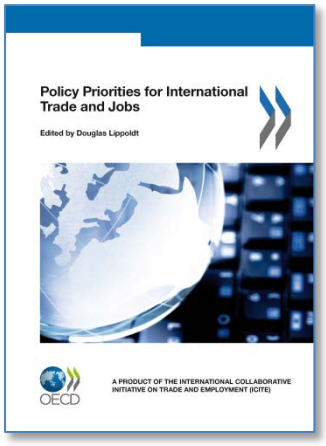

Policy Priorities for International Trade and Jobs

A PRODUCT OF THE **INTERNATIONAL COLLABORATIVE INITIATIVE ON TRADE AND EMPLOYMENT (ICITE)**

Chapter 1

Trade and Employment in a Fast-Changing World

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Chapter 1

Trade and Employment in a Fast-Changing World

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Organisation for Economic Co-operation and Development

Anchored by a new wave of research under the International Collaborative Initiative on Trade and Employment, this paper reviews the vast literature on ways that trade might affect job creation and wages, including its relation to economic growth, productivity, and income distribution as well as working conditions. The paper also looks at evidence related to oft-voiced concerns about the effects of offshoring and trade in services as well as adjustment costs associated with trade. On balance, the paper concludes that in virtually all of these dimensions trade can play an important role in creating better jobs, increasing wages in both rich and poor countries, and improving working conditions. However, benefits of trade do not accrue automatically, and policies that complement trade opening are needed to have full positive effects on growth and employment. Moreover, as with adjusting to technological progress, the process of trade-induced growth necessarily entails the continual reallocation of resources away from less productive activities to more productive ones, and this can mean that, even as average wages and employment conditions improve, some workers may experience unemployment or may even see their real wages decline as they change jobs. For these reasons, policies that embed trade reforms in a context of macroeconomic stability and a sound investment climate on the one hand, and, on the other, protection for workers, maintenance of high-quality working conditions, and facilitation of labour transitions, can play an important role in realising the potential wage, employment and income gains associated with trade.

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Context: A Fast-Integrating World

The world economy is becoming integrated through trade at an unprecedented pace. The last three decades have witnessed huge changes in the *structure of trade.* Trade as a share of GDP has risen in nearly all corners of the world and made trade one of the most dynamic sources of growth for many countries. Developing countries – particularly China and the other BRIICs – have become major actors in the world market, both as exporters and importers. And the continued rapid fall in cost of communication and transportation have not only powered the integration of goods and services markets, but also facilitate an accelerated pace of technological dissemination. Integral to these changes have been innovations in *business organisation* that have spawned new trends in trade. The development of "trade in tasks" – global value chains, segmentation of production through offshoring, and global out-sourcing[1] – are fast-integrating distant economies into the global market, often through the intra-firm trade of multinational companies. Moreover, services, formerly thought to be largely non-tradable, have become a leading sector in global trade – including, for example, accounting, financial, legal, construction services, and many more.

These changes have effectively integrated not only markets for products, services, finance and technology, but also directly or indirectly markets for labour. Workers in OECD countries now voice worries about job opportunities lost to offshoring and services outsourcing as well as increased vulnerability associated with job and income volatility. At the same time, workers in many developing countries worry about adverse consequences of trade liberalisation, lagging employment opportunities for burgeoning labour forces, and competition from China. A more general concern of workers everywhere is that globalisation may be contributing to increased income inequality and poorer working conditions, and that they may not share in the prosperity that growth would otherwise bring. The Great Recession that began in 2007-08 has only deepened these concerns (Box 1.1).

This chapter looks at these issues drawing on work prepared for the International Collaborative Initiative on Trade and Employment (ICITE) as well as the recent larger literature, especially recent work analysing firms' trading behaviour. The objective is to tease out points of relative analytical certainty, to inform the debate by summarising information on less certain points, and to identify areas where more research is needed. The chapter is organised around the relation of trade to six topics: growth, productivity, jobs and wages, income inequality, working conditions, and adjustment costs. A final two sections venture some summary generalisations and point to policies that lead to more inclusive growth.

To foreshadow the conclusions: the evidence reviewed here is compelling that trade can be a driver of economic growth and rising wages – as long as companion policies in the form of a positive investment climate, labour markets and social protection systems support trade openness. Resulting productivity gains from exporting and importing entail a continual movement of labour and capital to more internationally competitive sectors with higher productivity – but also may result in frictional unemployment and income losses for displaced workers, hence the need for affirmative public policies. Rising average incomes, however, say nothing about distributional consequences, but for those countries that experience greater

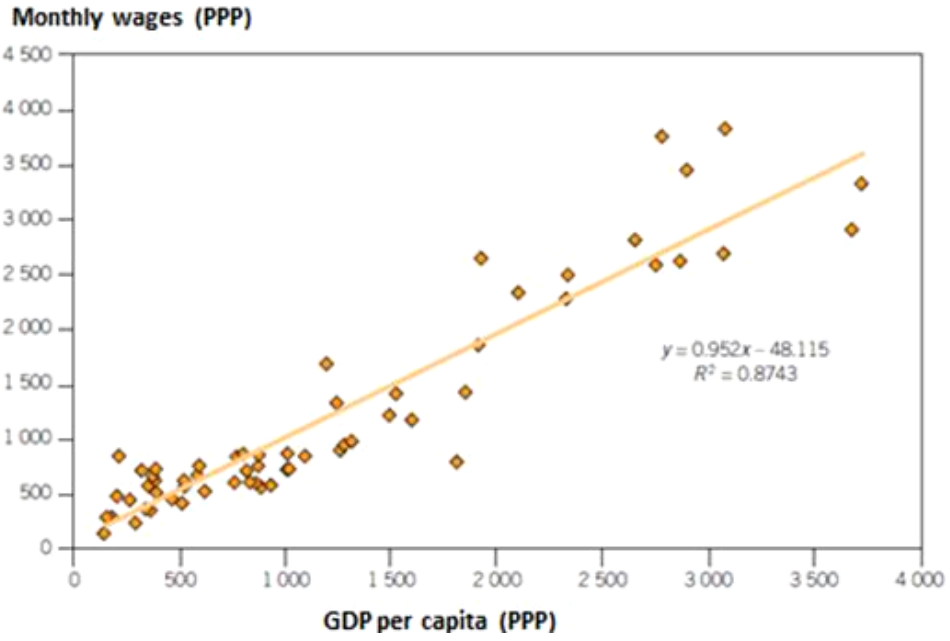
1. We use a broad definition of offshoring, which refers to both offshore-outsourcing and vertical integration abroad, and is widely used in the literature (e.g. Contractor *et al.*, 2010). Off-shoring is the relocation abroad (a geographical change) and outsourcing the move of production outside the firm (an organisational change).

income inequality, it seems that other factors are more important than trade in driving inequality. Moreover, working conditions in developing countries, contrary to the assertions of some, have not deteriorated with trade openness. Indeed the positive effect of trade on investment and incomes carries with it important implications for reduced child labour, workplace injuries, and informality, while offering new opportunities for female entrepreneurs. However, trade, as with changes in technology, does entail reallocation of resources, so policies that help workers to move more quickly into new, higher productivity jobs can help attenuate human costs of normal job transitions and unemployment arising from economic shocks as well as lay the foundations for more rapid growth.

1.1. Trade and growth

The pace of economic growth is central to rising incomes, job creation, and real wages. Average wages are closely correlated with national income per capita (Figure 1.1). The relationship of trade to economic growth is central to the question of whether integration into the global economy promotes employment growth. Numerous reviews of this literature have found a fairly consistent pattern: trade indeed is a key factor in promoting economic growth.[2] One recent example, Noguer and Siscart (2005), took careful account of geography along with other factors, and concluded that a 1% increase in openness was associated with a 1% increase in per capita incomes.

Figure 1.1. Average wages and per capita income go hand in hand



Source: ILO wage database.

Other studies have shown that openness in trade is associated with additional drivers of growth. For example, Levine and Renelt (1992) emphasise the effects of trade on raising ratios of investment to GDP, Frankel and Romer (1999) on deepening physical and human capital, and Alcala and Ciccone (2004) on total factor productivity. Cline (2004), who reviewed a number of studies on the relationship between trade and growth, concludes quite succinctly:

2. See numerous reviews listed in Annex Table 1.A1.2, including Cline (2004), Winters (2004), Baldwin (2003), Berg and Krueger (2003), Hallaert (2006), and Rodriguez and Rodrik (2000).

> "Despite all the debate about whether openness contributes to growth, if the issue were truly one warranting nothing but agnosticism, we should expect at least some of the estimates to be negative … The uniformly positive estimates suggest the that the relevant terms of the debate by now should be about the size of the positive influence of openness on growth, and probably also about how trade policy is related to observed openness, rather than about whether increase levels of trade relative to GDP have a positive effect on productivity and growth" (2004:237).

One recent study merits special mention because of its focus on Africa and its sophistication in responding to critiques of earlier econometric studies. In a paper boldly titled "Trade Causes Growth in Sub-Saharan Africa", Brückner and Lederman (2012) adopted econometric techniques that correct for endogeneity bias associated with reverse causality and omitted country variables. Their control variables included rainfall, OECD growth and political institutions, among others. They found that trade openness causes economic growth: a 1 percentage point increase in the ratio of trade over gross domestic product is associated with a short-run increase in growth of approximately 0.5% per year, and with an even larger effect in the long-run, reaching about 0.8% after ten years.

If *trade openness* is now widely accepted to be associated with more rapid growth over the long run, the effects of *trade liberalisation* on growth in the immediate aftermath of the reform are more contentious. The problems of measurement are nontrivial and lie at the root of controversies in the literature.[3] Rodriguez and Rodrik (2000) offered a convincing and devastating critique of the early econometric literature relating trade liberalisation to growth.

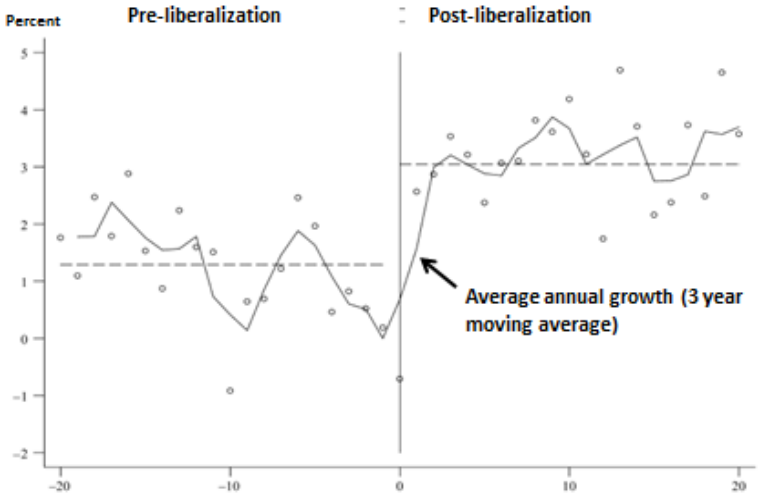
Since then, several new studies have been undertaken that address in varying degrees many of the methodological shortcomings of the early literature (see Annex 1.A1). For all their variety of methodologies and approaches, these recent studies point in the same direction – that trade liberalisation has a positive effect on growth (Winters, 2004; Hallaert, 2006). Moreover, no study finds that trade *restrictions* positively affect long-run growth, a point conceded by even the most sophisticated critics. Second, case studies of the best performing economies, often neglected by econometricians, identify several causes of growth and growth surges. In fact, Srinivasan and Bhagwati (2001), in a seminal riposte to the trade skeptics, argued that case studies made the case overwhelmingly for openness, and with a methodological validity that cross-country regressions did not enjoy. Similarly, the Growth Commission (Spence and El-Erian, 2008) looked for commonalities among the top 12 high performing economies over the long period after 1950, and found that increasing openness and trade liberalisation were traits common to all. Third, the growing body of firm-level evidence that finds trade and trade liberalisation are positively correlated with productivity improvements has become a persuasive and now robust foundation of the trade-growth literature (a point elaborated in the next section). Finally, Winters (2004) highlights findings in the literature on the interaction of *trade and other determinants of rapid growth* – better macroeconomic policy (manifest in lower inflation), lower corruption, increases in investment, and education, among others – and concludes that the

3. Studies of growth often fail to distinguish between a temporary increase in the growth rate and a sustained increase associated with the trade policy changes over the long run. Moreover, measurements of trade policy pose considerable problems because of the complexity of border barriers (e.g. tariffs, specific duties, non-tariff barriers, administrative controls, to say nothing of barriers to services trade) and difficulties of distilling these into comparable measures across countries. Also, trade reforms often occur in conjunction with other policy changes that cannot be captured adequately in the cross-country comparative models. Finally, the econometric difficulties of dealing with omitted variables and controlling for reverse causation haunt the literature, especially the early studies.

comprehensive effect of trade openness on growth may be as much through positive effects on these other characteristics of high performing countries as directly affecting growth itself.

Two recent studies merit honourable mention because their econometric sophistication tries to allay the concerns of the trade skeptics. Wacziarg and Welch (2008) undertook an event analysis of 141 liberalisation episodes (24 in depth), comparing growth before and after liberalisation. They found that, after controlling for several other determinants of growth, indeed the impact of trade liberalisation on growth was substantial. Per capita growth of countries liberalising was some 1.5 percentage points higher than before liberalisation (Figure 1.2), and investment rates were 1.5- 2.0 percentage points higher.

Figure 1.2. Economic growth after liberalisation tends to be more rapid

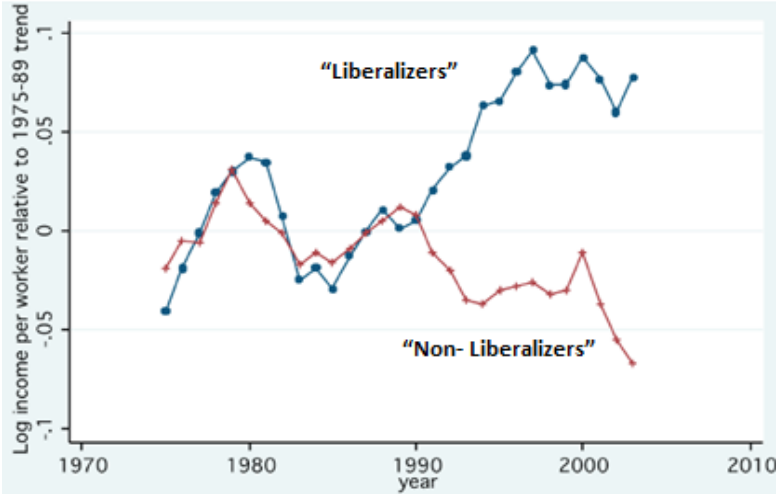


Source: Wacziarg and Welch (2008).

Estevadeordal and Taylor (2009) took the analysis further by comparing growth rates before and after 1990 when a wave of trade liberalisations occurred. They divided countries into a "treatment group" ("liberalisers") and a control group ("non-liberalisers"), an approach that is now the gold standard of impact evaluation but rarely applied to trade.[4] They also took into account the differentiated impact of liberalisation in consumption and intermediate goods. They find strong evidence that liberalising tariffs on imported capital and intermediate goods, raised growth rates by about one percentage point annually in the liberalising countries (Figure 1.3). Changes to tariffs on consumption goods, though collinear with general tariffs reforms, were only weakly correlated with growth outcomes.

4. This approach has been widely used for health and other non-trade issues where it is easier to distinguish between beneficiaries and non-beneficiaries in randomised samples. This is more difficult to do in trade because changes in trade policy routinely affect the whole country. For more on this approach in development economics, see Banerjee and Duflo (2011) and Karlan and Appel (2011). For limited trade applications, see Cadot, Fernandes, Gourdon and Mattoo (2011), and Cadot and Newfarmer (2011).

Figure 1.3. Economic growth after liberalisation tends to be more rapid



Source: Estevadeordal and Taylor (2008).

Finally, apart from open goods markets, the role of competitive services sectors has been increasingly acknowledged in the literature as an important determinant of growth (Hoekman and Mattoo, 2008; Francois and Hoekman, 2010; Jensen, 2011). In general, developing countries are more defensive of their incipient service sectors than are OECD countries (Gootiiz and Mattoo, 2009). Openness in financial and telecommunications services is an important determinant of growth. Full openness in financial and telecommunications services was associated with growth rates of up to 1.5 percentage points faster than in other countries (Mattoo *et al.*, 2006). This is because services imports generally are characterised by the liberalisation of both foreign and domestic access to the markets and because foreign suppliers to domestic market often bring in new technologies or product differentiation advantages (Hoekman and Mattoo, 2008).[5]

But trade liberalisation is not an elixir. By itself, reducing border barriers does not automatically propel growth to new trajectories. Initial spurts of growth in the wake of trade reforms in Chile during the 1970s and later in Argentina in the 1990s both ended in severe recession by the end of their first decades due to misconceived macroeconomic policies.[6] Trade reform in South Africa had minimal consequence for trend growth (McMillan and Rodrik, 2011). A conclusion coming out of reviews of several trade liberalisation episodes that failed is that liberalisation unsupported by other complementary policies may have negligible effects on economic growth. *Inappropriate macroeconomic policies* can readily undermine the otherwise

5. Recognising this potential, all 34 OECD economies, whose substantial share of output and employment lies in the services sector, have in fact agreed to build a systematic measure of barriers to trade in services – Services Trade Restrictiveness Index (STRI) – to track changes in barriers to services trade among the members, in support of GATS commitments. For more information, consult: *www.oecd.org/dataoecd/31/15/47342418.pdf.*

6. These include inconsistent combinations of fiscal, monetary and exchange rate policies that led to overvaluation of domestic currencies. Panagariya (2004) recounted several examples of trade-defeating macroeconomic policies – either through monetary shocks or misaligned exchange rate policies. Wacziarg and Welch (2008) point to inappropriate macroeconomic policies as the chief villain in vitiating the effects of trade on growth in their study. See Tybout, Corbo and de Melo (1991) for a detailed discussion of the productivity gains associated with Chile's initial reforms and the measurement complications of the subsequent macroeconomic unraveling at the end of the 1970s.

positive microeconomic effects of trade policy – as witnessed in the cases of Chile and Argentina. *Investment policies* are also crucial; Wacziarg and Welch (2008) found that fully one-fifth of the positive effects of trade liberalisation came through higher rates of investment. This, in turn, is only possible with adequate *property rights* (Edwards, 1998) and an absence of other *major distortions*[7], particularly in credit markets. *Social protection systems* are important to help smooth adjustment and address concerns that could lead to a backlash against reform, as explained by one of the studies generated under ICITE (VanGrasstek, 2011). Bolaky and Freund (2004) found that trade liberalisation was only effective in situations where the larger *regulatory environment* was supportive of private investment. Brückner and Lederman (2012), echoing earlier studies, point out that *ethnic rivalries* and national polarisation can undermine this relation and depress the otherwise positive effects of trade on growth. Haltiwanger described ways that *barriers to entry and exit* at the firm level may brake processes of resource reallocation, concluding that "(…) trade liberalisation in an economy with many distortions can yield especially adverse outcomes, and perhaps few benefits" (2011: 121).[8]

In summary, trade liberalisation may (sooner or later) be a necessary but not a sufficient condition for attaining more rapid growth. Whether countries realise the potential gains from trade liberalisation depends heavily on companion policies and the general economic environment. These supportive policies – stable macroeconomic policies, adequate property rights, effective regulation, and well designed public investments – can determine the difference between a trade reform that helps catapult trend growth to a higher level or one that produces little. Winters concludes:

> "…the preponderance of evidence points to that conclusion [i.e. that trade liberalisation contributes positively to economic performance]. Part of the benefits of trade liberalisation depends on other policies and institutions being supportive, but there is also evidence that openness actually induces improvements in these dimensions. …the case for making it part of a pro-growth policy cocktail is very strong" (2004: F18).

While much remains to be done on the liberalisation agenda – notably in trade in agriculture and services – average rates of protection have come down dramatically around the world. The main policy challenges in most countries have now transformed from managing liberalisation reforms into managing technology and other external shocks, overcoming supply side constraints, and coping with regulatory and restrictive business practices that may impede taking full advantage of trade.

