

Chapter 1

Trade-adjustment Costs in OECD Labour Markets: A Mountain or a Molehill?

Concerns that international trade and investment represent a growing threat to workers in OECD countries currently run very high. How many workers are losing their jobs as a result of rising imports or the “delocalisation” of jobs? Are trade-displaced workers able to move into new jobs which offer pay comparable to that on the jobs lost to international competition, or are these layoffs a pathway to long-term unemployment and chronic under-employment? How can governments best assist workers displaced by trade to re-integrate into the labour market? For example, should these workers be retrained for jobs in more dynamic industries? If the only jobs available to some job losers pay much less than their prior jobs, should a wage insurance scheme be set up to compensate them for a part of their lost earnings power?

Introduction¹

Fears that “globalisation” implies increasing job losses and downward pressure on wages appear to be widespread and are an important source of popular ambivalence towards the increasingly open character of OECD economies. Such concerns are not new since international economic integration has proceeded at a rapid pace in recent decades: the volume of world trade growing sixteen fold over the second half of the twentieth century, while annual outflows of foreign direct investment were 25 times higher in the end of the 1990s than they were in 1950 (OECD, 1998). However, recent developments appear to have heightened workers’ fears that rising trade competition threatens their jobs and past gains in wages and employment conditions, particularly in the OECD countries where wages are highest (Fontagné and Lorenzi, 2005; Husson, 2005; Kohler and Chaves, 2003; Scott, 2005). Increased international sourcing of production activities – including the “offshoring” of white-collar jobs in information technology (IT) and business process services – has led some commentators to conclude that a large share of high-wage workers will soon be in direct competition with workers in countries where wages are far lower. Anxieties about “delocalisation” and “a race to the bottom” are also reinforced by the increasing integration of India and China into the world trading system. Finally, the proposals for further trade and investment liberalisation associated with on-going WTO negotiations and the Doha Development Agenda also appear to portend intensified international competition for OECD workers.

In light of these concerns, it is timely to review the impact of rising international economic integration on OECD labour markets, as well as what is known about best-practice policy responses. However, it is important to place such a review within its broader policy context, namely, the need to identify the overall requirements for successful adjustment to structural economic change. The drivers of structural economic change extend beyond rising international trade and investment, including *e.g.* technological change and increased demands for environmental quality, and meeting this challenge requires policy responses that extend far beyond appropriate employment programmes and labour market regulation. Nonetheless, labour-market policies play a critical role since well-functioning labour markets that enable workers to move smoothly from declining to expanding activities lie at the heart of the adjustment process. To the extent that they are well-founded, workers’ fears concerning trade may thus indicate important gaps in the adaptive capacity of OECD national economies, in addition to being symptomatic of an important source of employment insecurity.²

This chapter analyses adjustment costs borne by workers in OECD countries who are adversely affected by international trade and investment. Its purpose is to provide an assessment of trade-adjustment costs in the labour market and the policy tools available to reduce these costs or to compensate the workers most affected. The analysis of possible policy responses encompasses both measures targeted specifically at assisting trade-displaced workers and more general policies which may play an important role in enhancing the

re-employment prospects of workers adversely affected by trade-related structural adjustment. These policies are assessed in light of the available evidence concerning the magnitude and nature of the adjustment costs borne by workers and the effectiveness of the various types of programmes that have been implemented by OECD governments.³

The chapter is organised as follows. The long-run effects of international trade on employment and wages in OECD countries are briefly discussed in Section 1. In Section 2, attention turns to analysing the size of trade-adjustment costs related to job displacement and how these costs are distributed across the workforce. In particular, new estimates of the incidence and consequences of trade-related job displacement in 14 EU countries are juxtaposed with Kletzer's (2001, 2002) influential findings concerning trade-related job loss in the United States. Attention then turns to an analysis of policy responses in Section 3. A brief final section places the main findings from the chapter within the context of the on-going reassessment of the OECD Jobs Strategy.

Main findings

- The most important long-run impacts of international trade and investment on labour markets have been to raise average real wages, while inducing shifts in the sectoral and occupational composition of employment. Neither economic theory nor the historical record suggests that aggregate employment performance has been undermined by increased international economic integration. However, it is likely that growing trade with low-wage countries has played some role in increasing wage inequality in many OECD countries.
- Increases in international competition create labour-market adjustment costs because they are associated with an increase in job displacement and some of the affected workers experience long unemployment spells and/or large wage losses once re-employed. However, trade is only one of many drivers of job turnover and structural change and it is difficult to estimate precisely the share of job displacement that is attributable to international factors.
- Adjustment costs appear to be higher for trade-displaced workers than for other job losers. In both the United States and Europe, workers displaced from jobs in the industries facing the most intense international competition are slower to become re-employed and experience larger wage losses once re-employed than do job losers in other industries. Large wage losses on the post-displacement job are a particularly important source of post-displacement earnings losses in the United States. By contrast, long-term unemployment and labour force withdrawal following displacement are the biggest sources of earnings losses in Europe. In both the United States and Europe, the adjustment costs borne by trade-displaced workers are highly variable, implying that adjustment assistance needs for this group are very diverse.
- The higher average costs borne by workers displaced from jobs in high-international-competition industries, *vis-à-vis* other displaced workers, do not appear to be causally related to international competition having more often provoked their layoffs. Compared with other job losers, displaced manufacturing workers in both Europe and the United States tend to be older, less educated and to have had higher tenure on the lost job; all characteristics that are associated with above-average re-employment difficulties and larger earnings losses following re-employment. Trade-displaced workers are also more likely to have vocational skills specialised to declining occupations and industries.

- The overarching need is to implement general labour market policies that can lower adjustment costs *indirectly* by strengthening job creation, upgrading work-force skills and steering workers towards the jobs where they are most productive. Such policies would foster more efficient labour re-allocation, even as earnings losses are reduced for trade-displaced workers. By reducing the economic insecurity and possible inequities associated with trade-related displacement, such “win-win” policies might also reduce political opposition to international economic integration and structural economic change more generally.
- Direct assistance is also appropriate for many trade-displaced workers, including: i) earnings-replacement benefits that provide adequate income security for job losers, while preserving incentives for re-employment (see also Chapter 3); ii) prompt access of job losers to an array of active measures (see also Chapters 4 and 5); and iii) whenever feasible, advance notice and other proactive measures to initiate the adjustment process *before* the job loss occurs. To succeed, such policies will need to take account of the specific barriers confronting trade-displaced workers as they attempt to reintegrate into productive employment.
- Providing adjustment assistance for trade-displaced workers raises difficult problems of policy design, among which are deciding: i) the appropriate balance between proactive and reactive measures; ii) whether and when it is desirable for labour market programmes to differentiate between trade-displaced workers and other displaced workers; iii) the extent to which workers experiencing earnings losses due to international competition should be compensated; and iv) how compensation can best be provided so as to avoid undermining incentives for trade-displaced workers to search actively for a new job.
- At the macroeconomic level, successful adaptation to changing trade patterns requires that labour flow from declining to expanding industries. However, it does not follow that workers displaced from declining industries should be encouraged to direct their job search towards expanding industries. Indeed, the majority of workers displaced from manufacturing jobs become re-employed in this same sector, despite the downward trend of manufacturing employment in most OECD countries. Earnings losses are also significantly larger for workers who change industry. The high turnover rates characterising OECD labour markets mean that there is considerable hiring in declining industries and it makes sense for some, particularly older, workers displaced in these industries to search for new jobs in the same industry in which they can make good use of their experience and skills.
- While it is preferable to assist trade-displaced workers using *general* earnings-replacement and active labour market policies in most instances, experience in a number of OECD countries suggests two types of situations in which *targeted* programmes – that is, programmes that serve only trade-displaced workers (or a sub-set of this group) – may represent a useful supplement to general programmes:
 - ❖ Targeted measures may sometimes be more cost-effective. For example, a dedicated programme may be better able to provide a co-ordinated package of services for workers affected by mass layoffs, especially, those occurring in declining sectors and regions where a protracted process of labour shedding can be foreseen and the affected workers face a distinct combination of barriers to finding suitable new employment. However, targeted measures of this type have a mixed record, sometimes

becoming *de facto* barriers to adjustment. Accordingly, they should be used sparingly, strongly oriented towards facilitating orderly adjustment and time-limited.

- ❖ Equity or political economy arguments are sometimes advanced as justification for targeted programmes (*e.g.* that trade-displaced workers have a particular claim to public assistance on the grounds that their situation results from a deliberate policy decision to liberalise trade and investment flows). If such non-economic arguments prevail, care should be taken to minimise the inefficiencies and inequities that can result from singling out trade-displaced workers for assistance beyond that offered to other workers encountering similar difficulties in the labour market.

1. The long-run effects of trade on labour market outcomes

A. Aggregate gains from trade⁴

The aggregate gains from trade are clearly demonstrated by the theoretical literature on the economics of international trade. Welfare gains are realised when countries specialise in the production of the goods and services in which they have a comparative advantage, where these comparative advantages can be due to either relative technology differences (Ricardian models) or different factor intensities (Heckscher-Ohlin models). Since trade liberalisation facilitates international specialisation in production, it normally results in higher real aggregate incomes and welfare.⁵ Additional efficiency gains from trade may be achieved through a variety of channels. These include the resulting increase in overall product market competition (Markusen, 1981), the exploitation of economies of scale and enhanced product variety (Krugman, 1979), and “dynamic” gains such as those from technology spillovers or increases in R&D intensities (Bartelsman *et al.*, 2004a; Rivera-Batiz and Romer, 1991). International sourcing is a form of trade and the general arguments for efficiency gains from trade apply to it (Bhagwati *et al.*, 2004). For example, “fragmentation” of production via international sourcing of intermediate inputs lowers the cost of domestic production, when producers import goods and services from (relatively) more efficient foreign producers and then incorporate these intermediates into final production.

Although it is difficult to measure the gains from trade precisely, the empirical literature supports theoretical arguments that trade increases aggregate productivity and welfare. A study of trade among 63 countries associated a rise of one percentage point in the ratio of trade to GDP with an increase in per-capita income of between 0.5 and 2% (Frankel and Romer, 1999). In a panel data study of 21 OECD countries, Bassanini and Scarpetta (2001) found that an increase in trade openness of 10 percentage points – roughly the increase experienced in the examined economies between 1988 and 1998 – resulted in an increase in output per working-age person of 4%. A number of studies have provided evidence that more open countries typically grow faster than less open ones, in addition to enjoying higher income levels at any given period of time (Dollar, 1992; Sachs and Warner, 1995; Harrison, 1996; Edwards, 1998; Frankel and Romer, 1999). Indeed, the contribution of international trade to economic growth can be significant. In the 1990s, countries that have been more open to trade and investment have experienced average annual growth rates twice those of less open countries.⁶

B. Winners and losers in the labour market

Trade theory demonstrates that trade liberalisation may reduce the welfare of certain individuals even as it improves aggregate productivity and income. In particular, the real wages

of certain workforce groups may fall after trade barriers are lowered, including those whose skills are specialised to import-competing industries (as demonstrated by the Ricardo-Viner model) or low-skilled workers in a country in which high-skilled labour is relatively abundant (as demonstrated by the Stolper-Samuelson property of the Heckscher-Ohlin model). Since free trade is Pareto-efficient under standard assumptions, the winners from trade liberalisation could afford to compensate the losers and still enjoy net gains. In fact, however, a comprehensive compensation scheme is rarely if ever implemented and policies to foster international integration must be expected to generate losers as well as winners. This raises the possibility that trade may have distributional effects that violate equity norms or create political opposition to trade liberalisation, even when it would increase aggregate income.

A large body of research addresses the question whether changing trade patterns – in particular, rising trade with low-wage emerging economies – have been an important cause of the trend toward rising inequality that has recently characterised labour market outcomes in most OECD countries (Feenstra and Hanson, 2003; OECD, 1997; Torres, 1997).⁷ Such a link is plausible on theoretical grounds. A major proximate cause of increased inequality has been the declining position of less educated workers in the labour market. As noted above, expanded trade between OECD countries and emerging economies, where the latter have a comparative advantage in the production of goods that make intensive use of low-skilled workers, could reduce the wages and/or employment rate of less educated workers in the OECD area. However, most researchers have concluded that trade made a relatively modest contribution to the declining labour market position of low-skilled workers and have pointed to skill-biased technological change as being a more important factor.⁸ Nonetheless, it is very difficult to disentangle the causal impacts of these (and other) factors.

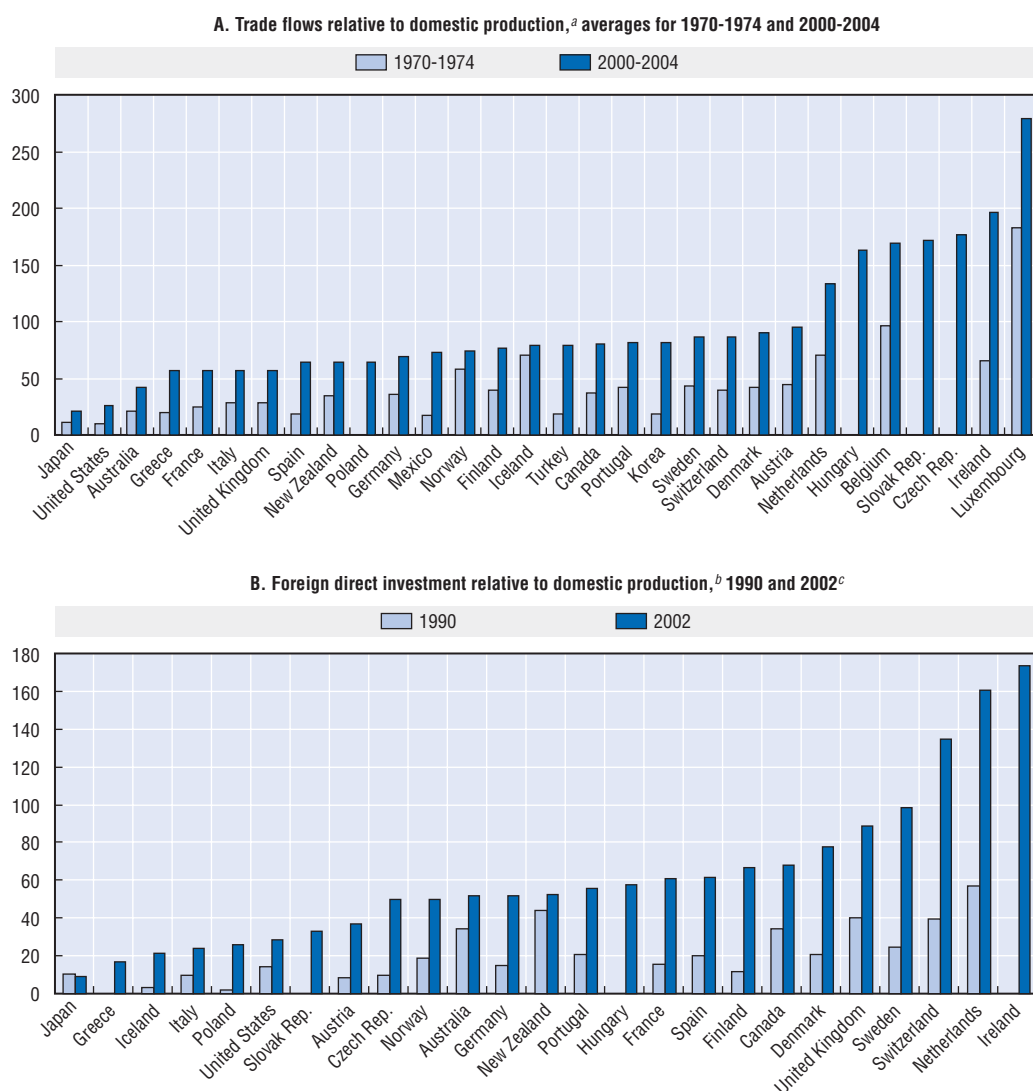
Standard trade theory assumes full employment of labour and capital. The introduction of unemployment into standard trade models can have important implications for assessing the impacts of trade liberalisation, but these implications vary according to the manner in which unemployment (or other factor-market distortions) are introduced into the model and are difficult to summarise. As a practical matter, empirical studies suggest that openness to trade typically is not an important determinant of aggregate unemployment in developed economies (see sub-section C below).⁹ However, Rodrik (1998) has argued that greater international economic integration has been a source of increased economic insecurity. Data for 104 countries suggest that countries with greater exposure to foreign trade have experienced greater income and consumption volatility during the past three decades. The link between trade openness and insecurity appears to be strongest when trade liberalisation results in a strong specialisation in production, a pattern that may be more typical for small developing countries than for OECD countries. Nonetheless, the long-run increase in the integration of OECD countries into the international economy may have been a source of increased “turbulence” in labour markets.

C. Can high-wage countries remain competitive in the “global” economy?

Simple inspection of recent trends in international trade flows and employment performance illustrates the apparent plausibility of fears that high-wage workers are at a competitive disadvantage in an increasingly open world economy, but also the possibility that the implications of trade are in fact much more benign – consistent with theory and the consensus in the empirical literature summarised above. A first point of reference is that OECD economies have become significantly more open to trade since 1970, with the size of trade flows relative to GDP (“trade openness”) having more than doubled in many

countries (Chart 1.1, Panel A). Data on the scale of foreign direct investment (FDI) relative to GDP also indicate a strong trend toward increasing international economic integration, although internationally comparable measures of “FDI openness” can only be calculated for a shorter historical period and for fewer countries (Chart 1.1, Panel B). Although the trend increase in openness to trade and FDI has been universal in the OECD region, large cross-country differences characterise both the levels and rates of increase of these two summary indices of openness. Some of the differences in the relative economic weight of

Chart 1.1. OECD-wide trend towards increased international economic integration co-exists with large cross-country differences in the size of trade and FDI relative to GDP



a) Sum of exports and imports as a percentage of GDP.

b) Sum of inward and outward international direct investment positions as a percentage of GDP.

c) Data for the Czech Republic and New Zealand refer to years 1993 and 2002, data for Denmark refer to years 1991 and 2002, data for Norway refer to years 1990 and 2001, data for Poland refer to years 1992 and 2002, data for Portugal refer to years 1995 and 2002 and data for Spain refer to years 1992 and 2001.

Source: OECD Economic Outlook, National Accounts and Foreign Direct Investment databases.

Statlink: <http://dx.doi.org/10.1787/472130642470>

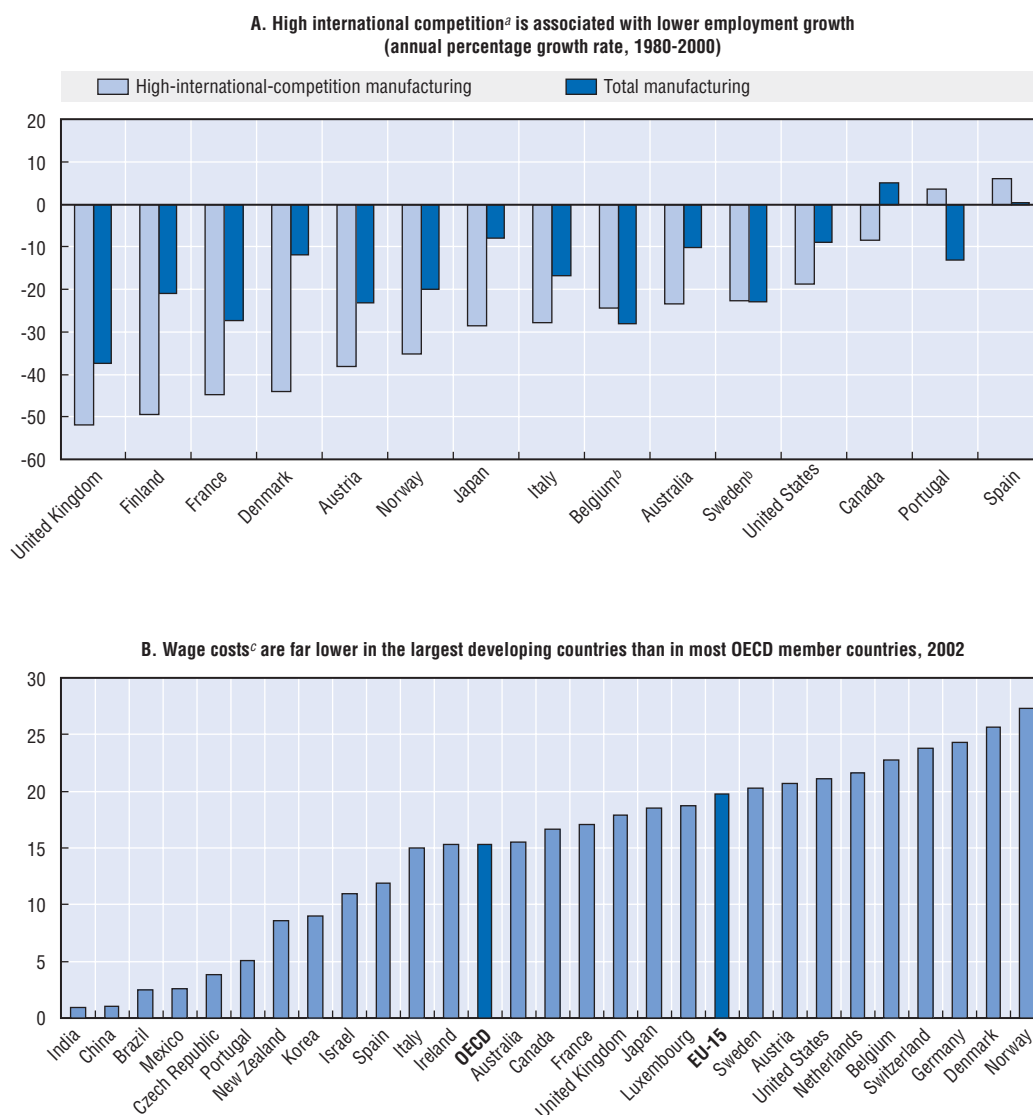
trade and FDI in different countries reflect geography (e.g. trade flows tend to be higher relative to GDP in small countries or those close to their main trading partners), but different policy stances also play an important role, as reflected in regulatory barriers to foreign trade and investment (Golub, 2003; Nicoletti *et al.*, 2003).

If openness to trade represents a systematic threat to OECD workers, one would expect to be able to detect an association between higher or more rapidly increasing trade openness and poor labour market performance. When 1970-2000 employment growth rates for moderately detailed manufacturing industries are juxtaposed with data on trade flows, it can be seen that employment fell more rapidly in the subset of industries that experienced the strongest growth in international competition in 11 of the 15 countries analysed (Chart 1.2, Panel A), with the average employment decline across these 15 countries being 27% in high-international-competition industries, as compared to 16% for total manufacturing.¹⁰ This association suggests that rising international competition may have been a significant factor resulting in employment declines in certain OECD manufacturing industries.¹¹ However, the resulting impact on the aggregate labour market is muted by the fact that high-international-competition industries accounted for less than 4% of total employment in 2000 in these 15 countries and all of manufacturing for 22% (unweighted averages).

Internationally comparative data on average wage costs for 2002 confirm the existence of very large wage differentials for production workers in manufacturing, with average wage costs being dramatically lower in India, China and Brazil – developing countries with large populations and an increasing presence in global markets – than in most OECD countries (Chart 1.2, Panel B). There are also large wage differentials within the OECD (e.g. between Central and Eastern European (CEE) and Western European countries, and between Mexico and the United States).¹² It has been argued that such large wage differences produce a strong incentive for managers to move production jobs to low-wage countries – especially, in view of the fact that new technologies facilitate the fragmentation of production and outsourcing, while increased international integration of capital markets makes investors more sensitive to international cost differentials – and that the industrial relations climate is being undermined by employers' recurrent threats to "delocalise" jobs, unless unions accept to make concessions on wages and working conditions (Bronfenbrenner, 2000; Kohler and Chaves, 2003). However, these wage-level comparisons make no allowance for international differences in labour productivity and such an adjustment is required to assess the extent to which the continuing competitive viability of manufacturing in high-wage countries is menaced by excessive unit labour costs.

In light of these statistics, it might appear natural to conclude that workers in high-wage countries cannot compete successfully with workers from low-wage countries. However, aggregate employment performance does not appear to have suffered in the OECD countries that are most open to trade or where trade openness has increased most rapidly (Chart 1.3). There is substantial cross-country variation within the OECD area in employment-to-population ratios, but these differences are not systematically associated with the large cross-country differences in trade openness (neither in levels nor in first differences). Nor is any systematic bivariate association evident between cross-country differences in trade openness and either unemployment rates or real wages (data not shown). These findings are, of course, consistent with the fundamental insight from trade theory discussed above, as well as with the empirical observation that higher average wage levels in OECD countries are associated with higher productivity.¹³ The rapid integration of a number of low-wage

Chart 1.2. International competition may be a factor restraining employment and wages in some industries



a) High-international-competition industries are those manufacturing industries where the net imports ratio rose most strongly during 1980-2000 (see OECD, 2005b, Annex 1.A1.1 for further explanation).

b) Data cover the period 1980 to 1999.

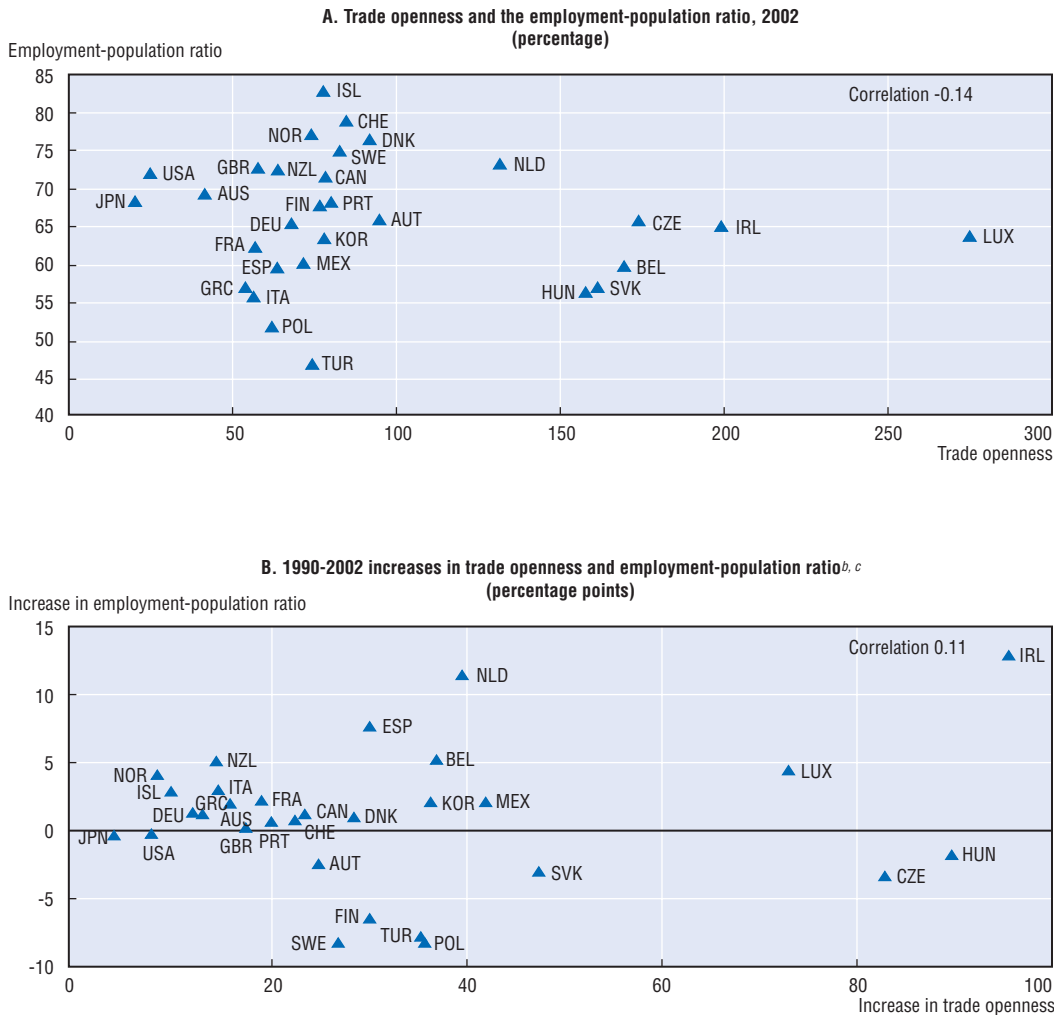
c) Average hourly compensation in US dollars for production workers in manufacturing in 2002. Countries are ranked in ascending order of hourly compensation evaluated at market exchange rates.

Source: OECD STAN database and US Department of Labor, Bureau of Labor Statistics, Foreign Labor Statistics, November 2004 (<ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/ichcssuppt02.txt>), except that wage data for India are estimates based on 2001 and 2003 data from Oxford Economic Forecasting (www.oef.com).

