperation programme has focused on helping institutions and individuals to understand and implement WTO agreements and to participate in trade negotiations. The implementation of WTO agreements provides considerable opportunities for reducing trade costs and for enhancing market access opportunities.

*The Aid for Trade initiative creates a targeted and internationally coordinated effort to address trade-related supply constraints faced by developing countries.*

The Aid for Trade initiative is intended to help developing countries to build the supply capacity and trade-related infrastructure needed for trade expansion and to take advantage of opportunities offered by the multilateral trading system. The involvement of the WTO in these efforts arises from its role in creating opportunities for countries to benefit from participation in international trade.

Aid for Trade includes technical assistance, infrastructure development and the further improvement of productive capacity. The infrastructural component of Aid for Trade has a

direct impact on efforts to reduce trade costs and to expand productive capacity in low-income countries. Technical assistance to help members implement WTO agreements can also help developing countries to capitalize on market access opportunities.

A key aspect in the implementation of the Aid for Trade initiative is the role that monitoring the WTO can assume by undertaking a periodic global review of the initiative based on reports from a variety of stakeholders. The global review undertaken in November 2007 showed that Aid for Trade has assumed growing importance in most donor programmes. The resources for Aid for Trade averaged US\$21 billion over the 2002-05 period and now represent over 30 per cent of bilateral programmes. For the year 2008, the immediate goals are improving monitoring, advancing implementation and strengthening developing-country ownership of the initiative.

## THE SOCIAL CONSEQUENCES OF TRADE OPENING

*Some workers may lose their job as a result of trade reform.*

Some of the gains from trade opening come about from the reallocation of resources to activities where they are more productive. While such reallocation is necessary to reap the benefits of trade reform, they may imply losses for some individuals. Jobs may, for instance, be curtailed in one branch of the economy and created in another and, as a consequence, some workers may lose their jobs.

In many countries, policies are in place to assist those temporarily out of work. Those policies are often general in nature, in the sense that they target anybody affected by job loss, independently of the cause of the loss. But examples exist of policies that explicitly target individuals, sectors or regions affected by trade.

A general problem with any trade-specific programme to assist workers is that it may be difficult to identify workers affected by trade. Moreover, no strong evidence exists that workers laid off as a consequence of trade differ significantly from workers laid off for other reasons, either in the length of their unemployment or their likely income in the future. However, under certain circumstances, arguments in favour of trade-specific

social protection programmes can be made on equity or even efficiency grounds. Some evidence suggests that trade-specific adjustment programmes can also play a role in garnering support for trade reform.

*In many countries, general social protection systems exist to assist laid-off workers. In those countries, it is hard to justify trade-specific interventions, but in countries that lack general schemes trade-adjustment programmes for workers may be useful.*

In developing countries, the case for trade-specific programmes may be stronger. Most industrialized countries have social protection systems in place, but such systems are lacking in many middle-income and most low-income countries. In the absence of any social protection, unemployment – even for a short period – may cause considerable hardship. Temporary assistance could be helpful in such cases and prevent the unemployed from falling into poverty. How to design such schemes for maximum effectiveness in low-income countries is a question that has not yet been fully answered.

To the extent that trade might contribute to increasing inequality, the question also arises whether it is desirable to introduce specific policies to redistribute the gains from trade. Many industrialized countries have general redistribution policies in place and such policies could, in principle, counterbalance any effect trade may have in increasing inequality. Developing countries tend to have limited experience with the design of redistribution schemes. Studies show, however, that trade is likely to be a minor contributor to changes in income distribution and this further weakens the argument in favour of trade-specific redistribution schemes.

A potentially more important question is how overarching redistribution systems should be designed to achieve their objectives without introducing new distortions – for instance, by changing the incentives facing employers, workers, consumers or others. Another difficulty may lie in the fact that some factors of production are more mobile than others at the global level, and the less mobile factors may end up carrying a heavier tax burden. This may be undesirable if those factors represent the lower income scale in the economy. Globalization may therefore pose new challenges to public finance.

## TRADE AND TECHNOLOGY

*Technical knowledge can be acquired through international trade.*

Studies that focus on international knowledge spillovers find that knowledge developed in one country has positive effects on other countries through trade. Trade leads to the spread of international technology for three major reasons. First, technologically more sophisticated intermediate goods become available for production. Second, the technological specifications of intermediate and final goods developed abroad can be studied and the intrinsic knowledge can be acquired. Finally, trade favours person-to-person communication as an important vehicle of knowledge transfer.

*However, countries have different abilities to absorb technology developed elsewhere.*

Studies have emphasized several factors determining whether technology is successfully absorbed across countries. These factors are associated with the idea that a country needs to have certain types of skills (e.g. human capital) and institutions in order to be able to adopt foreign technological knowledge.

*A wide range of policies can be used to foster technological progress at the national level. The multilateral trading system (and international organizations more generally) can play a role in facilitating international technology transfers.*

Policies to improve a country's ability to adopt technological innovations must be targeted at its educational system as well as its business and regulatory environment. One particular problem related to the transfer of technology is that innovations produced in advanced economies may not respond to the needs of developing countries.

Such a mismatch may result from insufficient property rights protection. This suggests a role for international organizations in promoting international technology diffusion through adequate property rights enforcement. Other areas where international organizations can help include the coordination of development aid to build infrastructure and human capital.