1.2. Trade and productivity

A main channel through which trade affects growth in incomes is by stimulating increases in productivity. This is brought about by progressively greater specialisation in both exporting and importing activities. Indeed, rising trade ratios are broadly correlated with overall increases in productivity over the long run. Cline (2004) concluded that an increase in the ratio of trade to GDP by 10 percentage points will on average produce a long-term increase in labour productivity between 1.4 and 9.6%. Several studies show that trade liberalisation is associated

7. Krishna (2010) in Porto and Hoekman (2010) analysed several major distortions: monopolies in product markets, "hold-up problems" associated with corruption, laws and regulations that distort price incentives, poor infrastructure, and high costs of transportation.

8. Haltiwanger (2011:36) present a full list of factors that constitute policies supportive of trade liberalisation: flexible labour markets; safety nets; infrastructure; competitive product markets; developed financial markets; regulation; and property rights.

with improvements in productivity in developing countries too.[9] Chapter 14 in this volume (von Uexkull, 2012) using the example of developing countries belonging to the Economic Community of West African States also shows that exporters have higher productivity and pay higher wages.

One potential driver of productivity gains is foreign investment. This can occur through the contribution of foreign ownership to product design, technology, management, access to markets and or further specialisation associated with intra-firm trade and integration into supply chains. Consider one example: Arnold and Javorcik (2009) use Indonesian plant level data to analyse the consequences of foreign ownership. Using a control group for purposes of comparison, their analysis showed that foreign ownership led to significant productivity improvements in the acquired plants, visible in the acquisition year and continued in subsequent periods. After three years, the acquired plants exhibited a 13.5% higher productivity than the control group. The rise in productivity, driven in part by restructuring and increases in investment, resulted in greater employment and wages. Foreign ownership also appeared to enhance the integration of plants into the global economy through increased exports and imports.

These trade and investment stories have in common the impulse to reallocate resources – including labour – towards ever more productive uses. Traditional development economics literature has focused on the role of shifts of employment from low-productivity sectors, such as agriculture, into high productivity sectors, such as manufacturing (*between-sector shifts*). The recent literature on heterogeneous firms has emphasised the productivity *shifts within sectors*, where labour moves from the less productive firms into more productive ones, even in sectors that contract with trade integration, – notwithstanding measurement difficulties (see Houseman *et al.*, 2011).

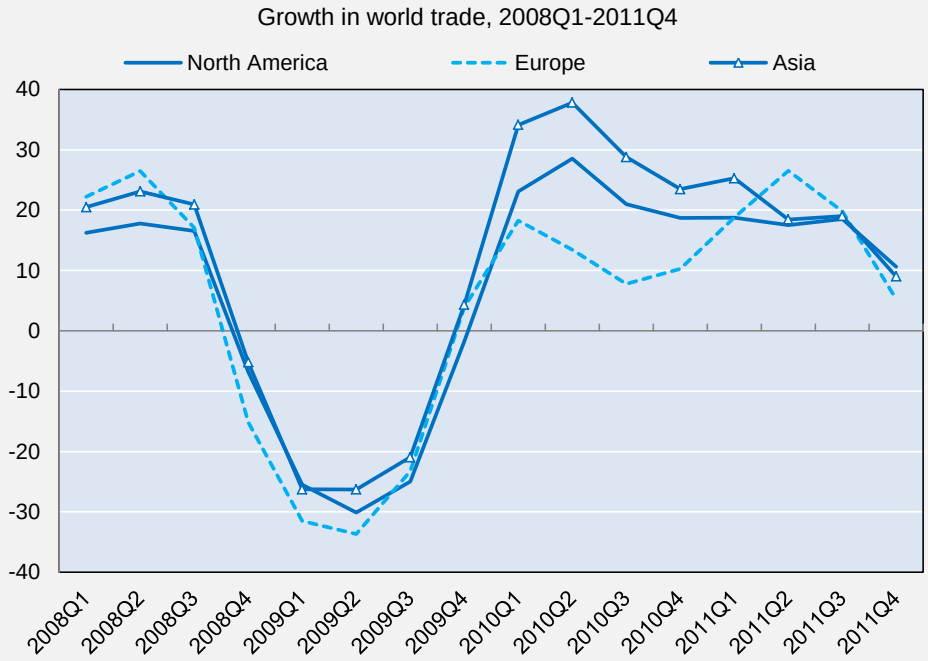
The effects of these two trends may not necessarily go in the same direction. In fact, McMillan and Verduzco (2011) presented evidence showing that sectoral change driven by within-sectoral shifts may actually imply movement of labour out of high productivity sectors into lower productivity sectors in natural resource exporting countries, a process which they characterise as retarding productivity (though it is not clear whether the out-migration on balance ended up in firms and jobs with lower productivity than those the workers left). A similar observation lead McMillan and Rodrik (2011) to conclude that economies with growing and diversified industries (notably Asia), as well as a competitive real exchange rate and flexible labour markets, were better able to capture productivity gains from both within-sector productivity growth and structural change across sectors. As the authors point out: "globalisation does increase the costs of getting the policies wrong, just as it increases the benefits of getting them right" (2011:79). While the conclusion is compelling, the empirics may require more research: Workers leaving higher-productivity sectors may in fact be leaving low-productivity jobs to accept higher-productivity jobs if in the lower-productivity sectors.

9. Goldberg and Pavcnik, wrote: "recent empirical studies suggest that trade liberalisation is associated with productivity improvements in developing countries (Harrison (1994) for Cote d'Ivoire, Krishna and Mitra (1998), Aghion, Burgess, Redding, Zilibotti (2003), and Topalova (2003) for India, Kim (2000) for Korea, Pavcnik for Chile (2002), Fernandes for Colombia (2003), Muendler (2004) and Hay (2001) for Brazil. If these productivity gains are shared with workers in the form of higher wages, trade liberalisation could increase industry wage premiums in sectors that experienced largest tariff cuts" (2007: 21).

Box 1.1. Great Recession and "Great Trade Collapse" of 2008-09: Trade shocks and adjustment

In the Great Recession, trade became a major channel of recessionary impulses from North to South – and to domestic labour markets. Trade fell sharply in the first quarter of 2009 (19.3%) putting pressure on output and employment, only to recover significantly in the second half of 2009 (Box Figure 1.1.1). While goods trade plummeted, trade in services proved more resilient during the crisis (Borchert and Mattoo, 2009). For example, while the value of US goods imports and exports declined by 33% and 21% respectively by February 2009, services imports and exports each fell by less than 7%. Consequently, overall exports of countries with higher shares of services trade also fared better.

Box Figure 1.1.1. Trade dropped significantly during the crisis, only to rebound relatively quickly… albeit at different speeds and to varying degrees in various countries



Source: WTO, Short-term merchandise trade statistics.

The impact of a recessionary shock on labour markets varies depending on a nature of the shock in a given country. Gamberoni *et al.* (2010), for example, showed that the average domestic debt and banking crisis has more than twice the impact on domestic employment than a typical global economic downturn (defined as periods with a significant decline in world GDP). Nonetheless, trade shocks can interact with domestic shocks with pernicious results, and trade openness may amplify output fluctuations caused by domestic crises. In the case of a debt or banking crisis, open economies experienced a stronger reduction in employment growth in the initial phase, but also a faster recovery. This confirms a certain trade-off between exposure to trade as a source of vulnerability to external shocks and as an engine of growth promoting recovery, a point also highlighted by other analysts (e.g. ILO-WTO, 2011).

Policies made a huge difference to labour outcomes in response to shocks. Countries with similar falls in trade have experienced very different employment outcomes. For example, while Israel and Denmark experienced similar declines in trade over the 2008-09 period (around 10%), in Israel the total number of jobs increased by 2%, while it decreased by 2% in Denmark. An ICITE study examining the experience of Denmark and Spain (Arnal, 2011) shows that Denmark's "flexicurity" policies facilitated smoother adjustment to long-term changes in the labour market by encouraging workers to migrate to new jobs. In the case of short-term recessionary shocks such as the 2008-09 crisis, however, employment protection legislation as well as part-time work schemes have proved more effective in keeping employment stable (e.g. Gamberoni, *et al.,* 2010; Görg and Görlich, 2011). Policies that slow adjustment in the labour market may mitigate immediate impacts of a crisis, but may come at the cost of aggravating market distortions and reducing job creation in the longer term (e.g. Paci *et al.*, 2009).

Exports foster productivity growth –

Exporting firms within almost any given country tend to be larger and more productive through specialisation and achieving economies of scale and scope. Relative to firms that sell solely on the domestic market, exporters pay higher wages, a characteristic not only of the United States (Bernard *et al*., 2007), but also developing countries[10], consistent with the predictions of new trade theory that the most productive firms survive and improve their productivity, usually through exporting.[11] This is partly because access to global markets allows companies to attain much larger economies of scale as fixed costs can be spread over a larger output (Spence, 2007).

Moreover, would-be exporters explicitly targeting foreign markets make different business decisions affecting their investment, human resources, technology and the selection of inputs – and this helps to drive their productivity growth (Box 1.2). In the view of Hoekman and Winters, the "exporter selection" process is not necessarily driven by exogenous shocks, such as trade reforms, but reflects investments made by firms in anticipation of accessing foreign markets" (2007). Hallward-Driemeier, *et al.* (2002) in their study of five East Asian countries found that exporting firms and FDI subsidiaries not only self-selected into export markets, but made their choices of technology, investment inputs, and labour training practices with an eye to being more efficient in reaching foreign markets.

– and so do imports

Imports also can drive increases in productivity (Box 1.2). Imports can provide access to more inexpensive or high-quality inputs, products with different factor contents (including technology) and competition in final goods markets. Several early studies for specific countries show that import competition can spur productivity growth.[12] More recently, Amiti and Konings (2007) studied Indonesian manufacturing for the period from 1991 to 2001, and showed that a reduction of 10% in final goods tariffs would increase productivity by 1%, while reducing input tariffs would increase productivity by 3%. In the last three decades, the integration of global markets through trade has ushered in a distinctive trend toward distributed international production of components for a single final product. This process is more complex than the previous model of import competition for final products. Today, different parts of the production process may be located in several countries, while the services attendant to its creation, production and marketing may be located in countries other than the home market of the product. This trend has been called, if with different nuances, trade in intermediate inputs,

10. See for example, Clerides, Lach and Tybout (1998) for Colombia, Mexico and Morocco, and Aw, Chung and Roberts (2000) for Chinese Taipei and South Korea Hallward-Driemeier, Iarossi and Sokoloff (2002) for five East Asian countries.

11. Melitz (2003) showed that trade-induced competition associated with trade liberalisation led to expansion of the more productive firms into export markets and contraction of less productive, usually non-exporting firms, with long-term dynamic effects on productivity.

12. See Tybout and de Melo (1991) for Chile, for example. Hallaert (2006: 71 ff) reviews several of the early studies: Coe *et al.* (1997) showed that openness to imports of capital goods (supposed to incorporate trading partners' stock of knowledge) enhances total factor productivity growth. Yanikkaya (2003) argued that trade promotes growth through technology transfers: the more a country (especially for developing countries) trades with the United States (one of the most highly innovative countries), the more likely it is to grow faster. Tybout and Westbrook (1995) in the case of Mexico, Aw *et al.* (2000) in the case of Chinese Taipei, and Pavcnik (2002) in the case of Chile provide suggestive evidence linking trade liberalisation and productivity growth driven by reallocations.

vertical specialisation, production sharing, and trade in tasks, as well as "slicing the production chain" (Krugman, 1995) and "second unbundling" (Baldwin, 2006).

Box 1.2. How import liberalisation affected one company in Mexico

Ann Krueger recently told of the example of one firm adjusting to liberalisation: "In Mexico, it is reported, a leading opponent of NAFTA was an owner of a white goods manufacturing company. The apartment-sized refrigerators that were produced usually lasted less than a year before a new (domestically-made) compressor was needed. The businessman believed that, once NAFTA was in effect his refrigerators would no longer be able to compete. Despite his efforts, NAFTA came into being. With its introduction, the businessman discovered that he could buy foreign-made compressors that were both cheaper and longer-lasting. Not only did he retain his share of the Mexican market, but he became the largest seller of apartment-sized refrigerators in the US market!"

Source: Ann Krueger, Keynote Address to Conference on Aid for Trade, OECD Paris, 28 March 2011.

A similar trend can be seen in developing countries. For example, Frazer (2012), studying the effects of Rwanda's lower tariffs after joining the East African Community, estimated that a five percentage point reduction in the tariff on imported inputs resulted in an increase in exports of between 5% and 10% for those firms that imported inputs. These findings are also consistent with Estevadeordal and Taylor (2009) who charted the power of lowering tariffs on intermediate goods on economic growth. Finally, Muendler (2010) found that trade liberalisation in Brazil in the 1990s led to new import competition that triggered faster productivity growth among exporters and in comparative-advantage industries, because larger market potential offers stronger incentives to improve efficiency for these firms and industries.

Services trade is also now driving productivity

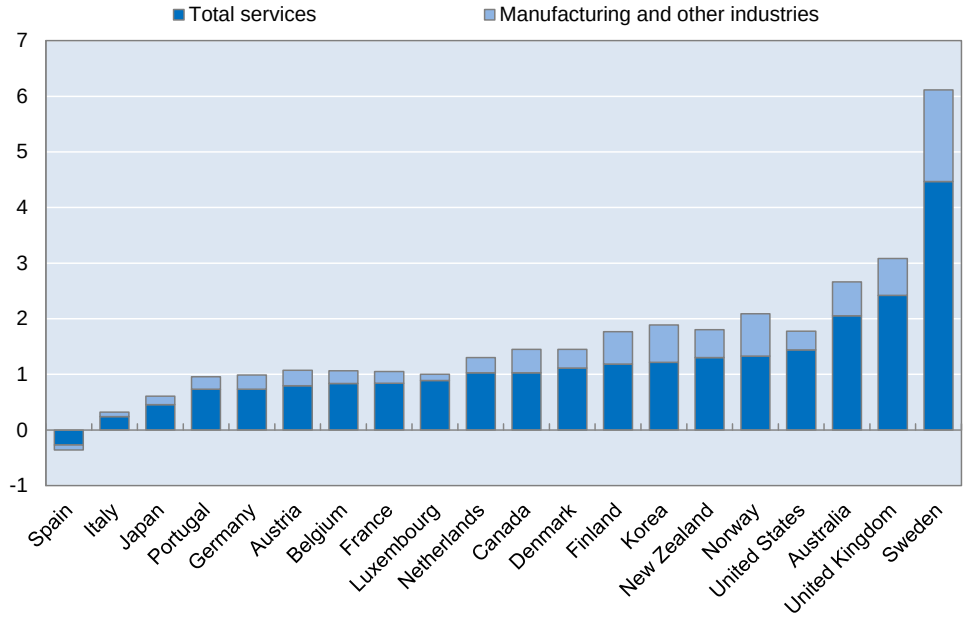
Trade in services has become increasingly important in proportion to the overall growth in international trade. Services have fluctuated around a fifth of total trade in goods and services since the 1970s, and stood at around 20% of global and OECD trade in 2006 (OECD, 2007). The largest services trade volumes are in travel, transport and other business services, while trade growth has been strongest in computer services, finance, and other business services. Services are heterogeneous – ranging from finance and telecommunications to professional services such as accounting and legal work to retail trade. They also include what have often been thought of as public services – health and education. Many services are inputs into the productive process, and as a consequence are a driver of productivity growth as well as sources of employment. In many OECD countries services accounted for more than one half of growth in labour productivity between 1990 and 2002 (Figure 1.4).

The role of trade as a driver of productivity gains is only now being studied in light of these developments. Offshoring and out-sourcing of services have figured prominently in the growth rate of services, particularly in back office services, software development, research and development functions. In Chapter 5 of this book, an ICITE study by Gonzales, Jensen, Kim and Nordås (2012) concluded that new technologies – in computers, tablets, smart phones and other telecommunications particularly – are transforming the links between business services and production in both consumer and investment industries. They argued that openness in business services can support a deepening virtuous circle of specialisation, productivity growth and movement up the quality ladder in manufactured exports. They show that using imported intermediate business services helps tailor the product to the needs of the export market, and this is one determinant of expanding export share. They related the export share of total output in each sector to the share of imported business services in gross output for the selected 44 countries from the OECD input-output database. The export share of gross output was found

to be positively associated with the import share of business services inputs. They found that a one percentage point higher services import share is associated with a 0.3 percentage point higher export share. Interestingly, for low-technology manufacturing, each additional percentage point of business services imports in gross output was associated with an additional 1.4 percentage points in export share of gross output, at the mean. For high-tech industries and business services, the corresponding figures were 0.8 and 1.2, respectively.

Figure 1.4. Services account for a large share of labour productivity growth in the OECD

Contribution to growth of value added per person employed, percentage points, 1990-2006



Source: Authors' calculations based on OECD STAN.

Another developing country study arrived at a similar conclusion, while using a different approach. Arnold, Javorcik, Lipscomb and Mattoo (2012) charted the effects of services reforms in India (measured in changes in indices of services liberalisation) on the productivity of manufacturing firms using data for about 4 000 firms from 1993 to 2005. They found that banking, telecommunications, insurance and transport reforms all had significant, positive effects on the productivity of manufacturing firms, both domestic and foreign. The aggregate effect of services liberalisation was an increase in productivity of 11.7% for domestic firms and 13.2% for foreign firms for a one-standard-deviation increase in the liberalisation index. For banking reforms, a one-standard-deviation change in the banking sector index corresponded to a 6.5% change in productivity for both domestic and foreign firms. A one-standard-deviation change in the telecommunications liberalisation index corresponded to a 7.2% increase in productivity for domestic firms and a 9.8% increase in productivity for foreign firms. A similar change in the transport index led to a 19% improvement in productivity of all firms. Only foreign firms appeared to benefit from the insurance reform enjoying a productivity boost of 3.3%.

In a study of services in another developing country, Mattoo and Payton (2007) conducted one of the most comprehensive reviews of services and their past and potential role in one low-income country – Zambia. The study argued that moving toward greater services liberalisation could contribute to future productivity growth in several sectors and provide new sources of exports.

Productivity matters for wages

Increases in productivity, trade-induced or otherwise, will necessarily impact labour involved in the production process. Over the long run, the growth of productivity is broadly correlated with rising wages. Irwin (2009) showed that labour productivity growth in the United States has been a fairly accurate predictor of real compensation to workers. This correlation is not perfect, however, and during relatively long periods, growth in wages can lag or exceed growth rates in productivity.[13] In the United States, for example, labour compensation lagged productivity increases beginning in 2002. The US Bureau of Labor Statistics (Fleck, Glaser and Sprague, 2011) attribute this gap not just to the difference between the prices indices used to adjust for inflation in hourly compensation and productivity measures, but also by an unprecedented decline in the labor share (the share of employees' compensation in total output) since 2000. Irwin attributes some of this gap to the spiraling executive compensation (particularly in the financial industry) that also increased income inequality in the United States. Similarly, for a sample of large OECD countries, unit labour costs rose in tandem – broadly – with productivity (See Figure 1.5 for selected countries).

Trade, together with technological progress and domestic competition, is integral to a larger Schumpeterian process of growth. This process entails "creative destruction" of businesses and jobs as more productive firms take their place. In the United States, for example, Haltiwanger (2011) reported that on average 15% of plant-level jobs were destroyed each year, but that 17% of establishment jobs were created – for a gross turnover rate of 24% between 1980 and 2009. About 90% of the job reallocation occurred within rather than across industries. Other countries experience similar churning in the labour market. In the United Kingdom, some 15-16% of the labour force experiences a job turnover in any given year (Hijzen and Swaim, 2007). These patterns reflect the underlying growth processes of new technologies entering production, and new products coming on the markets, while old products mature and contract – and thus a continual reallocation of resources, inputs and labour from low-productivity businesses to high-productivity businesses. In the United States, about half of productivity gains in a manufacturing industry over a decade were associated with reallocation of inputs and outputs. In retail trade, where productivity growth has been especially rapid in the United States, the reallocation process has been even greater (Haltiwanger, 2011).