Statlink: <http://dx.doi.org/10.1787/084588843842>

economies into the world trading system is changing the international division of labour in a way that implies employment losses in certain industries in most OECD countries, but employment opportunities generally have improved sufficiently in other industries to preclude an adverse effect on aggregate employment.¹⁴

Chart 1.3. **Aggregate employment performance is not systematically related to trade openness^a**



Note: The correlation coefficients shown in this chart are not statistically significant.

a) Trade openness defined as the sum of exports and imports as a percentage of GDP.

b) Data for the increase in trade openness for the Czech Republic and the Slovak Republic cover the period 1993-2002. For Hungary the period covered is 1991-2002.

c) Period used to calculate the increase in the employment-population ratio starts as follows: Austria 1994, the Czech Republic 1993, Hungary 1992, Iceland 1991, Mexico 1991, Poland 1992, the Slovak Republic 1994 and Switzerland 1991.

Source: OECD Economic Outlook and Labour Market Statistics databases.

Statlink: <http://dx.doi.org/10.1787/175364164563>

In sum, a quick review of recent history casts considerable doubt on fears that trade with low-wage countries has been a barrier to achieving high employment and rising living standards in OECD countries. However, the future need not resemble a smooth extrapolation of the past. Indeed, the apparent increase in fears concerning the economic implications of globalisation reflects, in part, the belief that competition from low-wage countries has begun to take qualitatively new forms that will prove more damaging to workers in developed countries than were past forms of competition. Box 1.1 discusses whether the international sourcing of business services is likely to represent such a break with past experience. Once again, the available evidence is overall reassuring.

Box 1.1. Is international sourcing different?

The recent increase in the international sourcing of intermediate business services has attracted a great deal of attention in OECD countries, not least because it is widely interpreted to imply that many high-quality service jobs – jobs which are typically held by persons with post-secondary education who previously considered themselves protected from competition with workers in low-wage countries – are now at risk of being lost to “offshoring”. There are no official statistics on offshoring service activities but analysts have used various types of data to estimate its size and composition.¹ IMF data on services trade flows suggest that international sourcing of business services remains quite modest in size and that many OECD countries (notably, including the United States) have registered trade surpluses in the business services most associated with offshoring, in effect, “insourcing” more service jobs than they outsource (Amiti and Wei, 2005a and b). Using other types of data for the United States, McCarthy (2002) estimated that a little over 100 000 service jobs moved offshore in 2000 and Goldman Sachs concluded that approximately one-half million layoffs can be attributed to offshoring during 2001-2003 (as reported in the media).

Predicting the future growth of services offshoring is even more difficult than measuring its current extent. An OECD analysis of occupational employment data suggests that 15-20% of total employment in Australia, Canada, the EU15, and the United States correspond to service activities that potentially could be subject to international sourcing (van Welsum and Vickery, 2005), while the ILO (2001), using somewhat more stringent criteria, estimated that between 1 and 5% of service sector jobs were “contestable” by low-wage countries. However, it would not be reasonable to forecast that all of these jobs – or even most of them – will actually be outsourced, as is illustrated by the persistence of manufacturing jobs in OECD countries after decades of intense trade competition in industrial goods. Among available forecasts of services sourcing in the coming years, McCarthy (2004) forecasts that a total of 3.4 million white-collar jobs in the United States would move offshore by 2015, while Parker (2004) estimates that 1.2 million IT and service jobs will be outsourced from 16 European countries over the same time horizon.² Although these forecasts confirm that services offshoring is an important economic development that will probably grow, these job loss estimates are not large relative to total turnover in jobs. For example, McCarthy’s widely-cited estimate for the United States implies an average quarterly job-loss rate of approximately 55 000, far smaller than the 7.7 million jobs destroyed on average every quarter from 1992 to 2003 (Spletzer et al., 2004).

While research on the labour-market effects of international sourcing of service-sector jobs is just beginning, there is much more evidence regarding the effects of offshoring production jobs in the manufacturing sector (Amiti and Wei, 2005a).³ The research literature measuring the impact of international sourcing on productivity, employment and wages in the manufacturing sector – which primarily involves the importation of intermediate goods, rather than services – has turned up similar results to those for studies of the effects of international trade in final goods: international sourcing improves productivity⁴ while increasing skill demands and, consequently, reducing the relative wages and/or employment of low-skilled labour. Feenstra and Hanson (2003) attribute a 15% increase in the relative wage of US non-production (i.e. “skilled”) workers to international sourcing, while Hijzen (2003) applies the same method to the UK manufacturing sector and finds that sourcing accounts for 12% of the increase in wage inequality in that country during the 1990s. Using data from input-output (IO) tables, Hijzen et al. (2004) find that international sourcing also had a large positive impact on skill

Box 1.1. Is international sourcing different? (cont.)

demand in the UK labour market during 1982-1996. Geishecker and Görg (2004) apply a similar method combining data from IO tables with German household panel data and find that low-skilled workers saw their real wages reduced by up to 1.8% in the 1990s, as a result of offshoring, while those of skilled workers were increased by up to 3.3%.

In sum, the evidence suggests that international sourcing of intermediate goods has had qualitatively similar effects to those observed for trade in final goods and services, although it may have had a particularly strong impact on the skill composition of labour demand and more of the resulting structural adjustments occurs *within* industries, rather than *between* industries. Bhagwati et al. (2004) argue that international sourcing of services is likely to have qualitatively similar impacts.

1. For the purposes of this chapter, international sourcing is defined as the procurement of services (or material inputs) from a foreign supplier, which may be owned by the procurer or an independent firm. It is common to refer to this phenomenon as “outsourcing” but that terminology is imprecise, inappropriately including domestic outsourcing and excluding the sourcing of intermediate inputs to foreign affiliates (Bhagwati et al., 2004; OECD, 2004b).
2. Deloitte Research (2004) has made similar forecasts for both the United States and Western Europe (as reported in the media). Katalyse forecasts that France will lose 202 000 service jobs during 2006-2010, 80% of which represent foregone job creation, rather than the offshoring of existing jobs (as reported in the media).
3. A study of 10 OECD countries found that international sourcing of goods in these economies grew by 30% between 1970 and 1990 (Hummels et al., 1999). It also found that outsourced components in the vertical production chain make up about 21% of these countries' exports.
4. For example, Görg, Hanley and Strobl (2004) examine plant-level data in Ireland and find that, for exporting firms involved in offshoring intermediates, an increase in international sourcing intensity of one percentage point was associated with a 1.2% increase in productivity at the level of the plant. Similar positive results are found for Germany (Görzig and Stephan, 2002; Görg and Hanley, 2003, 2004).

2. Labour market adjustment costs

A. What is the policy rationale for addressing adjustment costs?

If countries are to realise the potential gains from trade and investment liberalisation, labour and other factors of production must flow away from activities in the economy in which it is relatively less efficient than its trading partners and towards activities in which the economy enjoys comparative advantage. However, the mobility of labour between jobs and sectors can be impeded by many factors, including heterogeneous skills, asymmetric information, geographic mismatch and poor job-search skills. It follows that structural adjustment to trade liberalisation may imply significant adjustment costs, particularly for workers displaced from firms in import-competing sectors.¹⁵ These workers may experience lengthy spells of unemployment or be forced to accept new jobs that pay lower wages than those paid by their previous employment.¹⁶

Several considerations suggest that the labour-market adjustment costs associated with trade-related displacement may merit a policy response.¹⁷ These considerations suggest possible motivations for policy intervention on efficiency, equity and political economy grounds:

- **Efficiency** – The long spells of joblessness following displacement and the sometimes large and persistent reductions in earnings once re-employed (Kuhn, 2002; Jacobson, et al., 1993a, b) both suggest that the labour market may not be matching trade-displaced workers with employers who could make productive use of their skills in an efficient manner. Market failure could result from information imperfections (e.g. workers not being aware of the nature of new jobs demanded) and result in under-employment of

productive capacity if re-employed workers occupy jobs which do not match their productivity potential.¹⁸ Policies that improve the efficiency of job search for trade-displaced workers or improve their access to retraining may also be able to improve allocative efficiency. Finally, the substantial public spending triggered by layoffs (e.g. for unemployment benefits and job-search assistance) raises the possibility that employers' decisions to shed workers will be distorted towards excessive layoffs, unless other policies cause them to internalise these social costs (Blanchard and Tirole, 2003).

- *Equity* – It may be judged unjust for the broad majority of the population to benefit from the gains from trade while high adjustment costs are borne by a minority of workers. This consideration suggests that some compensation might be provided to the losers, for example, via income transfer payments or assistance to become re-employed quickly in a new job offering earnings comparable to those on the lost job – thus reconciling equity with efficiency objectives.
- *Political economy* – Not assisting trade-displaced workers could erode political support for an open trading system. For example, 60 years of public opinion survey evidence for the United States indicates that fears of job loss account for the low level of public support for further trade liberalisation, but that support is significantly increased if trade liberalisation is combined with increased adjustment assistance for trade-displaced workers (Scheve and Slaughter, 2001).

In order to judge whether any of these rationales for adjustment assistance policy justify policy interventions – and if so, what types of interventions – an understanding of the size, nature, and distribution of the adjustment costs associated with trade-related displacement is essential. It turns out to be quite difficult to measure the incidence and the costs of trade-related displacement. Nonetheless, this is becoming an active area of research and the following two sub-sections review that literature and present some new empirical results. Prior to reviewing this evidence, it is useful to clarify several conceptual issues that arise (see Box 1.2). Doing so highlights the importance of collecting *direct* evidence on the incidence of trade-related displacement and consequent costs, since the indirect evidence used in many previous studies is likely to understate significantly the adjustment costs due to trade displacement and their concentration on a minority of trade-displaced workers who experience major difficulties re-integrating into employment.

B. The incidence of trade-related job displacement

Trade-displaced workers appear to be a significant (but difficult to count) minority of job losers

The task of measuring worker displacement resulting from trade liberalisation is one riddled with difficulties. Most fundamentally, the reasons for enterprise shut-downs and smaller scale layoffs are often complicated and involve several contributing factors. Trade may have weakened markets for locally produced goods, but poor productivity, deficient management skills and other factors often play a more significant role in an enterprise's performance. These causes also may be intertwined, rendering discrimination between trade-related structural changes and those provoked by technological developments or shifts in consumer preferences even more problematic. Nonetheless, several different methods can be used to identify job losers for whom international trade is likely to have played a significant role in causing their employer to terminate their job. Doing so provides qualitative insights into the incidence and costs of trade displacement.

Box 1.2. Estimating the incidence and costs of trade displacement

It is notoriously difficult to estimate the incidence of trade-related displacements and the resulting adjustment costs, as can be illustrated by considering the adjustment-cost estimates presented in Magee, Bergsten and Krause's pioneering study of the welfare effects of trade liberalisation in the United States (Magee *et al.*, 1972). In the absence of direct data on either the incidence of trade-related displacement or the average costs borne by a trade-displaced worker, Magee *et al.* used available proxy measures. They assumed that the incidence of displacement equalled their estimate of the net employment decline in import-competing industries following trade liberalisation and estimated costs per displacement by the product of the average duration of unemployment for all unemployed workers (as indicated by labour force statistics) and the average wage rate in each industry predicted to shed labour.¹ This approach is potentially problematic:

- **Incidence** – Employment reductions in import-competing industries provide an unreliable indicator of the incidence of trade-related displacement because these *net* employment changes are the outcome of far larger *gross* job flows.² The net employment reductions caused by rising imports (or falling exports) at the sectoral level almost surely understate greatly the associated rise in gross job destruction. Expressed differently, changes in trade patterns will typically induce significant reallocation of workers across firms within an industry, due to the high level of heterogeneity in the impact of trade on the competitive position of different firms within narrow manufacturing industries (Klein *et al.*, 2003). However, not all of the job destruction induced by international trade will result in job displacement, since some of these reductions will be accomplished through voluntary attrition. In principle, this off-set could be large, since worker turnover rates are even higher than job turnover rates. However, the size of this off-set is uncertain, since the overlap between potentially trade-displaced workers and workers who voluntarily quit their jobs may be quite low.³ Finally, using net employment changes to estimate trade displacement implicitly assumes that increased trade results in only a *temporary* increase in layoffs, whereas it is possible that increased openness to international trade and investment flows leads to a *permanent* increase in the rate of labour reallocation (and, hence, job destruction), since the competitive position of firms becomes more sensitive to international shocks (Rodrik, 1998).
- **Costs** – It is problematic to estimate the economic losses borne by trade-displaced workers as equalling the product of the average length of unemployment spells for *all* unemployed persons and an average wage rate. This approach is likely to result in a substantial underestimate of displacement costs because displaced workers tend to have longer unemployment spells than other unemployed persons and earnings losses often persist after a new job has been found (*i.e.* wages on the new job are often considerably below those on the prior job). The extensive research literature on job displacement in the labour market of the United States documents both of these points (see Kletzer, 1998, for a survey of this literature and Farber, 2003, for more recent results). The pattern also appears to be qualitatively similar in other OECD countries, although the evidence is more limited and international comparisons raise the difficult issue of incomplete comparability. The table below reproduces summary estimates of post-displacement adjustment costs for nine OECD countries from Kuhn (2002). Even a year after being displaced, substantial fractions of workers remain jobless, although this fraction appears to be much higher in some countries (*e.g.* Belgium and France) than in others (*e.g.* Japan, the United Kingdom and the United States). For those becoming re-employed, wages on the new jobs tend to average a little below prior wages, but average wage losses rise significantly with tenure on the prior job in most countries. Although not shown in the table, higher wage losses for older workers appear to be a universal pattern, while studies using data for the United States find that wage losses are also larger for displaced workers becoming re-employed in a different industry (Carrington, 1993; Neal, 1995; Kletzer, 2001). Another pattern that has important implications for designing policy responses is that unemployment durations and earnings losses differ greatly across displaced workers, even after controlling for

Box 1.2. Estimating the incidence and costs of trade displacement (cont.)

individual characteristics that influence average costs (e.g. job tenure, age, educational attainment), with a significant minority experiencing long periods of unemployment or very large earnings losses, while others appear to fare very well.

Estimates of displacement incidence and costs for selected OECD countries

Incidence rate (annual) ^a			Probability of still being jobless after		Displacement-induced percentage wage changes (mean)	
			6 months	12 months	All workers	Workers with more than 10 years of job tenure
A. Total layoffs						
Canada	1995	4.9	0.47 (Men)	0.30 (Men)	-1 (Men)	-11 (Men)
			0.68 (Women)	0.41 (Women)	-2 (Women)	-7 (Women)
Japan	1995	3.5	0.23 (Men)	0.14 (Men)	-4 (Men)	..
			0.25 (Women)	0.11 (Women)	0 (Women)	..
Netherlands	1993-95	4.1	0.46 ^e	0.28 ^e
United Kingdom	1990-96	4.7	0.2	0.12 ^f	-4	-6 ^h
United States	1993-95	4.9	0.33 ^g	0.24 ^g	0	-19
B. Mass layoffs only^b						
Belgium	1983	2.1	0.72 (Men) ^d	..	-6 ^d	-6 ⁱ
Denmark	1988	1.6	0.37 (Men) ^d	..	-1 ^d	..
France ^c	1984-90	0.5 (Men)	0.62 (Men) ^e	0.45 (Men) ^e	..	10
Germany ^c	1984-90	1.1 (Men)	0.52 (Men) ^e	0.40 (Men) ^e	..	2

.. Data not available.

a) Workers displaced in a year as a percentage of total employment.

b) Workers separating from dying firms (Belgium and France) or dying plants (Denmark and Germany).

c) Workers aged 25 to 50 with a minimum of four years of tenure.

d) Workers with a minimum of three years of tenure.

e) Conditional on a positive spell of joblessness.

f) After 10 months.

g) Workers with a minimum of one year of tenure.

h) Workers with a minimum of five years of tenure.

i) Workers with a minimum of six years of tenure.

Source: Kuhn, P.J. (ed.) (2002), *Losing Work Moving On*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.

The foregoing considerations suggest that reliable estimates of the adjustment costs borne by trade-displaced workers should be based on the best possible estimates of the incidence of trade-related job displacement and the actual adjustment experience of those workers, including earnings losses that continue after they are re-employed.

1. A number of subsequent studies have adopted the same basic strategy for estimating the adjustment costs borne by trade-displaced workers, albeit with some refinements. For example, Baldwin *et al.* (1980) applied this methodology in a later study of the net benefits of trade liberalisation for the United States, but allowed the expected duration of unemployment for trade-displaced workers to vary across industries to reflect differences in the demographic composition of their workforces.
2. The pioneering study of Davis, Haltiwanger and Schuh (1996) showed that manufacturing employment in the United States declined at an annual rate of 1.1% during 1973-1988, but that this modest net decline resulted from a gross job creation rate of 9.1% and a gross job destruction rate of 10.3%. That is, the gross flows were an order of magnitude higher than the net flows, indicative of a high level of reallocation of employment across firms within detailed industries. This qualitative result has been confirmed by many subsequent studies, including for services industries and other countries (Davis and Haltiwanger, 1999).
3. Davis and Haltiwanger (1999) survey a number of empirical studies which indicate that worker turnover rates are even higher than job turnover rates. Nonetheless, they conclude that a significant share of job destruction in the United States is accomplished via involuntary layoffs. This share may be particularly high for jobs threatened by imports, which tend to be held by older and high-tenure production workers with relatively little formal education and low turnover rates.

Box 1.3 presents estimates of trade-related displacement and gross labour-market flows based on five statistical sources for the United States. Comparisons of these estimates provide several useful insights for analysing trade-adjustment costs and policy responses. First, the incidence of trade displacement cannot be measured with precision using existing statistics and labour market programmes are also likely to find it difficult to differentiate among job losers according to whether international competition was an important cause of their being laid-off. Nonetheless, certain order-of-magnitude comparisons can be drawn, albeit tentatively: i) job losses that can be confidently identified as having been caused by trade competition are a small share of total job displacement; however, ii) trade competition could play a significant role in a much higher share of layoffs; furthermore, iii) a significant fraction of workers are displaced every year – with 5% being a reasonable estimate for the United States; where iv) this represents a little more than one-third of total job destruction; suggesting that v) the high rate of voluntary labour mobility allows nearly two-thirds of all employment reductions to be achieved via voluntary attrition. These magnitudes are subject to considerable uncertainty and probably differ for other OECD countries. Nonetheless, it appears likely that other national labour markets are also characterised by a co-existence of substantial voluntary labour-market mobility with significant rates of trade-related job displacement.

Table 1.1 compares the annual displacement rates in the United States reported in Kletzer (2001) with parallel estimates for Europe and Canada.¹⁹ The average annual displacement rate in the 14 ECHP countries is 2.8%, slightly higher than the 2.2% incidence rate that Kletzer estimates for the United States, while the estimate for Canada is substantially higher, at 6.7%.²⁰ Differences in displacement rates across industry groupings are of greatest interest for this chapter's analysis, since they provide an indication of the importance of international trade in generating permanent layoffs. In all three areas, displacement rates are higher in manufacturing than in services, with this difference being particularly strong in the United States (4.6% versus 1.7%).²¹ In Canada, the displacement rate in high-international-competition industries is higher, at 8.3%, than in the rest of

Table 1.1. Manufacturing workers are displaced more often than service workers, but evidence for a direct link between trade and job loss rates is mixed

Average annual displacement rates (percentage of total employment)

Industry	Canada ^a 1983-1999	14 European countries ^b 1994-2001	United States ^c 1979-1999
Manufacturing	6.5	3.7	4.6
High-international-competition	8.3	3.7	5.9
Medium-international-competition	5.9	4.5	6.2
Low-international-competition	5.9	3.5	4.3
Services and utilities ^d	4.5	3.2	1.7
Total employment ^e	6.7	2.8	2.2

a) Average annual permanent layoff rates, where permanent layoffs are defined as layoffs that occur when the separated worker does not return to the same employer in the same year the layoff took place or in the following year. Estimates based on the 1% Longitudinal Worker File (LWF) as calculated by Statistics Canada.

b) Secretariat estimates based on data from the European Community Household Panel (ECHP) for Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom.

c) Estimates based on data from the Displaced Workers Survey (DWS), as calculated by Kletzer (2001).

d) Services for Europe.

e) Estimates for the United States exclude employment in the primary sector and construction.

Source: Statistics Canada's LWF for Canada; ECHP, waves 1 to 8 (April 2003) for Europe; and Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, DC, for the United States.

Box 1.3. **Counting trade-displaced workers in the United States: lessons from five data sources**

The chart below compares incidence measures related to trade displacement which have been calculated from five different data sources for the United States. Preceding from the most restrictive to the most encompassing measures of trade displacement and labour turnover:

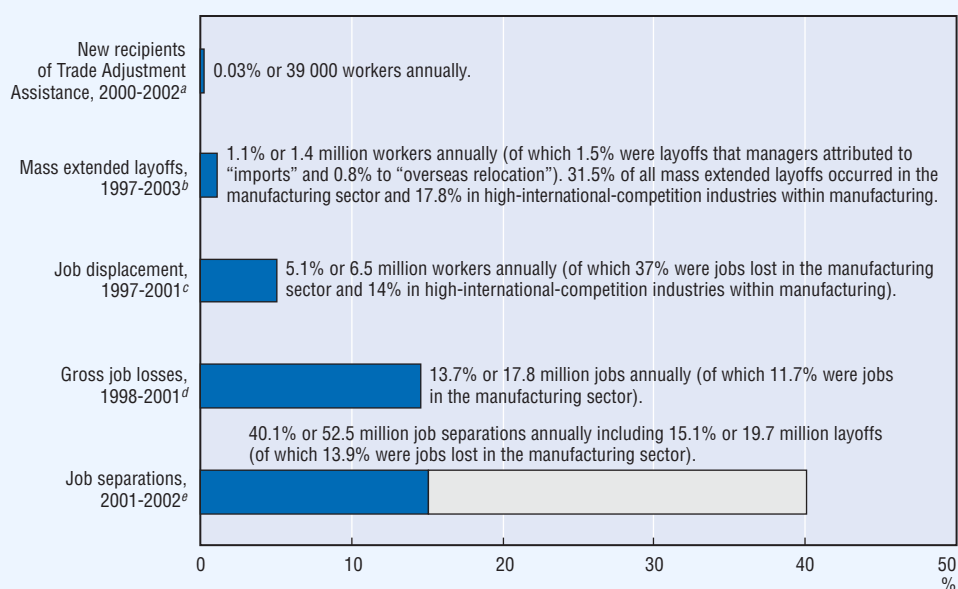
- *The Trade Adjustment Assistance (TAA)* programme provides income-replacement benefits and adjustment assistance to certified trade-displaced workers that supplement the unemployment insurance benefits and re-employment services available generally to the unemployed (see sub-section 3.E below for a more detailed description of TAA). During 2000-2002, an average of 39 000 workers became new recipients under this programme annually, representing 0.03% of total non-farm employment. However, this represents a lower-bound estimate of trade displacement since the eligibility criteria used to define trade-displaced workers under TAA are somewhat narrow (*e.g.* workers displaced by trade in services are not covered) and the administrative process under which workers are certified for this programme almost certainly results in low coverage rates among potentially eligible workers (Kletzer and Rosen, 2005).
- *The Mass Layoffs Statistics (MLS)* programme builds on administrative data collection associated with the unemployment insurance system to provide statistics on large-scale layoffs. These data are especially useful for analysing trade displacement because managers are interviewed following every “mass layoff event” and are asked to identify the economic reason for the job losses. Among the possible reasons that can be reported are “imports” and “overseas relocation of the work”. During 1997-2003, the MLS data indicate that an average of 1.4 million workers lost their jobs in mass layoffs each year, corresponding to an annual incidence rate of 1.1%. However, managers cited imports as the reason for job loss for just 1.5% of all workers involved in mass layoffs and the corresponding figure for overseas relocation was 0.8%. Combining these two reasons, 2.3% of all mass layoffs are identified as being trade-related displacements each year, representing just 0.02% of total employment. This is very close to the incidence rate implied by the TAA programme data and also provides a strongly downward biased estimate of the true figure for two reasons: i) the MLS statistics miss many layoffs that fail to satisfy the minimum-size thresholds applying to establishment employment levels and the number of jobs shed over a five-week period;¹ and ii) the two trade-related reasons that employers can cite as being the principle cause of the layoffs are included in a lengthy list that contains other items, which are much more frequently cited and typically would also apply to managerial decisions to cut employment in response to trade competition (*e.g.* “financial difficulty” and “reorganisation within firm”).²
- *The Displaced Worker Survey (DWS)* is a household survey which has collected data on nationally representative samples of displaced workers since 1979 and has been widely used by researchers, since it contains quite extensive information on the characteristics of displaced workers and their adjustment experience following job loss, unlike the administrative data collected in the MLS. According to DWS data, an average of 6.5 million workers were displaced each year during 1997-2001, representing an annual incidence rate of 5.1%, nearly five-times as high as the MLS-based estimate. None of the DWS variables provide direct information concerning whether international trade caused these workers to lose their jobs and researchers have had to use proxy indicators to infer which observations correspond to trade-displaced workers. In particular, a number of researchers have used the industry of the lost job as a proxy indicator for the role of trade competition.³ Kletzer (2001) has analysed these questions in greatest detail and finds that 14% of all displaced workers identified in the DWS (or 0.7% of all workers annually) lost a job in a manufacturing industry facing intense international competition.⁴

Box 1.3. Counting trade-displaced workers in the United States: lessons from five data sources (cont.)

- The incidence rates of trade (and total) displacement provided by the TAA, MLS and DWS data can be compared with the total turnover of jobs and workers, in order to gauge the scale of job displacement relative to total flux in the labour market. According to the *Business Employment Dynamics* (BED) statistics, an average of 17.8 million jobs were destroyed every year during 1998-2001, implying an annual gross job losses incidence rate of 13.7%.⁵ The gross job losses rate is thus nearly three times greater than the displacement rate calculated from DWS data, suggesting that nearly two-thirds of the time employers make use of natural attrition, rather than layoffs, to achieve reductions in the size of their labour force.⁶ Indeed, labour turnover rates in the *Job Openings and Labor Turnover Statistics* (JOLTS) are even higher than the BED gross job losses rates, with 52.5 million job separations being reported every year, an annual incidence rate of 40.1%. Of perhaps greater relevance for drawing comparisons with trade-displacement rates, the annual incidence rate for involuntary layoffs in JOLTS is 15.1%.⁷

Counting trade-displaced workers: searching for faces in a (swirling) crowd?

Five measures of job-loss rates in the United States, annual percentages of total non-farm employment



- a) Average value for 2000-2002 based on Trade Adjustment Assistance participation data reported in Kletzer and Rosen (2005).
- b) Average values for 1997-2003 as calculated from data reported at the Mass Layoffs Statistics homepage of the US Bureau of Labor Statistics (www.bls.gov/mls/home.htm).
- c) Average values for the periods 1997-1999 and 1999-2001 in Farber (2003), which have been converted to an annual rate using the adjustments for multiple job losses and recall bias in Abbring et al. (2002). Shares in manufacturing and high-international-competition industries within manufacturing are from Kletzer (2001).
- d) Average annual gross job losses rate for 1998-2001 from Table 2 of Pinkston and Spletzer (2004).
- e) Average annual job separation rates calculated as the sum of the 12 monthly rates reported at the Job Openings and Labor Turnover Survey (JOLTS) homepage of the US Bureau of Labor Statistics (www.bls.gov/jlt/home.htm). Area in darker shading corresponds to employer-initiated separations, principally layoffs.

Source: OECD calculations using the sources mentioned in notes a-e, as well as employment estimates from the Current Employment Statistics homepage of the US Bureau of Labor Statistics (www.bls.gov/ces/home.htm).

Box 1.3. Counting trade-displaced workers in the United States: lessons from five data sources (cont.)