1.3. Trade and labour markets

Does trade create jobs? No…and yes

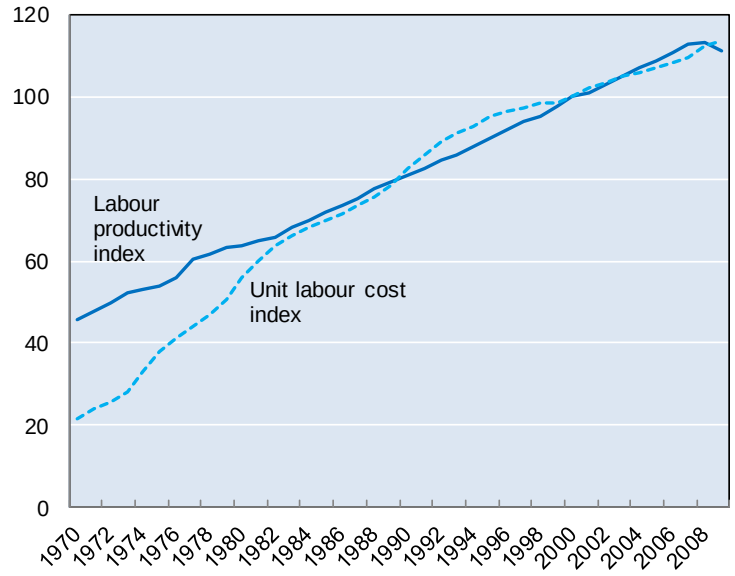
At its most basic and from a long-run perspective, as Irwin (2009) wrote, "…total employment is not a function of trade but of the total number of people in the labour force". Indeed, for OECD countries, total employment has closely tracked the growth in the labour force (Figure 1.6). Moreover, unemployment rates in the United States had been coming down from the oil-crisis of the 1970s until the Great Recession. The gaps between the lines in Figure 1.6 can vary considerably from country to country. Average reported official unemployment rates appear to be higher in developing countries than the 8.2% reported for the high-income OECD in 2012, ranging from 10.2% in Latin America to 28.8% in Sub-Saharan Africa (McMillan and Verduzco, 2011:24). These numbers can be deceiving. For many developing countries, labour force surveys are often limited to major urban areas, rarely include informal employment, and too frequently are absent altogether. In most low-income countries,

13. See also ILO (2011b, Chapter 3) for evidence on falling wage share of national income. Using population weighted averages and a different dataset, Belser and Lee (2011) found that wage growth lagged behind productivity growth in the United States, France and Germany after 2000.

where most people work in agriculture or the informal service sector, people are too poor to weather long periods without any earnings at all. If surveys were standardised, including informal and rural nonfarm employment, it seems likely that they would reveal a similar pattern of long-term growth, albeit with larger or smaller levels of effective unemployment.

Figure 1.5. Rising labour productivity is associated with rising wages… usually

Labour productivity and unit labour cost, 2000=100, simple average of 6 OECD countries[a]



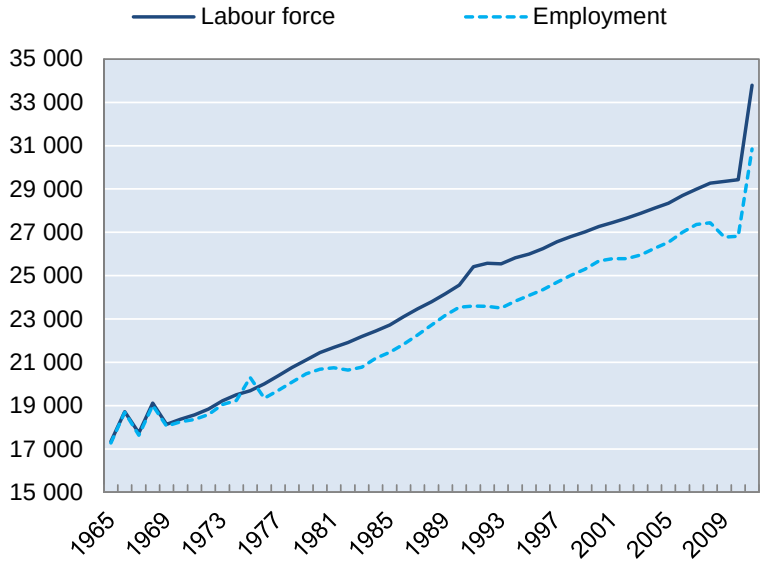
a) France, Germany, Japan, Korea, United Kingdom, United States.

Note: A similar trend can be obtained by substituting deflated compensation per employee for unit labour cost.

Source: OECD STAN Database.

Figure 1.6. Labour Force growth largely determines employment growth

Labour force and employment (in thousand workers), simple average of selected OECD economies[a]



a) Australia, Canada, Denmark, Finland, Germany, Ireland, Italy, Japan, New Zealand, Spain, Switzerland, Turkey, United Kingdom, United States.

Source: OECD Labour Force Statistics.

It is precisely for this reason that Hoekman and Winters (2007) drew a useful distinction between long-run and short-run labour market effects. In long- run growth models, aggregate employment is determined by growth in the labour force, macroeconomic variables, and labour market institutions – and trade openness or trade liberalisation plays no role at all (2007:77) or a marginally positive one.[14] The secular trend downward in unemployment rates between the mid-1970s and the Great Recession occurred at the same time as growth in US imports from developing countries, which rose from under 6% to nearly 20%. To be sure, external or domestic shocks can disrupt labour markets and cause unemployment, but after some period, labour markets generally clear and return to long-run employment equilibrium. In a recent study Dutt, Mitra and Ranjan (2009) indeed found a striking difference in the short versus long-run responsiveness of unemployment to trade liberalisation. When considering permanent trade liberalisation episodes, they found an immediate rise in unemployment in the short run and a reversal of that rise and an eventual decline in unemployment in the long run.

In some countries there may be a slight secular increase in the rate of unemployment, adjusted for the business cycle, but institutional factors – the tax wedge, the average unemployment benefit replacement rate, union density and an indicator of regulatory impediments to product market competition – play the predominant roles. Imports are largely uncorrelated with unemployment (Figure 1.7). Görg and Görlich (2011) in an ICITE study included as Chapter 6 in this volume review a dozen more recent studies, and conclude that:

> "…imports may cause job displacement in the short-run, due to adjustment costs. (…) While fewer studies have been able to consider differences between the long and short run, those that have done so generally find that, in the long run, there appears to be a positive relationship between imports and employment…" (2011:28).

Beneath these aggregate numbers, however, a tectonic shift in the global location of manufacturing has taken place in the last three decades. McMillan (2011) showed that outside of Asia and Eastern Europe, total employment in manufacturing has remained remarkably stable or even declined. At a time when global manufacturing employment rose from 115 million in 1980 to 162 million, high-income countries saw their collective employment in industry fall from 61 million in 1980 to 54 million in 2005. Similarly, employment in manufacturing fell in Latin America, the Middle East and North Africa and in Sub-Saharan Africa. While India showed some slight increase, the huge gains were in East Asia, which saw employment their manufacturing sector rise from 27 million to 69 million, and Eastern Europe, where it rose from 6 million to 18 million.

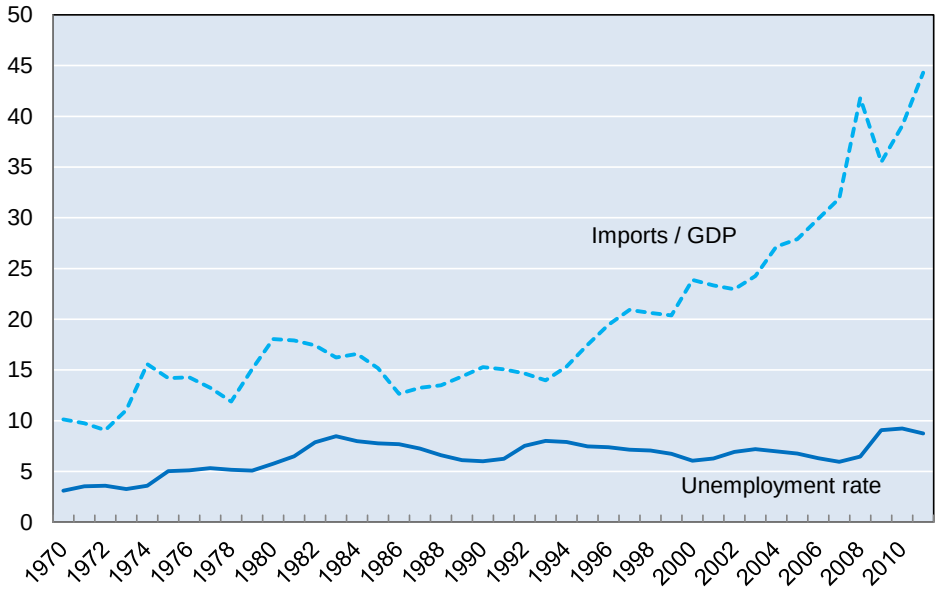
This process reflects long-run growth in the global economy. The shift in global employment in manufacturing has been remarkable in the last 30 years. The developing world has been growing at a pace twice as fast as the high income countries for the better part of the last three decades, and associated new investment has gone into manufacturing, especially low technology and labour-intensive products. Even though the United States, for example, has witnessed a steady secular decline in jobs in manufacturing, services have expanded. The tendency of manufacturing employment to decline as a percent of the total labour force and for services to rise is a characteristic of most high-income countries. In France and the United Kingdom, manufacturing employment has declined while services rose. This is partly because many of the

14. In a recent paper, Dutt, Mitra and Ranjan (2009), using cross-country data on trade policy, unemployment, and various controls (such as employment laws, trade union power, civil liberties, country and labour force size) and controlling for endogeneity and measurement-error problems, found fairly strong and robust evidence that unemployment and trade openness were negatively related.

jobs created in the services sector require greater skills and pay more than manufacturing, even though sectoral wage averages may be lower in services (see Gonzales *et al.*, 2012 - Chapter 5 in this book). Görg and Görlich report in Chapter 6 in this volume that German employment in manufacturing declined by 5% between 1999 and 2008, notwithstanding strong export performance; other declining sectors were agriculture (9%), mining (40%), construction (23%), finance (6%) and public administration (9%). Meanwhile, employment in hotels, transportation, education, health and personal services increased.

Figure 1.7. Rising imports are uncorrelated with unemployment… in the long run

Percentages, selected OECD countries[a]



a) Australia, Austria, Belgium, Canada, Denmark, Finland, Former Federal Republic of Germany until 1991, France, Germany, Iceland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States (simple averages).

Source: OECD *Economic Outlook* database.

Most economists analysing job losses economy-wide ascribe the dominant effect to technological change. This also has the effect of creating stronger demand for skilled workers and less demand for unskilled workers – even in developing countries (Feenstra and Hanson, 1999). Moreover, many industries with high job turnovers experience little import competition (Kletzer, 1998). Several studies[15] have found that trade has little explanatory effect on changes in labour demand across industries. As a long literature that preceded these studies, Hoekman and Winters (2007) conclude that "Thus, despite different methodologies, the labour and trade literatures have been in substantial agreement on the effect of trade on wages and employment: i.e. skill-biased technical change dominates."

Wages and employment: trade lift, trade pressures

Any discussion of wages requires a preface. Wages do not constitute the principal form of income of many workers, especially in developing countries. Only a small share of the labour

15. These include Lawrence and Slaughter (1993), Sachs and Shatz (1994), Robbins (1996), and Desjonqueres, Machin and van Reenan (1999), among others.

force is part of the wage-earning sector in developing countries, and so changes in wages, especially in the short run, may not reflect changes in per capita incomes. In low-income developing countries, workers earning wages in the formal sector may be less than 20% of the total. Analysis of trade and labour that focuses solely on wages will miss important developments in income, employment and working conditions in agriculture, services, construction and mining sectors.[16]

These caveats notwithstanding, several *firm*-level *studies* point in a common direction: firms that trade usually pay higher wages. As noted earlier, exporters make investment and technology decisions that increase their productivity – and this invariably increases the skill-content of their labour force and consequently their average wages (Melitz, 2003). An abundant literature has documented that exporting firms pay higher-than-average wages. Exporters in the United States, for example, on average pay wages that are some 6% higher than non-exporters (Bernard *et al.*, 2007).

More recently, the literature has focused on import effects on wages. In an ICITE study (Chapter 2 of this volume), Stone and Cavazos (2011) used a panel of 60 high-income and developing countries[17] over the period from 1989 to 2004 to examine the relationship of trade and wages. They found that imports have a strong and positive effect on wages through their effects on productivity. Detailed two stage analysis indicated that the dominant effects were through productivity shifts associated with import competition driving out less productive firms. They also found that returns to capital tended to increase. Conversely, tariffs were found to have a depressing effect on wages. They conclude: "Taken as a whole, the evidence is that imports are good for wages".

An ICITE study by Friedman *et al.* (2011, Chapter 4 of the present volume) examined the interrelated effects of openness to trade and FDI in Chile. These authors categorised 29 different sectors for 2003 and 2008, into three clusters of openness (low, medium and high) based on three measures of openness: import competition, export opportunities, and FDI. They found that the open sectors paid a wage premium to their workers. In fact, wages in the open tradable sectors were 18% higher than the non-tradable sectors, and that wage gap increased to 25% in 2008. Seen from a different angle, the average wage in the most open sectors proved to be about 25% higher. Labour market policies were also found to be important, including those with respect to core labour standards. Unionisation had an important positive effect on wages in high openness sectors – belonging to a union was associated with wages that were 34% higher in 2008.

Offshoring and the effects of intermediate trade

Trade in intermediates, according to Miroudot *et al.* (2009), amounted to 56% of goods trade and 73% of services trade in OECD countries in the period from 1995 to 2005.[18] To arrive at these numbers, they looked at disaggregated trade statistics for major products and crossed these

16. Analysis in developing countries – especially low income developing countries – is further limited by the fact that labour market surveys are sporadic and incomplete.

17. Because of missing data for many countries, the actual number of countries that entered into the econometric analysis fell to 30, "mostly EU economies".

18. These shares are considerably larger than those found in other studies, arguably because of their more comprehensive methodology. An earlier study focusing on trade in intermediates (Feenstra and Hanson, 2001) found that, while the total was substantially lower, the rate of increase surpassed that of most merchandise trade. For the US between 1972 and 1990, the imported share of intermediate inputs rose from 6.5% to 11.6%; they report much higher shares for Europe and Japan.

findings with findings from input-output tables. They find that intermediate goods trade is growing at about the same pace as all trade, so the trend did not affect the final composition of OECD merchandise trade. Services exhibit a different pattern, as services intermediates were indeed a faster growth segment of the market.

The consequences for productivity mirror findings for trade as a whole.[19] Higher trade flows of intermediates are correlated with higher productivity. For example, an OECD study on dynamic gains of trade finds that a 1% increase in the share of imported intermediate inputs raises a firm's productivity by 0.3% (Stone and Shephard, 2010). Miroudot *et al.* (2009), analysing 29 industries in 11 OECD countries, find two channels through which trade in intermediate goods and services exerts this positive impact: First, foreign inputs embody the foreign technology, and this technology is more productive than the one embodied in domestic inputs; second, trade in intermediates pushes the frontier of a reallocation of resources to greater efficiency. Country-specific studies confirm these positive effects on productivity of offshoring of intermediate inputs in high-income economies.[20]

An oft-voiced concern among policymakers – predominantly in high income countries – is the fear of the impact of offshoring on domestic economies. In a paper treating the role of multinational corporations, Ebenstein *et al.* (2009) sought to determine whether offshoring or trade had led to reallocation of labour both within and out of manufacturing, and then measure its impact on the wages of domestic workers. They linked industry-level data on offshoring activities of US multinational firms, import penetration, and export shares with individual level worker data from the Current Population Surveys in the US for this purpose. Controlling for the "routineness" of individual occupations, they found that offshoring to high-wage countries is positively correlated with US manufacturing employment, while offshoring to low-wage countries is associated with US employment declines. At the same time, wages for workers who remain in manufacturing are generally positively affected by offshoring; in particular, they found that wages are positively associated with an increase in US multinational employment in high-income locations. Using data between 1982 and 2002, they found that changes in import competition or offshoring within the same industry range were associated with wage changes ranging from zero to positive and significant, albeit small in magnitude. For example, a 10% increase in the number of workers employed by US firms in low-income countries had virtually no impact on wages across all skill groups. However, a 10% increase in offshoring to high-income countries is associated with a small increase in wages of less-skilled workers of between 0.1 and 0.2%. The impact of an increase in import penetration is negligible and not statistically significant when the authors focus only on manufacturing workers.

19. These new patterns of trade have required theoretical innovations to create trade models that explain outcomes (Baldwin and Robert-Nicoud, 2007), for example, extend the traditional Hechsher-Ohlin trade model by arguing that off-shoring is the equivalent of "shadow migration" that plays a similar role to technological progress. The theoretical formulations suggest that the off-shoring can help realize new sources of comparative advantage and explain inter-industry trade. While the general consequences for production, prices and wages are ambiguous, they conclude that typically factor owners of home country nations are better off with off-shoring, depending on terms of trade effects. Rojas-Romagosa (2011) used simulations to deduce that off-shoring can raise or lower welfare in rich countries depending on terms of trade effects, but in low-income countries, off-shoring will always be welfare increasing.

20. For example, US studies find that offshoring material inputs has a positive effect on productivity, accounting for approximately 5% of productivity growth (Amiti and Wei, 2006). Gorg and Hanley (2009) found that offshoring intermediate services enhances innovation in Irish firms, and a study of Spanish firms found a positive productivity effect of offshoring intermediate inputs (Kohler and Smolka, 2009 – cited in Lanz *et al.*, 2011). US studies find that offshoring material inputs has a positive effect on productivity accounting for approximately 5% of productivity growth (Amiti and Wei, 2006).

As with Brazil's trade reform, this study found that for the United States, much of the negative effects on wages of offshoring and trade operate through downward pressure on wages of workers who leave manufacturing to take jobs mostly in services or in agriculture. Some workers in those industries exposed to import competition – mainly unskilled workers – did suffer from such dislocation and left manufacturing, often suffered cuts in wages when relocating to the service sector. The negative wage impact is particularly large among displaced workers who also switch occupations. Ebenstein *et al.* (2009) estimated wage losses of 2-4% among workers leaving manufacturing and an additional 4-11% wage loss among workers who also switch occupations. These effects are most pronounced for workers who perform routine tasks.

It is not only wages that adjust, but so too can employment rates. For the United States, Amiti and Wei (2006) found that offshoring material inputs had a small negative effect of less than 0.5% on employment, when industries are finely disaggregated (450 manufacturing industries). However, even this effect disappeared at the more aggregate level of 96 industries indicating that there is sufficient growth in demand in other industries within these broadly defined classifications to offset any negative effects.

Two ICITE studies explored the impact of offshoring on wages and employment in two European countries. The ICITE study of Italy (Iapadre, 2011) examined the employment and wage effects of trade and offshoring in Italian manufacturing industry using a panel of 15 sectors for the period from 1999 to 2008. The authors find that after controlling for the effects of output growth and technical progress on labour demand, trade specialisation has played a positive role in sustaining growth of employment in the last decade, offsetting the negative impact of the competitive pressures from developing countries and production offshoring by Italian firms. The positive impact of trade specialisation on labour demand exceeded by nearly ten-fold the combined negative effect of the share of developing countries in world exports and the impact of offshoring. Furthermore, using a panel of data on individual workers for the period from 1997 to 2003 the authors find, after controlling for a set of individual characteristics, firm size and productivity, competitive pressures from developing countries exert a negative effect on wage growth. The elasticity of wages with respect to the share of developing countries in world exports is around -2%. While this effect can be attenuated, depending on the export specialisation of the region in which workers are located, the wage gap between white- and blue-collar workers increases in any case.

In their ICITE study on Germany, Görg and Görlich (Chapter 6) found no significant effect of trade on individual-level wages, once standard controls for firm size and location (East Germany) and individual worker characteristics were considered. The authors suggest that the relatively small differences over the decade between the performance of these industries is rooted in German labour market policies that are designed to promote stability and conclude that trade in its various facets is only to a low degree responsible for wage developments at the individual level. The study further looks at the link between an individual's probability of losing his or her job and offshoring. It finds that offshoring of material inputs reduced the risk of being unemployed in both services and manufacturing sectors.[21] The effect was larger for the services sector (60% lower probability of unemployment). This is in line with the findings by Bachmann and Braun (2011) that outsourcing of materials increases employment stability in services industries. On the other hand, offshoring of services in the services sector in Germany increased in the risk of being unemployed, in particular for high-skilled workers. (There is no comparable

21. In the case of manufacturing, the effect is statistically significant only for the medium skilled group – a one percentage point increase in material offshoring implies a reduction in probability of being unemployed by about 30%.

employment effect in the manufacturing sector beyond the positive impact of offshoring of material inputs.) The authors suggest that this outcome is driven by the fact that Germany does not have a comparative advantage in the services sector and, thus, may encounter difficulties in competing internationally in services.

Services offshoring – trade in tasks

Apart from offshoring of material inputs, it is offshoring and outsourcing of selected tasks in services sectors that has increasingly become a dominant trade concern of politicians in high-income countries.[22] To better illustrate the mechanisms behind services offshoring, Jensen and Kletzer (2006) define a set of occupational characteristics that make them susceptible to offshoring or out-sourcing. Movable jobs are those with little face-to-face customer contact, high information content, and work processes are "telecommutable" – and the work can be sent over the internet. They conclude that as much as 40% of the services jobs in the United States could potentially be affected – and these are workers with higher skills and higher incomes than workers in manufacturing and in the non-tradable services industries.

In a paper included as a special section in this volume, Lanz, Miroudot and Nordås (2011) re-examine the question of the extent to which services are off-shorable (Chapter 7). This study looks at tasks distribution by occupation and then performs a cluster analysis to see that tasks in fact come in bundles and are not as easily separable and thus offshorable as might have been assumed in the literature. Matching indices of the importance of offshorable tasks by occupation with data on employment by occupation, they find that between 20 and 29% of all jobs in major economies such as the United States, Canada and Australia could be off-shored (though not all would be).[23] An alternative approach to measuring trade in tasks is to extend the technique of measuring the factor content of trade[8] to measuring the tasks content of trade.[24]

Studies of the wage and employment effect of services offshoring are too few in number and cover too few countries (mostly advanced countries) to produce definitive conclusions. Lanz *et al.* (2011) then look at the relative share of selected task clusters in output and exports. Imports of services were found to be unrelated to "Working with others", but positively associated with "Information processing tasks" and "Getting information and communicating", suggesting that services imports may complement "Information processing" tasks and "getting information and communicating". The effects are small, however, and must be interpreted with caution (the more so, given the small sample of countries). Import penetration of goods seems to have negligible effects on the composition of tasks within an industry performed in the local economy. In some capital-intensive manufacturing industries, import penetration is associated with a shift from tasks related to operating or monitoring machinery towards information related tasks, while import penetration by and large appears to have little effect on the composition of tasks in local services sectors. That said, they found that the import penetration in services has a small, but *positive* effect on the share of tasks related to getting and processing information being performed in the local economy. They concluded that offshoring complements rather than replaces local information processing. As with distortions in the market for intermediate inputs

22. The WTO has divided services trade into four categories: Mode 1: Cross border supply of services (e.g. internet-related services); Mode 2: Consumption abroad (e.g. tourism and travel); Mode 3: Commercial presence (e.g. foreign companies investing abroad in services, such as retail trade or finance); Mode 4: Temporary movement of worker (e.g. labour service contracts or professional services permits). This section focuses only on Modes 1 and 4.

23. See van Welsum and Vickery (2005), Blinder (2009) and Jensen and Kletzer (2010).

24. See, for example, Stone *et al.* (2011); and Trefler and Zhu (2010).

generally, restrictions on offshored tasks will have a negative effect on national productivity, especially in more diversified, complex economies.

Other studies also show no or somewhat positive effects of offshoring of services on wages and employment. Criscuolo and Garicano (2010) for the United Kingdom found that increased imports of services raised both wages and employment in occupations subject to licensing requirements. Similarly, Geishecker and Görg (2008) also using British data, found that offshoring raised the wages of skilled labour and lowers the wages of unskilled labour. Crinò (2009) showed that service imports drove up the relative demand for skilled versus unskilled labour in tradable sectors. Blinder and Krueger (2009) administered a worker-level survey on earnings and job offshorability and found no correlation between the two. In a 2007 paper, Kletzer pointed out that workers and occupations exposed to trade in services experience job losses at a rate slightly higher than for the whole economy – 0.13%, higher than for the economy as a whole of 0.10%; she is quick to point out that the data used in the analysis came from 2001-03 in the United States, the period when the dot-com bubble burst. One study for the United Kingdom found no evidence that importing intermediate services is associated with job losses or greater worker turnover (Hijzen *et al.*, 2007). Using firm-level data, the study found that firms that start importing intermediate services experience faster employment growth than equivalent firms which do not. This appears to result from the cost-saving or productivity effects of offshoring that give rise to an increase in the scale of production.

But not all the news is good. Using data for 1996–2007, Liu and Trefler (2011) studied the impact of services imports from China and India on US labor markets over a ten-year period. They found that the trade was associated with considerable occupational movement in US white collar workers. Switching to jobs with a lower wage occurred in 17% of the trade-exposed labour force and to ones with a higher wage in 4%. Import penetration was also associated with transitions to unemployment of 0.9 percentage points. Those staying in their pre-importation occupations saw only marginal downward pressure in their occupations, a fall of 2.3%. The study could not account for unobserved worker characteristics. Under the assumption that these had no effect (i.e., "no sorting"), downward switching was associated with an annual earnings hit of –13.9% and upward switching was associated with an annual earnings gain of +12.1%; under the assumption of worker sorting, trade-induced switching had no statistically significant impact on earnings. They conclude that "service offshoring to China and India has had adverse effects" on US labor markets – and while these effects are small, they are not small enough that they can be dismissed out of hand.

Virtually all of these studies of services trade have focused on the impacts in high-income countries. The view is different from the perspective of developing countries. Messenger and Ghosheh (2010) examined the effects of business processing outsourcing on labour markets in four countries – Argentina, Brazil, India and the Philippines. Wages of workers were generally higher than prevailing average wages. In India, wages in the Business Process Outsourcing sector were nearly double the average Indian wage, and in the Philippines 53% higher for workers of the same age on average. They also point out that the work had downsides – it is high stress, often at night in Asia to accommodate Western markets, and subject to electronic monitoring (cited in McMillan and Verduzco, 2011).

Skilled labour seems to benefit more from increased labour demand and higher wages in both high-income and low-income countries, contrary to Stolper-Samuelson logic. Low-skill jobs in high-income markets are often high- skill jobs in low-income countries, so off-shoring can create demand for relatively skilled labor in both trading countries. Gonzales *et al.* (2012) cited studies showing that demand for high-skilled workers generally increases in high income countries as a response to offshoring of services (Crinò, 2010; Jensen, 2011). This is because

offshored services are complementary to high-skilled tasks performed at home, and because jobs are created when skills-intensive services sectors start exporting.[25] Information-intensive tasks performed in the European Union and the United States held steady or increased slightly after 2000; moreover, the share of information-intensive tasks in local inputs was positively associated with import penetration in services, pointing to the complementarity of off-shored services and locally produced services (Lanz, 2011, and Crinò, 2010). Meanwhile, in India, nominal high-skilled wages more than doubled both in manufacturing and tradable business services in 2003-07. Gonzales *et al.* (2012) argue that if regulatory and trade barriers were reduced further for trade in business services, developing countries would benefit from greater employment in the sector and higher wages (Chapter 5).

In addition to studies of trade in business services, studies of services trade in the form of temporary movement of workers (Mode 4) are gradually emerging. For example, movement in professional services – accountants, lawyers, computer programmers, engineers – are particularly important for developing countries, particularly small countries, where services may not be plentiful but whose contribution to productivity and growth is essential. For example, the average labour productivity of East African users of professional services is 10-45% higher than non-users (Brenton *et al.*, 2012). Yet barriers to the temporary movement of workers limit competition and the efficiency of professional service providers in Eastern and Southern Africa. National markets for professionals and professional services in East Africa remain underdeveloped, whereas regional markets are fragmented by restrictive policies and regulatory heterogeneity. An effective reform agenda will require policy action in four areas: education, regulation of professional services, trade policy, and labour mobility at both the national and international levels.

A special section in this volume (Beverelli, 2012) examines "spillover effects" of migration and offshoring policies in a framework with multiple origin and multiple destination countries to establish how policies in various areas may impact one another (Chapter 8). The paper's starting point is an observation that the public tends to support open trade policy more than open migration policy. If domestic spillover effects are relevant, a host government can influence the number of migrant workers not only by acting directly on its migration policy, but also indirectly, by providing incentives for firms to source labour abroad via offshoring. These findings are in line with the findings by Baldwin and Robert-Nicoud (2010) that depict offshoring as shadow-migration.

Trade in services, one could conclude provisionally from this literature, is largely beneficial to wages in both high-income and low-income countries. Services outsourcing has either had minimal or no effects in high income markets to date – and there is some evidence that it may even have increased labour demand and contributed to higher wages, if in small measure. In developing countries, services liberalisation, particularly through Modes 1 and 3, seems to have had a more definitive impact in job creation. The telecommunications revolution and back-office-processing industries have been net plusses for workers in developing countries. These conclusions might well be taken as provisional – because research is limited and gaps abound, and because the world is undoubtedly at the earliest phase of a global integration in services that is likely to intensify in the years ahead.

In summary, the mosaic of offshoring studies in intermediate goods as well as services presents only a partial picture and one without conclusive patterns. On the one hand, workers

25. In 2010, the ten largest exporters of commercial services (share of global exports in parentheses) were: United States (14.1), United Kingdom (6.2), Germany (6.2), China (4.4), France (3.8), Japan (3.7), India (3.2), Spain (3.2), Singapore (2.9), Hong Kong, China (2.8).

in exporting firms and in sectors with comparative advantage are likely to enjoy more buoyant job opportunities and higher wages. Workers with higher skills and in higher skilled occupations are also likely to benefit and perhaps substantially. On the other hand, workers in import-competing industries and occupations may well see their activities contract; for those workers that remain, wages may actually increase, but for those that exit and migrate to different occupations or different sectors, earnings losses can be substantial. Offshoring and trade in tasks merely expand the scope for productivity and wage gains from this process – but they also expand the scope for losses, though the effects in the aggregate appear to be minimal.

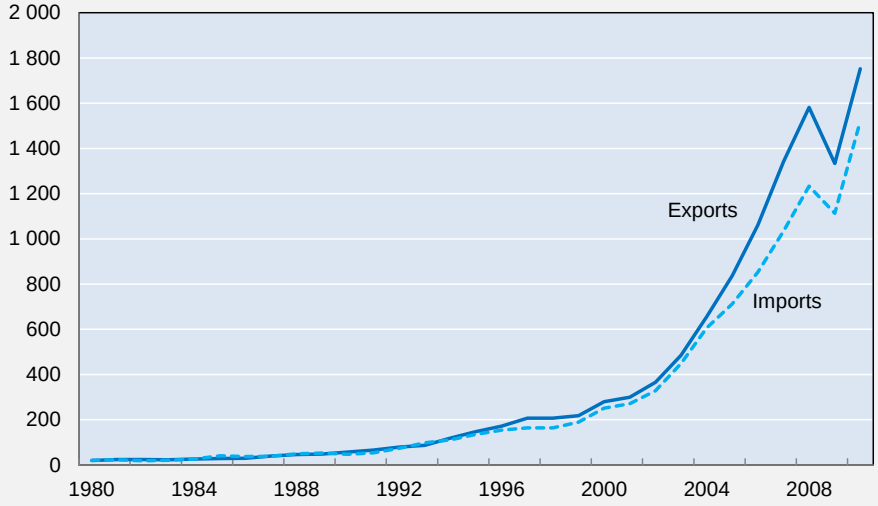
Box 1.3. China's expanding role in the global economy

China's participation in the global economy began an historic acceleration after its opening in 1992. The relatively rapid rise of China has undoubtedly had an impact in many countries. Beginning with its trade reforms in the early 1990s and continuing progressively through to its joining of the WTO in 2001, the availability of this new pool of workers for manufacturing has transformed the global supply of labour. This combined with the entry of Russia and Eastern Europe into global markets following the fall of the Berlin Wall, effectively "doubled" the size of the world labour force producing tradable manufactures (Freeman, 2005). China became the world's largest exporter in the space of two decades. Autor *et al.* (2011) calculated that Chinese imports explain one-quarter of the aggregate decline in US manufacturing employment.

But this is only half of the story. To increase its domestic productivity and be able to export, the Chinese government progressively liberalised its economy and reduced import barriers. Since 1994, China has also hugely increased its imports and has become the world's second largest importing country (Box Figure 1.3.1). As a consequence, China is importing raw materials from Africa, foodstuffs and grain from Latin America, and many intermediate and capital goods from the middle- and high-income countries of Asia and the West. Many of its exports have an intermediate import content that is unusually high compared to other BRICS economies. In a recent OECD study, imported intermediates in exports from China and other selected economies were computed from OECD input-output tables combined with bilateral trade data; the study showed that in 2005 some 27.4% of China's exports value originated from imported intermediates (OECD, 2011d). As part of global value chains, the country has tended to specialise in parts of the production process that are labour-intensive.

Box Figure 1.3.1. China has become the world's largest exporter and… the second largest importer

China's exports and imports of goods and services, 1980-2010, billion USD.



Source: WDI.

The consequence of China's importing high technology goods and services is to create high-paying jobs in exporting firms in partner countries. That said, there may remain an asymmetry in labour markets because contractions in employment and wages in import-competing industries may exceed employment and wage increase in export industries.

1.4. Trade and inequality

Even if trade facilitates growth in *average* per capita incomes and wages, the effects are not uniform. Averages may mask a "polarisation" in employment – and, by creating high-skilled, high-wage jobs and jobs in low-wage but non-routine tasks, while hollowing out less skilled middle wage jobs (Davidson and Matusz, 2004), that may contribute to a worsening of income distribution. Thus, the role of trade and globalisation in changes in income distribution and wage inequality merit special review.

Is trade a driver of income inequality–

Inequality has increased in most high income countries since the 1980s (OECD, 2011a).[26] According to the OECD's *Divided We Stand* study, in 17 of the 22 countries for which long-term data exist, income inequality worsened, three remained roughly the same and two recorded reduced inequality. Many developing countries also exhibit a trend of rising inequality, including China and other East Asian countries, India, and about half of Latin American countries, while Eastern Europe and Africa lack reliable data to assert dominance of one trend over another (World Bank, 2006:45-46). Another measure, albeit partial, points in the same direction: labour's share of national income has fallen since the 1990s in "nearly three quarters of the 69 countries" for which data were available (ILO, 2011b: 56).

More recently, within the OECD, the latest trends in the 2000s showed a widening gap between rich and poor, not only in some of the already high inequality countries like Israel and the United States, but also – for the first time – in traditionally low-inequality countries, such as Germany, Denmark, and Sweden (and other Nordic countries), where inequality grew more than anywhere else in the 2000s. At the same time, Chile, Brazil, Mexico, Greece, Turkey, and Hungary reduced income inequality considerably – often from very high initial levels. In fact, in Latin America, a region with perennially high inequality, 12 of 17 countries for which data were available *reduced* income inequality between 2000 and 2007 (Gasparini and Lustig, 2011, Birdsall *et al.*, 2011). These conflicting trends led Scarpetta *et al.* (OECD, 2011a) to posit that perhaps there is a global trend toward a similar level of inequality, higher than that in the 1990s, but more uniform across countries.

The same OECD study analysed the determinants of changing income inequality, focusing on three factors – globalisation, technology and employment policies. Globalisation is of concern because it may be coupled with rising imports and related job dislocation. Moreover, theory would suggest that in wealthy countries skilled workers benefit as trade opening creates demand for their products and services while imports and outsourcing compete away less-skilled jobs.[27]

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26. The OECD (2011a) is careful to point out that inequality can be measured in several ways, and studies frequently employ different definition.

27. Theory suggests that average wages between rich and poor countries are likely to converge with trade, but that wages within rich countries will likely widen, even as wages within poor countries are likely to narrow. Hecksher-Ohlin and the Stolper-Samuelson theories would predict that trade integration would raise the returns to the abundant factors of production. In this theoretical world, trade opening would mean that skilled workers in developed countries, which are abundant in skilled labour, would see their demand expand as the products they produce experience greater demand with trade, while unskilled workers would see their demand fall. This is because developing countries, using their abundant supply of unskilled labour, supply an ever greater share of the world market for labour-intensive goods. In this world, wages in rich countries would tend to widen, while wages in poor countries to narrow; and average income gaps separating rich and poor countries would tend to narrow.

But the world in more complex than this one dimensional construct. The study found that "neither rising trade integration nor financial openness had a significant impact on either wage inequality or employment trends within the OECD countries" (OECD, 2011a:29). Even when only the effects of import penetration from emerging countries were considered, the effects of trade on wage-inequality appeared neutral. Regulation and employment protection legislation did have an impact. In countries with weaker employment protection legislation, imports from low-income countries did tend to heighten wage dispersion. Foreign direct investment and its offshoring activities were also found to play a role, but the most important source was technological change.

These findings are consistent with those of the IMF (2007). The IMF team looked at factors determining changes in Gini coefficients for both developed and developing countries, and found that globalisation was less important than technological change, as well as other factors in both rich and poor countries. While globalisation – including measures of international capital flows and trade – did have an impact on income inequality in rich countries, it was outward FDI, not trade that led to this impact. For developing countries, neither globalisation nor its subcomponents were associated with rising income inequality. To the contrary, trade openness in fact contributed to greater income equality in developing countries.

Whereas the studies above focused on trade openness, a study by Gourdon, Maystre and de Melo (2008), focused on the role of trade liberalisation in countries with differing factor proportions, not only skilled and unskilled labour but also differing endowments of natural resources and technology. This study used Gini coefficients as the measure of inequality and considered the changes in within country income inequality in 61 countries between 1980-2000 as well as a different data set with 55 countries for 1998-2008. They interacted various measures of factor endowments with tariff reductions. They concluded that tariff reductions were associated with increases in inequality in the capital-abundant and high-skill abundant countries of the high-income world. Increases in inequality were also positively correlated with trade liberalisation in countries abundant in a non-educated labour force and/or dependent on a few natural resources. However, trade liberalisation tended to decrease inequality in countries that are well-endowed with primary-educated labour. This serves to underscore the importance of educating labour to realise any wage-equalising effect of trade.

The chapter in this volume by Giordano and Li provides an exhaustive review of the recent literature on the impact of trade and poverty nexus in Latin America – a region with one of the most unequal distributions of wealth and other assets in the world (Chapter 12).The preponderance of evidence they cite, though at times conflicting, suggests trade leads to growth and poverty reduction, if with a relatively small contribution. Whenever trade integration was not necessarily "pro-poor", rigidities in the labour markets, the historical pattern of protection that created rents in unskilled-labour-intensive sectors and the emergence of new global low-wage competitors were among the main suspects as the causes of increasing inequality.

– or perhaps wage inequality?

Much of the trade literature has focused on *wage inequalities* rather than measures of *household consumption inequality*.[28] Focusing solely on wage inequality may miss broader movements in the opposite direction for several reasons: in many countries (particularly developing countries) only a small portion of the labour force may be wage earners; relative price shifts affect household consumption baskets of the poor differently than the rich; nearly all

28. Several excellent reviews of this enormous body of work can be found in Winters *et al.* (2004), Goldberg and Pavcnik (2007), Harrison *et al.* (2011) and Pavcnik (2011).

governments have policies that facilitate transfers to households; and rising commodity prices may shift incomes toward rural households. For example, Viet Nam's liberalisation produced wage widening while at the same time it improved the distribution of household income (Box 1.4).[29]

Box 1.4. When trade-induced wage inequality worsens but income becomes more evenly distributed: The case of Viet Nam

Most people in Viet Nam worked in the country side as farmers in the mid-1990s. With the trade opening, many young and underemployed workers left the land to take jobs in new shoe and garment factories. These new industries paid a premium for skilled workers and non-production workers that rose rather quickly, increasing wage inequality in the cities. Simultaneously, the price of rice went up, and the price of fertiliser fell, increasing the real incomes of low-income households. The combination of these effects created a more equitable distribution of household income, but with widening wage differentials.

Source: Dollar, 2005.

When focusing on the determinants of wage inequality, the literature does not speak with one voice. Some recent empirical studies lend credence to the view that technology is the principal driver. Michaels *et al.* (2010) studied the United States, Japan, and nine other OECD countries from 1980 to 2004 focusing on the role of technology, captured in measures of ICT. They found that indeed ICT was a driving force of wage "polarisation" in these countries. Trade openness seemed also to be associated with rising skill premiums, but the trade effect disappeared when combined with ICT. Industries with faster growth of ICT had greater increases in relative demand for workers with higher levels of education; these industries also exhibited bigger falls in relative demand for middle-educated workers. Technologies can account for up to a quarter of the growth in demand for the college educated in the quarter century since 1980.