1. The MLS data cover establishments employing at least 50 workers where at least 50 people filed for unemployment insurance during a consecutive five-week period. Establishments employing 50 or more workers accounted for almost 57% of total employment within the scope of the MLS programme in 2003, so the establishment-size threshold omits more than one-third of the labour force (Brown, 2004). Also omitted are layoffs involving fewer than 50 workers or that are extended over a prolonged period of time, but the extent of the resulting bias is unknown.
2. In 2004, the interview questions used for the MLS were modified so as to do a better job of identifying mass layoffs resulting from the movement of work to another site (Brown, 2004). In the first three quarters of 2004, 8% of extended mass layoffs were associated with the movement of work (corresponding to 41 000 job losers). 26% of these layoffs involved offshoring and nearly three-quarters of those represented the shifting of work to out-of-country production sites of affiliates, rather than outsourcing of work to independent firms. A large majority of the layoffs related to offshoring represented manufacturing jobs that were relocated to Mexico and China.
3. It is clearly inaccurate to assume that all displacement in high-international-competition industries are trade displaced, while no job losers in other industries are. Provided that trade-displaced workers are sufficiently over-represented in high-international-competition industries, this method should nonetheless provide an indication of differences between trade-displaced workers and other job losers in terms of the e.g. the distribution of ages or average wage losses. Since this method introduces both upward and downward bias in the number of trade-displaced workers, it is unclear whether it results in an under- or over-estimate of the true incidence rate.
4. Total manufacturing accounted for 37% of all displaced workers (corresponding to 1.9% of all workers annually).
5. The BED data are usually reported on a quarterly basis (e.g. Spletzer et al., 2004) which are sometimes “annualised” by summing the four quarterly values. Doing so generates substantially higher estimates of job turnover than the annual rates presented in Chart 1.4, which were calculated by Pinkston and Spletzer (2004) based on 12-month changes in establishment-level employment.
6. The 5.1% annual displacement rate estimated from DWS data is 37% of the 13.7% gross job losses rate estimated from BED data. Since manufacturing accounts for a disproportionate share of job displacements, but only a proportionate share of gross job losses, it appears that the share of job deaths resulting in layoffs is higher in manufacturing than in the rest of the economy.
7. There are two major explanations for why the rate of involuntary layoffs recorded by JOLTS is nearly three times as high as the displacement rate calculated from DWS data: i) the annual layoff rate estimated from JOLTS data is the sum of 12 *monthly* rates, implying that the same worker can separate from multiple jobs in a single year and that many of the layoffs recorded are probably temporary (though all last at least seven days); and ii) the JOLTS layoff data combine persons fired for cause with persons laid off for economic reasons (i.e. displaced workers).

manufacturing (5.9%), consistent with losses of comparative advantage causing elevated rates of job loss.²² By contrast, there is no consistent association between the intensity of international competition and displacement rates within the manufacturing sectors of either the EU or the United States. This may indicate that inter-industry differences in exposure to international competition have been particularly strong in Canada manufacturing,²³ but probably also reflects the more accurate assignment of job losers to industry in the Canadian database underlying these calculations (which relies upon employers, rather than workers, to identify the industry of employment).

Econometric estimates of job losses from international competition tell a similar story

The bivariate association between more intense international competition in an industry and a higher incidence of job displacement is only suggestive of a causal link between international competition and job loss, because layoffs can be influenced by numerous factors in addition to declining comparative advantage. Multivariate techniques are better suited for isolating the true impact of changes in international trade on the incidence of job displacement, although causal impacts remain difficult to pin down due to the possibility of endogeneity bias.²⁴ Another difficulty (as noted above) is that it generally is not possible to differentiate among displaced workers according to whether any

particular layoff occurred as a result of international trade. Accordingly, most researchers have analysed the impact of trade on employment using industry-level measures of job loss. Also for reasons of data availability, much of the econometric research studying the impact of trade on job loss has focussed on *net* employment changes, rather than theoretically preferable measures, such as the incidence of job displacement or *gross* job destruction.²⁵

OECD (2005b) surveys twelve recent econometric studies which have used multivariate regression techniques to study the association between *net employment growth* rates in particular industries and the intensity of trade competition, when controlling for other factors likely to affect industry employment levels (see Panel A of Annex Table 1.A2.1). These studies suggest the following conclusions:

- Most of these studies have found qualitative evidence in support of the hypothesised link between rising import competition (or declining export competitiveness) and declining employment at the level of more or less disaggregated manufacturing industries. Thus far, there is little evidence for a detrimental impact of international sourcing of business services on sectoral employment, probably due to the smaller magnitudes of the trade flows involved and the generally more buoyant employment performance of this sector.²⁶
- The estimated elasticities tend to be quite small and to vary considerably across studies, suggesting that the specific methods and data sources adopted have a substantial effect on estimation results. This variability may indicate that the strategies being used to identify employment effects due to changes in trade competition are not very satisfactory, particularly in the context of potentially strong endogeneity bias. Some studies allow these response elasticities to vary across industries and often find that the negative impact of international competition appears to be much stronger in some industries than others (*e.g.* Kletzer, 2002), perhaps reflective of differences in the importance of product differentiation (Helpman and Krugman, 1985).

Recently, an increasing number of econometric studies of the impact of trade competition on employment have used data on *job displacement rates* as the dependent variable and hence provide more directly relevant evidence for assessing trade-adjustment costs. OECD (2005b) also summarises ten recent studies analysing the relationship between trade competition and job displacement (or gross job losses), using regression analysis to control for other factors affecting the rate of job loss (see Panel B of Table 1.A2.1). The following conclusions emerge:

- Most of these studies find some evidence supporting the hypothesis that increased import competition (or reduced export competitiveness) is associated with a temporary increase in the rate of job loss. By contrast, there appears to be no evidence that a higher level of openness is associated with a permanently higher level of labour market turbulence, as reflected in a persistent increase in the incidence of job displacement (although this possibility has not received much scrutiny from researchers).
- The estimated effects tend to be relatively small and are not robust to variations in model specification or data sources. However, this is a very new area of research and it is to be hoped that more robust results will soon become available.

C. The characteristics of trade-displaced workers and their adjustment costs

The policy implications of trade-related displacement will vary critically depending upon the nature and extent of the adjustment difficulties encountered by the workers

affected, including the amount of time spent jobless and any earnings losses on the new job. Prior research for a considerable number of countries has shown that the adjustment costs borne by displaced workers range from small (or nonexistent) to very large and that certain personal characteristics (e.g. being older or having little formal education) are associated with greater post-displacement difficulties (Kletzer, 1998; Kuhn, 2002). This section presents estimates of the characteristics of trade-displaced workers and their adjustment costs, focussing on whether they differ from other job losers in ways that have implications for the operation of public programmes to reduce adjustment costs from trade.²⁷

Are trade-displaced workers different from other displaced workers?

Using industry as a proxy for trade displacement, Kletzer (2001) compares trade-displaced workers with other job losers.²⁸ She finds that workers displaced from high-international-competition manufacturing industries in the United States are quite similar to those displaced from other manufacturing industries, except that women and ethnic minorities represent significantly larger shares of all job losers in high-international-competition industries (Table 1.2, Panel A).²⁹ In terms of age, education, job tenure and prior earnings, workers displaced in high-international-competition manufacturing industries are similar

Table 1.2. **Are trade-displaced workers different: a comparison for the United States, 1979-1999**

	High-international- competition manufacturing	Medium- international- competition, manufacturing	Low-international- competition, manufacturing	All manufacturing	Services and utilities
A. Workers' characteristics					
Age at displacement (years)					
55-64 (%)	10.4	10.3	8.7	10.1	8.2
Mean age	39.1	38.4	37.8	38.6	37.3
Education					
Less than high school (%)	21.3	21.9	18.2	21.0	11.9
Mean years of education	12.3	12.3	12.5	12.3	13.2
Share female (%)	44.9	30.4	35.1	36.9	50.4
Share minority (%)	19.0	16.5	16.7	17.6	17.0
Predisplacement occupation					
White collar (%)	31.3	28.6	34.5	30.7	64.5
Blue collar (%)	66.8	68.7	62.1	66.8	21.3
Job tenure at time of displacement (years)					
Greater than 10 (%)	22.1	21.6	19.4	21.5	12.7
Mean job tenure	6.8	6.5	5.9	6.5	4.6
Weekly earnings on the old job					
Mean (US dollars)	402.97	400.41	375.11	396.88	368.65
B. Adjustment costs					
Share reemployed at survey date (%)	63.4	65.4	66.8	64.8	69.1
For reemployed					
Mean change in log earnings	-0.132	-0.126	-0.086	-0.121	-0.038
Share with no earnings loss or earning more (%)	36.0	34.0	38.0	35.0	41.0
Share with earnings losses greater than 30 per cent (%)	25.0	25.0	26.0	25.0	21.0

Source: Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, DC, Table D2, p. 102.

to those losing jobs in medium-international-competition industries, but moderately different from those in low-international-competition industries (where the workers are younger and had lower job tenure and earnings on the lost job). However, the contrast is much sharper between workers displaced in manufacturing and those losing jobs in the service sector. The latter are considerably younger, better educated, more likely to be women and to have held a white-collar job, and their prior earnings and job tenure are also lower.

More detailed analysis for the United States indicates that the characteristics of workers displaced from jobs in the different detailed industries within the high-international-competition group vary considerably (Kletzer, 2001). For example, the textile, clothing and footwear sector is characterised by lower tenure than many of the other vulnerable industries, but still higher than in most service sectors; it also tends to have a higher share of female workers and pays wages below manufacturing industry averages (Kletzer, 2001; Rosen, 2002). By contrast, steel industry workers are more often male and higher paid than those in other manufacturing industries. Tenure is also higher and firms tend to be larger and concentrated in regions where iron ore or coal is found. This suggests that a decline in employment by steel firms can have a large negative effect on local demand for production workers.³⁰ Employment in shipbuilding has similar characteristics. In sum, trade competition does not so much target particular types of workers, as jobs in particular industries, and adjustment assistance policy needs to reflect the varied needs of a very heterogeneous group of job losers.

In many respects, the situation is qualitatively similar in Europe (Table 1.3, Panel A). As in the United States, European workers displaced from jobs in manufacturing tend to be somewhat older and to have significantly more tenure and higher earnings on the prior job than workers displaced from service jobs. They are also much more likely to be employed in blue-collar jobs. The characteristics of workers displaced from high-international-competition industries also differ somewhat from other displaced manufacturing workers, with the former group being older and having had more tenure and slightly higher earnings on the lost job.³¹

Are adjustment costs higher for trade-displaced workers than for other displaced workers?

In the United States, workers displaced from jobs in high-international-competition manufacturing industries are moderately less likely to be re-employed at the survey date (63%) than displaced workers from other manufacturing industries (67% for workers displaced from low-international-competition manufacturing) and the re-employment gap is somewhat larger vis-à-vis service sector workers (69% re-employed) (Table 1.2, Panel B).³² Re-employment rates following displacement appear to be considerably lower in Europe than in the United States, averaging 57% for all of manufacturing and just 52% in high-international-competition industries within manufacturing (Table 1.3, Panel B).³³ This difference suggests that displaced workers typically find it more difficult to find a new job in Europe than in the United States and/or are more inclined to withdraw from the labour force. Such a difference would be consistent with prior research suggesting that institutional differences between Europe and the United States (e.g. stricter employment protection legislation, more generous earnings-replacement benefits and a more compressed wage structure in Europe) tend to result in longer unemployment spells and higher inactivity rates among working-age persons in Europe (OECD, 2003, 2004).³⁴

Table 1.3. **Are trade-displaced workers different: a comparison for 14 European countries,^a 1994-2001**

	High- international- competition manufacturing	Medium- international- competition, manufacturing	Low- international- competition, manufacturing	All manufacturing	Services	All sectors
A. Workers' characteristics						
Age at displacement (years)						
15-24 (%)	10.4	13.1	11.6	11.8	12.2	11.4
25-54 (%)	75.1	75.8	78.1	76.4	78.0	76.9
55-64 (%)	14.5	11.2	10.3	11.9	9.8	11.7
Mean age	40.9	38.8	39.4	39.7	37.9	39.2
Share female (%)	31.7	44.9	26.2	34.8	43.2	38.2
Predisplacement occupation						
White collar (%)	31.9	20.0	27.1	25.9	73.3	48.5
Blue collar (%)	68.1	80.0	72.9	74.1	26.7	51.5
Job tenure at time of displacement (years)						
Greater than 10 (%)	32.1	30.4	27.7	30.0	18.6	21.5
Mean job tenure	7.0	6.6	6.2	6.3	4.7	5.0
Hourly earnings on old job						
Mean (euros)	9.51	9.15	9.08	9.43	9.15	9.08
B. Adjustment costs						
Share reemployed two years later (%)	51.8	58.7	59.6	57.0	57.2	57.3
For reemployed						
Mean change in log earnings	0.001	-0.038	0.028	-0.001	0.073	0.040
Share with no earnings loss or earning more (%)	44.0	45.7	47.3	45.8	49.6	47.1
Share with earnings losses greater than 30 per cent (%)	5.4	7.0	6.8	6.5	8.4	7.5

a) Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom.

Source: European Household Panel, waves 1 to 8, April 2003.

Workers displaced from high-import-competing industries in the United States experience an average pay cut of 13% once re-employed, with one-quarter experiencing earnings losses of 30% or more (Table 1.2, Panel B). Workers displaced from the rest of manufacturing fare a little better, whereas earnings losses once re-employed are significantly smaller for workers displaced from jobs in the service sector, for whom the mean earnings loss is just 4%, although one displaced service worker in five reports an earnings loss of at least 30%. By contrast, earnings are unchanged on average for European workers becoming re-employed following the loss of a job in manufacturing and actually increase an average of 7% for workers displaced from jobs in the service sector (Table 1.3, Panel B). The share of European workers reporting wage losses of at least 30% is far smaller than in the United States (8% versus 22%, for all displaced workers), evidence that earnings changes between the old and new jobs vary less widely in Europe. In sum, it appears that trade-displaced workers are at a somewhat greater risk of experiencing wage losses once re-employed, than are other job losers, in both Europe and the United States, but both the average size of these losses and their variability is much greater in the United States.³⁵

Prior research on adjustment costs following job displacement suggests that many of the personal characteristics that differentiate persons losing jobs in manufacturing from their counterparts in the service sector – and, to a lesser extent, workers displaced from

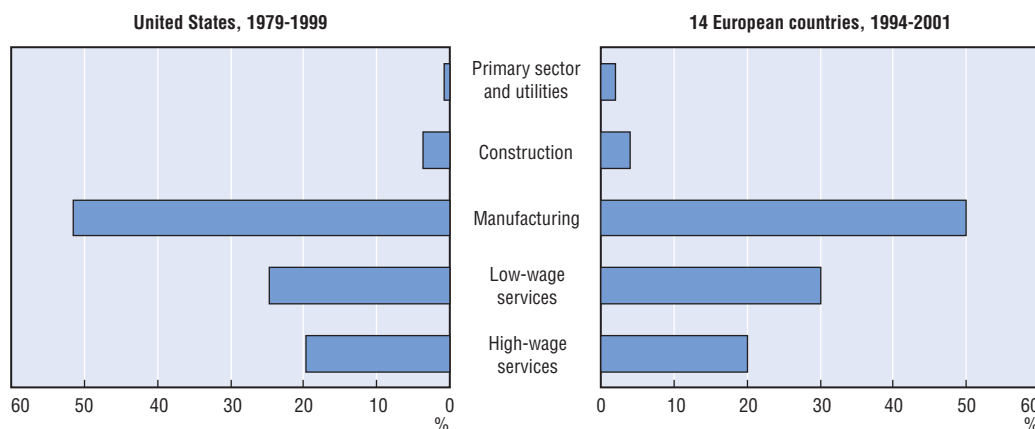
high-international-competition industries from those displaced from the remainder of manufacturing – (e.g. being older and having higher job tenure and lower educational levels) are likely to be associated with higher earnings losses (Farber, 2003; Kuhn, 2002).³⁶ This raises the question whether the higher earnings losses suffered by trade-displaced workers (as proxied by industry) reflect an independent causal effect of trade having caused these layoffs or, instead, merely reflects the tendency for the workers displaced by trade to have individual characteristics that represent barriers to successful adjustment? Using DWS data for the United States, Kletzer (2001, 2002) estimates multivariate models of adjustment cost following displacement and finds no evidence for an *independent* effect of having been displaced as a result of international competition, when controls are included in the regression equations for individual characteristics, such as age, education and tenure on the lost job. Since she is not able to include good controls in her regression equations for the tendency of trade-displaced workers to have qualifications that are most suited to employment in declining industries and occupations, and to live in areas where the local labour market is characterised by high unemployment and stagnant hiring, this constitutes quite strong evidence that a worker's characteristics and how well they match with local labour demand are much more important for determining post-displacement costs than is the precise reason for the layoff.³⁷

Do trade-displaced workers find new jobs in dynamic sectors of the economy?

Since trade-displaced workers tend to have been laid off from jobs in declining industries, it is natural to ask how often they make a successful transition to employment in expanding sectors of the economy. The picture turns out to be rather complex, with many displaced workers becoming re-employed in the same industry or a closely related one. For example, in both the United States and Europe, half or more of workers displaced from a job in manufacturing become re-employed in that sector, despite the downward trend in manufacturing employment in most of these countries (Chart 1.4). Not surprisingly, most of the rest moved to jobs in the service sector, with service industries such as retail trade, where job skill requirements tend to be relatively low and general,

Chart 1.4. The majority of workers displaced from manufacturing jobs find a new job in manufacturing

Re-employment by broad industrial sector (percentage)



Source: Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, DC, for the United States; and ECHP, waves 1 to 8 (April 2003) for Europe.

Statlink: <http://dx.doi.org/10.1787/127517456764>

Table 1.4. **Many displaced workers find a new job in the same industry and doing so reduces earnings losses**

Workers displaced in:	Share re-employed in same industry (%)	Mean earnings changes (%) for workers re-employed in:	
		Same industry	Different industry
A. United States (1979-1999)^a			
High-international competing manufacturing	19.4	-1.9	-20.0
All manufacturing	18.7	-3.1	-19.1
Non-manufacturing	25.9	-3.7	-7.1
B. 14 European countries (1994-2001)^b			
Manufacturing	43.6	2.2	-2.7
Non-manufacturing	49.7	6.5	5.9

a) Industry change defined in terms of three-digit industries (235 industries).

b) Industry change defined in terms of one-digit industry groupings (18 industries).

Source: Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, DC, for US estimates and European Household Panel, waves 1-8, April 2003 for the European countries.

accounting for the bulk of this outflow. Re-employment in the same industry also remains quite common when assessed in terms of the most detailed industrial classifications available in the two databases (235 industries for the United States and 18 for Europe) (Table 1.4). Importantly, wages on the new job compare more favourably to those on the old job for displaced workers who remain in the same industry, especially in the United States.³⁸

These patterns in the industry of re-employment highlight an important distinction between labour-market adjustment to trade at the macro and micro levels. At the macro level, the adjustment challenge is to facilitate the flow of labour resources from declining to expanding sectors, so as to take full advantage of emerging sources of comparative advantage. However, the situation is more complex at the micro level, since it often makes sense for workers displaced from declining sectors to search for a new job in the same sector. The high gross flows characterising labour markets mean that there is considerable hiring even in declining sectors (cf. sub-sections 2.A-B above). Remaining in the same industry may make particular sense for older and high-tenure displaced workers, whose skills and experience are likely to be highly specialised to the sector or occupation in which they have been working.³⁹ The macro-level re-allocation requirements are not necessarily compromised by such an outcome, since expanding sectors may be able to meet their recruitment needs by attracting labour force entrants and voluntary job changers.

The policy challenge from trade displacement

The empirical analysis of trade displacement just presented provides some useful orientation for analysing adjustment assistance policies. A first insight that emerges is that trade-adjustment costs would be greatly reduced if policies can be put in place that minimise the extent to which trade-related job displacement serves as a pathway to long-term unemployment, premature labour force withdrawal and persistent under-employment (i.e. re-employment at significantly lower wages). If this is to be done, policies will need to address the most important barriers to re-employment in jobs making full use of displaced workers' productive skills. A second insight that emerges from the foregoing analysis is that trade-displaced workers are a diverse group whose adjustment difficulties range from apparently minor to very great, with older, higher tenure and less educated job losers –

especially, those unable to find a new job in the same industry – suffering the greatest earnings losses.⁴⁰ The challenge to lower trade-adjustment costs is thus closely related to the life-long-learning agenda, which aims to maintain workers' employability as they age and job skill requirements increase (OECD, 2004a, Chapter 4). A third insight, is that the nature of the adjustment barriers encountered by trade-displaced workers may vary depending on the national institutional environment. In particular, the greatest source of high adjustment costs in Europe is low re-employment rates following job displacement, while earnings losses on the post-displacement job are the dominant source of losses in the United States.⁴¹

3. Policies to reduce trade-adjustment costs⁴²

As was highlighted in Sections 1 and 2, international trade is an important driver of structural change and long-run increases in living standards. These structural adjustments take place through voluntary job transfers to a considerable extent, either directly from one job to another or through the replacement of older cohorts of workers with younger ones. However, firm closure and job displacement are an inevitable and particularly challenging part of the adjustment process and this can be painful for those individuals and communities involved, while costs for society as a whole can be large in terms of lost human capital and production. The policy challenge is to facilitate labour reallocation, so as to take best advantage of new possibilities, while at the same time limiting adjustment costs for individuals, communities and society as a whole. The purpose of this section is to analyse how this can best be done in light of the preceding empirical analysis of trade displacement, placing the emphasis on broad policy orientations rather than the detailed content of specific measures.⁴³

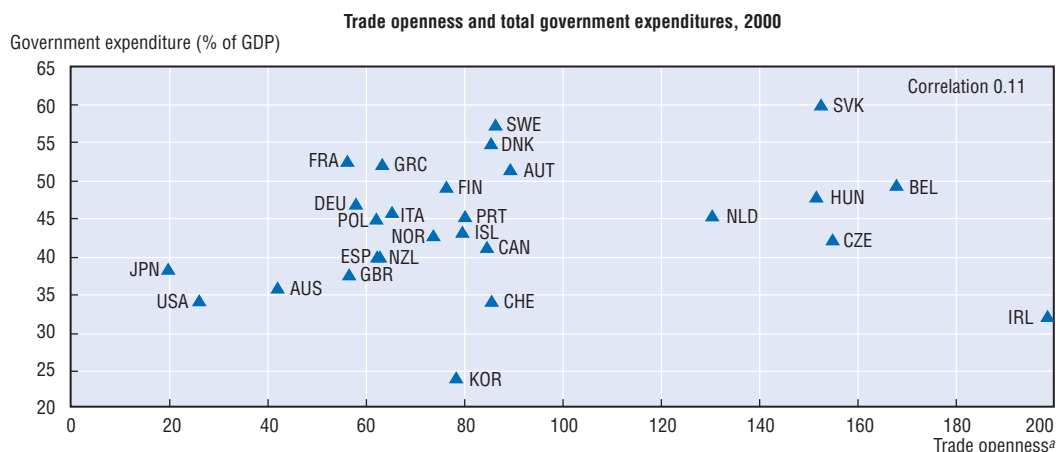
A. Is there still a role for domestic labour market policy in the global economy?

A first question concerning policy responses is whether domestic labour market policy is still feasible and effective in national economies that are increasingly open. For example, it has been argued that increasingly “footloose” multinational corporations have gained so much bargaining leverage for demanding a “good business climate” that governments are increasingly unable to levy tax revenues that are adequate to meet social objectives and collective consumption needs (e.g. as described in the final report of the World Commission on the Social Dimension of Globalisation; see ILO, 2004). In fact, international economic integration is compatible with a large public sector, since government spending exceeds 50% of GDP in a number of OECD countries that are very open to international trade (Chart 1.5). There even appears to be some tendency for government spending to be higher in the OECD countries where trade is largest relative to GDP.⁴⁴ The association between greater trade openness and higher public spending is even more evident when attention focuses on labour market programmes which are of particular relevance for providing adjustment assistance to trade-displaced workers (e.g. expenditures on active labour market programmes (ALMPs) and unemployment benefits, data not shown). Indeed, some researchers have argued that higher spending on such programmes is complementary to trade openness, because greater international integration tends to increase the demands for adjustment assistance and social insurance against earnings volatility (Agell, 1999; Auer et al., 2005; Rodrik, 1998).

Simple cross-country comparisons also suggest that globalisation has not rendered domestic labour market policy powerless to protect workers against employment

Chart 1.5. Globalisation has not implied lower public spending

Trade openness and total government expenditures, 2000



Note: Correlation 0.11 not statistically significant.

a) Trade openness defined as the sum of exports and imports as a percentage of GDP.

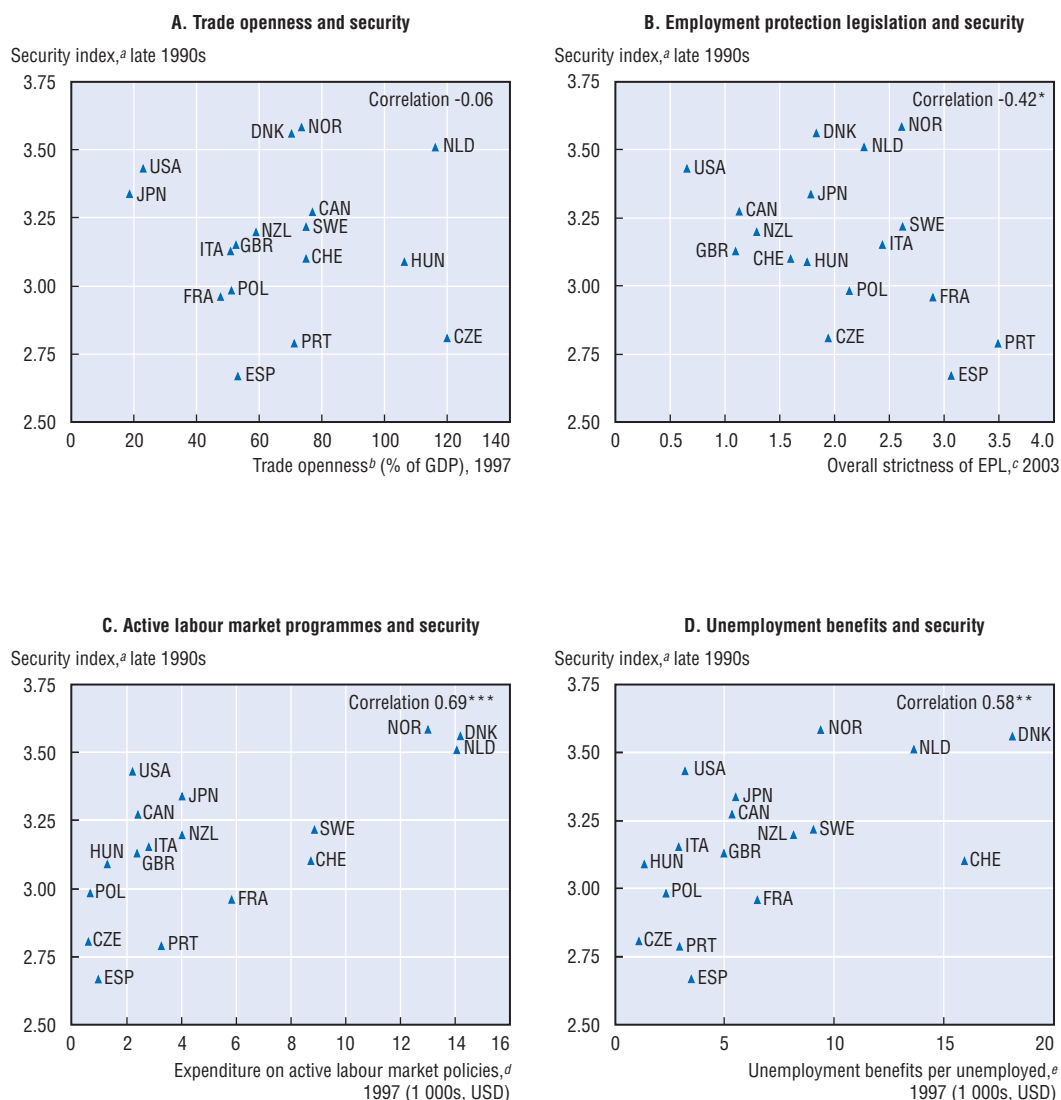
Source: OECD Economic Outlook database.

Statlink: <http://dx.doi.org/10.1787/425883525777>

insecurity created by intensifying international competition. The four scatter plots presented in Chart 1.6 show that workers' perceptions of employment security have no clear association with the level of trade openness in their country of residence, but do vary with domestic employment policy stances. In particular, perceived security tends to be higher in countries where spending on ALMPs and unemployment benefits is more generous. By contrast, workers feel somewhat less secure in countries where employment protection legislation (EPL) is more strict, perhaps due to an awareness that the incidence of long-term unemployment is higher in these countries (OECD, 2004a, Chapter 2). In sum, increased international integration has clearly changed the context for employment policy making, but does not appear to have undermined national governments' ability to implement such policies nor the potency of these policies for affecting the level of employment security.

The continued viability and potential efficacy of domestic labour market policy means that it is worthwhile to analyse which policies would best meet the trade-adjustment challenge implied by the analysis in Section 2. ALMPs and unemployment benefit systems clearly constitute key components of the required policy response, since they have the potential to assist trade-displaced workers to move into good new job matches more quickly, while cushioning the impact of displacement-related earnings losses on family incomes. The labour-market adjustment costs associated with globalisation can thus be viewed as providing an additional reason for reforming these programmes, so as to assure their adequacy and enhance their effectiveness. The heterogeneity of the assistance needs of trade-displaced workers also reinforces the more general argument that public employment services should provide individually tailored packages of activation services to unemployed persons in a timely fashion (see Chapters 4 and 5 for a detailed analysis of how this can be done). The long periods of joblessness that sometimes follow displacement highlight both the importance of unemployment benefits for this group, as well as the need to assure that the tax/benefit system also provides them with economic incentives to

Chart 1.6. Perceptions of employment security vary more strongly with labour market policy than with trade openness



***, **, * means statistically significant at 1%, 5% and 10% levels, respectively.

a) Average answer, by country, to the following question from ISSP "Do you worry about the possibilities of losing your job?" – Scale from 1 (I worry a great deal) to 4 (I don't worry at all).

b) Sum of exports and imports as a percentage of GDP.

c) Scale of 0 to 6 from least to most restrictive.

d) Expenditure on active labour market policies per unemployed converted to USD using PPPs.

e) Expenditure on unemployment benefits per unemployed converted to USD using PPPs.