Both Dollar (2005) and Hoekman and Winters (2007) assert as stylised facts that the returns to skilled labour relative to unskilled labour in both high-income and developing countries have increased, implying that wage inequality has become worse. However, this cannot be taken for granted in all countries at all times. In fact, Lederman (2011), using more recent data, asserts that in six countries of Latin America the returns to education – one proxy for skilled labour – have held roughly stable since the 1990s; generally, returns to secondary education have declined, while returns to university education have declined except in Chile and Colombia.

Other studies also suggest that trade liberalisation should not be automatically assumed to increase the returns for the high-skilled workers. For example, Ferreira *et al.* (2007) studied net trade-induced changes in industry-specific wage and skill premiums in the period 1988-95 in all sectors of the Brazilian economy and found that trade liberalisation in Brazil did in fact contribute to the reduction in wage inequality in the entire Brazilian economy, not just in manufacturing. This is because pre-liberalisation tariffs adjusted by import penetration were highest for skill-intensive goods and fell more than those protecting other goods. Moreover, massive exports of cereals and sugar to China have simultaneously boosted demand for unskilled agricultural labour. The ICITE study on Mexico, using urban labour force surveys for the period from 1992 to 2009, also finds that trade liberalisation associated with NAFTA led to larger employment expansion in low skilled occupations, thus, benefitting unskilled workers (Campos-Vázquez and Rodríguez-López, 2011). In the case of Mexico, this result may, however, be driven by certain bottlenecks in the economy, including the quality of education (OECD, 2009b).

29. Lederman (2011) points out the importance of this gap, and suggests ways to unite these two literatures in future research.

If skill-biased technology remains the dominant view among economists of wage inequality determinants, Pavcnik (2011) and Harrison *et al.* (2011) in their respective and thoughtful reviews point out that recent research raises new questions about trade. One channel is through trade in tasks. Feenstra and Hanson (1999), among others, have found evidence that makes a strong case that trade in intermediates raises the skill premium in both trading partner countries – as the offshored intermediate may involve low-skill labour in wealthy countries but relatively high skilled in developing countries. Other studies of occupational wage differentials, notably for routine tasks (Autor *et al.*, 2003 and Ebenstein *et al.*, 2009), provide evidence of rising skill premia in the US associated with import competition. A second channel of effects has to do with quality up-grading in the presence of trade; as firms are exposed to trade, those that expand their market share, tend to shed lower-skilled workers to realise productivity gains, and that effect is magnified as they simultaneously begin to compete on the basis of product quality – which also typically creates demand for greater skills within the firm (Verhoogan and Kugler, 2012). Because of the difficulties of disentangling technological change and trade-related change, a third channel is through bundling of technology in traded goods, that is, the combined effects of technology and trade in imported machinery. One recent paper by Burstein, Cravino and Vogel (2011) studied trade in computers and machinery, and its complementarity to skilled labour; they found that trade in capital goods could raise the relative demand for skilled labour and the skill premium. To illustrate this, they conducted a counterfactual calculation moving from the trade levels observed in the year 2000 to autarky, and found that doing so would decrease the skill premium by 16% in the median country of their sample, by 5% in the United States, and by a much larger magnitude in countries that heavily rely on imported capital equipment. Coe, Helpman and Hoffmaister (1999) presented empirical evidence demonstrating the impact of technology diffusion – in their case through trade in goods – on total factor productivity growth. At least theoretically, the same should hold true for technology that is diffused through factor flows. Both Pavcnik (2011) and Lederman *et al.* (2011) call for new research to explore these channels through which trade might affect income distribution.

In the meantime, this discussion leads to several conclusions:

- There is no definitive and generalisable evidence that trade is associated with worsening household income distributions in either high-income or low- and middle-income countries; in those countries with deteriorating income inequality, if anything, the bulk of the evidence points other more powerful determinants, including the role of technological progress, regulations and labour market institutions, and tax and expenditure policies of governments.
- To the extent that globalisation plays a role in the increasing inequality evident in high-income countries, the aggregate cross-country studies suggest it has more to do with finance and outward foreign direct investment rather than trade.
- Recent work suggests that offshoring and outsourcing may indeed play a role in widening some wage disparities among occupations, as might the interactive effects of trade and technology together, but the evidence is preliminary.
- Even if trade were to exert pressures toward household income inequality, using trade policy to attempt a remedy for these pressures would likely be an ineffective and counterproductive response (see final section).

1.5. Trade and working conditions

Job quality has several dimensions

The quantity of jobs is of interest to society and workers, but so too is the quality of jobs. Job quality has several dimensions. Though by no means comprehensive, important elements of job quality include respect for core labour standards as defined by the ILO[30], as well as working hours, health and safety at the workplace, job security and benefits (Robertson *et al.*, 2009). Trade-induced competitive pressures could conceivably encourage countries to compete against each other by reducing labour standards and working conditions to minimise costs – a "race to the bottom". Also, increased competition could reduce workers bargaining power, thus, also leading to a reduction in labour protection and benefits, and, at the extreme, provoke a downward spiral in labour standards and working conditions around the world.

Donado and Wälde (2012) explore the effect of international differences in occupational health and safety (OHS) standards on international capital flows, and then the effect of these flows on accident rates (as a proxy for OHS standards) in the developing countries. Their method is a careful theoretical argument and literature review. Their underlying assumption is that trade unions, with access to greater knowledge than the individual, collectively set higher workplace standards. If unions in the North produce moderate safety standards, capital flows to the South will less than flows without unions as some level of health are better so marginal productivities of capital are higher with unions; if unions produce standards that are too high from the vantage of capital owners, some capital will be driven out of the country and these flows will reduce safety standards in the North as workers lose power to set high standards. In the South, however, active unions and the associated rise southern standards will increase global output in the world as a whole will rise and so will welfare. Their review of the quantitative literature suggests that the effect of integrating capital markets on northern standards is small: a 1% reduction of the northern capital stock would lead to an increase in the sickness level of less than one-tenth of a percentage point, though positive effects of unions on the south is stronger. They conclude: "Globalization effects on OHS standards … do therefore not provide an argument against globalization."

Indeed, the worst of fears about a race to the bottom do not appear to have materialised systematically in the real world, though examples do arise. A large empirical literature seems to point, if anything, to the opposite conclusion.[31] For example, Flanagan (2006), researching 30 years of data for a wide sample of countries, found that open economies have, in fact, *significantly better* working conditions than more closed economies, including fewer accidents at work, fewer hours of work, and greater freedom of association. Moreover, inferior working conditions as measured by gender inequality, child labour and lack of respect for rights to free association and collective bargaining more often than not deter, rather than encourage, foreign

30. The four core labour standards are: elimination of all forms of forced or compulsory labour; effective abolition of child labour; equality of opportunity and treatment; and freedom of association and right to collective bargaining.

31. See, for example, Rodrik (1996), Oman (2000), OECD (1996, 2000), Kucera (2002), Ghose (2003), Busse (2004), Flannagan (2006). For example, OECD studies (1996, 2000) found that countries with lower core labour standards have not enjoyed better export performance, though China may be an exception.

investment of multinational companies (e.g. Kucera, 2001; Neumayer and de Soysa, 2004, 2005a, 2005b).[32]

Broad-based cross-country studies covering both developed and developing countries that trace the relationship between trade and working conditions beyond core labour standards have, however, been rare, which explains to some degree the persistence of the "race-to-the-bottom" view.[33] Two systematic cross-country comparisons included in this volume that emerged from ICITE research – Flanagan and Khor (2012) in Chapter 9 and Häberli, Jansen and Monteiro (2012) in Chapter 10 – contribute therefore in important ways to a better understanding of the relationship between trade and working conditions. Flanagan and Khor (2012) studied a broad sample of economies during the period from 1970 to 2000 and found that openness was in fact associated with improved working conditions and open economies significantly outperform closed ones. While in Asia the differential was mostly related to higher wages, outside of Asia the rate of fatal on-the-job accidents in manufacturing and measures of work hours are also significantly lower in open economies. Labour rights are also generally better respected. The impact of trade has been mostly indirect, through its impact on GDP. Country case studies undertaken as part of ICITE complement these broad-based findings by showing that trade contributed to a reduction in the number of hours worked in Japan (Kiyota, 2011) and interacted with unionisation in the export sectors in Chile to raise wage premia for workers in those sectors (Friedman *et al.*, 2011, included as Chapter 4).[34]

The study by Häberli *et al.* (2012), Chapter 10 of this book, further explores the question whether regional trade liberalisation (as embodied in regional trade agreements, RTAs) led to a weakening of labour market regulation other than that relating to core labour standards. The authors study a broad sample of 74 countries, both developed and developing, over the period from 1980 to 2005, and found that regional trade agreements were, in three of eight regression models, associated with selected indicators of working conditions: reductions in severance payments (after 20 years), reductions on unemployment benefits for one year, and advance notice after nine months of employment. However, the associated reduction in labor protection occurred only in high-income countries and, contrary to a common perception, only in response to RTAs with other rich economies – rather than with the emerging South.[35] There is also no evidence for a lowering of labour protection related to RTA trade in low-income countries, while the impact was either positive or negligible in middle-income countries. The fear that trade agreements between high-income countries and developing countries would worsen working conditions in the North because of trade competition from low-wage workers in sweatshops of the South found no support from the evidence of this study.

32. Since civil liberties are correlated with wages, and higher wages may deter labour-seeking FDI, the correlation between increased respect for civil liberties and FDI is only positive when estimations control for wages (Kucera, 2002).

33. Flanagan (2006), quoted here, is a notable exception, however the study does not account for demographic characteristics or within-country variations. Hasan and Mitra (2003) and Robertson *et al.* (2009) also attempt a broad-based comparison but do not apply a universal framework, pursuing an eclectic approach instead.

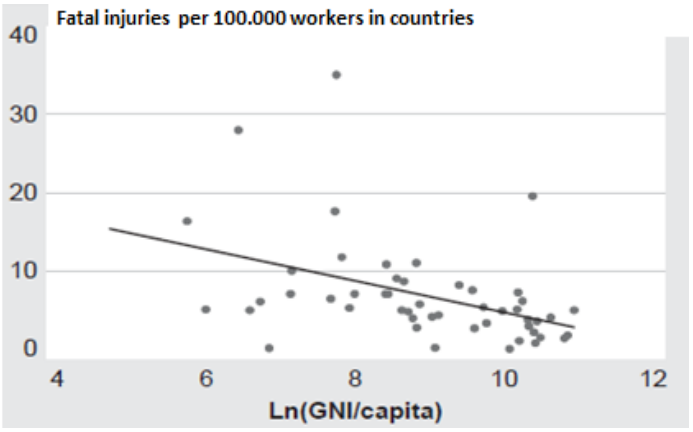
34. It is interesting to note that this finding also confirms the view that exposure to globalisation did not contribute to erosion of unions, but rather that this trend has occurred independently of trade (Baldwin, 2003).

35. The study extends Fischer and Somogyi (2009) and Olney (2011) who analyse how globalisation affects employment protection legislation in OECD countries.

Trade can improve working conditions through several channels. *Growth*, inextricably bound up with trade, is one channel as working conditions tend to rise with the level of development. For example, fatal injuries are negatively correlated with national per capita income (Figure 1.8). Working conditions may improve because developed countries specialise in industries with better conditions or because they raised labour standards through policy and increased enforcement as income increased – both likely to be linked to globalisation (Robertson *et al.*, 2009). Also, the shift of labour from the agricultural sector, typically the locus of poorest working conditions in developing countries, to urban jobs tends to deliver higher wages and better conditions (Robertson *et al.*, 2009).

Reputation-sensitive international buyers and pressure from advocacy groups constitute a second important channel of convergence towards higher labour standards. Harrison and Scorse (2010), who examine the effects of anti-sweatshop campaigning by US activists in Indonesia, found evidence that foreign-owned and export-oriented firms are more susceptible to pressure exerted by labour advocacy groups, which led to higher compliance with minimum wages and labour standards. Even after controlling for worker and plant characteristics foreign-owned and export oriented firms were more likely to comply with labour standards legislation. Exposure to foreign anti-sweatshop agitation, which involved dissemination of information to workers, has also helped to redress the bargaining imbalance, strengthening the positive impact on working conditions, as predicted by the literature (e.g. Kim, 2007; Polaski, 2006).

Figure 1.8. Fatal injuries usually fall as countries become wealthier



Source: Robertson *et al.* (2009).

Foreign direct investment can also impact the quality of working conditions in a country through operations of multinational enterprises (MNEs) in the local labour market. A recent study by the OECD (2008a) shows that FDI may have a substantial positive effect on wages in foreign-owned firms in the host country, but that this effect is mostly related to a short-term impact of cross-border mergers and acquisitions and is reflected mostly in better paid opportunities for new employees rather than increased wages for incumbent workers following a takeover.[36] Other studies also find evidence that local workers employed in multinational

36. The study compares the wages and working conditions of employees in the foreign affiliates of MNEs and their supplier firms to the wages and working conditions that they would have received had they not been employed by a foreign firm or one of its suppliers. The comparison with employment conditions in comparable domestic firms provides therefore a plausible approximation of the conditions that would have been offered to individuals had they not been able to work for MNEs (directly or indirectly) and thus allows an estimation of the contribution of MNEs to improving wages and working conditions in a host country.

companies receive wage premia, in particular in developing countries, even after controlling for workers characteristics, but some papers point to negligible or slightly negative effects.[37] Besides the impact on wages, foreign investors are also likely to impact the working conditions in the country. As mentioned earlier gender inequality, child labour and lack of civil rights are negatively correlated with FDI inflows, which suggests that FDI, after controlling for wages, tends to encourage better working conditions (Kucera, 2002, and Neumayer and de Soysa, 2004, 2005a, 2005b). While there appears to be no systematic evidence on the propensity of MNEs to export domestic labour practices to developing countries (OECD, 2008b), the impact of domestic consumers and non-governmental monitoring groups increases compliance with the existing laws, often having an overall positive effect on compliance in the country. The recent controversy over the production of the iPad in China is an illuminating example (Box 1.5).

Box 1.5. How international companies and NGOs can impact local working conditions: The case of Apple in China

Globalisation implies not only international competition but also increased influence of international pressure-groups on domestic markets. While global companies may be tempted to cut corners and increase their profit margins by, for example, increasing working hours or compromising on other workers rights, international NGOs can make a big difference by bringing to light such abuses and impacting reputation-sensitive international buyers. For example, most recently, an inspection of Chinese plants making electronic products for Apple conducted by the Fair Labour Association, a monitoring group, found widespread violations - mainly in regards to hours worked. Although far from unusual in the Chinese market, these discoveries made headlines and provoked an outcry that drew protests and petitions. Several labour rights organisations started independently scrutinising Apple's suppliers. As a result, the manufacturing giant supplying electronic parts to Apple, Foxconn, pressured by its reputation-conscious client, pledged to sharply curtail working hours and significantly increase wages on 29 March 2012. The move is seen as a breakthrough and could improve working conditions across China. In the global market where reputation matters, international companies open to pressure from clients and NGOs have an important role to play in increasing working conditions in the local market.

Source: *New York Times*, 30 March 2012.

Conditionality embedded in trade agreements is also playing an increasingly important role in the convergence of standards. Specific provisions embedded in international trade agreements that require compliance with labour standards in exchange for market access may contribute to the upward trend. One example is the 1999 United States-Cambodia trade agreement that offered a possible 18% annual increase in export entitlements for Cambodian textile and apparel industry on top of Multi-Fibre Arrangement (MFA) entitlements, conditional on the implementation of a program to improve working conditions. The ILO was requested to monitor progress in implementation through a technical cooperation project - "Better Factories Cambodia" and so Cambodia's apparel quota allocation under the MFA was effectively linked to ILO reports on working conditions. Polaski (2004) notes the positive

37. Some studies look at composition of workers at different education- and skill levels in foreign-owned firms in a host country (Lipsey and Sjöholm, 2004, and Morrissey and Te Velde, 2003) and find positive effects; others trace the impact of foreign take-overs on individual wages using either firm-level data (e.g. Girma and Görg, 2007 or Lipsey and Sjöholm, 2006), which tend to yield large positive results but are likely to be biased, or worker-level data that, at best, find small positive effects (e.g. Andrews *et al.*, 2007 and Balsvik, 2006). Other studies exploit workers mobility by tracing workers moving from domestic to foreign-owned firms (e.g. Andrews *et al.*, 2007 and Balsvik, 2006) and find confirming evidence for positive short-term effects.

impact of such conditionality-driven approaches, but also point to the necessity of effective monitoring and safeguards in order to ensure these effects are not short-lived (Polaski, 2006).

Informality might increase

Trade may be associated with improvements in the working conditions of the formal sector, but that simultaneously occur with increases in informal employment. According to the 2002 ILO framework of informality, the "informal economy" refers to economic activities that are not covered by formal legal protection normally benefiting workers. This includes home-based work, subcontracting, and services provided outside the firm, some of which is self-employment and other is paid work in informal arrangements. In practice, this may mean a lack of social protection, labour rights or disrespect for safety regulations. Sinha (2011) estimates that 80% of workers in low-income countries, 40% of those in middle-income countries, and 15% of those in high-income countries are employed in the informal economy.

Competition from imports – arising from liberalisation or new technological advances – could drive firms out of business or induce firms to improve their productivity by adopting new technologies, shedding labour, or focusing on a narrower range of product lines. In either case, newly shed workers may migrate into the informal sector. Similarly, import competition may create incentives for firms to opt-out of the formal sector altogether to minimise costs associated with compliance with standard labour protection laws (though a more common motivation is to escape taxes).[38]

While there is some evidence that trade liberalisation does lead to exit from the import-competing sectors (e.g. Muendler, 2010), trade liberalisation does not seem to systematically contribute to an increase in informality. A study of Brazil by Goldberg and Pavcnik (2003) found that, controlling for individual worker characteristics, cross-sectoral variation in tariff changes is not a significant determinant of the probability of employment in the informal sector. Moreover, in another study co-written with Attanasio (2004), they find that whereas trade liberalisation initially led to increased informal employment in Colombia, this effect disappeared once a labour market reform was implemented, allowing more flexible adjustment and formalisation. Therefore, it seems that trade does not lead to an expansion of the informal sector, provided that country's labour markets are flexible enough to allow adjustment within the formal sector. A number of studies find that capital or labour mobility are crucial for allowing trade liberalisation to improve welfare of workers in the informal economy (e.g. Marjit and Acharyya, 2003; Marjit and Beladi, 2005; Marjit and Maiti, 2005) and others highlight the importance of education and skill upgrading to facilitate the formalisation of the informal sector (e.g. de Ferranti *et al.*, 2001). A recent review of empirical, quantitative studies on the impact of trade liberalisation on informality in Sinha (2011) found that trade liberalisation had an inconsistent effect on the degree of informality, and the empirical studies from Latin America found that trade had a small impact, if any. The largest determinants of the size of the informal sector are per capita income levels and government policies – towards small and medium-sized enterprises, requirements for establishing a business, labour taxation, and the like.

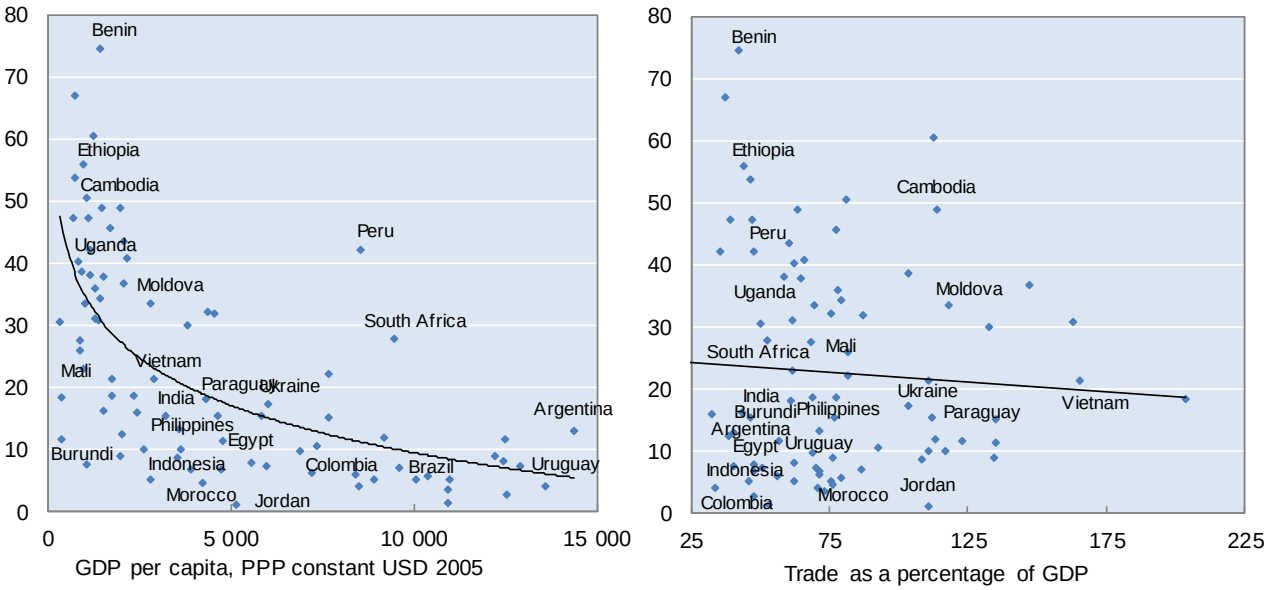
38. For a review of theoretical models showing that trade may induce informality, see Bacchetta, Erst and Bustamante (2009) and Sinha (2011).