Source: OECD (2004a), *Employment Outlook*, Chapter 2; and OECD *Economic Outlook* database (for trade openness).

Statlink: <http://dx.doi.org/10.1787/721741078757>

become re-employed (see Chapter 3 for a detailed analysis of these issues). In addition to reinforcing broader arguments for enhancing the effectiveness of ALMPs and the unemployment benefit system, the challenge to reduce trade-related adjustment costs raises more specific issues, a number of which are discussed below.

B. Choosing how to intervene: five strategic choices

Table 1.5 illustrates two strategic choices that must be made in assembling a policy package to reduce trade-adjustment costs, namely, finding good balances between: i) direct and indirect measures; and ii) general and targeted measures. There appears to be a broad consensus that both direct and indirect measures have an important role to play. The key types of direct assistance to trade-displaced workers have already been identified, namely, ALMPs and unemployment benefits. However, indirect measures are also essential in order to provide an economic environment in which it is possible for workers displaced from declining sectors of the economy to find new jobs that make good use of their skills.⁴⁵ If there is a broad consensus that both direct and indirect measures are important, for lowering trade-related adjustment cost, there appears to be much less consensus about whether targeted programmes (i.e. programmes that serve only trade-displaced workers or a subset of this group) have a legitimate role to play. Sub-section E below analyses OECD countries' experiences with targeted programmes.

A national strategy for reducing trade-adjustment costs also needs to confront three additional strategic choices:

- *The relative emphasis to be placed upon proactive and reactive measures* – In practice, reactive measures always play a large role (e.g. income support and job-search assistance provided after workers have become unemployed). The main question would thus appear to be whether proactive measures also have a significant role to play and, if they do, what form they should take. This question is discussed in sub-section C, below.
- *How much and how to compensate trade-displaced workers for their losses* – The question of compensating “losers” from trade liberalisation receives much attention in the welfare analysis of trade theorist, but tends not to be discussed in the context of labour-market programmes providing assistance for trade-displaced workers (or other job losers).

Table 1.5. **A partial taxonomy of measures for reducing labour-market adjustment costs from trade**

Types of measures	Direct	Indirect
General	<p>Unemployment insurance and other income-replacement benefits available to all displaced workers and/or all unemployed under common rules.</p> <p>Active labour market programmes available to all displaced workers and/or all unemployed under common rules.</p>	<p>Macroeconomic policies conducive to strong growth and high employment.</p> <p>Framework conditions for efficient reallocation of labour in response to structural change (e.g. adjustment-friendly EPL and wage-setting institutions).</p> <p>Education and life-long learning programmes to up-skill the workforce.</p> <p>Broad trade policy measures to restrict imports (“protectionism”).</p>
Targeted	<p>Special adjustment assistance or supplementary income-replacement benefits to all trade-displaced workers.</p> <p>Special adjustment assistance to specific subgroups of trade-displaced workers (e.g. job losers in specific firms or sectors which face intense import competition).</p>	<p>Industry redevelopment or rationalisation programmes (e.g. tax subsidies, public-private partnerships to develop new sources of comparative advantage).</p> <p>Local economic development.</p> <p>Industry-specific trade policy (e.g. trade safeguards or anti-dumping measures under WTO rules).</p>

Memo item: Other strategic choices involve finding: i) the right balance between proactive measures (e.g. advance notification and encouragement to the reassignment of workers within firms) and reactive measures (e.g. job search assistance and unemployment benefits after job loss); ii) the right balance between compensating trade-displaced workers for their losses and maintaining incentives for them to move quickly into new jobs that make good use of their skills; and iii) the right division of responsibilities between the public and private sectors for financing, administering and delivering adjustment assistance measures.

Sub-section D below considers the extent to which compensating trade-displaced workers for their earnings losses might be adapted as a policy goal and how any such compensation can best be provided, so as to avoid undermining these workers' incentives to become re-employed.

- *Public versus private responsibilities* – A final strategic issue is determining the extent to which the private sector, in particular employers, should be required to assume responsibility for financing, administering and delivering adjustment assistance to trade-displaced workers (or employees at risk of becoming trade-displaced workers). This issue is invoked at several points below, in the context of specific measures, but no attempt is made to identify cross-cutting principles.

C. What role for proactive measures?

The job losses caused by trade shocks are sometimes sufficiently predictable to allow adjustment assistance to begin in advance of workers' layoffs. An early start may provide time for cooperation between the firm, public employment services and, when present, labour representatives to plan to minimise the adverse impact on workers whose jobs are ending or, potentially, even to prevent some job losses. Several types of proactive measures are briefly discussed below and their potential contributions to lowering adjustment costs assessed.

Advance notification can support re-employment of displaced workers, especially if combined with timely job-search assistance

Employer-provided advance notice of planned layoffs is of value, in its own right, for giving workers a head start in searching for a new job, as well as being a prerequisite for implementing additional proactive measures. Research in the United States has shown that displaced workers receiving advance notice spend less time unemployed than workers laid-off without any advance warning (Nord and Ting, 1991, 1992; Addison and Portugal, 1992; Swaim and Podgursky, 1990).⁴⁶ There is also some indication of a positive effect on post-displacement wages for workers who have received advance notification (Rhum, 1994). Though research on this topic in countries outside the United States has been very limited, a significant positive effect on the probability of obtaining a job during the notice period has been documented for blue-collar workers in Sweden (Storrie, 1992).⁴⁷

The positive impact of advanced notice in reducing adjustment costs may be enhanced if the notified workers are also offered job-search assistance or retraining during the notice period, although rigorous evaluation results are lacking. Most OECD countries have rapid-response systems in place that are triggered by the announcement of a collective dismissal and then work to mitigate the potential effects of a mass layoff (e.g. by orienting workers toward existing vacancies in advance of dislocation).⁴⁸ Outreach is typically emphasised, with employment office personnel being dispatched to firms where particularly damaging layoffs have been announced. Nordic countries provide some of the most comprehensive proactive services to workers affected by an announced collective dismissal. In Finland, an office of the Public Employment Service is often established on the premises of the dismissing firm. Through these field offices, workers may access all of the services offered by the PES during the notice period, including training. Costs are frequently shared by the enterprise. Because most such proactive initiatives are limited to mass layoffs from large firms, workers from small and medium enterprises needing such services will have a more arm's length relationship with the PES. This consideration makes outreach particularly important.

Policies to prevent job-loss are sometimes considered, but results are varied

As a general rule, prevention – i.e. policies that aim to avoid job losses – is better than cure only for layoffs that would result in an efficiency loss for the economy. The labour reallocation induced by trade (and structural adjustment generally) increases aggregate efficiency and it should be facilitated, rather than impeded, by public policy.⁴⁹ Nonetheless, it has been argued that market failure could lead to excess layoffs in some situations (e.g. when government, rather than employers, bear a significant share of the resulting costs), and that efficiency might be enhanced by an appropriate tax on layoffs (Blanchard and Tirole, 2003). In fact, governments often have used different incentives intended to reduce layoffs (e.g. by favouring the internal redeployment of workers). As noted, these measures can be fiscal, such as the “experience-rating” system determining firms’ contributions to the unemployment insurance system in the United States.⁵⁰ However, more interventionist forms that directly regulate which layoffs are allowed and how they must be handled are also used in all OECD countries, albeit to widely different degrees (OECD, 2004a, Chapter 2).

It is far from clear that most of the policy instruments that have been used in OECD countries to prevent layoffs (or to require employers shedding workers to assume the major responsibility for providing adjustment assistance to workers laid off), in fact contribute to greater efficiency or more equitable patterns of compensation. Cahuc and Kramarz’s (2004) recent critique of French practice illustrates the pitfalls that can arise. Under current law, firms announcing large-scale restructuring are required to negotiate a social plan (“*plan de sauvegarde de l’emploi*”), setting forth a strategy for reintegrating the workers whose jobs are being discontinued. Retraining agreements (“*congé de conversion*”) offering job losers six months of training and job-search support, are often a compulsory component of this plan, as are other measures such as severance pay. Cahuc and Kramarz argue that this policy package results in a slow and legalistic process which discourages labour mobility that is desirable from an efficiency perspective, while providing adjustment assistance to workers who are laid-off that is less timely, less well targeted and less effective than could be provided by an alternative strategy in which the public employment service takes responsibility for providing adjustment assistance to job losers (see Chapters 4 and 5 for an analysis of how such a system can operate effectively).

D. Should trade-displaced workers be compensated for their losses (and if so, how)?

Compensation raises difficult issues

The policy challenge, as formulated in the introduction to Section 3 above (i.e. “to facilitate labour reallocation, so as to take advantage of new possibilities, while at the same time limiting adjustment costs for individuals, communities and society as a whole”), would probably command broad agreement. However, it begs several difficult questions concerning whether workers whose economic interests are damaged by international competition should be compensated for their losses and, if so, how much compensation they should receive and how it should be delivered to them. Since the answers to these questions depend to a considerable degree on judgements concerning equity, economic reasoning cannot provide a definitive answer. However, several general observations can be made:

- Although full compensation has been emphasised in standard trade theory (e.g. for demonstrating that trade liberalisation improves Pareto-efficiency), it probably does not provide a useful standard for making policy choices (Facchini and Williams, 2001). A first

argument for incomplete compensation is that full compensation would be very likely to dull incentives for the reallocation of labour required to realise the potential gains from trade.⁵¹ A second argument for incomplete compensation is that some of the earnings losses associated with trade displacement may have less claim to be compensated than others. Whether trade-displaced workers accepting a lower wage in order to become re-employed should be compensated for that loss might be thought to vary according to whether the higher earnings on their previous job reflected sector-specific skills acquired through costly investments in human capital or pure economic rents.⁵²

- Compensation for trade-displaced workers may reduce efficiency by dulling re-employment incentives – although well-designed tax/benefit and activation systems can reduce disincentive effects (see Chapters 3, 4 and 5). However, social insurance arguments can be made for some level of compensation being efficiency-enhancing. This argument is most familiar in the context of unemployment insurance, which insures workers against earnings losses due to unemployment and may have efficiency advantages over private insurance schemes (Blanchard and Tirole, 2003).⁵³
- Most of the efficiency and equity arguments that can be advanced for compensating trade-displaced workers appear to apply with equal force to other displaced workers facing analogous re-integration difficulties. This observation supports a presumption that compensation for trade-displaced workers should be channelled through general income transfer and ALMP programmes also available to other persons in a similar situation. Two possible grounds for treating trade-displaced workers more generously would be greater cost-effectiveness (i.e. that compensation can be provided to trade-displaced workers such that the benefits exceed the costs, but this is not possible for other groups suffering similar losses) and non-economic considerations (e.g. the belief that equity requires extra compensation for trade-displaced workers⁵⁴ or that such compensation is necessary for obtaining political support for trade liberalisation⁵⁵).
- As a mechanism for compensating losers from trade competition, severance payments have the important disadvantage that the level of compensation paid does not reflect the size of the earnings losses, as affected by either the length of time spent unemployed following displacement or the size of the earnings reduction (if any) between the old and the new jobs.⁵⁶ By contrast, unemployment benefits have the advantage of varying to reflect the magnitude of earnings losses resulting from post-displacement joblessness, at least to a considerable extent, but also create labour supply distortions which may be particularly severe in the case of trade-displaced workers.⁵⁷ Furthermore, unemployment benefits typically do not provide any compensation for wage losses once re-employed. Wage insurance has been proposed as a mechanism for compensating such losses.

Wage insurance may be a useful addition to the policy tool kit

A system of wage insurance pays a displaced worker who accepts a new job at a lower wage within a specified period of time an earnings subsidy that replaces a fraction of the difference between earnings on the old and new jobs. The idea of providing wage insurance to trade-displaced workers has been promoted as serving a threefold purpose. First, this would help provide more equitable gains from globalisation by reducing the adjustment costs faced by those who are hurt by trade and investment liberalisation. Second, wage insurance would serve as an incentive to speedy re-employment as unemployment benefits become less attractive relative to accepting a new job, potentially in growth sectors. Once on the new job, the employee would be more likely to receive the type of

training necessary for advancement in the new firm or sector. Finally, by mitigating workers' anxieties about the job and earnings insecurities related to trade liberalisation, political opposition to further opening of product and service markets would also be diminished.⁵⁸

France, Germany and the United States have recently introduced wage insurance programmes for certain displaced workers. These initiatives – which are briefly described in Box 1.4 – are too recent to allow any firm conclusions to be drawn concerning their effectiveness in practice. Indeed, these types of schemes raise a number of complex issues related to design details and possible distortions that have yet to receive careful scrutiny. In particular, it will be important to clarify whether subsidising re-employment at low wages could tend to blunt incentives for displaced workers to search for good job matches or to invest in on-the-job training in their new job. Similarly, the relatively high levels of labour turnover and year-to-year earnings variability in the labour force (OECD, 2003, Chapter 2), suggest that eligibility for wage insurance needs to be tightly targeted on job changers for whom wage reductions are involuntary and are likely to have a significant impact on living standards. Finally, the striking difference in the risk of experiencing large wage losses once re-employed, which Section 2 documented for Europe and the United States, suggests that the suitability and most appropriate design of wage insurance will vary according to the national context.⁵⁹

Box 1.4. Three examples of wage insurance

The French Article R. 322-6 du code du travail, Arrêté du 26 mai 2004 provides for a system of wage insurance known as *conventions d'allocations temporaires dégressives* that was first introduced in 1999. Under this programme, workers displaced in a mass layoff who are re-employed on a permanent contract at a lower wage are eligible to receive a subsidy covering up to 75% of the difference in earnings between the new and previous jobs, up to a monthly maximum state contribution of EUR 153. The previous employer is also required to make a contribution to supplementing the new, lower salary. If the employer is unable to make such a contribution, the state's contribution can be raised to as much as EUR 229. This subsidy is available for a maximum period of two years.

Germany instituted a programme of wage insurance in 2003 (*Entgeltsicherung für ältere Arbeitnehmer*) which is limited to job losers aged 50 years and older. Workers becoming re-employed in a new job paying less than their previous jobs are eligible for two types of earnings supplements. First, a payment of 50% of the earnings gap between the prior and new jobs is offered. Second, pension contributions on the new job are supplemented up to 90% of the level on the prior job. One notable aspect of this scheme is that no time limit is placed on these earnings supplements.

A wage insurance scheme for older trade-displaced workers was recently introduced in the United States. Since August 2003, workers at least 50 years of age who are certified as being trade-displaced workers and meeting all of the eligibility criteria for the Trade Adjustment Assistance programme (TAA, see Box 1.5 below) may choose Alternative Trade Adjustment Assistance (ATAA) instead. This programme offers a wage subsidy to workers who start a new full-time job within 26 weeks of separation and who are paid wages below those on the previous job. Provided that the worker does not earn more than USD 50 000 per year in the new employment, a payment of 50% of the difference between the new salary and the old salary is paid, up to a maximum of USD 10 000 over two years. This subsidy is available for a maximum period of two years following the layoff.

Source: Information provided by national authorities.

The French, German and US wage insurance schemes have yet to be subjected to careful evaluation. However, a pilot wage insurance programme in Canada provides some insight into the potential of these types of programmes to speed re-employment and better reconcile efficiency and equity objectives (Bloom *et al.*, 1999). The Earnings Supplement Project (ESP) was tested on two groups comprising a total of 5 912 individuals in 1995 and 1996. Two separate randomised experiments were carried out targeting displaced workers and repeat users of unemployment benefits. Beneficiaries who found full-time jobs within 26 weeks, at wages inferior to their weekly insurable earnings, were eligible for supplemental payments equal 75% of the earnings difference. A weekly maximum was set at CAD 250 and payments could be received for a maximum of two years. Key findings indicated that the treatment and control groups looked for jobs with similar intensity but that ESP participants were willing to consider a wider range of jobs, including those that paid less than their previous jobs. Of ESP participants, 20.5% received the supplemental benefit. Results suggest that the programme increased the percentage of displaced workers who found full-time jobs by 4.4 percentage points, reflecting both a shift from part-time to full-time work, as well as an increase in overall employment. Programme designers expected the reduced job-search period and incentive to accept lower paid jobs to provoke a wage-suppressing effect. In fact, the wages of ESP participants were 4.6% lower than those of the control group (though this difference is not statistically significant). The programme had almost no effect on the amount or duration of unemployment benefits received by the two groups.

E. What role for targeted programmes?

Most OECD countries have followed a strategy of providing trade-adjustment assistance (at least implicitly) via general systems of unemployment insurance and ALMPs. Advocates of general programmes maintain that it makes little sense to set up targeted programmes that favour one type of displaced worker while excluding others facing similar labour market difficulties. If they require assistance, trade-displaced workers will then be aided along with those displaced for other reasons, structural or cyclical. By contrast, a targeted programme may give an arbitrary advantage to workers displaced by trade over similar workers displaced by other factors such as changes in technology or changes in consumer preferences. A second argument against targeted programmes is that it is often difficult to differentiate between trade-displaced workers and other job-losers. Indeed, factors such as rapidly changing technology may make it increasingly difficult to isolate the various causes of worker displacement with sufficient precision (Rosen, 2002).⁶⁰ Finally, targeted programmes for trade-displaced workers may be particularly susceptible to political capture that pushes them towards reducing pressures to adjust, rather than fostering more efficient adjustment (OECD, 2005a).

Despite these difficulties, targeted programmes may have a positive, if limited, role to play. The empirical analysis in Section 2 suggests that special programmes targeting trade-displaced workers might have some advantages, since trade-displaced workers constitute a somewhat distinct group whose members' adjustment assistance needs probably differ in some respects from those of other persons served by employment programmes. These differences would not appear to provide a strong argument for targeting in general, since the characteristics of trade-displaced workers overlap extensively with those of other job losers. Nonetheless, it should not be ruled out entirely that certain sub-groups of trade-displaced workers might have sufficiently distinct needs from most of the workers served

by general ALMPs to justify setting up a special programme for serving them, particularly when trade displacement takes the form of mass layoffs that have a strong negative impact on the local labour market.

Targeted programmes have taken two distinct forms in the recent experience of OECD countries. First, the United States has maintained a general programme aimed at all trade-displaced workers, which provides more extensive adjustment assistance than is available to other displaced workers. Second, a number of OECD countries have operated special programmes for more or less narrowly-defined groups of trade-displaced workers, typically focussing on a particular industry or locality. Since these two types of targeting are quite different, they will be discussed separately.

Targeted programmes for all trade-displaced workers: the case of TAA

The United States is unique within the OECD for having operated a targeted programme for trade-displaced workers, the Trade Adjustment Assistance programme (TAA), for over 40 years.⁶¹ This programme is national in scope and, in principal, is available to all workers losing their jobs due to imports. TAA offers a more generous set of unemployment benefits and ALMPs to workers certified as trade-displaced than are available to other displaced workers. However, the mix of services offered by TAA – especially, the relative emphasis placed on supplementary unemployment benefits *versus* training – has fluctuated quite markedly since the programme was enacted (see Box 1.5 for a brief history of the TAA). This programme operates in a national context where general programmes for displaced workers are modest as compared to most other OECD countries.⁶²

The TAA has been subject to considerable evaluation, although the constant evolution of the programme means that many past evaluation results are now of questionable relevance (Baicker and Rehavi, 2004; Decker and Corson, 1995; GAO, 2001; OTA, 1987). Some of the services it has provided have been innovative and shown high returns (Jacobson *et al.*, 2004), but others have not. However, 40 years of experience with the TAA has not revealed any clear economic efficiency rationale for having a targeted programme for all trade-displaced workers. In particular, TAA has not made use of unique types of adjustment assistance that are especially tailored to meet the distinct needs of trade-displaced workers. Rather, it has offered a shifting mix of the same types of job-search assistance, retraining and relocation services routinely offered to participants in ALMPs.⁶³ Furthermore, the cumbersome procedure involved in certifying job losers for TAA has resulted in low take-up rates and often long delays in the receipt of adjustment assistance (GAO, 2004b; Kletzer and Rosen, 2005).

Instead, it appears that the TAA programme exists primarily for political reasons related to how majority coalitions have been obtained for trade liberalisation legislation in the United States (Destler, 2005; Kletzer and Rosen, 2005). A second factor reinforcing political support for TAA may be the relatively modest levels of support offered by the general unemployment insurance and ALMP systems in the United States, which heighten the overall level of anxiety associated with the prospect of increased trade competition.

Targeted programmes for specific groups of trade-displaced workers

Rather than using targeted policies that are intended to aid all trade-displaced workers, some OECD countries have chosen to target adjustment assistance measures to sub-groups of trade-displaced workers for limited periods of time. Using such targeted

Box 1.5. Trade Adjustment Assistance (TAA): a programme in constant evolution

TAA in the United States was created by the Trade Expansion Act of 1962, which implemented an early round of multilateral tariff reductions under the GATT system (e.g. tariffs on imports from the European Community were cut by 50%). The TAA programme was brought in as a vehicle to help workers in sectors in decline as a result of trade liberalisation make less painful transitions to growing sectors through provision of income support and re-employment services. The programme also offered assistance to firms in need of restructuring. Since 1962, over 3 million workers have been certified eligible for TAA, out of which about 2 million workers have received assistance. Historically, the generosity of the TAA programmes has closely tracked the different trade negotiation rounds, the approval of the North American Free Trade Agreement (NAFTA) and, more recently, the renewal of the President's trade-promotion authority to pursue WTO negotiations.

The generosity of the assistance offered and its composition have fluctuated markedly during the more than 40-year history of the TAA. For example, stringent eligibility requirements which had kept the number of beneficiaries low during the 1960s and early 1970s were relaxed by the Trade Act of 1974, in advance of the Tokyo Round of GATT negotiations. The Omnibus Budget Reconciliation Act of 1981 sharply reduced programme spending during the 1980s, while shifting spending priority from income support to training. In 1993, the push to enact the NAFTA in the US Congress prompted the creation of a sister programme, the NAFTA Transitional Adjustment Assistance or NAFTA-TAA, which was somewhat more generous than the TAA. In 2002, the Trade Adjustment Assistance Reform Act merged NAFTA-TAA into TAA, which generally adopted the more generous provisions previously limited to workers affected by trade with Canada and Mexico.

The history of TAA illustrates the difficulty of objectively identifying trade-displaced workers. Overly-stringent criteria resulted in no workers being certified in the first seven years of its existence, and relatively few in the following five. Relaxed criteria resulted in a swelling of programme spending to a high of USD 1.6 billion in 1980 when they were once again tightened, in part, in response to evaluations suggesting that TAA had become to a considerable degree a "deluxe" unemployment insurance system for auto workers on temporary layoff. The NAFTA-TAA expanded eligibility criteria to include workers from upstream suppliers or downstream finishers as well as those from plants that relocated to Canada or Mexico (Baicker and Rehavi, 2004).

The TAA Reform Act of 2002 also moved towards providing greater income support. For example, the maximum duration of benefit eligibility was extended to 78 weeks, up from 52, and workers participating in remedial education may continue to receive benefits for an additional 26 weeks. The revamped programme also makes it easier to waive the training requirement for receiving income benefits. Perhaps most interestingly, the TAA now includes a refundable tax credit for health insurance, the Health Care Tax Credit, and an experimental wage insurance programme for older trade-displaced workers (i.e. those aged 50 and older), the Alternative Trade Adjustment Assistance programme (see Box 1.4 above).

Source: Information provided by national authorities; Baicker, K. and M. Rehavi (2004), "Policy Watch: Trade Adjustment Assistance", *Journal of Economic Perspectives*, Vol. 18, No. 2, pp. 239-255; Kletzer, L.G. and H. Rosen (2005), *Easing the Adjustment Burden on US Workers*, Institute for International Economics, Washington, DC.

initiatives may help smooth labour reallocation because the impact of trade liberalisation tends to be localised, hitting particular sectors and/or regions hard. For example, targeted programmes are sometimes adopted in order to deal with trade shocks that produce localised layoffs on a scale that threatens to overwhelm the existing labour market policy infrastructure. Another potential advantage of such programmes is that their reduced size and one-off character makes it easier to tailor them to meeting the specific needs of the workers affected. Finally, targeted measures can sometimes be put in place in advance of layoffs actually occurring, thereby easing adjustment.⁶⁴

In almost all of the eight sectors examined in the OECD horizontal study of trade and structural adjustment there are examples of sector-specific measures being used, sometimes successfully, to help the adjustment process, whether to help textiles and clothing producers in Australia to be competitive in a low-tariff environment or to cope with mass layoffs in Sweden's Östergötland county (OECD, 2005a). Often, these programmes combine adjustment assistance for trade-displaced workers with measures to revitalise the local economy and/or to improve the competitiveness of the affected industry. Nonetheless, it is difficult to generalise concerning these types of measures, since no clear criteria have emerged for determining when they are appropriate and they have been quite varied in their design and effectiveness. Box 1.6 provides several examples of sectoral targeted policies that illustrate this variety (see also Table 1.A3.1 in OECD, 2005b).

What differentiates successful from unsuccessful programmes? There is no simple recipe, but it appears that these targeted programmes should remain exceptional, being limited to cases where they offer a clear advantage over reliance upon general employment programmes or provide a necessary "safety valve" for diffusing political opposition to an open trading system. This appears most likely to apply when shifting trade patterns displace a large number of workers facing particularly great barriers to re-employment in one or a few localities. Targeted assistance also has been justified as being necessary to address specific market failures. However, such claims are difficult to assess and should be carefully scrutinised (OECD, 2005a). Past experience also suggest that it is particularly important for these programmes to emphasise facilitating orderly adjustment, since targeted assistance otherwise easily evolves into *de facto* barriers to adjustment. Such an orientation can be reinforced by using time-limited programmes with clear exit strategies.

Conclusions

As a flashpoint for public anxieties concerning economic insecurity, the perceived impact of globalisation on OECD labour markets certainly looms large, more a mountain than a molehill. However, the empirical analysis in Sections 1 and 2 of this chapter suggests that the actual impact of international economic integration is unlikely to confirm the worst of these fears. Trade-related job displacement and the attendant adjustment difficulties represent a serious policy challenge, but international trade and investment appear to be far from being the biggest sources of employment and earnings insecurity for workers. Furthermore, the analysis in Section 3 suggests that familiar policy instruments, such as unemployment benefits and active labour market programmes, can significantly reduce the insecurity resulting from trade-related displacement by fostering re-integration into employment and cushioning the impact of earnings losses on family incomes. Nonetheless, it does not follow that trade-adjustment costs are no more than a molehill. Rather than asking, "Are trade-adjustment costs a mountain or a molehill?", the chapter's analysis suggests that a better question would be "How best can assistance to

Box 1.6. Two examples of sectoral programmes for trade-displaced workers

Austrian Steel Foundation – In the late 1980s, privatisation of the loss-making Austrian steel industry led to significant layoffs in this sector. As part of a social plan to help cope with this situation, negotiations between management and the works councils led to the creation of the Austrian Steel Foundation. The Foundation provides services tailored to individual worker needs and includes vocational orientation, small business start-up assistance, extensive training or formal education (sometimes for several years) and job-search assistance. Retraining programmes are concentrated on re-qualification and occupational reorientation rather than on marginal skill upgrades. The Foundation is financed by the steel firms and programme participants themselves, as well as by the government (in the form of unemployment benefits) and remaining employees who pay a solidarity levy of 0.25% of gross wages toward the Foundation.

Evaluations have suggested positive results. One rigorous evaluation suggests that, in the five years following completion of the Foundation's programme, employment prospects were significantly higher for participants than non-participants. Younger participants and low-wage workers also achieved significant wage gains compared to the control group. There is little in the way of evidence, however, to suggest whether the positive results associated with this employment foundation come from the unique characteristics of this effort. Also, participation rates among eligible workers have been relatively low. While there is no clear explanation for this, the answer may lie with the extended length and elevated effort characteristic of the programme. The Austrian Government later rolled-out this type of policy to help adjustment in other sectors.

Australian experience – Australia has administered a number of adjustment assistance programmes aimed at industries hit hard by trade liberalization, with some success. And, beginning in 2004, it introduced several new programmes targeting workers in the sugar, automobile components and the textile, clothing and footwear (TCF) sectors. Such programmes have a long history in the TCF sector in Australia.* Workers in the Australian TCF sector lived, for the most part, in declining areas with little or no job growth. Many had been recruited as migrant workers, had few educational qualifications and spoke little English. Tenure among displaced workers was high and many were in older age groups. Over 70% were women. Recognising the dramatic impact that trade liberalisation would have on employment in the TCF sector and the limited employability of many of the workers in the sector, the Australian Government put in place a generous labour market adjustment plan to assist TCF displaced workers by providing up to 24 months of skills and language retraining. It was assumed that, once they had been re-skilled, displaced workers would move into growing areas of industry. Rigorous evaluations of the programme found variable results. A four-year longitudinal study of a sample of the displaced workers suggests that up to a third had still not found employment by the end of the analysis period. Only 31% of men from non-English-speaking backgrounds aged 45 or older had returned to work after the four-year period. Evidence suggests that training helped those who had the best pre-training employment prospects, but that, for those with poorer prospects, the length of training had a large and significant negative impact in the likelihood of finding re-employment.