Will trade increase child labour?

Child labour is prevalent in poor developing countries[39], but as countries develop, children spend more time in school (Figure 1.9). Trade plays a minimal direct role – but there are abusive firms in the tradable sectors much as with the non-tradable sector. Most working children live in rural areas and work in subsistence agriculture and in non-tradable commercial agriculture (Edmonds, 2010). There appears to be no direct link between trade openness and increasing child labour rates. There is some evidence to suggest that the opposite is true. To the extent that trade liberalisation can reduce poverty, it is also likely to reduce the incidence of child labour (McMillan and Verduzco, 2011). For example, a cross-country analysis by Edmonds and Pavcnik (2006) shows that 1% of increased trade openness *reduced* child labour by 0.7%, an effect primarily achieved through income growth. The primary channel through which trade affects child labour is therefore income growth.

Figure 1.9. Child labour declines as countries climb out of poverty and trade plays a negligible role

Economic activity rate of children, age 7-14 (% of total) by income and trade ratio



Note: Chart on the left: Logarithmic trendline, chart on the right: linear trendline.

Source: WDI, latest year available.

Foreign investment, at times demonised as a driver of child labour in developing countries, is largely exonerated in the several studies of this issue. Many studies find a negative correlation between FDI and child labour as investors systematically prefer countries with lower incidence of child labour and higher secondary school attendance.[40] Child labour is found to negatively affect labour quality (Kucera, 2002) as well as works as a brake on human capital formation (Braun, 2002), deterring FDI in the short and long run.

39. See, for example, Edmonds and Pavcnik (2005a and 2005b) and Edmonds, Pavcnik and Topalova (2010).

40. For example, Neumayer and de Soysa (2004, 2005a, 2005b), Kucera (2002), Busse and Braun (2003).

Trade can create opportunities for women workers (as well as for men)…

Trade can generate both positive and negative effects for women.[41] First, trade-induced competitive pressures may reduce the margin for discriminatory behaviour, as companies seek to hire the best workers at the least costs. Second, to the extent that trade liberalisation benefits unskilled workers in developing countries, women may benefit disproportionally, given their limited access to education and resulting generally inferior skill levels. Third (and in contrast), unequal access to inputs can impede the ability of women to take advantage of new opportunities created by trade liberalisation. Female subsistence farmers may lack access to finance that would otherwise allow them to profit from trade liberalisation. Similarly, while technological diffusion related to globalisation facilitates access to new jobs to women, in particular in the services sector using ICT technologies, it can equally lead to higher female job precarity and reduced wages, if gender educational and skills gaps persist and women are unable to meet the demands of new technologies. Finally, as explained by Sen (1990) due to low value attached to unpaid and household work, when trade leads to the expansion of employment opportunities for women in export sectors, it may also boost female inter-household bargaining power (Kabeer, 2004). This is reflected, for example, in increased decision-making by women over marriage and fertility decisions reported among workers in exporting sectors in Bangladesh (Fontana, 2008). This in turn may have important spillovers into education and training decisions of women facing improved employment prospects and their children.

The way these cross-cutting forces play out depends on the country. In general, trade has been found to narrow the gender gap, by increasing female labour participation.[42] On average, the more countries open to trade, the more female labour participation increases (Figure 1.10). This is particularly the case in the developing countries that enjoy a comparative advantage in unskilled-labour abundant sectors and tend to see women disproportionally employed in the exports sector, mostly manufacturing. For example, 70% of employment in export processing zones (EPZs) in 2005-2006 was female, reaching 90% in countries like Jamaica and Nicaragua (Boyange, 2007). This positive female employment elasticity to exports, also reflected in country studies presented at the ICITE conference in Tunis, has led to assertions of "feminisation" of manufacturing employment (Berik, 2011).

Despite these overall positive effects, trade does not seem to improve other pre-existing gender inequalities associated with vertical and horizontal occupational segregation and the gender wage gap. In fact, such high concentration in exporting sector due to limited opportunities in the domestic economy may expose female employment to volatility related to sudden changes in terms of trade or other trade shocks.[43] In terms of impact on female wages at home some studies confirm the competitive effect of trade on female wages (e.g. Garcia-Cuellar 2002; Black and Brainerd, 2004), while others find contrary evidence (Berik *et al.*, 2004; Busse and Spielmann, 2006). An ICITE study on South Africa finds higher gains from regional agricultural liberalisation for women than for men (Sandrey *et al.*, 2011), but generally evidence remains inconclusive. Overall, cross-country studies suggest that, once worker's skills and occupation are accounted for, the gap falls in high-income countries, while no

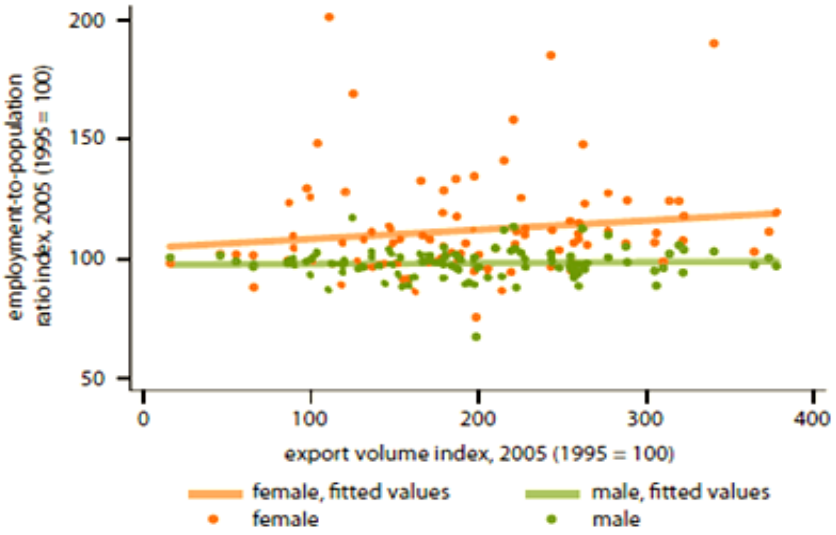
41. See Berik (2011) for a review of theoretical approaches to gender effects of trade liberalisation.

42. See, for example, Bussman (2009) who finds that trade openness increases female labor force participation in developing countries. Busse and Spielmann (2006) further find that gender inequality in labour force activity rates and educational attainment rates are negatively linked with comparative advantage in labour-intensive commodities.

43. Levinsohn (1999), for example, in analysing the impact of trade liberalisation in Chile, finds that gross job reallocation rates are often over twice as high for women than for men.

discrimination-reducing effect is found in medium and low-income countries (Oostendorp, 2009). This may suggest that technology embedded in FDI that raises demand for skills dominates pro-competitive effect, as long as educational differences between women and men persist. While in the OECD economies there remain no significant gender educational gaps (OECD, 2011b), developing countries persistently underperform in gender equality in education (World Bank, 2012), which is an important factor for high concentration of women in low-productivity, low-pay jobs there. Unless educational and vocational training gaps are bridged, trade-induced productivity growth may impact negatively female employment opportunities over time.[44] Improved skills, on the other hand, may allow women to profit from new jobs arising in export-oriented services sectors.[45]

Figure 1.10. Trade openness creates jobs for women disproportionately, if slightly so…



Source: World Bank (2012a), World Development report: 2012.

All this is to say that trade can create new job opportunities (Box 1.6), but it cannot ameliorate pre-existing problems of unequal access to assets and education. If domestic barriers to employment and skills mismatch are not addressed, high elasticity of female employment to exports may in fact expose female workers to higher volatility of employment, as displayed most clearly after the expiry of the MFA agreement and resulting contraction of light manufacturing sectors in some developing countries (e.g. World Bank, 2012b). These problems however necessitate reforms at home and cannot be addressed through trade policy.

Therefore, trade does not seem to emerge from the literature as either the hero or villain in setting the working conditions of labour. Trade per se seems to have no systematic effect on the

44. For example, the process of upgrading and moving up the value chain in manufacturing has already reversed the process of feminisation of employment in the sector in some developing countries (Berik, 2011). A cross-country study by Milberg and Tejani (2010) shows that that during 1985-2006 period in middle-income countries the growth of the female share of employment was inversely related to the growth rate of both capital intensity and value added per worker in manufacturing. Doraisami (2008) and Berik (2000) present evidence that a gender skills mismatch explains this trend.

45. In countries like India, where important advances in female education were made, women make up 40-70% of call centre workers and the share of women working in IT services has increased from 10% in 1993 to 30% in 2008.

various aspects of working conditions – whether measured through job quality, informality, job safety, child and female labour. The strongest systematic effect is its first order effects on income growth, which is the single biggest common denominator for improved working conditions. To the extent that trade is associated with rising incomes, it helps improve opportunities for women, children and male workers as well.

Box 1.6. Linking women to global markets to raise incomes

The Marula tree is commonly found in the savannas of Namibia and constitutes an important source of food an income in rural communities in the country. For generations women in rural Namibian communities have been using traditional techniques to produce marula oil for the use of their families to sell locally on an informal scale. By starting a cooperative in 1996 - the *Eudafano Women's Cooperative (EWC)* - these rural women were able to start selling their product on local and export markets. It quickly turned out that the global market allowed the community to transform the local produce into a niche international product sought, after in the cosmetic industry. In 2000, EWC became the exclusive provider of marula oil to *The Body Shop*, which uses it in its cosmetic products. Following a scientific collaboration with an international R&D company the community also developed a marula-based active botanical ingredient that entered a portfolio of many cosmetic companies producing natural products. Effects on rural development and social uplifting have been impressive. By now EWC boasts membership of over 6 000 women and is the second largest producer of marula products in southern Africa. With access to new markets, by 2000 rural marula producers were receiving over USD 60 000 annually and by 2010 were receiving USD 2.35 per kilogram of marula oil– an invaluable income boost for communities with otherwise limited salary opportunities.

Source: WTO/OECD, *Aid for Trade at a Glance 2011: Showing Results*.

…but may increase volatility and job insecurity for some

Globalisation may affect volatility and rate of turnover in the labour market as competition drives resource re-allocation towards greater productivity. This would suggest that trade may induce a secular increase in the rate of *job turnover* over time. This does not seem to have been the case in the United States – Faberman (2008) and Davis *et al.* (2007 and 2010) document a decline in business-level job variability measures for the United States that roughly coincided with a decline in the magnitude of monthly unemployment flows in the country over the last three decades.[46] Among other determining factors, Davis *et al.* (2007) suggest the shift in retail trade to large distribution chains (e.g. Wal-Mart), where employment is less sensitive to business-cycle fluctuations than smaller firms.[47] ICITE studies of Germany and Spain show that temporary contracts for some workers alongside relatively strong employment protection for workers on permanent contracts, may render temporary employment particularly volatile (Arnal, 2011; Görg and Görlich, 2011).

Earnings volatility may also pose new *income risks* for workers. Krebs, Krishna and Maloney (2010) and Krishna and Senses (2009) found that while trade openness may be

46. Davis *et al.* (2010) show that the employment-weighted mean volatility of firm growth rates for all US businesses has declined by more than 40%t since 1982 (noting that while the aggregate trend was negative, the trend for publicly traded firms has the opposite direction, as confirmed by other literature).

47. The pattern is somewhat different in other economies. Haltiwanger (2011) suggests that in the case of transition economies, volatility in labour markets increased dramatically since 1990s. Albeit this time period coincides with rapid opening of these economies, studies reviewed by Haltiwanger do not point to trade openness as the culprit of increased volatility. The collapse of the communist regime has played a crucial role in the initial phase and so did the policies introduced in the aftermath of the system's change. For example, the study by Haltiwanger and Vodopivec (2003) looking at Slovenia points to the wage-setting mechanism in the country as a key factor determining the patterns of worker and job flows.

associated with higher average incomes, it also increased the variance of income and, thus, the individual income risk. This is a particularly pertinent issue in the case of developing countries where credit markets are incomplete, which limits workers' ability to insure themselves against shocks, even of an idiosyncratic nature.[48]

By inducing faster changes in specialisation patterns of firms and industries and facilitating technological change, globalisation may be also altering returns to a given skill level, thus, complicating educational choices and investment in human capital (e.g. Krebs, 2003). For example, Lederman *et al.* (2011) in a paper presented at an ICITE conference in Chile show that globalisation may have indeed increased volatility of returns to schooling in the LAC region. Given that education and skills are an important part of workers' "insurance policy" against the risk of being unemployment or experiencing a wage reduction (as well as impacting workers' mobility during the adjustment period following a shock), further research of these second-order effects appears important.

1.6. Adjustment costs

To reap the benefits of enhanced productivity, trade and other drivers of the growth process require a continuing reallocation of resources. Technologies create new products while old ones wilt. Competition creates opportunities for some firms to expand market share and drives others out of business. Demand for labour shifts in responses to these larger market forces, and so the reallocation process requires difficult short-term adjustments. If trade reforms shift relative prices sharply, the reallocation process of both capital and labour to the internationally competitive sectors can be abrupt. Adjustment costs can refer to the value of output that is forgone in the transition to a new long-term production equilibrium usually manifest in unemployment (Francois *et al*., 2011).

Trade-induced adjustment costs cut into the overall benefits of the trade reform, and often fall disproportionately on one or another group of workers. When trade surges or liberalisation affects a specific region or group, it may create a tightly affected group that is able to raise barriers to trade, even when it undermines the interest of the more diffuse set of consumers and producers. As discussed above, worker dislocation through job destruction in import-competing sectors can often be greater than job creation in new export activities (e.g. Hoekman and Porto, 2010), or there may be a non-trivial lag between spells of job destruction early in the reform process and a subsequent recovery and renewed job creation (e.g. Haltiwanger, 2011).

In earlier studies the adjustment costs were calculated by multiplying an estimate of the average amount of time workers were unemployed by the estimate of their average wages before unemployment. Estimates ranged from 1 to 4% of total gains from trade liberalisation.[49] More recent work, however, suggests that the adjustment costs may in fact be much larger, when previously unmeasured costs are taken into account (e.g. Davidson and Matusz, 2000 and 2004; Francois *et al.*, 2011). For example, Davidson and Matusz (2004) incorporated the time and resource cost of job searches and retraining in their estimates and found that the adjustment costs reach between 30 to 80% of the overall gains, depending on the model assumptions. One recent estimate based on a model with data from Brazil's trade reform put the costs of reallocation at between 16 and 42% of the gains from trade, depending on the mobility of

48. Krebs *et al.* (2010) specifically analyse welfare implication of income risk in the context of missing credit markets on the example of Mexico and find that liberalisation indeed appears to leave workers more exposed to idiosyncratic income shocks.

49. For example, the costs account for 4% of gains from trade liberalisation in Magee (1972), 1.5% in de Melo and Tarr (1990) and 0.5-1.5% for the first year after liberalisation in Takacs and Winters (1991).

capital in the adjustment process (Dix-Carneiro, 2011). Even if the aggregate adjustment costs appear to be larger than previously thought, most studies still find that the benefits significantly outweigh the losses. For example, Bradford, Grieco and Hufbauer (2005) assert that benefits are seven times larger than costs.

High-income countries, in particular, fear the impact of trade-related competition from low-income countries on their local labour markets and the degree of adjustment required. Recent literature has looked anew at the role of trade and labour displacement, especially within the context of China's emergence. For example, Autor *et al.* (2011) analysed the effect of rising Chinese import competition between 1990 and 2007 on regional and local US labour markets where import-competitive activities were concentrated. The authors relate changes in exposure to low-income-country imports to changes in municipal-level local wages, employment levels, industry employment shares, unemployment, and labour-force participation rates and allow impacts to vary by age, gender, and education. They find that rising exposure indeed increases unemployment, lowers labour force participation, and reduces wages in local markets. The authors calculated that Chinese imports explain one-quarter of the aggregate decline in US manufacturing employment. Furthermore, they added up the transfer benefits payments for unemployment, disability, retirement, and healthcare associated with these labour lay-offs and concluded that these transfers amount to one to two-thirds of the US gains from trade with China. This calculation of course is short-term static analysis; from a long term and dynamic perspective, eventual re-absorption of workers into the labour force, combined with the productivity effects of trade, would likely leave the United States far better-off, even if the short-term adjustment costs were high due to dislocation.

Overall, the magnitude of the adjustment costs will depend, among other things, on the degree of market rigidities in the economy, such as labour market inflexibilities or inefficient capital markets, preventing smooth reallocation of resources. Capital and financial markets are important because the shift in relative prices opens up new investment opportunities, and if financial markets can supply investment funds to investors in the new internationally competitive sectors, it will create jobs at a faster rate. Dix-Carneiro (2011) found that ability of capital to move quickly was one of the key determinants of adjustments costs and speed of adjustment. By the same token, onerous labour employment protection regulation can hamper labour mobility also prolonging the adjustment period (Jansen and Lee, 2007). The easier the ability of factors of production to move smoothly across the economy, the smaller adjustment costs are observed (e.g. Davidson and Matusz, 2000). But beyond this, labor market adjustment is at best "sluggish", and the argument for public interventions to aid workers is compelling (see Coşar, 2011).

Institutions play a vital role in determining not only the speed, but also the channel of adjustment. In some cases competitive pressures can lead to reduced employment in the short-run (quantity effect), in others it will be wages that adapt (price effect). Hoekman and Winters (2007), among others, discussed the importance of labour market institutions in determining varying labour market outcomes following trade reforms. Chang *et al.* (2009) finds that characteristics of labour market institutions are key determinants of whether a country is able to reap the benefits from trade reforms. In particular, excessively stringent employment protection and hiring practices hamper growth potential by restricting the movement of resources to the most productive sectors of the economy. Gamberoni *et al.* (2010) in a more recent paper further explored the impact of both trade openness and labour market institutions on employment dynamics during economic crises. They found that high severance pay dampened the employment effects of crisis regardless of their cause, while generous unemployment benefits

were associated with stronger reductions in employment growth.[50] Francois *et al.* (2011) also suggested that severance pay and dismissal notification requirements can be a means of protecting workers from short-term labour demand volatility. Mitra and Ranjan (2011) highlighted the benefits of public work programs in the context of external shocks and in countries that do not have social protection systems in place.

As explained in Chapter 11 by Douglas H. Brooks and Eugenia C. Go, analysing the employment situation and labour market policies in Asia and the Pacific, there is a certain trade-off between the stabilising effect of employment protection legislation and the opportunity cost of allowing reallocation to maximise growth potential. A review of employment evolution and available policy tools in this dynamically growing region is instructive, not only because it identifies significant variation in the region usually praised for its flexibility, but also highlights some of the inherent difficulties in designing effective labour market policies in developing countries. For example, average severance pay of fifteen salary weeks is seen by the authors as a factor meaningfully driving upwards labour costs in the region. While recognising usefulness of severance pay, given low coverage of unemployment insurance in the region, they point to a high risk of firms' moving to the informal sector, which remains very large (67% of employment in 2008). Overall, they conclude that while serving an important role in shielding workers from adverse shorter-term conditions, these measures are hardly a panacea for managing changes in the structure of demand for labour, with which the region as well as emerging economies elsewhere are grappling.