* For ninety years, the TCF industries benefited from substantial assistance to provide employment for the increasing population, and safeguard local industry from imports. However, assistance began to decline in the 1980s under the "Button Plan", when the government sought to encourage the development of industries which were internationally competitive, export-oriented, innovative, responsive to market signals and less dependent on community support. The removal of tariffs and quotas on TCF industries prompted many employers to restructure operations in an effort to meet international productivity standards that would allow them to compete in open markets. Once productivity improvements were exhausted, firms began to close or outsource manufacturing. In the period between 1989 and 1993, employment in the TCF industry fell by 22%.

Source: Information provided by national authorities; Evans-Klock, C., P. Kelly, P. Richards and C. Vargha (1998), "Worker Displacement: Public Policy and Labour-Management Initiatives in Selected OECD Countries", ILO Employment and Training Papers, No. 24, Geneva; Weller, S. and M. Webber (1999), "Re-employment after Retrenchment: Evidence from the TCF Industry Study", *Australian Economic Review*, Vol. 32, No. 2, pp. 105-129; Weller, S. and M. Webber (2001), *Refashioning the Rag Trade: Internationalising Australia's Textiles, Clothing and Footwear Industries*, UNSW Press, Sydney; Winter-Ebmer, R. (2003), "Coping with a Structural Crisis: Evaluating an Innovative Redundancy-retraining Project", IZA Discussion Paper No. 277, Bonn.

trade-displaced workers be incorporated into an overall strategy for achieving high employment rates in the context of continuous structural economic change and population ageing?”.

Posed this way, the challenge to lower the costs from trade-related structural adjustment overlaps greatly with the broader reform agenda associated with the OECD Jobs Strategy. Indeed, one of the keys to maintaining high levels of employment and broadly shared prosperity is to reconcile a high level of adaptability, at the level of firms and the overall labour market, with sustained “employability” and earnings security for individual members of a diverse and ageing labour force. A number of labels have been coined to characterise success at meeting this challenge, such as “flexicurity” or “protected mobility”, but much remains to be learned about how best to achieve the desired outcome. This chapter has underlined how increasing international economic integration raises the stakes for meeting this challenge, as well as some elements of an effective policy response. The comprehensive reassessment of the OECD Jobs Strategy is certain to revisit this challenge, albeit within the context of a broader assessment of the policy requirements for good labour market performance.

Notes

1. This chapter draws upon input that the OECD Directorate for Employment, Labour and Social Affairs provided to the OECD’s horizontal project on trade and structural adjustment (OECD, 2005a). Some of the material in this chapter was originally prepared by Ricardo-Luis Tejada, who served as a consultant for that project.
2. Concerns about inadequate adjustment capacities prompted the 2003 OECD Ministerial Council Meeting to request that the OECD Secretariat undertake a horizontal project on “trade and structural adjustment”. The main conclusion of that study, which was endorsed by the 2005 Ministerial Council Meeting, is that a broad and comprehensive policy response is required to foster successful adjustment via the reallocation of labour and capital to more efficient uses, while limiting adjustment costs for individuals, communities and society as a whole (OECD, 2005a).
3. Kongsrud and Wanner (2005) presents a more detailed analysis of policies to improve the overall adaptive capacity of OECD economies, than is presented in this chapter, while OECD (2005a) analyses a wider spectrum of policy responses (including, *e.g.* fiscal policy, trade safeguard measures and core labour standards) and also considers trade and structural adjustment policies in developing countries. Many of these issues are also analysed in Ghose (2003) and ILO (2004, 2005).
4. This section provides a highly simplified overview of a vast literature on the gains from trade. A good analytical survey of trade theory is provided by Bhagwati *et al.* (1998) and the many studies cited therein.
5. While international trade improves aggregate welfare in all trading countries under quite general conditions, this need not always be the case. Samuelson (2004) illustrates this general point with an example intended to resemble certain aspects of current trading patterns between the United States and China. In this example, technological catch-up by China results in an adverse shift in the terms of trade against the United States and a permanent reduction in US per capita real income, even as world GDP increases.
6. However, there are some dissenting voices, especially as regards the benefits of openness for the growth performance of low-income countries (*e.g.* Rodrik and Rodríguez, 2001). The balance of the evidence supports a positive effect from openness, but additional institutional preconditions – such as the effective rule of law – may need to be in place in order for less developed countries to realise the potential advantages from trade liberalisation.
7. Förster and Mira d’Ercole (2005) show that the trend towards widening inequality in market incomes appears to have halted in the majority of OECD countries over the period 1995–2000.
8. Much of the initial research focussed on the United States, but more recent studies have reached similar conclusions for other advanced economies (Dewatripont *et al.*, 1999a). However, the shift of labour demand away from less skilled workers has been primarily reflected in falling relative

- wages in some countries (*e.g.* the United States) and by falling relative employment in others (*e.g.* a number of Continental European countries). Krugman (1994) conjectured that this difference reflected greater rigidity in the structure of relative wages in the latter countries. Subsequent research has generated some support for this conjecture (see the discussion in OECD, 2004a, Chapter 3).
9. Nor is trade policy an effective instrument for reducing aggregate unemployment when it is too high. Monetary and fiscal policy are better suited to counteract cyclical fluctuations in unemployment, whereas structural reforms in the labour and product markets appear to be required to reduce structural unemployment where it is too high (OECD, 1999; Layard *et al.*, 1991).
 10. OECD (2005b), Annex 1.A1 explains the data sources and methodology underlying these calculations and discusses the results in greater detail.
 11. However, the overall weak performance of manufacturing employment indicates that other factors, such as rapid productivity gains and adverse shifts in the composition of consumption demand, are also important sources of retrenchment in this sector (Fontagné and Lorenzi, 2005).
 12. The OECD sectoral database used in the calculations reported in Panel A of Chart 1.2 does not allow a parallel historical analysis of wage trends to be undertaken, in order to assess whether wage growth has been more restrained in the industries facing the most intense international competition.
 13. For example, Konings (2003) finds that while wage rates are some five times lower in the typical firm in Central Europe than in high-wage countries like Belgium, labour productivity is also approximately five times lower in Central Europe, suggesting that there is no systematic labour cost advantage from moving production to the low-wage countries. This conclusion is borne out by a regression analysis of firm-level labour demand that provides no evidence that low-wage competition from Central and Eastern Europe has a negative effect on jobs in Belgian manufacturing. Similarly, Konings and Murphy (2005) finds no evidence that multinational enterprises headquartered in high-wage EU countries relocate jobs to low-wage EU-accession countries in response to these wage differentials, while other studies find that the main driving force for investing in Central and Eastern Europe for most companies is not the low wage costs, but rather the attainment of first-mover advantages and the opportunity to get access to a growing market (EC, 2004, Chapter 5).
 14. Sectoral case studies for OECD countries illustrate these points more concretely, showing how some industries have contracted under import competition, while others grew by making productivity gains and/or exploiting new export markets (OECD, 2005a). National case studies are also revealing. For example, aggregate labour market performance has improved markedly in recent years in Australia and New Zealand following the introduction of major structural reforms, a key component of which were sharp reductions in barriers to international trade and investment. However, the transition experiences of CEE member states of the OECD make it clear that large negative structural shocks, such as those associated with opening economies to trading at world prices, can result in a substantial increase in unemployment that persists for a considerable period of time.
 15. In order to highlight the long-run effects of trade on production patterns and the level and distribution of income, theoretical models of trade typically abstract from the adjustment costs associated with this reallocation, assuming either instantaneous and costless mobility of all factors across sectors (*e.g.* the two-sector Heckscher-Ohlin model) or the combination of perfect mobility for some factors and zero mobility for other “sector-specific” factors (Ricardo-Viner models). However, a full accounting of the cost and benefits of trade must incorporate adjustment costs.
 16. Other, social and psychological costs following job displacement include increased risks of divorce, declining health status and higher mortality (Eliason, 2004; Eliason and Storrie, 2004).
 17. Trade-adjustment costs also arise for non-labour factor inputs (*e.g.* premature scrapping of fixed capital). However, only labour adjustment cost are analysed in this chapter.
 18. See Mortensen and Pissarides (1999) for a formal analysis of potential market failures in bilateral search models of the labour market. It should be emphasised, however, that not all of the *private* costs borne by displaced workers represent *social* costs and hence a drag on overall efficiency gains from trade. For example, some of the wage losses upon re-employment may represent a rent component in the prior wage.
 19. Kletzer’s estimates for the United States are based on data from the Displaced Worker Survey (DWS), probably the best single source of information concerning the incidence of job displacement in the United States and clearly the best source of information about the personal characteristics of a large and nationally representative sample of displaced workers and adjustment costs that they bear. The estimates for Europe are based on data for 14 European countries from the European Community Household Panel (ECHP) – due to small sample sizes in the ECHP, statistics are not reported on a country-by-country basis – and were calculated by the OECD Secretariat. (Note *b*) to Table 1.1 identifies

the 14 European countries included in the ECHP analysis.) The estimates for Canada are based on the 1% Longitudinal Worker File (LWF) and were provided to the OECD by Canadian authorities. Juxtaposition of these results is useful for assessing whether the findings of Kletzer (2001, 2002) and other researchers concerning trade displacement in the United States also hold for other OECD countries. Two caveats applying to this assessment are the omission of many OECD countries from the analysis and the likelihood that these comparisons reflect, in part, differences in the three data sources. Both the DWS and the ECHP are household surveys, but only the latter is a true longitudinal database which allows workers to be observed prior to being displaced and then to be followed for some years, whereas the DWS relies upon retrospective questions to collect more or less comparable information (i.e. persons are asked about permanent layoffs occurring in the previous 3 years). Other differences between the two data sources are that the DWS offers larger sample sizes and a much more detailed industrial classification. By contrast, the LWF was created by combining information from four administrative databases, with much of the original information having been provided by employers.

20. As Kletzer (2001) acknowledges, her estimated displacement rate is “conservative” since she omits the construction and mining sectors (the industries with the highest displacement rates) and makes no correction for workers displaced multiple times or recall bias. The 5.1% incidence rate reported in Box 1.3 covers all industries, incorporates such corrections and is only moderately lower than the Canadian estimate in Table 1.1. While Kletzer’s estimate understates the incidence of job displacement, she argues that inter-industry comparisons, which are emphasised in the analysis of trade-related displacement below, should not be much affected.
21. This difference between the results for the United States and those for Canada and the EU is due, at least in part, to differences in the period for which incidence rates were estimated. Kletzer’s estimates correspond to the period 1979-1999, meaning that her estimate of the displacement rate in manufacturing is inflated by the sharp recession at the beginning of the 1980s, during which job loss rates were very high in US manufacturing.
22. OECD (2005b, Annex 1.A1) explains the methods used to group manufacturing industries according to whether international competition is high, medium or low. It also presents evidence that it is reasonable to assume that trade displacement has been strongly concentrated among manufacturing workers.
23. For example, Canada has experienced a quadrupling of imports from China between 1995 and 2003 (Roy, 2004) and some research suggests that the Canada-US Free Trade Agreement led to significant employment losses in less-skill-intensive industries in Canada (Beaulieu, 2000).
24. Trade theory suggests that export and import prices are preferable to trade volumes, as independent variables in a regression analysis, at least for “small” countries, since world trading prices should be largely exogenous (whereas trade flows and employment are jointly determined). However, price data for trade raise difficult measurement issues and it is less clear in practice that evidence based on trade prices is necessarily superior (Kletzer, 2002).
25. While estimates of the impact of trade competition on industry-level employment are of limited value for assessing trade-adjustment costs, they do provide useful information concerning the impact of trade on the industrial composition of employment.
26. Amiti and Wei (2005a,b) find no such effects in regression models estimated for 78 industries in the United Kingdom and 96 industries in the United States. However, a small negative employment effect does emerge when the US model is re-estimated for 450 detailed industries.
27. Unfortunately, it was not possible to include Canada in this analysis, which is limited to a comparison of Europe and the United States. Prior studies of Canadian job displacement suggest that most of the qualitative findings presented in this sub-section would also hold for Canada (Abe *et al.*, 2002; Kuhn and Sweetman, 1999).
28. The inter-industry differences in displacement rates documented in sub-section B (above) suggest that comparisons of job losers, between manufacturing and other industries (and, perhaps, also between high, medium and low-international-competition industries within manufacturing) may be qualitatively informative concerning differences between trade-displaced workers (as a group) and other job losers, but will also tend to understate those differences.
29. This difference reflects the demographic composition of the workforce in several industries facing intense import competition, notably, the textile, footwear and clothing industries.
30. Shelburne and Bednarzik (1993) show that employment is more geographically concentrated in the industries where trade-displacement is likely to be greatest in the United States than in other industries. This suggests that trade-displaced workers have an above-average risk of beginning

their job search in a local labour market that is depressed and that policies to assist these workers will often need to take into account the resulting spatial mismatch between labour supply and demand.

31. In contrast to the results for the United States, women are a significantly smaller share of workers displaced from high-international-competition industries than from medium-international-competition industries in Europe.
32. The lower re-employment rate for workers displaced from high-international-competition manufacturing, as compared to the rest of manufacturing, probably reflects the higher share of women in the former group. Swaim and Podgursky (1994) show that women experience more post-displacement joblessness than men, because they more frequently respond to job loss by withdrawing from the labour force. However, the re-employment rate for displaced service workers is significantly higher than that for their manufacturing counterparts, despite a larger share of the former being women.
33. The estimated re-employment rates are not fully comparable between the DWS and the ECHP, but in both cases re-employment rates are calculated an average of approximately two years after the layoff.
34. Lower re-employment rates can significantly lower the gains from international trade (at least, for some period of time). For example, McKinsey Global Institute (2003) compares the net economic gains (for the entire economy) to offshoring back-office and IT functions for Germany and the United States. This study concludes that the gains are much lower in Germany due to the lower re-employment rate of workers displaced by international sourcing.
35. The large wage losses experienced by many displaced workers in the United States also appear to be quite persistent (Jacobsen *et al.*, 1993a and b; Kletzer, 1998).
36. The combined impact of several of these factors may be particularly large. For example, Jacobson *et al.* (1993b) found that high-tenure workers who lost jobs from distressed manufacturing firms suffered much greater earnings losses than other displaced workers, averaging 25% per year.
37. Dewatripont *et al.* (1999b) reach a similar conclusion. They estimate panel regression models for 2-digit industries in four European countries and find that the association between rapid import growth and a higher incidence of long-term unemployment vanishes when controls for industry and worker characteristics are added to their regression models.
38. The weaker apparent relationship between industry of re-employment and earnings losses in Europe may reflect the low level of industry detail available in the ECHP and/or the effect of more compressed wage structures.
39. It is this industry-specificity of skills that probably explains why wage losses are greater for displaced workers changing industry than for those remaining in the same industry (Carrington, 1993; Kletzer, 1998; Neal, 1995).
40. Although no evidence is available concerning the costs associated with displacements caused by international sourcing of services, the chapter's findings concerning workers' characteristics and post-displacement costs suggest that these costs would be lower on average than those associated with job displacement due to imports of manufactured goods. The workers affected by services offshoring are likely to be younger, better educated and less geographically concentrated than displaced manufacturing workers. They will also tend to have job experience and skills that are in greater demand in the labour market.
41. This difference is reminiscent of Krugman's conjecture (see note 8 above), albeit in a dynamic form: greater wage flexibility in the United States than in Europe leads to higher re-employment rates for displaced workers, but also to larger wage losses on the new job.
42. For ease of writing, the argument in this section is presented in terms of policies to reduce the adjustment costs borne by trade-displaced workers. However, much of the argument should be understood as potentially applying to all workers displaced by structural economic change. Indeed, the empirical analysis in Section 2 suggests that it is difficult to differentiate among job losers according to the role of trade in causing them to be laid off and, in any case, that the adjustment challenge is much the same for all workers displaced by structural change, regardless of the role played by trade.
43. Annex 1.A3 in OECD (2005b) provides a more detailed discussion of specific policy measures, including numerous national examples of labour-market programmes providing direct assistance to trade-displaced workers.
44. Rodrik (1997) shows that there is a strong positive association between government spending and the intensification of international economic integration across a large sample of OECD and non-OECD countries, and concludes that this relationship is probably causal. In support of this finding,

he cites the work of political scientist Katzenstein (1984, 1985) who has “documented in detail” how small European states with highly open economies, such as Austria, the Netherlands and Sweden, have “complemented their pursuit of liberalism in the international economy with a strategy of domestic compensation”.

45. One priority is to assure adequate job creation and labour demand. The framework conditions required here are essentially the macroeconomic and demand-side structural policies enumerated in the OECD Jobs Strategy (OECD, 1994, 1999), as well as policies to unlock the full growth potential of the service sector (OECD, 2005c). A second priority is to adapt labour supply to labour demand, as the latter evolves, for example, by facilitating the mobility of labour from declining to expanding sectors and regions (Chapter 2 of this volume and Kongsrud and Wanner, 2005) and upgrading workforce skills (OECD, 2004a, Chapter 4). Finally, trade safeguards under WTO rules may have a limited role to play (OECD, 2005a).
46. In this respect, the most marked impact of generous advance notice lies in allowing some workers to avoid post-displacement unemployment altogether, by giving workers ample time to search for new jobs, rather than its role in reducing jobless spells after then worker has become unemployed (Addison and Blackburn, 1997).
47. Since a minimum notice period is required by law in most OECD countries, it is difficult to assess the net benefits from notice by comparing the costs borne by, respectively, workers laid-off with and without having received advance notice. However, the absence of any such legal requirement in the United States until the Worker Adjustment and Retraining Notification Act (WARN) of 1988 and the rather limited coverage of the requirement for 60 days notice in that legislation, mean that such comparisons can be made for displaced workers in this country. A number of studies have done so, notably using data from the Displaced Worker Survey.
48. In fact, this type of orientation can even be initiated before there has been any notification of specific layoffs. For example, Portuguese labour market policy makes vocational guidance and labour market information available to workers in sectors at risk of layoffs resulting from restructuring or other economic factors.
49. A significant share of overall productivity growth is due to flows of workers from low- to high-productivity firms (Bartelsman *et al.*, 2004b).
50. In most US states, firms contribute to an unemployment benefit “account” from which the company draws in the event of dismissals. When the benefits paid to dismissed employees exceed contributions made, the company’s account falls into deficit, which it must pay back over time. If designed appropriately, such experience-rating schemes can serve to internalise the social costs of mass layoffs and discourage inefficient dismissals, but there is considerable uncertainty what degree of experience-rating is optimal. Other fiscal measures that have been used to reduce layoffs (*e.g.* public subsidies to encourage work-sharing) appear less desirable since they tend to create inefficiencies (*e.g.* distort working-time choices) and also represent a net burden on the fiscal system.
51. The theoretical demonstration that trade liberalisation can be Pareto-improving when combined with an appropriate set of lump-sum transfers leaves unanswered the question whether an incentive-compatible compensation system realistically can be implemented. Dixit and Norman (1980, 1986) showed that an incentive-compatible system of commodity taxes exists under standard assumptions. Subsequent contributions have shown that this may no longer be the case once account is taken of unemployment (Brecher and Choudhri, 1994) or adjustment costs (Feenstra and Lewis, 1994), although the latter paper argues that the combination of the Dixit-Norman pattern of taxes with a subsidy to imperfectly mobile factors for moving between industries can achieve Pareto gains under certain conditions.
52. Jean and Nicoletti (2002) show that workers employed in industries shielded from product market competition sometimes receive substantially higher wages than comparable workers in other industries. They interpret these pay premia as reflecting a share of the monopoly rents that accrue to firms in such industries, which has been captured by workers through bargaining.
53. Unemployment insurance can also act as a subsidy for efficiency-enhancing investments in searching for a good job match. A similar argument can be made for potential efficiency gains from offering partial social insurance against the risk that workers’ investments in specific human capital will lose their value due to changing trade patterns or other types of structural change. Such insurance might be able to encourage greater investments in human capital, while also reducing a potentially important source of economic insecurity.
54. For example, the argument is sometimes made that workers who suffer job loss as a result of trade liberalisation do so as a direct result of a change in government policy and that this linkage creates a stronger entitlement to public compensation for their losses, than that existing for other job losers.

55. There has been some recent research on government spending and public support for trade in OECD countries that seems to support this view (Hays *et al.*, 2005).
56. High levels of severance may also reduce adjustment capacity in the labour market by discouraging voluntary labour mobility. However, the lump-sum character of severance payments tends to limit post-displacement, labour-supply distortions. Furthermore, other forms of employment protection, such as advance notification, may facilitate adjustment (as discussed above).
57. As compared with other recipients of unemployment benefits, labour supply distortions may tend to be particularly large for trade-displaced workers, because benefit levels that appear “reasonable” in terms of earnings on the lost job may in fact be very high relative to potential earnings in available new jobs (Kongsrud and Wanner, 2005). For national examples of innovative schemes intended to better reconcile unemployment benefits with strong incentives to become re-employed, see OECD (2005b, Annex 1.A3).
58. The idea of providing wage insurance to workers displaced by trade or international sourcing has received particular attention from US economists (see Lawrence and Litan, 1986; Baily *et al.*, 1993; Jacobson *et al.*, 1993a; Kletzer and Litan, 2001; Kletzer 2003; Brainard and Litan, 2004). American researchers appear to have been particularly attracted to this approach because there is a considerable body of empirical research for the United States documenting the often deep and enduring earnings losses suffered by displaced workers and it is believed that the public’s awareness of these wage losses reinforces political support for protectionist measures. Some have argued, however, that there is no compelling reason that wage insurance be offered only to trade-displaced workers (Kletzer and Rosen, 2005).
59. Wage insurance may have a role to play in European countries, even though few displaced workers become re-employed at wages significantly lower than those on their prior jobs (*cf.* Section 2), provided that reluctance to accept such pay cuts is an important explanation for why re-employment rates are low. For example, Burtless and Shaefer (2002) proposed a wage insurance scheme as being useful to counteract long-term unemployment in Germany. They argue that the high level of unemployment in that country is not due to high inflows into joblessness, but rather to low outflows caused by the negative incentive effects of the unemployment insurance system on re-employment rates.
60. A good example of the difficulty in defining trade-displaced workers is provided by Kucera and Milberg (2002) who find that the bulk of displacement related to trade between 10 OECD countries and non-OECD countries is due to decreased exports to these economies (largely as a result of the 1980s debt crisis) and not surging import penetration. In this example, policies targeted at displaced workers in import-competing industries would miss those in export sectors altogether, despite the fact that their job-losses were trade-related.
61. During the 1970s Australia ran, and quickly scrapped, a passive benefit programme aimed at workers displaced from trade-impacted industries, the Australian Structural Adjustment Assistance programme, which was initiated in 1973 following significant tariff cuts and then terminated in 1976. The programme failed to move participants back into employment, partly because of the disincentives to job search created by supplementary unemployment benefits. Indeed, its termination came on the heels of a government evaluation which concluded that the provision of special unemployment benefits to designated displaced workers reduced worker mobility. Additional reasons for ending the programme were the degree of arbitrariness apparent in determining which workers were eligible for the programme and pressures on government to provide similar benefits to other displaced workers (Leigh, 1990).
62. The United States spends less on LMPs relative to GDP than any OECD country except Mexico, about 40% of the unweighted average. With regard to ALMP, average expenditure across the OECD was five times higher than in the United States (OECD, 2004a).
63. Two recent exceptions are the Health Care Tax Credit subsidising individual health insurance for up to two years (GAO, 2004a) and the Alternative Trade Adjustment Assistance (ATAA) wage insurance programme for older workers, both of which were enacted in 2002 and are just beginning to operate. However, there does not appear to be any inherent reason that either of these provisions would not be suitable for other displaced workers. In fact, France and Germany recently enacted wage insurance programmes for displaced workers which do not restrict eligibility to workers laid off as a result of international trade (see Box 1.4 above).
64. The distinction between narrow targeted programmes, such as are discussed here, and general ALMPs is not always clear-cut, because the latter often encompass a capacity to make similar interventions (*e.g.* to set up rapid response cells when a factory closing is announced, see above).

Bibliography

- Abbring, J., G. van den Berg, P. Gautier, A.G. van Lomme, J. van Ours and C. Ruhm (2002), "Displaced Workers in the United States and the Netherlands", in Peter Kuhn (ed.), *Losing Work, Moving On: International Perspectives on Worker Displacement*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI, pp. 105-194.
- Abe, M., Y. Higuchi, P. Kuhn, M. Nakamura and A. Sweetman (2002), "Worker Displacement in Japan and Canada", in Peter Kuhn (ed.), *Losing Work, Moving On: International Perspectives on Worker Displacement*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI, pp. 195-300.
- Addison, J.T., L. McKinley and L. Blackburn (1997), "A Puzzling Aspect of the Effect of Advance Notice on Unemployment", *Industrial and Labor Relations Review*, Vol. 50, No. 2, pp. 268-288.
- Addison, J.T. and P. Portugal (1992), "Advance Notice and Unemployment: New Evidence from the 1988 Displaced Worker Survey", *Industrial and Labor Relations Review*, Vol. 45, No. 4, pp. 645-664.
- Agell, J. (1999), "On the Benefits from Rigid Labour Markets: Norms, Market Failures and Social Insurance", *Economic Journal*, Vol. 109, No. 453, pp. 143-164.
- Amiti, M. and S.-J. Wei (2005a), "Fear of Service Outsourcing: Is It Justified?", *Economic Policy*, No. 42, pp. 308-347.
- Amiti, M. and S.-J. Wei (2005b), "Service Outsourcing, Productivity and Employment", IMF Working Paper, Washington, DC, forthcoming.
- Auer, P., Ü. Efendioglu and J. Leschke (2005), *Active Labour Market Policies around the World: Coping with the Consequences of Globalization*, International Labour Office (ILO), Geneva.
- Baicker, K. and M. Rehavi (2004), "Policy Watch: Trade Adjustment Assistance", *Journal of Economic Perspectives*, Vol. 18, No. 2, pp. 239-255.
- Baily, M., G. Burtless and R. Litan (1993), *Growth with Equity: Economic Policymaking for the Next Century*, The Brookings Institution, Washington, DC.
- Baldwin, R. E., J.H. Mutti and J.D. Richardson (1980), "Welfare Effects on the United States of a Significant Multilateral Tariff Reduction", *Journal of International Economics*, No. 10, pp. 405-423.
- Bartelsman, E., A. Bassanini, J. Haltiwanger, R. Jarmin, S. Scarpetta and T. Schank (2004a), "The Spread of ICT and Productivity Growth: Is Europe Really Lagging Behind in the New Economy?", Part I, in D. Cohen, P. Garibaldi and S. Scarpetta (eds), *The ICT Revolution: Productivity Differences and the Digital Divide*, Oxford University Press, Oxford, pp. 3-140.
- Bartelsman, E., J. Haltiwanger and S. Scarpetta (2004b), "Microeconomic Evidence of Creative Destruction in Industrial and Developing countries", IZA Discussion Paper 1374, Bonn.
- Bassanini, A. and S. Scarpetta (2001), "The Driving Forces of Economic Growth: Panel Data Evidence for the OECD Countries", *OECD Economic Studies*, No. 33, OECD, Paris.
- Beaulieu, E. (2000), "The Canada-US Free Trade Agreement and Labour Market Adjustment in Canada", *Canadian Journal of Economics*, Vol. 33, No. 2, pp. 540-563.
- Bhagwati, J., A. Panagariya and T.N. Srinivasan (1998), *Lectures in Trade Theory*, MIT Press, Cambridge, MA.
- Bhagwati, J., A. Panagariya and T.N. Srinivasan (2004), "The Muddles over Outsourcing", *Journal of Economic Perspectives*, Vol. 18, No. 4, pp. 93-114.
- Blanchard, O. and J. Tirole (2003), "Contours of Employment Protection Reform", Working Paper Series No. 03-35, Department of Economics, Massachusetts Institute of Technology, Cambridge, MA.
- Bloom, H., S. Schwartz, S. Lui-Gurr and S.-W. Lee (1999), "Testing a Re-employment Incentive for Displaced Workers: The Earnings Supplement Project", Social Research and Demonstration Corporation, Ottawa.

- Brainard, L. and R. Litan (2004), "'Offshoring' Service Jobs: Bane or Boon – and What to Do?", Policy Brief No. 132, Brookings Institution, Washington, DC.
- Brecher, R.A. and E.U. Choudhri (1994), "Pareto Gains from Trade, Reconsidered – Compensating for Jobs Lost", *Journal of International Economics*, No. 36, pp. 223-238.
- Bronfenbrenner, K. (2000), "Uneasy Terrain: The Impact of Capital Mobility on Workers, Wages and Union Organizing", report to the US Trade Deficit Review Commission, Washington.
- Brown, S.P. (2004), "Mass Layoff Statistics Data in the United States and Domestic and Overseas Relocation", Paper presented at the EU-US Seminar on "Offshoring of Services in ICT and Related Services," 13-14 December 2004, Brussels.
- Burtless, G. and H. Schaefer (2002), "Earnings Insurance for Germany", Policy Brief No. 104, Brookings Institution, Washington, DC.
- Cahuc, P. and F. Kramarz (2004), "De la précarité à la mobilité: Vers une Sécurité sociale professionnelle", Report to the Ministry of Economy, Finances and Industry and the Ministry of Employment, Work and Social Cohesion, Paris, December.
- Carrington, W. J. (1993), "Wage Losses for Displaced Workers: Is It Really the Firm that Matters?", *Journal of Human Resources*, Vol. 28, No. 3, pp. 435-462.
- Davis, S.J. and J. Haltiwanger (1999), *Handbook of Labor Economics*, in O. Ashenfelter and D. Card (eds), *Handbook of Labor Economics*, Vol. 3, Chapter 41, Elsevier Science B.V., North-Holland Press, Amsterdam.
- Davis, S., J. Haltiwanger and S. Schuh (1996), *Job Creation and Destruction*, MIT Press, Cambridge, MA.
- Decker, P. and W. Corson (1995), "International Trade and Worker Displacement: Evaluation of the Trade Adjustment Assistance Program", *Industrial and Labor Relations Review*, Vol. 48, No. 4, pp. 758-774.
- Destler, I.M. (2005), *The Politics of Trade Policy*, Institute for International Economics, Washington DC (forthcoming).
- Dewatripont, M., A. Sapir and K. Sekkat (1999a) (eds), *Trade and Jobs in Europe – Much Ado about Nothing?*, Oxford University Press, NY.
- Dewatripont, M., A. Sapir and K. Sekkat with the assistance of G. Guazzarotti and A. Lamorgese (1999b), "Labour Market Effects of Trade with LDCs in Europe", Chapter 3 in M. Dewatripont, A. Sapir and K. Sekkat (eds), *Trade and Jobs in Europe – Much Ado about Nothing?*, Oxford University Press, NY.
- Dixit, A. and V. Norman (1980), *Theory of International Trade*, Cambridge University Press, Cambridge, UK.
- Dixit, A. and V. Norman (1986), "Gains from Trade without Lump-sum Compensation", *Journal of International Economics*, Vol. 21, pp. 111-122.
- Dollar, D. (1992), "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-85", *Economic Development and Cultural Change*, pp. 523-544.
- Edwards, S. (1998), "Openness, Productivity, and Growth: What do we really know", *Economic Journal*, Vol. 108, pp. 383-398.
- Eliason, M. (2004), "Lost Jobs, Broken Marriages", Institute for Social and Economic Research, No. 2004-21.
- Eliason, M. and D. Storrie (2004), "Does Job Loss Shorten Life?", Centre for European Labour Market Studies, Department of Economics, Göteborg University, December, Sweden.
- European Commission (2004), *Employment in Europe 2004: Recent Trends and Prospects*, Brussels.
- Evans-Klock, C., P. Kelly, P. Richards and C. Vargha (1998), "Worker Displacement: Public Policy and Labour-Management Initiatives in Selected OECD Countries", ILO Employment and Training Papers, No. 24, Geneva.
- Facchini, G. and G. Willmann (2001), "Pareto Gains from Trade", *Economia Politica*, Vol. 18, No. 2, pp. 57-65.
- Farber, H.S. (2003), "Job Loss in the United States, 1981-2001", Working Paper 471, Industrial Relations Section, Princeton University, Princeton, N.J.
- Feenstra, R.C. and G.H. Hanson (2003), "Global Production Sharing and Rising Inequality: A Survey of Trade and Wages", in K. Choi and J. Harrigan (eds), *Handbook of International Trade*, Basil Blackwell, Oxford, UK, pp. 146-185.
- Feenstra, R.C. and T.R. Lewis (1994), "Trade Adjustment Assistance and Pareto Gains from Trade", *Journal of International Economics*, No. 36, pp. 201-222, North Holland.

- Fontagné, L. and J.-H. Lorenzi (2005), *Désindustrialisation – Délocalisations*, Conseil d'Analyse Économique, Paris.
- Förster, M. and M. Mira d'Ecole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", Social, Employment and Migration Working Papers, No. 22, OECD, Paris.
- Frankel, J.A. and D. Romer (1999), "Does Trade Cause Growth?", *American Economic Review*, Vol. 89, No. 3, pp. 379-399.
- GAO (US General Accounting Office) (2001), *Trade Adjustment Assistance; Trends, Outcomes and Management Issues in Dislocated Worker Programs*, GAO-01-59, Washington DC.
- GAO (2004a), *Health Coverage Tax Credit: Simplified and More Timely Enrollment Process Could Increase Participation*, GAO-04-1029, Washington DC.
- GAO (2004b), *Reforms Have Accelerated Training Enrollment, but Implementation Challenges Remain*, GAO-04-1012, Washington DC.
- Geishecker, I. and H. Görg (2004), "International Outsourcing and Wages: Winners and Losers", Nottingham University Business School Working Paper Series, Nottingham, UK.
- Ghose, A. (2003), *Jobs and Incomes in a Globalizing World*, ILO, Geneva.
- Golub, S. (2003), "Measures of Restrictions on Inward Foreign Investment of OECD Countries", *OECD Economic Studies*, No. 36, OECD, Paris, pp. 85-116.
- Görg, H. and A. Hanley (2003), "Does Outsourcing Increase Profitability?", Nottingham University Business School Working Paper Series, No. 01/2003, Nottingham, UK.
- Görg, H. and A. Hanley (2004), "International Outsourcing and Productivity: Evidence from Plant Level Data", Leverhulme Centre for Research on Globalisation and Economic Policy, Nottingham, UK.
- Görg, H., A. Hanley and E. Strobl (2004), "Outsourcing, Foreign Ownership and Productivity: An Empirical Investigation with Plant Level Data", Leverhulme Centre for Research on Globalisation and Economic Policy, Nottingham, UK. www.nottingham.ac.uk/economics/leverhulme/research_papers/04_08.pdf.
- Gorzig, B. and A. Stephan (2002), "Outsourcing and Firm-level Performance", German Institute of Economic Research (DIW), Discussion Paper No. 309, Berlin.
- Harrison, A. (1996), "Openness and Growth: A time-series, cross-country analysis for developing countries", *Journal of Development Economics*, Vol. 48, New York, NY, pp. 419-447.
- Hays, J., S. Ehrlich and C. Peinhardt (2005), "Government Spending and Public Support for Trade in the OECD: An Empirical Test of the Embedded Liberalism Thesis", *International Organization*, forthcoming.
- Helpman, E. and P. Krugman (1985), *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*, MIT Press, Cambridge, MA.
- Hijzen, A. (2003), "Fragmentation, Productivity and Relative Wages in the UK: A Mandated Wage Approach", GEP Research paper, 2003/17, University of Nottingham, Nottingham.
- Hijzen, A., G. Holger and R.C. Hine (2004), "International Outsourcing and the Skill Structure of Labour Demand in the United Kingdom", IZA Discussion Paper No. 1249, Bonn.
- Hummels, D., J. Ishii and K.-M. Yi (1999), "The Nature and Growth of Vertical Specialization in World Trade", Federal Reserve Bank of New York, Staff Paper No. 72, New York, www.newyorkfed.org/research/staff_reports/sr72.pdf.
- Husson, M. (2005), "L'économie mondiale déséquilibrée", *Imprecor*, No. 501/502, Paris.
- ILO (2001), *World Employment Report 2001*, International Labour Office, Geneva.
- ILO (2004), *A Fair Globalization: Creating Opportunities for All*, Final report of the World Commission on the Social Dimension of Globalization, International Labour Office, Geneva.
- ILO (2005), *World Employment Report 2004-05 – Employment, Productivity and Poverty Reduction*, International Labour Office, Geneva.
- Jacobson, L., R. LaLonde and D. Sullivan (1993a), *The Costs of Worker Dislocation*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Jacobson, L., R. LaLonde and D. Sullivan (1993b), "Earnings Losses of Displaced Workers", *American Economic Review*, Vol. 83, No. 4, September, pp. 685-709.
- Jacobson, L., R. LaLonde and D. Sullivan (2004), "Estimating the Returns to Community College Schooling for Displaced Workers", IZA Discussion Paper No. 1017, February.

- Jean, S. and G. Nicoletti (2002), "Product Market Regulation and Wage Premia in Europe and North America: Empirical Investigation", OECD Economics Department, Working Paper, No. 318, OECD, Paris.
- Katzenstein, P.J. (1984), *Corporatism and Change: Austria, Switzerland, and the Politics of Industry*, Cornell University Press, Ithaca, NY and London.
- Katzenstein, P.J. (1985), *Small States in World Markets: Industrial Policy in Europe*, Cornell University Press, Ithaca, NY and London.
- Klein, M., S. Schuh and R.K. Triest (2003), *Job Creation, Job Destruction, and International Competition*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Kletzer, L.G. (1998), "Job Displacement", *Journal of Economic Perspectives*, Vol. 12, No. 1, pp. 115-136.
- Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, DC.
- Kletzer, L.G. (2002), *Imports, Exports and Jobs: What Does Trade Mean for Employment and Job Loss?*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Kletzer, L.G. (2003), "Trade-related Job Loss and Wage Insurance: A Synthetic Review", Working Paper 02-28, Santa Cruz Center for International Economics, <http://repositories.cdlib.org/sccie/02-28>.
- Kletzer, L.G. and R.E. Litan (2001), "A Prescription to Relieve Worker Anxiety", Brookings Institution, Policy Brief No. 73, Washington, DC.
- Kletzer, L.G. and H. Rosen (2005), *Easing the Adjustment Burden on US Workers*, Institute for International Economics, Washington, DC.
- Kohler, G. and E.J. Chaves (eds) (2003), *Globalization: Critical Perspectives*, Nova Science, New York.
- Kongsrud, P.M. and I. Wanner (2005), "The Impact of Structural Policies on Trade-related Adjustments and the Shift to Services", OECD Economics Department Working Papers, No. 427, OECD, Paris.
- Konings, J. (2003), "Are Wage Cost Differentials Driving Delocalisation?: A Comparative Analysis between High and Low Income Countries Using Firm Level Data", Discussion Paper 134/2003, LICOS Centre for Transition Economics, Katholieke Universiteit Leuven, Belgium.
- Konings, J. and A. Murphy (2005), "Do Multinational Enterprises Relocate Employment to Low Wage Regions?: Evidence from European Multinationals", revised version of CEPR Discussion Paper 2972, LICOS Centre for Transition Economics, Katholieke Universiteit Leuven, Belgium.
- Krugman, P. (1979), "Increasing Returns, Monopolistic Competition, and International Trade", *Journal of International Economics*, Vol. 9, No. 4, pp. 469-479.
- Krugman, P. (1994), "Past and Prospective Causes of High Unemployment", *Economic Review*, Federal Reserve Bank of Kansas City, pp. 23-43.
- Kucera, D. and W. Milberg (2002), "Trade and the Loss of Manufacturing Jobs in the OECD: New factor content calculations for 1978-1995", International Institute for Labour Studies, Discussion Paper 135/2002, ILO, Geneva.
- Kuhn, P.J. (ed.) (2002), *Losing Work Moving On*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Kuhn, P.J. and A. Sweetman (1999), "Vulnerable Seniors: Unions, Tenure, and Wages Following Permanent Job Loss", *Journal of Labor Economics*, Vol. 4, No. 4, pp. 671-693.
- Lawrence, R.Z. and R.E. Litan (1986), *Saving Free Trade: A Pragmatic Approach*, The Brookings Institution, Washington, DC.
- Layard, R., S. Nickell and R. Jackman (1991), *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford University Press, New York.
- Leigh, D. (1990), *Does Training Work for Displaced Workers? A Survey of Existing Evidence*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Magee, S.P., C.F. Bergsten and L. Krause (1972), "The Welfare Effects of Restrictions on US Trade", *Brookings Papers on Economic Activity*, Vol. 1972, No. 3, pp. 645-707.
- Markusen, J.R. (1981), "Trade and the Gains from Trade with Imperfect Competition", *Journal of International Economics*, North Holland, pp. 531-551.
- McCarthy, J.C. (2002), "3.3 Million US Services Jobs to go Offshore", *Trends*, Forrester Research, 11 November.
- McCarthy, J.C. (2004), "Near-Term Growth of Offshoring Accelerating", *Trends*, Forrester Research, 14 May.

- McKinsey Global Institute (2004), "Can Germany Win from Offshoring?", McKinsey and Co., Washington DC.
- Mortensen, D.T. and C.A. Pissarides (1999), "New Developments in Models of Search in the Labor Market," in O. Ashenfelter and D. Card (eds), *Handbook of Labour Economics*, Vol. 3, Chapter 39, North-Holland Press, Amsterdam.
- Neal, D. (1995), "Industry-Specific Human Capital: Evidence for Displaced Workers", *Journal of Labor Economics*, Vol. 13, No. 4, pp. 653-677.
- Nicoletti, G., S. Golub, D. Hajkova, D. Mirza and K.-Yeol Yoo (2003), "The Influence of Policies on Trade and Foreign Direct Investment", *OECD Economic Studies*, No. 36, OECD, Paris, pp. 7-83.
- Nord, S. and Y. Ting (1991), "The Impact of Advance Notice of Plant Closings on Earnings and the Probability of Unemployment", *Industrial and Labor Relations Review*, Vol. 44, No. 4, July, pp. 681-691.
- Nord, S. and Y. Ting (1992), "The Impact of Advance Notice: A Rejoinder", *Industrial and Labor Relations Review*, Vol. 45, No. 4, pp. 674-682.
- OECD (1994), *The OECD Jobs Study: Evidence and Explanations*, Paris.
- OECD (1997), *Employment Outlook*, Paris.
- OECD (1998), *Open Markets Matter: The Benefits of Trade and Investment Liberalisation*, Paris.
- OECD (1999), *Implementing the OECD Jobs Strategy: Assessing Performance and Policy*, Paris.
- OECD (2000), *Employment Outlook*, Paris.
- OECD (2002), *Employment Outlook*, Paris.
- OECD (2003), *Employment Outlook*, Paris.
- OECD (2004a), *Employment Outlook*, Paris.
- OECD (2004b), *Information Technology Outlook*, Paris.
- OECD (2005a), *Trade and Structural Adjustment: Embracing Globalisation*, Paris (forthcoming).
- OECD (2005b), Background material for Chapter 1 of the *OECD Employment Outlook 2005*, "Trade-adjustment Costs in OECD Labour Markets: Three Annexes", available on www.oecd.org/els/employmentoutlook.
- OECD (2005c), *Enhancing the Performance of the Services Sector*, Paris (forthcoming).
- OTA (US Congress, Office of Technology Assessment) (1987), "Trade and Adjustment Assistance: New Ideas for an Old Programme – Special Report", OTA-ITE-346, Washington, DC.
- Parker, A. (2004), "Two-Speed Europe: Why 1 million Jobs Will Move Offshore", *Trends*, Forrester Research, August.
- Pinkston, J. and J. Spletzer (2004), "Annual Measures of Gross Job Gains and Gross Job Losses", *Monthly Labor Review*, Vol. 127, No. 11, pp. 3-13.
- Rhum, C. (1994), "Advance Notice, Job Search, and Postdisplacement Earnings", *Journal of Labor Economics*, Vol. 12, No. 1, pp. 1-28.
- Rivera-Batiz, L. and P. Romer (1991), "Economic Integration and Endogenous Growth", *Quarterly Journal of Economics*, Vol. 106, No. 2, pp. 531-555.
- Rodrik, D. (1997), *Has Globalization Gone Too Far?*, Institute for International Economics, Washington, DC.
- Rodrik, D. (1998), "Why Do More Open Economies Have Bigger Governments?", *Journal of Political Economy*, Vol. 106, No. 51, pp. 997-1032.
- Rodrik, D. and F. Rodríguez (2001), "Trade Policy and Economic Growth: A Sceptic's Guide to Cross-National Evidence", in B. Bernanke and K. Rogoff (eds), *Macroeconomics Annual 2000*, MIT Press for NBER, Cambridge, MA.
- Rosen, H. (2002), "Trade-Related Labour Market Adjustment Policies and Programs, with Special Reference to Textile and Apparel Workers", available from: www.newamerica.net/Download_Docs/pdfs/Pub_File_1426_1.pdf.
- Roy, F. (2004), "Canada's Trade with China", Analytical Paper 11-624-MIE No. 007, Statistics Canada, Ottawa.
- Sachs, J. and A. Warner (1995), "Economic Reform and the Process of Global Integration", *Brookings Papers on Economic Activity*, No. 1, Washington, DC, pp. 1-118.

- Samuelson, P.A. (2004), "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer, pp. 135-146.
- Scheve, K. and M. Slaughter (2001), *Globalization and the Perceptions of American Workers*, Institute for International Economics, Washington, DC.
- Schoepfle, G. (1982), "Imports and Domestic Employment: Identifying Affected Industries", *Monthly Labor Review*, Vol. 105, No. 8, pp. 13-26.
- Scott, R. (2005), "US-China Trade, 1989-2003: Impact on jobs and industries, nationally and state-by-state", Economic Policy Institute Working Paper No. 270, Washington, DC.
- Shelburne, R.C. and R.W. Bednarzik (1993), "Geographic Concentration of Trade-sensitive Employment", *Monthly Labor Review*, Vol. 116, No. 6, June, pp. 3-31.
- Spletzer, J.R., R.J. Faberman, A. Sadeghi, D.M. Talan and R.L. Clayton (2004), "Business Employment Dynamics: New Data on Gross Job Gains and Losses", *Monthly Labor Review*, April, pp. 29-42.
- Storrie, D.W. (1992), "Advance Notice and Post-Displacement Joblessness", Papers and Proceedings of the fourth conference of The European Association of Labour Economists, University of Warwick, Warwick, UK.
- Swaim, P. and M. Podgursky (1990), "Advance Notice and Job Search: the Value of an Early Start", *Journal of Human Resources*, Vol. 25, No. 2, pp. 147-178.
- Swaim, P. and M. Podgursky (1994), "Female Labor Supply following Displacement: a Split-Population Model of Labor Force Participation and Job Search", *Journal of Labor Economics*, Vol. 12, No. 4, pp. 640-656.
- Torres, R. (1997), "The Impact of Trade with Emerging Economies on US, Europe and Japan Labour Markets", *Economic Growth and Employment*, Proceedings of the 1997 Economic Conference of Statistics Canada, September, Ottawa.
- Van Welsun, D. and G. Vickery (2005), "Potential Offshoring of ICT-Intensive Using Occupations", Document DSTI/ICCP/IE(2004)19/FINAL, OECD, Paris.
- Weller, S. and M. Webber (1999), "Re-employment after Retrenchment: Evidence from the TCF Industry Study", *Australian Economic Review*, Vol. 32, No. 2, pp. 105-129.
- Weller, S. and M. Webber (2001), *Refashioning the Rag Trade: Internationalising Australia's Textiles, Clothing and Footwear Industries*, UNSW Press, Sydney.
- Winter-Ebmer, R. (2003), "Coping with a Structural Crisis: Evaluating an Innovative Redundancy-retraining Project", IZA Discussion Paper No. 277, Bonn.

TRADE-ADJUSTMENT COSTS IN OECD LABOUR MARKETS: THREE ANNEXES

ANNEXES 1.A1, 1.A2 and 1.A3 to “Trade-adjustment costs in OECD labour markets: a mountain or a molehill?”

Chapter 1 of the OECD *Employment Outlook 2005*

The material presented in the following pages supplements that presented in Chapter 1 of the *OECD Employment Outlook 2005* (OECD, 2005a).¹ These three annexes supplement Chapter 1 as follows:

- Annex 1.A1 explains the methods used in Chapter 1 to classify manufacturing industry according to the intensity of international competition. Additional empirical results are also presented for differences in net employment growth according to the intensity of international competition.
- Annex 1.A2 summarises the methods used and key results obtained by 22 recent econometric studies of the impact of international trade on employment in OECD countries. The summary assessment of prior empirical research that appears in Section 2 of Chapter 1 draws upon this material.
- Annex 1.A3 supplements the discussion of broad policy orientations in Section 3 of Chapter 1 by providing a more detailed description of the types of policies that are used by OECD Governments to lower the adjustment costs borne by trade-displaced workers.

1 . These three annexes and the chapter that they supplement draw upon input that the OECD Directorate for Employment, Labour and Social Affairs provided to the OECD’s horizontal project on trade and structural adjustment (OECD, 2005b). Some of this material was originally prepared by Ricardo-Luis Tejada, who served as a consultant for that project.

ANNEX 1.A1

INTERNATIONAL COMPETITION AND EMPLOYMENT GROWTH FOR MANUFACTURING INDUSTRIES IN 15 OECD COUNTRIES, 1980-2000

This annex complements the empirical analysis in OECD (2005a), Chapter 1, Sections 1 and 2 in two ways. First, it explains the industry taxonomies that are used in the analyses of net employment changes at the industry level and trade-related job displacement (*cf.* Chart 1.2 in Section 1 and the analysis of ECHP data in Section 2). The second goal of this annex is to present the more detailed data on employment growth in manufacturing industries facing, respectively, low, medium and high levels of international competition, which underlie the summary presentation in Chart 1.2. As noted in Chapter 1, these net employment changes do not provide a reliable indication of the incidence of trade-related displacement. Nonetheless, they offer a useful reference point for the analysis of adjustment costs, since they provide an indication of the impact of trade on the industry-mix of employment.

For the purpose of analysing the impact of trade on the industrial composition of employment, an index of the intensity of international competition is calculated for detailed industries within the manufacturing sector. Although some service-sector workers are displaced by trade, this analysis focuses on job loss in manufacturing industries because that sector accounts for a large share of total trade flows (Ghose, 2003). Furthermore, trade flows are much higher relative to production in manufacturing (Chart 1.A1.1). An additional reason to focus on trade effects in manufacturing is that most of the prior research literature on trade adjustment costs (*cf.* Annex 1.A2, below) has focussed on manufacturing.

Chart 1.A1.1 **Exposure to trade is much higher in manufacturing than in services**

Trade relative to domestic production, average mid 1990s (percent)^a



a) The sum of imports and exports as a percentage of domestic production, as calculated from input-output tables. Averages for Australia, Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, the Netherlands, Norway, Spain, the United Kingdom and the United States.
Source: OECD Input-Output database.

Box 1.A1.1 Methodology used to classify industries by the intensity of international competition

In order to classify manufacturing industries according to the intensity of international competition that they face, two different indices of international competition were constructed using industry-level data on trade flows. These indices correspond to the potential impacts of trade flows on, respectively: i) industry employment levels (*i.e.* net employment changes); and ii) trade-related displacement (*i.e.* gross job losses). This approach differs from that taken in Kletzer (2001), where a single index (the percentage increase in the import-penetration ratio) is used to classify industries for the analysis of both net employment changes and job displacement rates.¹ However, the method used here follows this earlier study in most other respects.

The first or *net* index of international competition (ICNET) is intended to provide an indication of the extent to which international trade flows can be expected to create downward pressure on industry-level labour demand, so as to result, *ceteris paribus*, in a net decrease in industry employment. This index is based on the increase in net-import-penetration ratios and is calculated as:

$$\text{ICNET}_i^c = \% \Delta \left[\frac{M_i^c - X_i^c}{(P_i^c + M_i^c - X_i^c)} \right]$$

Where M = imports, X = exports and P = domestic production at current prices. This indicator shows for each country (indexed by c), the growth rate for the excess of imports over exports in each industry (indexed by i), relative to total domestic demand in that industry.²

The second or *gross* index of international competition (ICGROSS) is intended to provide an indication of the extent to which changes in trade flows, whether increases in imports or decreases in exports, are likely to induce gross job losses and, potentially, job displacement. It is calculated as:

$$\text{ICGROSS}_i^c = \max \left(0, \% \Delta \left[\frac{M_i^c}{P_i^c + M_i^c - X_i^c} \right] \right) + \max \left(0, \% \Delta \left[\frac{-X_i^c}{P_i^c + M_i^c - X_i^c} \right] \right)$$

The classifications of manufacturing industries, as facing low, medium and high international competition then proceeds in two steps. First, industries are ranked according to the values of these two indices, for a chosen historical period. The data that were used to calculate the two indices comes from the OECD's STAN database which provides 2-digit level production, import, export and employment data for manufacturing industries for the period 1980-2000 in most OECD countries.³ Second, thresholds defining low, medium and high international competition are established separately for each of the two indices and for each country.⁴ These thresholds are set, somewhat arbitrarily, according to the following rule: industries in the top quartile are considered high-international-competition industries, those in the second and third quartiles are considered medium-international-competition industries and those in the bottom quartile are considered low-international-competition industries.⁵

1. Kletzer (2001) first classifies industries according to changes in the import-penetration ratio, but then reclassifies a considerable number of industries using more *ad hoc* judgements concerning the intensity of import competition and the importance of intra-industry trade. Her empirical results suggest that increases in import penetration and declines in exports have quantitatively similar impacts on industry-level labour demand in the long run (Kletzer, 2001 and 2002), consistent with the approach adopted here for the net index of international competition.
2. As Kletzer (2001) argues, changes in employment should be related to changes in net imports, rather than to their level.
3. A small number of three and four-digit industries are also available for some countries.
4. Since these thresholds differ between countries, the low, medium and high classification of the intensity of international competition used here refers to *relative* intensities between industries within a country and do not reflect equal levels of *absolute* competitive intensity across the 15 countries analysed.
5. The 25% cut-off is somewhat arbitrary, but follows the methodology of Kletzer (2001). Other studies for the United States have used 15% (Schoepfle, 1982) and 30% (Bednarzik, 1993).

Trade data from the OECD STAN database are used to classify manufacturing industries in 15 OECD countries into three groups: those facing low, medium and high international competition during 1980-2000 (see Box 1.A1.1 for the technical details). The resulting classification of industries does not yield great surprises. Some industries, such as textiles, clothing, leather and footwear (TCF), are consistently high-import competing across member countries. Other sectors, including iron and steel (sometimes aggregated under basic metals), building and repairing of ships and boats, other transport (not related to motor vehicles, trailers and semi trailers) and food products, beverage and tobacco also figure prominently. Radio, television and communication equipment show high-to-medium increases in import penetration in most countries, with the exceptions of the United States, where sensitivity is relatively low, and Finland, where it is highly negative, reflecting the emergence of a strong comparative advantage in communications equipment. Import penetration in the pulp and paper industry has grown significantly in the Nordic countries and Canada.

Table 1.A1.1 summarises employment developments by the extent of international competition.² Employment in high-import-competing manufacturing industries fell an average of 27%³ and declined in all of the countries analysed, with the exception of small increases in Portugal and Spain. There is, however, a large spread with employment declines ranging up to approximately 50% in Finland and the United Kingdom. As expected, employment declines become less severe (or are absent altogether) in industries facing medium or low international competition. Nonetheless, a general shift away from the manufacturing sector throughout the OECD is evident, with the result that the majority of these 15 countries also experienced employment decreases in medium and low-import-competing industries (average reductions of 14% and 6%, respectively). While these data suggest that rising international competition is a significant factor resulting in employment declines in OECD manufacturing, productivity gains and adverse shifts in the composition of consumption demand also appear to be important sources of retrenchment in this sector.

2. Results for Australia, Belgium and the United Kingdom should be interpreted with caution, because employment data for these countries are only available at more aggregate levels, causing sectors with varying import sensitivities to be clustered together.