In general, in developing countries, the adjustment tends to occur through changes in relative wages, rather than inter-sectoral shift of employment (e.g. Goldberg and Pavcik, 2004). This may be indicative of market rigidities, particularly relevant to developing countries in the short run (Goldberg and Pavcnik, 2003 and 2004). In the case of high-income countries, we observe a wider heterogeneity in terms of labour outcomes, depending on, often quite complex, institutional set-ups. For example, the 2008 crisis had rather muted effects on total employment in Germany, unlike in most other EU economies. As an ICITE study points out, this could be partly attributed to relatively low real wage growth compared to changes in productivity as well as newer policy reforms that allowed firms to flexibly decrease working hours of their employees (Görg and Görlich, 2011, included as Chapter 6 in this book).[51] Another ICITE study, comparing the labour outcomes following recessionary shocks in Denmark and Spain concludes that it is the Danish "flexicurity" model – combining relatively generous unemployment benefits and weak employment protection – that allowed a more flexible adjustment to recessionary shocks.

The often neglected aspect of managing adjustment is the need for spurring competition in the services sector to minimise the overall costs of adjustment to trade liberalisation. Such services as transport, energy or telecommunications are key inputs into production process of firms and, thus, ensuring their competitiveness may reduce costs, enhance quality and increase variety of inputs used by firms, facilitating the adjustment (Hoekman and Javorcik, 2004). For example, a CGE stimulation in Konan and Maskus (2006) showed that in the case of Tunisia removing commodity tariffs without services liberalisation would lead to a much greater

50. The effect seems, nevertheless to be non-linear and driven mainly by countries in the highest 20th percentile of unemployment benefits (Gamberoni *et al.*, 2010).

51. Short-time work schemes, additionally subsidised by the government, have also played a role, while some firms hoarded qualified workers due to experienced, and expected, skill shortages (Möller, 2010). Also, while overall effects were muted, workers on temporary contracts did experience increased unemployment (Görg and Görlich, 2011).

movement of labour than would be required, if a set of reforms lowering operating costs and reducing barriers to entry in services sectors were also implemented.

Box 1.7. Effects of trade liberalisation on workers

The effects of a trade reform – that is, tariff liberalisation, dismantling of quotas and non-tariff barriers, and reducing other border barriers – on employment and wages is distinct from the natural evolution of trade-driven changes associated with technological change, business innovation and shifting consumer preferences. Often trade liberalisation involves a more immediate shift in relative prices, it involves identifiable winners and losers, and it involves a political process (e.g. VanGrasstek, 2011 or Rodrik, 2012).

Trade liberalisation typically induces an expansion of export-related sectors as firms have access to the cheapest inputs at international prices and terms of trade shift in their favour. At the same time, liberalisation induces contraction of import-competing sectors. In Chile, for example, Edwards and Edwards (1996) found a positive association between the degree of liberalisation a sector experienced and the extent of subsequent layoffs; the sectors experiencing the greatest liberalisation were also the ones where unemployment was of the longest duration. Similarly, Muendler (2010) also found that import-competing industries in Brazil after its major reform in the early 1990s tended to shrink.

So what happens to workers who are displaced? Muendler (2010) in his study of Brazil was able to trace the consequences for labour displaced by the reform-induced rapid shift in relative prices. Trade-exposed industries shrank their workforces by dismissing less-schooled workers more frequently than more-schooled workers. Most displaced workers migrated to the non-tradable sectors or left recorded employment altogether. But neither industries with comparative advantage nor exporters absorbed all of the trade-displaced workers. (Comparative-advantage industries and exporting industries do not necessarily have to be the same and Muendler treats both groups seperately.) To the contrary, comparative-advantage industries and exporters hired fewer workers than the average employer, and labour reallocation to the dynamic sectors appeared to remain incomplete for years.

Increases in labour productivity at a relatively fast pace among exporters and in comparative advantage industries explain these patterns. Indeed, competition in those activities drove employers to raise productivity, and they did so faster than non-exporters and firms in disadvantage industries. Muendler (2010) argued this is because firms expected exporting activity to increase the return to innovation, but presumably lower costs through access to cheaper and higher quality inputs as well as higher expected returns to all firm-level assets also played a role. This accelerated shifting of product market shares to more productive firms, but since product market-shares grow less than proportional with productivity, trade-induced productivity growth may lead to labour savings.

This asymmetry in the expansion path of the export sectors and the contraction of import-competing sectors often entails unemployment – much as technologically advanced activities progressively outshine older technologies. Indeed, Dutt *et al.* (2009) find that trade liberalisation may increase unemployment in the short run, reversing this effect in the longer run and driving unemployment level to a new lower steady state. It is part of the adjustment costs that an open, fast-growing economy cannot escape – but which can be mitigated through public policy.

Nonetheless, it is people, not industries, that experience job and income losses. These costs can be high for dislocated workers and their families. For example, one study found that the average loss in lifetime income for dislocated workers was roughly USD 80 000 (Jacobson *et al.*, 1993). Kletzer (2001) estimated that the average trade-related dislocated worker takes roughly a 13% wage reduction in his or her new job. The implication is that even if aggregate adjustment costs are small, the personal costs to individual workers may be high. These findings underscore the need for programs for dislocated workers.[52] Since the source of dislocation – technology, trade, or the business cycle – is usually difficult to identify, it make sense to design

52. For example, Bailey, Burtless, Litan and Shapiro (1998); Kletzer and Litan (2001).

programs that are applicable to all unemployed workers, irrespective of the cause of dislocation.[53]

1.7. Summing up: Ten generalisations about trade and employment

Despite the complexity and volume of writings about the relation of trade to employment, incomes and wages, the previous discussion might be distilled into nine generalisations, if at risk of sacrificing nuance. To be sure, "generalisations" imply "exceptions", and indeed in many country circumstances and historical episodes, they undoubtedly will not hold for idiosyncratic reasons. Cross-country regressions have the great virtue of allowing analysts to establish general relationships; but they have the inconvenience of masking the frequently wide variations of country experiences that fall above or below the line. So it is with these generalisations. That said, these may serve to summarise what we know about trade and employment. These include:

- Trade can play a powerful role in contributing to rising incomes and creating jobs. To be effective trade reforms have to be embedded in supportive policies. Countries where trade openness has failed to provide a growth stimulus commonly have unstable macroeconomic policies, inadequate property rights, a dearth of public investment in overcoming supply-side constraints, or other socio-political constraints.
- A main channel through which trade increases income is productivity growth. Importing creates competition that forces domestic firms to become more efficient and provides access to inputs of international calibre; exporting creates incentives for firms to invest in the most modern technologies, scales of production and worker training. The combined effect is to spawn a process of continual resource reallocation, shifting capital and labour into activities with higher productivity.
- Those firms that ride the wave of continuing transition toward higher productivity in tradable activities typically pay higher wages to their workers, and these workers tend to have greater skills and be in less routine occupations; but low-skilled workers and workers undertaking routine jobs are less able to make these transitions, and often fall into unemployment or may be compelled to accept work in lower paying jobs.
- In responding to shifts of relative prices in favour of tradable – whether these emanate from exchange rate movements, discontinuous technological change, trade liberalisation, or sudden shifts in global demand – employment gains in exporting sectors often lag or do not fully compensate for employment losses in import-competing sectors, sometimes ushering periods of higher unemployment; policies that support flexible movement of capital and labour into the new sectors can minimise these costs.
- Offshoring and production-sharing arrangements have created new opportunities for raising productivity through specialisation, providing the basis for the contention that these activities

53. The literature on the subject does not seem to point to any strong differences that could legitimise differentiation of worker support programs depending on the source of dislocation. For example, Kletzer (2001) finds for the United States and the OECD (2005) for 14 EU countries that the share of re-employed workers after two years is only slightly lower in sectors with high import competition. Comparisons of dismissed workers characteristics in these studies also suggest that, on average, the groups appear quite similar in terms of education and work experience, though the trade-related unemployed are slightly older, have more tenure and slightly higher earnings related to the lost job. Given the practical difficulty of identifying the exact source of dislocation when implementing an income and employment support program, trade-specific labour market policies have been viewed skeptically by international organisations, such as the OECD, ILO and WB.

are more often complements than they are substitutes for jobs in high-income countries, though some offshored activities have placed downward pressure on selected import-competing occupations in high-income countries.

- Trade in services, including trade through FDI in services (mode 3) and services trade across borders (mode 1) through outsourcing or offshoring, has had positive effects on job creation and wages in developing countries – and seemingly had only minor effects in labour markets of high-income countries.
- There is virtually no evidence that trade (as distinct from the other forces of globalisation) has played a major and/or systematic role across countries in increasing household income inequality (as distinct from the much narrower concept of wage inequality) in either high income or in developing countries. Where income inequalities have increased, analysis outside of the trade literature points to fiscal policies, the business cycle, financial deregulation, skill-biased technical change, and long-term regressive deficiencies in educational systems as being the primary culprits. An exception to this may be discoveries of natural resources that create sudden new wealth captured by elites.
- That said, recent studies of wages in heterogeneous firms point to several channels through which trade may exacerbate wage inequality, though this literature is in its infancy and pertains only to the formal wage segment of the labour market. Trade is undoubtedly part of the process of technical diffusion and integral to foreign direct investment, and may be a bundled purveyor of skill-intensive technology that increases skill premium among wage workers. What seems clear is that trade does not play the wage-equalising role within developing countries envisaged in elementary trade theory.
- Trade does not systematically undermine working conditions in developing countries – whether measured by job quality, safety, child or female labour – and indeed there is some evidence that trade contributes to *better* working conditions, either directly through FDI and labour standards, or indirectly through growth effects. However, the several anecdotal cases of abusive working conditions arising in the press underscore the need for policy to take enforcement of labour standards seriously in both tradable and non-tradable sectors. In some industries in advanced countries, trade may be putting pressure on labour standards, pressure arising ironically not from imports from developing countries but from other high-income countries.
- Trade-led growth, much like growth emanating from technological progress, requires reallocation of resources, and because expanding sectors may not have the same skill requirements as contracting sectors, the process is often uneven, with some workers benefiting through higher wages and some workers left behind. Even though most studies indicate these adjustment costs are relatively small from the vantage of the whole society over time, the human cost to some individuals and families can be severe. Evidence on trade-related volatility seem to indicate risks to workers' incomes may in fact be on the rise with integration. Moreover, to the extent that the pace of integration and technical changes is accelerating, these costs may be expected to be greater in the future. For these reasons, they deserve the attention of policy makers.

1.8. Policies to realise the promise of trade for inclusive growth

Policies matter.[54] Good policies can attenuate adjustment costs, lay the foundation for harnessing trade to growth, and result in nations working together to reduce barriers and expand trade. We conclude with suggested areas where further research could illuminate policy.

Managing adjustment effectively can reduce costs of dislocation

Protect workers, not jobs

Each of the potential problems associated with trade reviewed above – ranging from informality to child labour and income inequality – share one commonality: using trade policies as a remedy is invariably counterproductive. Much as it is counterproductive to slow the pace of technological progress, so too is it counterproductive to raise barriers to trade in an attempt to preserve jobs. Raising trade barriers is usually anti-poor. Moreover, it is typically not the most powerful instrument to deal with the problem at hand. For example, if market imperfections render adjustment to globalisation costly for firms, protectionist measures only sustain or exacerbate the sub-optimal status quo by reducing the incentives for firms to adapt or even creating perverse incentives not to adjust (Leidy and Hoekman, 1991; Bown and McCulloch, 2004). Instead policies that are responsible for sluggish adjustment or for a cyclical downturn, such as labour market rigidities, shallow capital markets, or excessively de-regulated financial markets, should be addressed to facilitate adaptation.[55]

The trade literature has focused – perhaps disproportionately – on managing adjustment to trade liberalisation. But as noted above, border protection has come down to historic lows, and the main policy challenges are associated with managing adjustment to abrupt changes in relative prices associated with technological change, business innovations, and macroeconomic shocks – and indeed the normal processes associated with competitive pressures to continually reallocate resources to higher levels of productivity.

Policies can help protect workers, if not particular jobs. Establishing market structures that smooth and quicken adjustment has assumed a new importance with deepening trade integration and new forms of trade. The best adjustment program is growth itself. Rapid growth creates a greater flow of job opportunities. In addition, adjustment is best undertaken in situations of flexible labour markets to allow fast adaptability. Finally, robust social safety systems are crucial to protect those affected directly by the adjustment (ILO and WTO, 2007; OECD, 2006; OECD *et al.*, 2011). The recent Bachelet Report (Bachelet, 2011) illustrates that there is by now a wealth of experience with the design and the funding of social protection systems in low and middle income countries. Programs tend to differ across countries in their components, in their scale and in beneficiary selection. Their funding mechanisms will also differ. Examples exist of countries funding social protection through mineral based taxation, social contributions, increases in general taxation or through Official Development Assistance.

54. This was the message of an important article by Hoekman and Mattoo (2010).

55. For these reasons, at the onset of the Great Recession and remembering the counterproductive surge in protectionism during the Great Depression, the G-20 leaders on multiple occasions beginning in 2008, heeding the admonitions of the joint efforts of ILO, OECD, World Bank and WTO, pledged to resist protectionist responses to the Great Recession and other adjustment related problems. Among the joint efforts of these multilateral institutions, see the Report to the G20 in Seoul in 2010 "Seizing the benefits of trade", available at: *www.oecd.org/dataoecd/61/57/46353240.pdf*

For high-income countries, long-term OECD studies such as the Jobs Strategy (OECD, 2006) highlight the role of employment flexibility in enabling firms to adapt to changing economic conditions and the role of wage flexibility in ensuring that markets are able to transmit clear signals to workers and firms. Significant variation nevertheless persists in the level of employment protection among OECD economies. While protection from arbitrary actions and provision of some stability in employment is desirable on social and efficiency grounds, onerous employment protection provisions can raise the labour costs and reduce job creation as well as drive up adjustment costs by preventing firms from quickly reallocating resources (OECD, 2010; OECD *et al.*, 2010). For example, Chapter 3 in this volume (Thompson *et al.*, 2012) shows that even in the case of a deep structural change caused by a drastic change in terms of trade of a country, adjustment can be attenuated when labour mobility is high. Overall, protecting workers through programs of income maintenance and wage subsidies for reemployment is more effective than protecting jobs made obsolete by technology or trade.

Easing restrictions on temporary employment may increase overall flexibility, but at the cost of disproportionally exposing workers on temporary contracts to business-cycle fluctuations. This was evident in the Great Recessions when temporary workers bore the brunt of most job losses in Germany and some other OECD countries (OECD, 2010; Görg and Görlich, 2011; Arnal, 2011). Introduction of flexibility on the margin while avoiding a change in the overall employment rigidities may exacerbate dualism in the labour market (e.g. OECD *et al.*, 2010; OECD, 2011c; OECD, 2012).

In developing countries, where informality is the norm and where the rate of job creation is much faster than in high income countries, it may be preferable to focus on enforcing core labour standards, and designing tax regimes to facilitate the formalising of employment. Designing appropriately dimensioned severance pay packages that provide some protection but are not so large as to discourage employment is one key element. Public work programs appropriately designed can also at times be beneficial (Mitra and Ranjan, 2011); for example, Chile after the devastating collapse in 1981-82 put in place a program for heads of households that lasted through 1988 and offers an example of an effective emergency program.

An argument against resorting to increases in protection should not be read to infer that immediate liberalising reforms are desirable in all circumstances. In situations of financial or macroeconomic turbulence or political unrest, abrupt reductions in border protections are merely likely to increase unemployment and undermine the long-term political support for reforms. Trade reforms undertaken when currencies are overvalued are likely to be ineffective. Some degree of political and macroeconomic stability, especially with a competitive real exchange rate, are crucial to the success of trade liberalisation; these ensure that resources – labour and capital – will move into export sectors in response to new trade liberalisation. Similarly, synergies can arise, for example, with financial sector reforms that encourage market-based allocation of credit with the private sector; this is necessary to ensure that new investment will flow into the dynamic internationally competitive activities post reform. Finally, selective public investments – in roads, a port or telecommunications – may also be necessary to ensure that new post-liberalisation price signals elicit an export response that is not otherwise blocked because of inadequate trading infrastructure. In most countries, reductions in border protection have historically been undertaken progressively and purposefully over a fairly long but sustained period. This has the advantage of allowing reforms in multiple policy arenas to move forward together and to develop a political economy, in which exporters' interests grow along with reforms to eventually supersede interests in the protected sectors (see Hoekman and Olarreaga, 2007).

Cushioning income losses…

As OECD *et al.* (2010) notes adequate employment protection legislation works best when accompanied by effective labour market programs to cushion the costs for workers affected by labour mobility and facilitate their quick reintegration into the labour market. These include robust safety nets – mostly in the form of unemployment insurance – as well as other income-support measures that compensate partially for income losses of affected workers and provide incentives to return to work.

In the case of high-income countries, unemployment benefits provide social insurance against the loss of earnings to unemployment. They are, however, unlikely to compensate fully for the total individual income loss incurred by the workers. Moreover, trade-displaced workers may earn significantly less in the jobs they find following unemployment (e.g. Kletzer, 2004; Ebenstein *et al.*, 2009). Wage insurance programmes (Kletzer, 2001) together with one-off compensation programs (World Bank, 2007) can be used as supplementary tools, providing an earnings subsidy to displaced workers to compensate for incurred losses and appease calls for protectionism. Such a wage insurance mechanism has been included, for example, in the United States Trade Adjustment Assistance. While it remains a controversy whether trade displaced workers should receive income support different from other types of displaced workers (OECD, 2005; ILO and WTO, 2007) in the case of large-scale lay-offs in local labour markets targeted policy packages may be required to cushion adjustment and make change palatable (OECD, 2005).

These policies are not cheap. As we have seen in the Autor *et al.* (2011) study, the burdens of unemployment benefits in particular localities can be substantial. In times of austerity such as today, mobilising political support for these programs is not easy – but this is precisely when they are most needed because austerity usually comes at a time of high unemployment.[56]

In the case of developing countries, affiliation to social security among the poorest remains low as does the levels of benefits provided, which limits the degree to which such programmes offer protection to workers. Moreover, weak administrative capacity and widespread informal employment create unique trade-offs between the objectives of social and employment policies in developing countries that are different from those in high-income countries (OECD 2011c; Hoekman and Winters, 2007).[57] For example, a worker may have both a formal and informal job, which makes it difficult to establish his true employment or income status. This, in turn, complicates the design of policy that would truly target the most vulnerable and encourage formal employment.

For these reasons, in developing countries, social assistance benefits, such as cash transfers that do not require social security contributions for eligibility, tend to be more efficient and easily administered than social insurance mechanisms (OECD, 2011c; World Bank, 2007). Cash transfers cushion the impact of shocks in particular for the poorest segment of the population, while the implicit tax on working is found to be lower than in the case of unemployment benefits in the context of a large shadow economy (OECD, 2011c).[58] In South Africa, workers

56. There is even an argument for raising taxes to pay for these measures; to the extent that the tax incidence is progressive and payments to support labor transition go disproportionately to low income groups with a higher marginal propensity to consume, the net effect can be expansionary, if only minimally so.

57. For an in-depth explanation and comparison see Chapter 2 in OECD (2011c).

58. These recommendations are in line with the UN's Social Protection Floor initiative which seeks to promote access to at least minimum levels of social protection for all and are described in detail in the most recent *OECD Employment Outlook* (OECD, 2011c).

receiving social cash transfers put more effort into finding work than those in comparable households not receiving grants and they are more successful in finding employment (Samson *et al.*, 2004; Samson and Williams, 2007; Williams, 2007). Evidence from Brazil, on the other hand, suggests that providing income support to job losers in the form of unemployment benefits or severance pay reduces the incentives to find employment, particularly for those facing tight liquidity constraints (OECD, 2011c). As a complement to the social assistance benefits for those with insufficient savings, mandatory self-insurance based on individual savings accounts is also recommended (OECD 2011c; World Bank 2007). Self-insurance for those who can afford it encourages re-employment while freeing up the resources needed for those with insufficient needs. The Chilean unemployment insurance system of individual unemployment savings accounts (*Régimen de Seguro de Cesantía*) in combination with a Solidarity Fund (*Fondo de Cesantía Solidario*) provides an example of this type of arrangement.

…and facilitating transitions to new jobs

Complementary to various income-support programs, active labour market policies (ALMPs) may enhance the ability of the dislocated workers to reintegrate quickly into the labour force and, thus, help minimise the costs of adjustment (OECD, 2005). ALMPs comprise job brokering with the purpose of speeding the matching between vacancies and job seekers; retraining and skills upgrading of job seekers; and direct job creation, either public-sector employment, subsidisation of private-sector work or self-employment assistance.