3. All of the averages cited in this and the following paragraph are unweighted.

Table 1.A1.1. **Employment growth and the intensity of international competition, 1980-2000**

	Period	Manufacturing industries				Change in employment, all industries (%)	Change in employment, manufacturing sector (%)
		Intensity of international competition ^a	Change in employment (%)	Share in total employment (%), 2000	Share in manufacturing (%), 2000		
Australia	1980-1999	High	-23.5	2.6	20.9	41.0	-10.2
		Medium	-8.9	7.2	57.4		
		Low	3.2	2.7	21.7		
Austria	1980-2000	High	-38.3	4.0	23.5	5.8	-23.2
		Medium	-21.5	8.9	52.8		
		Low	-4.5	4.0	23.7		
Belgium	1980-2000	High	-24.5	5.4	33.8	6.8	-28.1
		Medium	-28.5	5.6	35.3		
		Low	-31.1	4.9	30.9		
Canada	1980-2000	High	-8.4	3.8	27.4	36.5	5.0
		Medium	3.8	6.7	48.5		
		Low	28.4	3.4	24.1		
Denmark	1980-2000	High	-44.2	1.6	9.8	7.8	-12.0
		Medium	-7.4	9.1	55.1		
		Low	-4.1	5.8	35.1		
Finland	1980-2000	High	-49.6	5.0	24.9	-2.2	-21.0
		Medium	-13.7	9.4	46.9		
		Low	23.7	5.6	28.1		
France	1980-2000	High	-44.7	3.9	25.0	9.5	-27.4
		Medium	-21.3	7.3	46.4		
		Low	-14.6	4.5	28.6		
Italy	1980-2000	High	-27.9	4.4	19.6	8.2	-16.9
		Medium	-15.6	13.5	60.4		
		Low	-7.3	4.5	20.0		
Japan	1980-2000	High	-28.5	4.2	22.4	13.6	-8.0
		Medium	1.8	10.5	56.3		
		Low	-3.4	4.0	21.3		
Norway	1980-2000	High	-35.3	2.0	15.0	18.6	-19.9
		Medium	-15.8	8.0	61.5		
		Low	-17.9	3.1	23.4		
Portugal	1980-1999	High	3.6	1.9	9.4	7.7	-13.1
		Medium	-18.7	8.0	39.0		
		Low	-11.1	10.5	51.6		
Spain	1980-2000	High	6.1	3.5	19.3	27.1	0.3
		Medium	0.2	11.9	63.8		
		Low	-5.0	3.1	17.0		
Sweden	1980-2000	High	-22.7	4.3	24.5	0.2	-23.0
		Medium	-25.2	9.4	54.0		
		Low	-17.2	3.8	21.6		
United Kingdom	1980-2000	High	-51.8	3.8	26.3	8.7	-37.5
		Medium	-26.6	5.1	35.6		
		Low	-33.0	5.5	38.1		
United States	1980-2000	High	-18.8	4.1	32.3	39.9	-9.0
		Medium	-11.8	3.5	27.8		
		Low	3.3	5.0	39.9		

a) Based on within-country comparisons of net-import penetration growth rates, defined as the percentage increases in imports minus exports relative to total domestic demand [*i.e.* $(M-X)/(P+M-X)$].

Source: OECD STAN database.

On average for these 15 countries, high-import-competing industries accounted for 22% of manufacturing employment in 2000. When medium-competing industries are added, the OECD average rises to 72% of manufacturing employment. These figures suggest that an appreciable fraction of the industrial workforce in OECD countries could consider themselves to be “at risk” of being displaced by international competition, even if the numbers actually displaced in any given year is much smaller than total employment in these industries. However, employment in high-import-competing sectors averages just 4% of total employment (ranging from under 2% in Denmark, Norway and Portugal to 5% in Belgium and Finland), while the combined high and medium-import-competing sectors average 12% (ranging from 8% in the United States to 18% in Italy). These quite low values provide an important reminder that a very large majority of all jobs are in industries that have been much less exposed to international competition than have the most exposed parts of manufacturing.

ANNEX 1.A2

AN OVERVIEW OF RECENT ECONOMETRIC ESTIMATES OF THE IMPACT OF INTERNATIONAL TRADE ON EMPLOYMENT AND JOB LOSSES

Table 1.A2.1 presents an overview of recent empirical studies using multivariate techniques to estimate the impact of international trade on industry-level employment and gross job losses. This information provides the basis for the summary assessment of econometric studies appearing in OECD (2005a), Chapter 1, Section 2.

Table 1.A2.1. **Selected econometric estimates of the impact of international trade on employment and job losses**

A. Net changes in employment from trade			
Study	Country/Region	Description of Study	Findings
Revena (1992)	United States, 1977-1987, 38 3- and 4-digit manufacturing industries (selected as being import impacted)	Impact of import prices (interacted with import share) on employment, average weekly hours and wages of production workers.	A 10% reduction in import prices is associated with a drop of 2.5 to 4% in employment and 0.5 to 1% in wages in this sample of trade-impacted industries
Sachs and Schatz (1994)	United States, 1978-1990	Job-losses (net) among unskilled workers due to increasing import shares.	7% job-loss among manufacturing workers; 2% among non-manufacturing
Wood (1994)	"Northern" (i.e. highly-industrialised) economies, 1990	Factor-content analysis of the effects of North-South trade on demand for employment in the manufacturing sector.	Net job destruction of 5% of employment in manufacturing in northern countries
Burgess and Knetter (1998)	G-7 countries, 1970-1988, 14 2-digit industries	Impact of changes in real exchange rates on employment growth (also wages).	Correctly signed and significant coefficient in >25% of the 95 separate regressions and wrongly signed and significant in 3%.
Freeman and Revenga (1999)	18 OECD countries, 1978-1992, 49 manufacturing industries	Regressions in 1 st difference of industry-level employment and wages on import penetration and controls for total output, year and country.	Coefficient on the change of import penetration is negative and highly significant for both industry-level employment and wages, with bigger estimated impacts in Canada/United States than in EU countries (e.g. a one-unit increase in import penetration resulting in -0.112 and -0.065 log-point increases, respectively, of employment).
Goldberg and Tracey (2000)	United States, 1971-1995, 2-digit industries	Impact of industry-specific import and export real exchange rates on employment	Significant effects found in 13 of 20 industries, with the strongest effects for appreciations of the export exchange rate reducing employment.
Campa and Goldberg (2001)	United States, 1972-1995, 2-digit industries	Impact of industry-specific real exchange rates on employment (also hours and overtime).	Real exchange rates have a significant impact on employment, but it varies between low and high mark-up industries and extent of trade in intermediates.

Study	Country/Region	Description of Study	Findings
Treffer (2001)	Canada, 1989-1996, detailed manufacturing industries experiencing large reductions in protection with the enactment of the Canada/US Free Trade Agreement.	Difference in difference estimates of the impact of the reduction in protection on employment.	For all industries considered, average tariff reduction of 5% resulted in a 3% fall in employment (10% and 15% for the most affected industries).
Kletzer (2001, 2002)	United States, 1979-1994), 3-digit manufacturing industries	Net employment changes due to changes in import and export flows, (or to changes in import and export prices).	Employment elasticities of 0.7 for exports and - 0.4 for imports. Increases in imports have a greater impact in lowering employment in "traditional" import-competing industries such as footwear and textiles, where the initial import share was high. Price effects generally insignificant.
Kucera and Milberg (2002)	Ten OECD countries	Factor content analysis of the effects of trade expansion on employment in the manufacturing sector over the period 1978 to 1995.	Net loss of 3.3 million jobs, 2 million in the United States. Bulk of loss is due to intra-OECD trade. Net job losses from North-South trade results from export declines to LDCs, especially in the wake of the 1980s debt crisis, rather than from an increase in import penetration.
Amiti and Wei (2005a)	United Kingdom, 1995-2001, 69 manufacturing and 9 service industries.	Regression analysis of the impact of increases in the outsourcing of business services on employment.	No significant effect found.
Amiti and Wei (2005b)	United States, 450 manufacturing and service industries.	Regression analysis of the impact of increases in the outsourcing of business services on employment.	Growth in outsourcing is associated with a small, statistically significant reduction in employment for the most detailed industries (450), but this effect vanishes when the model is re-estimated for less detailed industries (96).

B. Impact of trade on the incidence of displacement and gross job flows			
Study	Country/Region	Description of Study	Findings
Haveman (1998)	United States, 1979-1989, 3-digit industries in manufacturing.	Impact of changes in industry-specific import and export prices on rate of displacement of workers with at least 2 years of job tenure.	A 1% increase in industry import price reduces displacements by 2.2%. Export price effect is not statistically significant.
Gourinchas (1998)	United States, 1972-1988, 103 4-digit industries in manufacturing (chosen from both the most and the least open industries, "tradable" and "non-tradable," respectively)	Impacts of industry-specific real exchange rates (de-trended) on job creation and job destruction.	A 10% appreciation increases job destruction by 0.4% and job creation by 0.2%, resulting in a net reduction in employment of 0.3%, with most of this impact due to "tradable" industries.
Gourinchas (1999)	France, 1984-1992, 2-digit manufacturing industries.	Impacts of industry-specific real exchange rates (de-trended) on job creation and job destruction in select "traded" industries.	A 10% appreciation increases job destruction by 2.4% and decreases job creation by 7.1%, resulting in a net reduction in employment of 9.5%.
Bentivogli and Pagano (1999)	Germany, France, Italy and the UK, 1992-1995, 14 manufacturing branches.	Impact of shifting trade with newly industrialised Asian economies on a proxy measure of job destruction base on unemployed persons having lost a job in the previous year in that industry.	No robust evidence that changes in exports and imports with the selected countries affected the rate of job destruction.
Goldberg, Tracy and Aaronson (1999)	United States, 1977-1997, two-digit industries (total private economy).	Impact of industry-specific export and import real exchange rates on 1-year job changing probability.	No consistent patterns across industries or over the period. Some evidence that appreciations lower job- and industry-switching probabilities.
Levinsohn (1999)	Chile (details to look up)	Impact of trade policy changes on job creation and job destruction.	Finds significant effects.
Davis and Haltiwanger (2001)	United States, 1972-1988, 4-digit manufacturing industries.	Impact of oil price shocks on job creation and job destruction.	Oil price shocks trigger considerable job reallocation and net employment adjustments, with job destruction being particularly sensitive (e.g. 1973 shock caused 11% job reallocation over next 15 quarters).

Study	Country/Region	Description of Study	Findings
Kletzer (2002)	United States, 1979-1994), 3-digit manufacturing industries	Estimates of total job displacement in highly import-competing industries and of changes in displacement due to changes in import and export flows and prices (also analyses the characteristics of trade-displaced workers and displacement costs).	6.45 million workers displaced from highly import-competing industries. Industry employment elasticity for exports is 0.2 and significant, imports and prices effects are usually insignificant. Average trade-displaced worker accepts a 13% pay cut in new job.
Klein, Schuh and Triest (2003)	United States, 1975-1993, 4-digit manufacturing industries	Impacts of industry-specific import and export real exchange rates on job creation and job destruction.	A 1-standard deviation increase in the export exchange rate increases job destruction by 0.5 percentage points over 2 years for an industry with an average degree of openness (1.6 percentage points for 90 th percentile level of an industry at the openness).
Wacziarg and Walack (2004)	25 low and medium income countries, trade liberalisation episodes between 1976 and 1994, 1-digit industries (entire economy) and 4-digit industries (manufacturing)	Impact of different types of liberalisation on indices of inter-sectoral labour mobility.	Liberalisation associated with greater inter-sectoral mobility only at the level of detail manufacturing industries, but the effect is small and not very robust. The effect is stronger when trade liberalisation was combined with domestic deregulation and privatisation.

ANNEX 1.A3

POLICIES TO REDUCE ADJUSTMENT COSTS: WHAT TYPES OF MEASURES WORK BEST?

This annex reviews the main policies used in OECD countries to reduce the adjustment costs borne by trade-displaced workers. It complements the analysis of broad policy orientations, which is provided in OECD (2005a), Chapter 1, Section 3, by discussing the content of different policy measures in greater detail.⁴

Indirect policies are discussed in Section A. These are policies which lower adjustment costs by creating the broad framework conditions necessary for overall labour market efficiency (particularly as concerns job creation and labour mobility). Kongsrud and Wanner (2005) discuss these policies in greater detail.

Attention then turns to the two main types of *direct* assistance for trade-displaced workers: active labour market programmes (ALMPs) in Section B and earnings-replacement benefits in Section C. To the extent that ALMPs foster quicker and less costly adjustment, they can contribute to meeting both efficiency and equity concerns. However, it is unlikely that even a well functioning system of ALMPs can prevent some trade displaced workers from experiencing large earnings losses. Income-support schemes represent a straightforward mechanism for compensating such losses. However, compensation schemes must be designed carefully to avoid blunting workers' incentives to adjust to shifts in labour demand, which are an inherent feature of a dynamic economy.

Finally, national examples of labour-market programmes providing direct adjustment assistance to trade-displaced workers in OECD countries are presented in Section D.⁵ This information is collected in Table 1.A3.1 and complements the more synthetic and analytical discussion in the text of Sections B and C.

A. *What are the “framework conditions” for efficient re-employment?*

The ease with which labour markets are able to adapt to shocks, such as those caused by changes in international trade and investment, will have an important impact on the re-employment prospects of trade-displaced workers. The gains from trade will also be higher in countries where the adjustment capacity of the labour market is greater (see Box 1.A3.1).

4 . OECD (2005b) discusses a wider range of policies to lower trade-related adjustment costs, including macroeconomic, trade and sectoral policy. This study also analyses policies to facilitate trade-related structural adjustment in developing countries.

5 . Most of the programmes described do not specifically target trade-displaced workers, yet operate so as to be important sources of adjustment assistance for this group.

Box 1.A3.1. Labour market functioning and the gains from international sourcing of business services

In 2003, the McKinsey Global Institute (MGI) published an analysis of the direct and indirect economic effects of sourcing U.S. back-office and IT functions to India. The study suggested that for every dollar transferred by US companies to India, a total of USD 1.46 in wealth was created. Of this, USD 1.13 was captured as cost savings by US firms and the remaining USD 0.33 went to India in the form of wages, profits and taxes. However, similar analysis for Germany by the MGI obtains less favourable results: for every Euro that German firms transfer abroad, the economy is estimated to be worse off by 20 cents. Some of the discrepancy is accounted for by geographical factors, such as the fact that German firms source largely to eastern neighbours where the savings in wage costs obtained are smaller than in the case of U.S. sourcing to India. However, the bulk of the discrepancy in the estimated size of returns to United States and German international sourcing is due to differences in labour market adjustment capacity. Greater mobility in the U.S. labour market allows it to derive more indirect economic value from redeploying workers whose jobs are outsourced. German workers who lose their jobs as a result of international sourcing have a harder time finding new employment than do similar displaced workers in the United States (consistent with the evidence presented in OECD, 2005a, Chapter 1), and hence represent a larger drag on the net benefits from international sourcing.

Source: McKinsey Global Institute (2004).

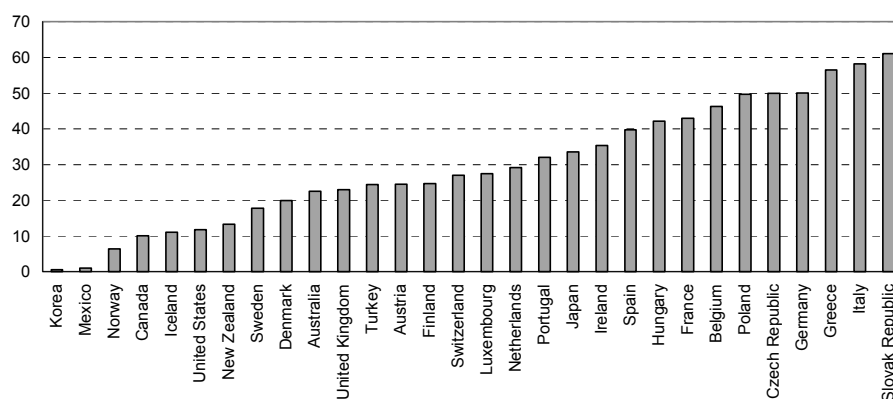
Adjustment costs for trade-displaced workers should be lower in countries where labour market institutions facilitate labour mobility. Indeed, a number of indicators point to substantial cross-country differences in the mobility of labour resources (Chart 1.A3.1):

- Countries' capacities to re-employ displaced labour resources vary considerably, as measured by the incidence of long-term unemployment (Panel A).
- Labour mobility between employers differs widely, as measured by the average job tenure of workers (Panel B) or job turnover rates (OECD, 1997, Chapter 2).
- Finally, regional labour mobility is important to handle structural change that has uneven geographical impact. Again, large country differences appear to exist, as measured by the incidence of internal migration (Panel C) and the dispersion in regional unemployment rates (OECD, 2005a, Chapter 2).

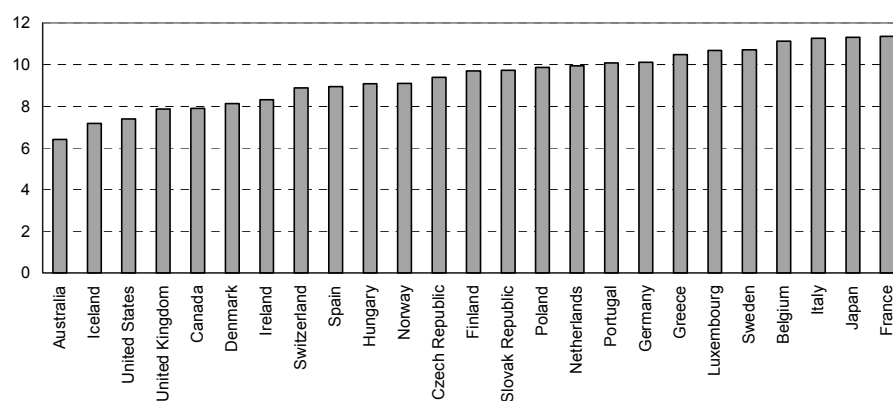
These mobility indicators should be interpreted with caution, since some labour turnover may represent unproductive "churning" and country disparities in re-allocative turnover could reflect differences in the magnitude of structural shocks, rather than differences in adaptive capacity. Nonetheless, it appears likely that OECD countries differ significantly in their adjustment capacities and that trade-displaced workers are likely to confront additional barriers to re-integration where labour markets are less adaptable.

Chart 1.A3.1 Indicators of labour mobility

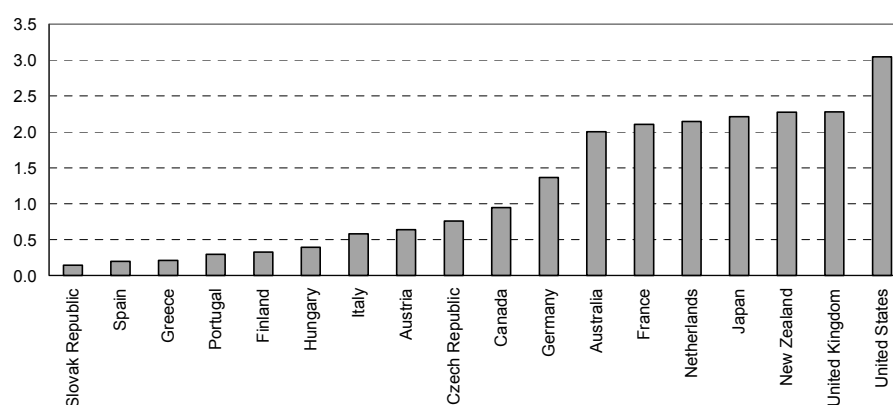
A. Incidence of long-term unemployment^a, 2003^b



B. Average job tenure (years), 2003^b



C. Internal migration in 2003^b (gross outflows as a percentage of the population aged 15-64)^c



- a) Defined as those unemployed continuously for 12 months or more as a percentage of total unemployment.
b) Or latest year available.
c) Regional level 2, except migration calculated for regional level 1 in Australia, Canada and the United States. The population reference for Australia is the total population and for Japan persons over five years of age.

Source: OECD Unemployment by Duration and Job Tenure databases and OECD (2005a), Chapter 2 (migration rates).

A number of policies may impact on the capacity of national labour markets to adjust in the face of structural shocks, including by reintegrating trade-displaced workers into jobs that make good use of their skills and aptitudes. To this end, regulations and related policies should foster employability and mobility in the labour force and a business environment supportive of growth and job creation. Many of the policy recommendations that encourage a supportive economic environment for labour market adjustment have been laid out by the OECD Jobs Strategy (OECD, 1994 and 1999). Four components of this broader policy agenda appear to be of particular salience to enhancing countries' capacity to adapt to trade:

- *Product market competition* – Flexible and competitive product markets are important in facilitating structural adjustments. For example, reduced barriers to competition (including international competition), entrepreneurship and growth are instrumental in strengthening job creation, making it easier to absorb workers displaced by imports in growing sectors of the economy.⁶ In particular, product market deregulation may unleash the considerable potential of the service sector as a source of new employment (OECD, 2005c).⁷
- *Employment protection legislation (EPL)* – Overly strict employment protection may slow down the adjustment process by constraining firms' ability to cope with a rapidly changing environment.⁸ Since firms' firing as well as hiring practices are likely to be affected by the restrictiveness of employment protection, both the inflow to and outflow from unemployment could potentially be reduced. Furthermore, the availability of high severance pay reduces the incentives for high-tenure workers to change job voluntarily.⁹ However (and as was discussed in Section 3), advance notification of layoffs can reduce adjustment cost by providing all interested parties time to plan and implement the necessary adjustments (OECD, 2005a, Chapter 1).
- *Wage-setting* – Firms' wage-setting practices may discourage workers from changing employer. In some countries, wages are closely tied to the number of years worked in the firm, thus significantly reducing the incentives for older and long-tenured workers to consider moving to a different firm.¹⁰ Flexibility in relative wages is also required to provide adequate price signals during periods of structural change. Centralised systems of wage

6 . Product market deregulation is also associated with higher levels of “creative destruction,” implying that it may increase the incidence of job displacement even as it reduces barriers to becoming re-employed (OECD, 2002, Chapter 5). It follows that pro-competition product market policy is complementary with labour market policies that facilitate mobility.

7 . More developed and competitive capital markets can also make an important contribution to greater economic dynamism and have been shown to be associated with better labour-market performance (Bednarzik, 2001).

8 . Research has also shown that strict EPL impedes firm creation and the ability of successful start-ups to expand rapidly, applying a brake to the types of entrepreneurial response that appear to be key to realising the full benefits from structural change (OECD, 2003b).

9 . It is possible to reduce some of the drawbacks of traditional severance pay systems, while continuing to provide workers with compensation against dismissal. For instance, Austria has recently replaced its traditional severance pay system with individual severance accounts that workers can carry with them in the event of changing employers – thus facilitating mobility, which is so important in the face of structural change (OECD, 2004, Chapter 2).

10 . Similarly, defined-benefit pension schemes are not always fully portable from one employer to another, thereby inhibiting mobility. Sometimes, workers may lose all their pension rights if, for example, they leave the employer within 3 or 5 years of appointment.

bargaining may thus impede efficient adjustment unless adequate provision is made for taking into account the specific competitive situation of sectors and firms (e.g. via “opt-out” clauses). The more compressed wage structure in many European countries, as compared to the United Kingdom and the United States, might be a barrier to re-employment prospects and hence one of the factors explaining the lower rates of re-employment following displacement in Europe (as shown in OECD, 2005a, Chapter 1, Section 2). However, targeted fiscal measures, such as tax exonerations for low-wage workers, may be able to partially off-set such effects (Jamet, 2005; OECD, 2003a, Chapter 3).

- *Adequate workforce skills* – Ensuring a workforce with adequate and adaptable skills is a key requirement for facilitating structural adjustments and, over the longer run, will support growth in productivity and real earnings. This is particularly true since changes in the job mix and production technologies both imply rising skill requirements. High-skilled workers tend to have relatively high job-to-job transition rates and are more mobile across occupations, industries and regions. High-educated workers and workers receiving in-work vocational training also face less risk of lay-off than their low-educated and non-trained counterparts. Even when they lose their jobs, educated and trained workers enjoy a relatively high probability of re-employment.¹¹ Enhancing the incentives to invest in workers’ skills is thus especially important in the face of rising trade competition and, more generally, structural change that requires greater labour mobility.¹²

B. Active labour market programmes

Although good framework conditions can reduce trade-adjustment costs indirectly, by fostering a high level of labour-market adjustment capacity, adjustment assistance provided directly to trade-displaced workers represents a valuable complement to these indirect measures.¹³ This section analyses the role of ALMPs, while Section C (below) considers earnings-replacement benefits, the second main type of direct adjustment assistance. Brief descriptions of national examples of direct adjustment assistance are then presented in Section D: Panels A-E of Table 1.A3.1 being devoted to presenting various types of ALMPs and Panels F-G of Table 1.A3.1 to examples of innovative measures for reconciling earnings-replacement benefits with incentives to become re-employed rapidly.

The empirical analysis in OECD (2005a), Chapter 1, Section 2 suggests that trade displacement represents a significant potential in-flow of formerly stable workers into structural unemployment,

-
11. These associations continue to be evident even after statistical correction for possible selection bias due, for example, to more capable or more motivated workers being more likely to receive training (OECD, 2004, Chapter 4).
 12. However, workforce skills can only be raised gradually and some older displaced workers will have difficulty benefiting from formal training programmes. Consequently, fiscal mechanisms to increase the hiring of low-skilled workers, such as exonerations of social charges for low-wage workers, may also have a role to play (Jamet, 2005).
 13. The distinction between direct assistance and indirect policies is sometimes rather arbitrary. This is perhaps most markedly so for the job-brokering services provided by the public employment system (PES). If performed well, these functions both directly assist the trade-displaced workers served by the PES and indirectly assist them in their job search by contributing to the overall efficiency of the labour market in matching job seekers with job vacancies. The choice to discuss the PES in this section (*i.e.* as a form of ALMP), rather than in the previous section (*i.e.* as a framework condition), was made for expositional ease rather than substantive reasons.

premature labour force withdrawal or endemic underemployment. Appropriate forms of ALMPs, such as jobs search assistance and retraining, can reduce adjustment costs by minimising such transitions. The main contribution that ALMPs can make is thus to support trade-displaced workers – particularly, the substantial minority within this group who experience great difficulty in becoming re-employed or only become re-employed at much lower wages – to re-integrate into employment in jobs that make good use of their productive capabilities.

A general principle in best practice for ALMPs is that each person should receive a comprehensive package of treatments that corresponds to his or her specific needs.¹⁴ This raises the question whether workers displaced by trade tend to require a different mix of treatments than other clients of ALMPs and, if so, whether the services that they receive are suitably tailored to their specific situation on the labour market. OECD (2005a), Chapter 1, Section 2 shows that older workers displaced from jobs in declining import-competing sectors are particularly likely to possess obsolete skills for which little demand exists in expanding industries and consequently to experience greater adjustment difficulties than are other job losers. This suggests that job-search assistance for trade-displaced workers may need to be complemented by more intensive measures, such as training or employment subsidies, more often than is true for the average person receiving unemployment benefits. Thus, one question that arises is whether ALMP systems are providing enough of these intensive services and targeting them to trade-displaced workers who can most benefit from them.

It should not be assumed, however, that intensive measures such as retraining or employment subsidies are appropriate for most trade-displaced workers. This is a heterogeneous group and many of its members appear to fare quite well with little or no assistance. Even among those facing greater adjustment difficulties, such as older workers displaced in declining industries, it should not be assumed that the best approach is to “retool” them for jobs in more dynamic sectors (*cf.* the discussion of industry of re-employment of displaced workers in OECD (2005a), Chapter 1, sub-section 2.C). Even in declining sectors, there is considerable hiring as some part of natural attrition must be replaced. Thus, older workers displaced from such industries, whose skills are highly specialised and linked to those required in their previous industry, should sometimes be assisted to locate vacancies in their prior industry, where their productivity and earnings will be higher. An additional reason for caution, is that evaluation results for ALMPs generally have been more favourable for less intensive measures, such as jobs search assistance, than for more costly and intensive measures (Dar and Tzannatos, 1999; Martin and Grubb, 2001; Betcherman *et al.*, 2004; Kletzer and Koch, 2004). All of these considerations point towards there being no one right treatment for trade-displaced workers. Tailoring the assistance offered to each worker’s needs – in particular, targeting the right intensive ALMP interventions to the right workers – represents an important precondition for obtaining good results at a reasonable cost.

Which types of active assistance measures are particularly important for improving the re-employment prospects of trade-displaced workers and which members of this group should receive which types of assistance? While a detailed answer to this question cannot presently be given, experience in different OECD countries, including evaluation studies of different ALMPs, provides some guidelines for making policy choices, including the importance of differentiating between basic services that should be promptly offered to all job losers seeking assistance and more intensive measures that should be carefully targeted. Two types of basic services can be identified:

14 . Chapters 4 and 5 of OECD (2005a) present a more comprehensive analyse the efficient functioning of the PES and ALMPs, while Table H of the Statistical Annex to that publication provides an overview of spending on ALMPs in OECD countries.

- *Orientation* – Employment services should offer individualised orientation to job losers, helping them to quickly and accurately access their re-employment prospects and to develop a realistic plan for re-integrating into the labour market. Typically, orientation involves one or a series of meetings with a counsellor who provides up-to-date information about job openings and the range of PES services potentially available to assist in contacting employers with vacancies or in becoming qualified for a new line of work. Different techniques can be used, for example participants may undergo a form of skills testing or assessment to determine their needs, interests and aptitudes, but the essential need is to rapidly orient displaced workers towards identifying and then pursuing an appropriate strategy for regaining a foothold in the employment.¹⁵ This may be a particularly difficult process for trade-displaced workers whose work experience, job qualifications and past earnings levels are a poor match for the job openings available in the local labour market.
- *Job-search assistance* – Evaluation studies have generally concluded that job-search assistance (JSA) is the most successful form of ALMP, on a value-for-money basis, since it achieves results similar to those realised by more expensive training programmes at a far lower cost (Dar and Gill, 1995; Fay, 1996; Dar and Tzannatos, 1999; Martin and Grubb, 2001; Betcherman *et al.*, 2004). The value of JSA may be particularly high for workers displaced after many years of employment with the same firm, since these workers may have lost many of the skills associated with a successful job search (knowledge about *e.g.* local and regional demand for skills, how to obtain up-to-date information regarding job vacancies and what behaviour is expected in job interviews). Specific JSA measures can include general placement assistance, specific job referrals and participation in labour exchanges or job clubs (*i.e.* where workers meet regularly to receive information regarding jobs and job-search techniques, develop search strategies, prepare résumés, receive moral support and other services associated with an employment search). Self esteem counselling also may be provided to prevent displaced workers from becoming discouraged in their job search.