While OECD countries employ a large variety of ALMPs, evidence suggests that they work best when fully integrated with income-support schemes and when tailored carefully to different needs of the jobseekers (OECD, 2005). Recent studies suggest that increases in spending on employment incentives as well as on training, increase employment in the short term – particularly training for women (Bouis *et al.*, 2012). Given the prolongation of the spells of unemployment in the developed countries in the aftermath of the Great Recession and the simultaneous tightening of government's fiscal capacity, the use of active labour market policies to boost short-term job creation is likely to play an important role and thus should be spared from budget consolidation efforts (OECD, 2012).

While many developing countries use ALMPs,[59] the scale of interventions and the resources devoted to them are more limited usually because of fiscal constraints (ILO and WTO 2007; Betcherman *et al.*, 2004). Empirical evidence suggests that while some of these interventions when properly designed can be effective for certain workers, policy makers must be cautious regarding what such training programs can realistically achieve and broad-based education reform should take priority (Martin and Grubb, 2001; Auer *et al.*, 2005; Kluve, 2006).

Laying stronger foundations for trade can promote growth and employment

Improving the investment and business climate

Ensuring an appropriate business climate is an important part of the mix in using trade opportunities to create jobs. Establishing a sound macroeconomic environment, progressively removing bureaucratic obstacles to doing business, and establishing the legal basis for property rights remain a priority. Reducing the burden of doing business in the formal sector is particularly important to reduce informality, which is pervasive in many emerging economies and can hamper the supply response to trade reform (Sinha, 2011).

59. See Sanchez Puerta (2010) for an overview of studies examining the effects of ALMPs in developing countries.

In the case of high-income economies, where a sound framework for doing business is already in place, further improvements in product market regulation and competition policies can allow quicker adjustments through their impact on exit and entry strategies of firms (see OECD, 2012). Also, improving competitiveness of the services sectors, especially in the so-called "backbone services" (transport, energy, communications) can facilitate adjustment as competitive services sectors allow easier exit of firms in declining industries by lowering costs, increasing quality and variety of services, and creating new opportunities for workers and entrepreneurs (Hoekman and Javorcik, 2004).

One element of the business environment that has been too often neglected in the trade literature is competition policy. In a world in which multinational companies operate in multiple national jurisdictions and multiple markets, restrictive business practices such as vertical restraints on trade and horizontal price fixing arrangements by introducing private restraints on trade are a threat to economic performance (see Hoekman and Winters, 2007). Evenett (2000) has shown how these can adversely affect price efficiency that trade competition would otherwise bring. Competition authorities in high-income countries and in developing countries have to work vigilantly to maintain markets open.

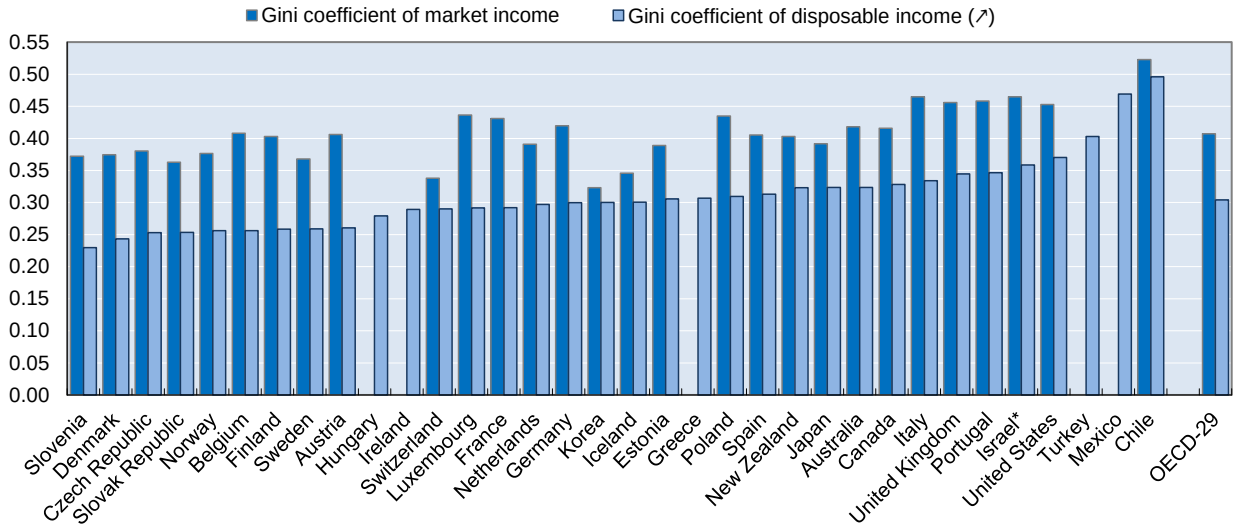
Using fiscal policies to offset income inequality

Recent trends towards greater income inequality may require a policy response. In high-income countries, the combination of skill-biased technological change together with changes in the tax code and executive compensation explain in large measure increasing inequality. In some countries, these characteristics may interact with the forces of globalisation – including capital flows, trade flows, and immigration – to aggravate inequality. In developing countries, the structure of asset ownership (particularly land) and natural resource endowments interact with skill-biased technological change to explain income distribution. While there is some evidence of convergence within the OECD toward some distributional norm, as the most unequal countries seem to be experiencing a trend toward greater equality and vice versa (OECD, 2011a), it is not obvious that market-driven outcomes will produce more equal societies over time.

Even the most unequal societies, such as Chile and the United States, use progressive tax policy and fiscal transfers to offset unequal market outcomes, if perhaps less than other OECD countries (Figure 1.11). But few OECD countries do as much as the Nordic and Northern European countries. Muting the forces of inequality is not only a function of taxation and income transfers. The distributional consequences of public expenditures can be more important (see World Bank, 2006). Some expenditure policies, properly structured, can make a large contribution toward lowering inequality at the same time as they position countries to grow more rapidly. This is particularly true for progressive subsidies to education and public investment in infrastructure.

Figure 1.11. Market incomes are distributed much more unequally than net incomes

Inequality (Gini coefficient) of market income and disposable (net) income in the OECD area, working-age persons, late 2000s



Note: Late 2000s refers to a year between 2006 and 2009. The OECD average excludes Greece, Hungary, Ireland, Mexico and Turkey (no information on market income available). Working age is defined as 18-65 years old. Countries are ranked in increasing order of disposable income inequality.

Source: OECD (2011a).

Education to up-grade the skill level of the workforce

High-quality education and training is one of the most consistently highlighted prerequisites to reap the benefits of trade opening. High-level of education permits adaptation to new technologies and thus is necessary for technological absorption and innovation (OECD *et al*., 2010; OECD, 2009a). A well-educated workforce is also more able to move from job to job, as skilled workers tend to be more mobile and adapt to changes more quickly (Hoekman and Javorcik, 2004). Also, investment in skills of a broad base of a population is likely to reduce the skill premium, thus, allowing a more equitable distribution of the gains from trade (Jansen, *et al*., 2011). Finally, skills and education have been found to be important in allowing export diversification at the extensive margin following trade liberalisation (Cadot *et al.*, 2011) and better educated populations are more likely to understand and support the trade liberalisation agenda.

While primary school enrolment has improved significantly among developing countries over the past two decades, many individuals still do not have access to any form of formal education in least developed countries (LDCs). Given the importance of early childhood education for lifelong learning capacity (Wossman and Schultz, 2011), increasing access in line with the Millennium Development Goals remains a priority. An example of Brazil shows that policies establishing minimum spending requirements per student or provisions of funds directly to households conditional on a child's school attendance (e.g. *Bolsa Familia*) have proven successful in raising the enrolment rates substantially (de Melo and Hoppe, 2005). More public funding, provided either through public educational institutions or conditional cash transfers to households, may be required, in addition to other support programs (World Bank, 2007; World Bank, 2006).

High-income countries also have educational weaknesses. On average for the OECD area, one in four workers is over-qualified (they possess higher qualifications than those required by their job) and just over one in four are under-qualified (they possess lower qualifications than those required by their job) (OECD, 2011c). What employers seek is skills, not qualifications. Encouraging introduction of industry-specific training and high-quality career guidance counselling might help allow a better matching of potential workers with jobs. Simultaneously, given the potential increase in outsourcing of services and volatility of employment in the future, improved opportunities for rapid retraining, skills upgrading and lifelong learning also emerge as a priority and will have to become an integral part of active labour market policies discussed later.

Facilitating connectivity through investing in infrastructure

Connectivity of the poor to markets is an ever more essential element to ensuring they can participate in growth.[60] Access to the internet, telecommunications, roads and ports, and air transport are the vital elements to absorbing technology and using trade to power growth. One of the most pervasive binding constraints in developing countries to trade growth and increases in national incomes is the quality of infrastructure. Several studies have made the link between investments in infrastructure and increasing capacity to trade. For example, Limao and Venables (2001) studied the relationship between roads and telecommunications and shipping costs, and then the relations between shipping costs and trade volumes; they found that an improvement in transport and communication infrastructure from the median score on surveys to the highest 25th percentile is associated with a decrease in transport costs by 12% - and this in turn is associated with an increase in trade volumes of 28%.[61] Adequate infrastructure is thus a necessary link allowing countries to participate in global value chains and exchange goods, services and ideas across borders. While upgrading the obsolete infrastructure is of policy concern to high–income countries too, lack of basic infrastructure is a key barrier to trade in developing countries, in particular LDCs. For example, in Africa the costs of trading regionally appear to be as high as trading globally because of poor transportation infrastructure and inefficient border procedures, even between neighbouring countries (von Uexkull, 2012).

Von Uexkull (2012) included as Chapter 14 explores this issue using data from the World Bank Enterprise Survey to analyse exporter characteristics in 15 Western African countries belonging to the Economic Community of West African States (ECOWAS). The author finds that, contrary to theoretical predictions, regional and global exporters resemble each other in terms of average size, productivity level and average pay, which points both to the employment potential of regional trade as well as to the existence of high barriers to exporting within the region. The following Chapter 15 by UNCTAD complements these results by looking at regional trade patterns among 15 Southern African economies using a gravity model (Peters and Mashayekhi, 2012). The authors find no evidence that reduction of trade barriers within the region has boosted intra-regional trade, suggesting that there are other important bottlenecks preventing the flow of goods and services across borders. These results illustrate the importance of a combination of good transport connectivity, favourable business climate and trade-facilitation measures in allowing countries to actively engage in international trade.

60. Paul Collier emphasised this point in his lecture on development in Rwanda, 6 February 2012. See International Growth Centre website, Rwanda country program, for a summary of his lecture.

61. They take as an infrastructure indicator four components: the density of rail road per square km, the density of road and of paved road per square km and the number of telephone mainlines per capita. The indicator has been widely used by other researchers to proxy for the quality of infrastructure cost and, thus, the cost of transport and communication (See Carrère, 2006).

Nations working together can enhance the benefits of trade

With the increasing potential for trade to power growth and the rising importance of complex new trade issues, multilateral and regional discussions on border barriers, services, and rules are as important as national policies to creating – and preserving – greater opportunities for trade. While national labour market policies and the domestic policy environment are crucial for delivering results for local labour markets, collective action is needed to allow countries reap the benefits of globalisation that otherwise would have been outside of their reach. This includes strengthening the global multilateral trading system, further regional cooperation and development assistance.

As highlighted in the OECD *et al.* (2010) report to G20, there is scope for a more active and ambitious trade liberalisation agenda to deliver better results for growth and jobs globally. An extensive empirical literature documents the potential gains from a Doha agreement and new analysis by the World Bank concludes that once the dispersion in protection across products is taken into account the gains from further trade reforms are two times higher for developing countries and 50% higher for high-income economies than previous estimates (Laborde *et al.*, 2010). Apart from the benefits from increased market access, a Doha deal would also lock in trade reforms and thus increase business confidence, solidify the essential role of the rule-based, multilateral trading system, and deliver new economic opportunities (OECD *et al.*, 2010). Despite the political deadlock, these benefits have to be clearly kept in mind.

Regional trade agreements and regional cooperation can complement multilateral cooperation in generating an environment more conducive to job creation. Pooling resources regionally can allow emerging economies to fund infrastructure projects and improve connectivity required for trade (e.g. Mekong Initiative). Regional agreements also allow a more targeted and far-reaching liberalisation, including specific provisions on services liberalisation (e.g. Trans-Pacific Partnership) and labour standards (e.g. 1999 United States-Cambodia Trade Agreement).

Finally, the scope for development assistance in the form of aid for trade is large. Given the fiscal limitations of many low-income countries and their large needs in terms of increased spending on education, infrastructure, improving productive and institutional capacity and adjustment assistance, the WTO-led Aid for Trade initiative is another form of international cooperation that can stimulate trade. It aims at capacity building and dismantling supply-side bottlenecks so as to allow countries to participate and benefit more from trade. This aid is already achieving results, but more could be done (see OECD/WTO, 2011, for the overview of the results to date).

Addressing what we don't know: the need for further research

Despite the voluminous research that supports these robust generalisations and policy options, additional research in three areas could produce insights useful for policy purposes.

First, it would useful to understand better the *globalisation and productivity* links. Are the job turnover rates accelerating for both trade and non-trade reasons in many countries around the world; if one posits an acceleration of technological change, increased factor mobility, and increased globalisation (finance, trade, movement of people, and technological diffusion), it may well be that over time, turnover rates in labour markets increase- and with them frictional unemployment rates. This, however, may not be the case; for example, Faberman (2008) and Davis *et al.* (2007 and 2010) document a decline in business-level job variability measures for the United States, roughly coinciding with a decline in the magnitude of unemployment flows in the country over the last three decades. While Haltiwanger (2011) suggests volatility elsewhere

may be on the rise, evidence is sparse. Further research might also facilitate a better understanding of second-order effects of trade that may be worker-specific, such as income risk as well as risks associated with investment in human capital, reflected in fluctuating returns to education, among other things (Lederman *et al.*, 2011). It would also be important to know more about trade-induced sectoral change and the McMillan-Rodrik (2011) puzzle; why is there net movement in some countries from higher-productivity to lower-productivity sectors, and is this really a drag on growth? It may be that workers leaving higher-productivity sectors are in fact leaving low-productivity jobs to accept higher-productivity jobs if in the lower-productivity sectors.

Second, firm-level research has opened up new questions about the role of *trade and inequality*; research needs to take this deeper to explore the links to household income inequality; the discussions in Harrison (2011) and Lederman (2012) have pointed to new avenues that might be explored. Another strand of research worth pursuing is the relation of trade to FDI and skill biased technological change as a collective determinant of income inequality (Pavcnik, 2011). Also, integrating trade and heterogeneous firm analyses with other variables not usually in the models of trade economists – such as financial variables, instruments to capture tax and spending incidence, and changes in regulatory policy – might help us decompose the forces driving inequality more accurately. These may lead to new evidence that contravenes our generalisations. Moreover, as noted in Hoekman and Porto (2010) there could be rather complex intra-household effects of trade liberalisation, depending on relative opportunities faced by different members of the same household following trade opening and some insights could be gained there as well, in particular in respect to demand for child and female labour.

Third, given the importance of *labour market institutions* in determining labour market outcomes, a deeper understanding of the causes of informality in interaction with incentives provided by formal market institutions in the case of developing countries is needed. Finally, contrary to work of economists in health and education, the trade economists have not made adequate use of *impact evaluation* in policy analysis, as pointed out by Cadot *et al.* (2011).

These are all areas where research might challenge or elaborate on the ten generalisations.

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In sum, this policy agenda is broad and ambitious. The good news is most countries already have charted a path towards its implementation, if in varying degrees and with different strategies. Moreover, these policies do not have to be undertaken at once or in the same fashion across countries. Incremental progress can lead to progressive expansion of trade opportunities. And in the long run, their enactment will help realise the potential for trade to contribute to rising standards of living for workers and everyone else.

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Annex 1.A1

Table 1.A1.1. Trade and growth: main econometric studies since 2000

Measures of trade openness	Number of countries	Time Period	Impact on growth	Source
I. Trade shares				
Trade share (within country regression)	~100	1980s-90s	Positive	Dollar and Kraay (2001)
Trade share in GDP	23 to 62	1913-90	Positive	Irwin and Tervis (2002)
Export share	>100	1970-97	Positive	Yanikkaya (2003)
Import penetration	>100	1970-97	Positive	Yanikkaya (2003)
Trade shares in GDP	>100	1970-97	Positive	Yanikkaya (2003)
Changes in trade share in GDP	~100	1980s-90s	Positive	Dollar and Kraay (2004)
Trade shares in GDP	~100	1961-2000	Positive	Lee, Ricci and Rigobon (2004)
Trade share in GDP	>100	2000	Positive (negative for heavily regulated economies)	Bolaky and Freund (2004)
Trade share in GDP	82	1960-2000	Positive if complementary reforms are undertaken	Chang *et al*. (2009)
Trade (geography instrument)	97	1985	Positive (1% increase in the trade share of GDP leads to about a 1% increase in income per capita)	Noguer and Siscart (2005)
Trade (bilateral trade instrument)	101-62	1960-1995	Positive (differences in trade growth explain ~17% of cross-country variation in income growth)	Feyrer (2009)
Trade openness (residual variation that is not due to GDP growth)	41 Sub-Saharan countries	1979-2009	Positive - trade openness causes economic growth (a 1 percentage point increase in trade openness leads to a ~0.5% short-term increase in growth per year and ~0.8% after ten years)	Brückner & Lederman (2012)
II. Indexes aggregating several measures of openness				
Sachs and Warner Index	111	1970-89	Positive	Wacziarg and Welch (2003)
Sachs and Warner Index	141	1990-98	Not significant	Wacziarg and Welch (2003)
III. Trade liberalisation				
Trade liberalisation	44 to 82	1975-2000	Positive (liberalising tariffs on imported capital and intermediate goods, did lead to faster GDP growth	Estedevordal and Taylor (2009)
Trade liberalisation (Panel; within country regression)	141 with further analysis on 24 developing countries	1950-98	Positive (countries that liberalised experienced on average 1.5 percentage point higher growth rates and 1.5-2.0 percentage points higher investment)	Wacziarg and Welch (2008)
Trade liberalisation (Panel; within country regression)	108 to 133	1950-98	Positive (liberalisation raises GDP growth &investment share)	Wacziarg and Welch (2003)
Trade liberalisation on export growth	22	Since mid-70s	Positive	Santos-Paulino and Thirlwal (2004)

Table 1.A1.2. Selected literature reviews on trade, growth, inequality and employment

Review	Topic	Number of studies
	Trade and growth	
Lederman (2011)	Trade and inclusive growth	~40
Hallaert (2006)	Trade, growth, productivity	~50
Cline (2004)	Trade and economic growth	>100
Winters (2004)	Trade liberalisation and growth	~50
Baldwin (2003)	Trade and economic growth	>30
Berg and Krueger (2003)	Trade and poverty reduction	>100
Srinivasan and Bhagwati (2001)	Trade openness, growth, welfare	>50
Rodriguez and Rodrik (2000)	Trade openness and economic growth	~100
Edwards (1998)	Trade, productivity and growth	~40
Edwards (1993)	Trade liberalisation & growth in developing countries	>100
	Trade, poverty and inequality	
Harrison *et al*. (2011)	Trade and inequality	~70
Pavcnik (2011)	Globalisation and inequality	~50
Goldberg and Pavcnik (2007, 2004)	Trade, poverty, inequality	>80
Dollar (2005)	Trade, poverty and inequality	~50
Milanovic (2005)	Trade and income distribution	>30
Cline (2004)	Trade and poverty reduction	>100
Winters *et al*. (2004)	Trade liberalisation and poverty	>200
Berg and Krueger (2003)	Trade and poverty reduction	>100
	Trade and employment	
OECD *et al*. (2011)	Trade, growth, employment	>100
Görg (2011b)	Trade, offshoring, employment	>60
ILO-WTO (2011)	Trade, employment, adjustment	>200
Porto and Hoekman (2010)	Trade & adjustment in developing countries	>200
Davidson and Matusz (2004, 2009)	Trade and adjustment costs	>200
Hoekman and Winters (2007)	Trade, trade policy and labour market	~100
Lee and Jansen (2007)	Trade, employment, inequality and the role of complementary policies	~200
Francois (2004)	Trade policy impact on production & employment	~40
Feenstra and Hanson (2004)	Trade, wages, inequality	~100
Greenaway and Nelson (2001)	Globalisation and labour markets	~90
Matusz and Tarr (1999)	Trade liberalisation and adjustment costs	>50

Policy Priorities for International Trade and Jobs

www.oecd.org/trade/ICITE