Intensive measures may be appropriate for workers for whom there is no realistic opportunity to return to a similar job in their local labour market and for whom finding employment in a different line of work or region would be difficult or impossible without assistance. In such cases, a number of measures may be appropriate:

- *Retraining* – It is natural to suppose that retraining can help workers displaced from declining sectors or occupations move into jobs in expanding areas of the economy that pay wages that are at least comparable to those on the lost job. However, evaluation for training programmes typically have been disappointing (Dar and Tzannatos, 1999; Park *et al.*, 1996) and it appears that retraining should be used sparingly, particularly so since it is an expensive form of assistance.¹⁶ Furthermore, most programmes that present positive results achieve gains through improved employment possibilities rather than through higher wages (Dar and Tzannatos, 1999; Martin and Grubb, 2001), suggesting that retraining may have a limited capacity to reduce the large wage losses of some displaced workers on their now job (*cf.* OECD, 2005a, Chapter 1, Section 2). Unfortunately, evaluation studies do not provide

15. It is sometimes feasible for this orientation process to begin before layoffs actually take place and such a head start appears to reduce adjustment costs (OECD, 2005a, Chapter 1, Section 3).

16. Longer-term classroom training is typically the most expensive form of retraining. In addition to the direct costs of providing training there is often a need for complementary income support to the participants. In some cases, remedial training also may be necessary for workers who lack basic academic skills required to succeed in a vocational training course.

consistent guidance concerning which types of workers benefit most from which types of training. Early evaluations for displaced worker programmes in the United States suggested that relatively short training programmes, designed to upgrade existing skills, were usually more effective than longer-term training for entering new occupations, particularly for older job losers (Leigh, 1995). More recent evaluation evidence suggests that extensive class room training can be valuable, even for older displaced workers, but probably only for a small share of all such job losers (Jacobson *et al.*, 2004).

- *Relocation assistance* – Trade-displaced workers are at an elevated risk of residing in economically depressed regions and often will need to extend their job search to geographic areas where labour markets are more buoyant. It follows that the employment services provided to this group will often require a broad geographical scope. However, even if a job seeker is matched to a job opening outside of the immediate area, there may be financial constraints preventing the geographic mobility required to take advantage of this opportunity. A number of OECD countries offer grants or allowances for travel expenses related to interviews as well as relocation costs for those who accept employment outside of their area of residence. Nonetheless, take up of relocation grants tends to be low, probably due to personal attachments to local geographic areas on behalf of displaced workers and their families, and barriers to moving created by the housing market (see OECD, 2005a, Chapter 4 and Kongsrud and Wanner, 2005). These factors that may be particularly important for older displaced workers.
- *Employment subsidies* – A number of OECD countries make use of employment subsidies to stimulate labour demand for certain job seekers, typically members of disadvantaged groups or the long-term unemployed. The evaluation literature has suggested that the net employment gains resulting from wage subsidy programmes are negligible or even zero (Martin and Grubb, 2001).¹⁷ Nonetheless, these policies sometimes can be justified on equity grounds, as providing jobs for the long-term unemployed (albeit at the expense of the short-term unemployed). These considerations make it clear that precise targeting is crucial to obtaining good results. That conclusion also applies to a second use of employment subsidies that has special relevance to trade-displaced workers, namely, as an incentive to employers to maintain positions that would otherwise be suppressed, so as to avoid or delay job displacement. In certain cases, market failure can lead to excessive layoffs (*cf.* OECD, 2005a, Chapter 1, Section 3) providing a possible rationale for such subsidies. Some OECD countries have made use of narrowly targeted employment subsidies to avoid or delay layoffs.¹⁸ These measures do not appear to have been subjected to rigorous evaluation, but it appears likely that employment subsidies used to save jobs often would be difficult to target so as to increase efficiency, rather than to create inefficiencies (*i.e.* by slowing labour market adjustment to shifts in comparative advantage and other types of structural economic change).

17. Similarly disappointing results have emerged regarding wage outcomes of such policies (OECD, 1993; Betcherman *et al.*, 2004).

18. For example, Germany encourages internal redeployment of workers threatened with job loss by offering temporary subsidies for moving these workers to new positions within the same firms. The Swedish government made similar use of employment subsidies from 1977 to 1989 in a programme targeted at protecting the jobs of older workers in the textile and clothing sector, which was experiencing increasing exposure to international markets.

- *Assistance for small business start ups* – Most OECD countries devote a small share of total ALMP spending to schemes that support unemployed individuals seeking to create a small business, through credits or grants and are often accompanied by technical assistance or other support. This has often been viewed as a positive alternative to unemployment assistance and a means of developing an entrepreneurial culture in areas where one might be wanting.¹⁹ Relatively few evaluations for enterprise-development assistance exist, but there is some evidence that few unemployed persons take advantage of such subsidies (Dar and Tzannatos, 1999) and that such programmes are most helpful to higher-educated job seekers (Betcherman *et al.*, 2004). Both of these patterns suggest that these programmes are probably of only limited application to the trade-displaced workers facing the greatest adjustment difficulties.
- *Public-sector job creation* – Like employment subsidies, public-sector job creation schemes are used to re-establish a connection between long-term unemployed and the world of work. Some countries may also use job-creation measures to condition the receipt of unemployment benefits by some workers on their participation in public-works schemes. While these schemes may be useful for maintaining labour-market contact for some trade-displaced workers in economically depressed areas for whom out-migration is not an attractive option, evaluations do not suggest that they are useful for securing permanent, unsubsidised jobs (Martin and Grubb, 2001). A further concern related to these policies is the risk that participants become stigmatised by potential future employers, particularly in the case of repeated participation. Such employment creation policies are also very expensive and can represent a high opportunity cost for funding other active measures (Evans-Klock *et al.*, 1998).

C. *Earnings-replacement benefits*

The analysis of the post-displacement costs in OECD (2005a), Chapter 1, Section 2, together with the somewhat sobering results of ALMP evaluations, indicate that a significant minority of trade-displaced workers will experience large and enduring earnings losses even if appropriate framework and active policies are in place. The most straightforward way to cushion these losses is through unemployment insurance and related earnings-replacement transfer programmes.

As compared with other users of unemployment insurance (UI) and related benefit systems, trade-displaced workers evoke particular concerns that are related to the long-term losses in earnings potential that sometimes follows job displacement (particularly in declining sectors). First, labour supply distortions may tend to be particularly large, because benefit levels that appear “reasonable” in terms of earnings on the lost job may in fact be very high relative to potential earnings in available new jobs (Kongsrud and Wanner, 2005). This consideration argues for keeping benefit levels relatively low and/or restricting the period of eligibility for benefits, so as to guard against trade displacement translating into a steady flow of workers into long-term unemployment or inactivity. A second concern is that trade-displaced workers arguably should be compensated, at least in part, for the reduction in earnings that persists after re-employment, and not only for the earnings lost while searching for a new job (as via UI). Since this second consideration argues for supplementing, rather than reducing, the earnings-replacement benefits conventionally offered to job losers, it is evident that

19. However, potential for deadweight loss can be high if entrepreneurs who receive assistance are those who would have started their businesses without subsidies. Such subsidies can also encourage a crowding out effect for businesses not receiving similar government assistance.

providing income support for trade-displaced workers requires that some difficult design issues be confronted.

Conventional earnings-replacement benefits

Unemployment insurance (UI) and related unemployment benefits (UB) are part of an economy's social safety net for workers and play a central role in reducing the income losses from trade displacement, particularly, those associated with the time spent finding a new job. As was mentioned above, there is a very real danger that these benefits will slow re-employment of trade-displaced workers if they are high relative to earnings on available jobs. However, unemployment benefits can also contribute to efficient adjustment by allowing trade-displaced workers more time to invest in searching for a new job which is a good match for their skills and preferences, possibly having a positive effect on re-employment wages. Similarly, UI/UB can facilitate participation in job training and other measures that may enhance re-employment prospects and be especially worthwhile for certain trade-displaced workers (*cf.* Section B, above). Thus, it is no easy matter to assess whether unemployment benefits should be more or less generous for this group than for other unemployed. Since it is also very difficult to differentiate between trade-displaced workers and other job losers, in practice (OECD, 2005a, Chapter 1, Sections 2 and 3), the former group should probably be treated according to the same rules as other programme participants. However, the fact that a significant number of trade-displaced workers enter UI/UB roles increases the importance of designing these benefit programmes so as to minimise unemployment traps.²⁰

It is a difficult challenge to design UI/UB programmes so as to provide adequate income security while also encouraging beneficiaries to become re-employed. OECD countries have experimented implemented a number of ideas for attempting to better reconcile these two goals, including: *i*) re-employment bonuses (see Box 1.A3.2); *ii*) “activation” strategies which condition the receipt of unemployment benefits on active job search and work availability (OECD, 2003a, Chapter 4; OECD, 2005a, Chapters 4-5); and *iii*) in-work benefits (OECD, 2005a, Chapter 3).

The situation is somewhat clearer with respect to other earnings-replacement benefits, such as retirement and disability schemes, which have sometimes been made available to trade-displaced workers – especially to older trade-displaced workers – who do not meet the normal age or health status thresholds for these programmes (OECD, 2005d). For example, France, Germany and Italy have made particularly heavy use of early retirement schemes for older displaced workers, in situations where reintegration into employment would have been a more efficient policy choice, albeit far from easy to implement successfully. Disability and long-term sickness benefits have been used in a similar manner, particularly in the United Kingdom and the United States. In light of the high fiscal costs associated with such “solutions”, governments need to be careful to restrict access to these programmes to the purposes for which they were created. However, it should be recognised that frequent recourse to such measures in the past is an indication of how difficult it can be to re-integrate older displaced workers into employment and of the need to provide more effective adjustment assistance measures to this group.

20. Panels F-G of Table 1.A3.1 provide brief descriptions of selected examples of innovative schemes to better reconcile UI benefits with strong incentives to re-employment for trade-displaced workers, which supplement the more general discussion in the text that follows. OECD (2005a), Chapter 3 analyses labour-supply disincentive effects of social benefits in greater detail, as well as the potential contribution of in-work benefits to reducing these distortions.

Box 1.A3.2 Re-employment bonuses

Japan and Korea have implemented re-employment bonuses in an attempt to shorten the period of time that job losers remain jobless and receive unemployment benefits. Re-employment bonuses are awards paid to benefit recipients who find and accept employment within a specified time period. The size of the bonus can be a fixed-sum payment or based on a percentage of the total unemployment benefit for which the worker is eligible. In Japan, workers who become re-employed (at least 20 hours per week) while 1/3 or more of the unemployment benefit eligibility period remains are entitled to a lump sum payment equalling the product of the basic daily allowance amount and 1/3 of the remaining days of entitlement. Similarly, persons receiving unemployment benefits in Korea who become re-employed while over 50% of their period of benefit eligibility remains (at least 20 hours per week) receive a lump sum payment equalling 50% of their remaining benefit entitlement.

A pilot scheme in the state of Illinois in the United States compensated job seekers with a lump-sum payment of USD 500 for re-employment within an 11-week period. Evaluations of four US re-employment bonus programmes in the United States indicate that they were successful in shortening unemployment spells, albeit by only about one-half week (or 3% of an average duration of UI receipt). However, the net impact was to increase government spending in three of the four experiments, since the extra spending on re-employment bonuses was not fully offset by the reduction in conventional unemployment benefits (Meyer, 1995). In the mid-1990s, as part of an effort to make re-employment bonuses more cost-effective, programmes began to target only those candidates most likely to exhaust UI entitlements. Recent evaluations of targeted bonuses indicate that positive cost-effective results are achievable and that, if implemented as a permanent programme, would yield significant net benefits (O'Leary *et al.*, 2005).

The United States is considering new legislation (H.R. 27, "The Job Training Improvement Act of 2005") which would encourage States to provide, on a pilot basis, USD 3 000 "personal re-employment accounts" to job seekers identified as most likely to exhaust benefits. These accounts would be provided in lieu of standard re-employment services and could be used to purchase job training or other services that facilitate a return to employment, such as child-care and transportation, as part of an effort to speed up the re-employment process. Recipients will be able to keep the balance of the account as a cash re-employment bonus if they find a job within 13 weeks.

Wage insurance may be a useful addition to the policy tool kit

Wage insurance is a benefit scheme that pays an earnings subsidy to displaced workers, who accept new jobs at lower wage rates within a specified period of time, where the benefit amounts are set so as to replace a fraction of the difference between earnings on the old and new jobs. The idea of providing wage insurance to trade-displaced workers has been promoted as serving a threefold purpose. First, this would help provide a more equitable distribution of the gains from globalisation by reducing the adjustment costs faced by those who are hurt by trade and investment liberalisation. Second, wage insurance would serve as an incentive to speedy re-employment as remaining on unemployment benefits becomes less attractive relative to accepting a new job. Finally, by mitigating worker anxiety about the job and earnings insecurities related to trade liberalisation, political opposition to further opening of product and service markets would also be diminished.²¹

Wage insurance appears to have the potential to better reconcile the equity goal, that the amount of compensation paid should reflect the size of earnings losses, with the efficiency goal of encouraging rapid re-employment. However, these types of schemes raise a number of complex issues related to design details that have yet to receive careful scrutiny. In particular, wage insurance might introduce

21. The idea of providing wage insurance to workers displaced by trade or international sourcing has received particular attention from U.S. economists (see Lawrence and Litan, 1986; Baily *et al.*, 1993; Jacobson *et al.*, 1993; Kletzer and Litan, 2001, Kletzer 2003; Brainard and Litan, 2004). American researchers appear to have been particularly attracted to this approach because there is a considerable body of empirical research for the United States documenting the often deep and enduring earnings losses suffered by displaced workers and it is believed that the public's awareness of these wage losses reinforces political support for protectionist measures. Some have argued, however, that there is no compelling reason that wage insurance be offered only to trade-displaced workers (Kletzer and Rosen, 2005).

new distortions and it will be important to clarify whether, *e.g.* subsidising re-employment at low wages could blunt incentives for displaced workers to search for good job matches or to invest in on-the-job training in their new job. Similarly, there is the possibility that wage insurance will represent, in large part, a subsidy to workers who previously had the good look to hold jobs paying higher than competitive wages and compensation for the loss of such “rents” may not be considered an appropriate policy goal. The high levels of labour turnover and year-to-year earnings variability in the labour force (OECD, 2003a, Chapter 2), suggest that eligibility for wage insurance could potentially be quite broad and that ways would need to be found to target these payments on involuntary job losers for whom wage reductions represent a significant loss of earnings potential that are likely to have an important impact on their living standards. Finally, the large international differences in the risk that a trade-displaced worker will experiencing large wage losses once re-employed (*i.e.* as documented for Europe and the United States in OECD, 2005a, Chapter 1, Section 2) suggest that the suitability and most appropriate design of wage insurance will vary according to the national context.²²

France, Germany and the United States have recently introduced wage insurance programmes for certain displaced workers. These initiatives – which are briefly described in Box 1.4 –have yet to be subjected to careful evaluation. However, a pilot wage insurance programme in Canada provides some insight into the potential of these types of programmes to speed re-employment and better reconcile efficiency and equity objectives (Bloom *et al.*, 1999). The Earnings Supplement Project (ESP) was tested on two groups comprising a total of 5 912 individuals in 1995 and 1996. Two separate randomised experiments were carried out targeting displaced workers and repeat users of unemployment benefits. Beneficiaries who found full-time jobs within 26 weeks, at wages inferior to their weekly insurable earnings, were eligible for supplemental payments equal 75% of the earnings difference. A weekly maximum was set at CAD 250 and payments could be received for a maximum of two years. Results suggest that the programme increased the percentage of displaced workers who found full-time jobs by 4.4 percentage points, reflecting both a shift from part-time to full-time work, as well as an increase in overall employment. Programme designers expected the reduced job-search period and incentive to accept lower paid jobs to provoke a wage-suppressing effect. In fact, the wages of ESP participants were 4.6% lower than those of the control group (though this difference is not statistically significant). Overall public spending rose, because the modest labour supply effect was too small to reduce unemployment benefits by enough to fully offset the wage insurance payments.²³

22 . Wage insurance may have a role to play in European countries, even though few displaced workers become re-employed at wages significantly lower than those on their prior jobs, provided that reluctance to accept such pay cuts is an important explanation for why re-employment rates are low. For example, Burtless and Shaefer (2002) proposed a wage insurance scheme as being useful to counteract long-term unemployment in Germany. They argue that the high level of unemployment in that country is not due to high inflows into joblessness, but rather to low outflows caused by the negative incentive effects of the unemployment insurance system on re-employment rates.

23 . 20.5% of all ESP participants received the supplemental benefit.

Box 1.A3.3 Three examples of wage insurance

The French *Article R. 322-6 du code du travail, Arrêté du 26 mai 2004* provides for a system of wage insurance known as *conventions d'allocations temporaires dégressives* that was first introduced in 1999. Under this programme, workers displaced in a mass layoff who are re-employed on a permanent contract at a lower wage are eligible to receive a subsidy covering up to 75% of the difference in earnings between the new and previous jobs, up to a monthly maximum state contribution of EUR 153. The previous employer is also required to make a contribution to supplementing the new, lower salary. If the employer is unable to make such a contribution, the state's contribution can be raised to as much as EUR 229. This subsidy is available for a maximum period of two years.

Germany instituted a programme of wage insurance in 2003 (*Entgeltsicherung für ältere Arbeitnehmer*) which is limited job losers aged 50 years and older. Workers becoming re-employed in a new job paying less than their previous jobs are eligible for two types of earnings supplements. First, a payment of 50% of the earnings gap between the prior and new jobs is offered. Second, pension contributions on the new job are supplemented up to 90% of the level on the prior job. One notable aspect of this scheme is that no time limit is placed on these earnings supplements.

A wage insurance scheme for older trade-displaced workers was recently introduced in the United States. Since August 2003, workers at least 50 years of age who are certified as being trade-displaced workers and meeting all of the eligibility criteria for the Trade Adjustment Assistance programme may choose Alternative Trade Adjustment Assistance instead. This programme offers a wage subsidy to workers who start a new full-time job within 26 weeks of separation and who are paid wages below those on the previous job. Provided that the worker does not earn more than USD 50 000 per year in the new employment, a payment of 50% of the difference between the new salary and the old salary is paid, up to a maximum of USD 10 000 over two years. This subsidy is available for a maximum period of two years following the layoff.

Source: Information provided by national authorities.

D. Selected national examples of policies providing assistance to trade-displaced workers

Table 1.A3.1 provides brief summaries of a number of national examples of labour-market policies that are likely to provide considerable adjustment assistance to trade-displaced workers and other job losers facing similar barriers to re-employment at satisfactory wages. These examples illustrate the considerable and growing experience in OECD countries with labour-market programmes to facilitate structural adjustment. Much of the information provided in this table was provided to the OECD Secretariat by member governments in response to a data request circulated in May 2004.²⁴

24. Ricardo-Luis Tejada had the main responsibility for developing this questionnaire and processing country submissions.

Table 1.A3.1. **Selected labour-market policies providing assistance to trade-displaced workers**

A. Initiatives combining multiple services			
Country	Policy	Description	Source
Australia	Sugar Industry Reform Package, 2004	Provides retraining, JSA and other employment services to workers displaced due to reform of the sugar sector (including decreased tariffs). Announced April 2004. Comprises of up to AUD 444.4 million over 4 years.	Information provided directly to OECD
Australia	Textile Clothing and Footwear (TCF) Structural Adjustment Programme, 2005	Will provide assistance to workers displaced from the TCF sector as a result of tariff reductions, which is additional to that available via general labour market assistance arrangements (e.g. Newstart Allowance and services through Job network). Also provides funding to businesses in the TCF sector for investment and innovations to enhance their international competitiveness. AUD 50 million over 10 years. Operational from July 2005.	Information provided directly to OECD
Austria	Employment foundations (AST)	Provide occupational reorientation and upgrading of skills to registered unemployed who lost jobs in sectors experiencing restructuring. Key objective is to provide market-driven qualifications to meet local labour market needs. Programme pays special attention to older workers. In 2002, programme expenditure totalled EUR 5.4 million benefiting 4 413 persons.	<i>European Employment Observatory, 2002a</i>
Austria	Austrian Steel Foundation	Tripartite foundation providing job search assistance, vocational orientation, retraining, small business start-up assistance and other services to workers losing their jobs due to the rationalisation of the Austrian steel industry. Programme is notable for offering extensive training and formal education options (including multi-year courses of study). Financing via contributions by employers, programme participants and the government.	Evans-Klock <i>et al.</i> , 1998; Winter-Ebmer, 2003

Country	Policy	Description	Source
Finland	Joint Purchase Training	<p>Provides enterprises with tailor-made training options in situations where the enterprise needs new labour, wants to reorganise its production processes, and upgrade the skills levels of its personnel, or wants to train its personnel as an alternative to lay-offs or notices. Employer usually pays 40-70% and the labour administration pays the rest.</p> <p>In 2000, national labour market training by joint purchase accounted for 459 000 student days, 7.6% of all training purchased.</p>	<i>European Employment Observatory, 2002c</i>
France	Retraining Agreements (<i>Congé de conversion, 2001</i>)	<p>Offers workers involved in a mass-layoff immediate and individualised training and job-search support for a period of 6 months. Employers who hire a participant before the end of the 2nd month receive the balance of remaining allowances as subsidy. (To be replaced by the <i>PARE anticipé</i> during the course of 2005.)</p> <p>Only available to workers under 57 who have been employed for a minimum of 2 years.</p>	Information provided directly to the OECD and <i>European Employment Observatory, 2002b</i>
France	Retraining leave (<i>Mesures de Conversion</i>)	<p>Offered to companies with fewer than 1 000 employees that are undergoing restructuring. The measure offers job-search assistance, appraisal and guidance, and training or retraining. Minimum length of 4 months during which normal work contract is suspended. Employee receives a training stipend of up to 65% of their gross salary.</p> <p>Intended as a preventive measure to assist the reintegration of employees at risk to be laid-off, but little used (1 700 persons in 2004). Co-funded by French government, the European Social Fund and employers.</p>	<i>European Employment Observatory, 2002b</i>
Germany	Subsidies towards measures included in social plans	<p>Financial support granted as an incentive to employers to provide for certain preventive measures in a "social plan" established for employees threatened by unemployment. This encompasses skills assessments, job-search-skills training, vocational training, etc.</p> <p>Preventive measures aimed at safeguarding jobs and avoiding unemployment.</p>	Ministry of Economics and Labour
New Zealand	Work Track	<p>3-week programme providing job-search skills and techniques for jobseekers risking long-term unemployment.</p> <p>Targets 4 000 participants/year.</p>	Information provided directly to OECD

Country	Policy	Description	Source
United States	Trade Adjustment Assistance (TAA), 1962	<p>For trade-displaced workers meeting certain eligibility criteria, TAA provides unemployment benefits and re-employment assistance that are more generous than the schemes generally available to unemployed persons. A wage insurance scheme limited to older workers was recently added to TAA (see Panel G below), as well as a refundable tax credit for purchasing individual health insurance.</p> <p>See Box 1.3. for a fuller discussion of this programme and how it has evolved during the past four decades.</p>	Information provided directly to OECD and Kletzer and Rosen (2005).
B. Relocation and mobility grants			
Austria	Travel allowance	<p>Allowance paid to jobseekers who can not be placed in a reasonable job locally and are prepared to accept a employment requiring a lengthy commute. Allowance may include accommodation expenses and can not exceed EUR 183/month, less a deductible of EUR 61.</p> <p>In 2002, expenditure for this programme totalled EUR 1.5 million; 1 495 persons received travel allowance. A separate travel allowance for interviews also exists.</p>	<i>European Employment Observatory, 2002a</i>
Finland	Relocation Allowance	<p>Unemployed people can be granted relocation allowance if they are willing, on the advice of the employment authorities, to move to an area with a lack of labour in the field in which they are qualified.</p> <p>In 1997 a total of 12 500 allowances worth FIM 10 million were granted.</p>	Finish Ministry of Social Affairs and Health
France	Geographic Mobility Assistance (<i>L'Aide à la Mobilité Géographique</i>)	<p>Grants may be paid to those who accept a job over 25 km away from their residence or that requires a 2-hour daily round trip, expenses may be reimbursed up to EUR 1 897.</p> <p>Grants are made only to individuals offered a "permanent" contract of employment.</p>	Assédic, France
Germany	Mobility Allowances	<p>Pays expenses of up to EUR 300 for travel to take up job outside local area, provides travel and double household allowance of first 6 months of commuting between home and job outside local area. Pays removal costs for relocation to new residence outside local area if move takes place within 2 years of accepting job outside local area.</p> <p>EUR 224.3 million paid in mobility grants in 2002.</p>	Ministry of Economics and Labour

Country	Policy	Description	Source
Portugal	Geographic Mobility Incentives (<i>Incentivos à Mobilidade Geográfica</i>)	Incentives offered to unemployed persons accepting jobs more than 100 kilometres from their homes. Pays one off relocation grants of up EUR 5 000 and rental subsidies of up to EUR 416/month for up to 3 years. Subsidies also available to unemployed persons starting businesses.	Information provided directly to OECD and <i>Instituto do Emprego e Formação Profissional</i>
Sweden	Relocation grants (<i>Flyttbidrag</i>)	Grants offered to unemployed or workers at risk aged 25 and over. Grants cover removal or travel costs related to job search and starting a new job. Weekly travel allowance in connection with starting a new job can be granted for a 6-month period on a trial basis since 01/01/2001.	Information provided directly to OECD and Ministry of Industry, Employment and Communications
United States	Trade Adjustment Assistance	Covers up to 90% of “reasonable” moving expenses and a lump sum equivalent to three times the worker’s average weekly wage, up to a maximum payment of USD 1 200. Relocation allowances and job-search assistance totalled USD 17.7 million from 2001-2004.	Information provided directly to the OECD
C. Start-up grants			
Germany	Bridging Allowance	Subsidies paid to persons receiving unemployment benefits who launch a business. The grants are equivalent to continued unemployment benefits plus social security contributions for 6 months. Approximately 185 000 entries in 2004.	German Ministry of Economics and Labour
Germany	Ich-AG (I-Inc.)	Subsidies paid to persons receiving unemployment benefits who launch a business equalling: i) EUR 600 the first year; ii) EUR 365 the second year; and iii) EUR 240 the third year. Approximately 170 000 entries in 2004.	German Ministry of Economics and Labour
Finland	Start-up grants	Grants for expenses incurred during start-up phase of new venture. Grants average EUR 650/month for up to 10 months. 3 800 grant-aided businesses started in 2003 (about 25% of total start-ups). 80% continue activities after five years.	Finish Ministry of Labour

Country	Policy	Description	Source
France	Support for New Business Development, 1999	Helps jobseekers create or restart a company by providing (interest-free loans) payable over a period of 5 years with up to 18 months payment deferral. Loans are for a maximum of EUR 6 098 and require 5% co-financing. Measure introduced end-1999.	Information provided directly to OECD and <i>European Employment Observatory</i> , 2002b
Greece	Subsidy Programme for Entrepreneurs	Subsidies of up to EUR 8 400 paid over 12 months to unemployed persons. 35% of programme expenditure reserved for long-term unemployed. Priority is given to women. Programme to cover 7 500 entrepreneurs.	Information provided directly to OECD
Japan	Subsidies for New Business Started by Beneficiaries of Employment Insurance	Self-employment subsidies to persons who were unemployed at the time of launch and whose business has survived for at least 3 months. Grant covers up to 1/3 of start-up costs during 3 months. Began February, 2003; budget: JPY 3 084 million (the 2004 fiscal year).	Information provided directly to OECD
Korea	Early re-employment allowance	Workers re-employed before exhausting their unemployment benefits receive a lump sum payment equalling 50% of the remaining benefits.	Information provided directly to OECD and New Zealand Department of Labour
New Zealand	Enterprise Allowance	Funding to job seekers aiming to set up their own business. Allowance is delivered as a weekly subsidy (of up to NZD 214 per week) available for up to 52 weeks. Up to NZD 5000 can be capitalised to cover initial costs of setup. About 3 800 participants by 2002; 70% of these had not re-registered within one year.	Information provided directly to OECD and New Zealand Department of Labour
Portugal	FACE, 2004	Financial aid granted for creation of self-employment to unemployed, workers at-risk of joblessness or in firms undergoing restructuring, recovery or modernisation.	Information provided directly to OECD
Sweden	Business start-up grants	Living allowances made to jobless individuals wishing to start a business. Payments made during start-up phase for of 6 months, extendible once. Payable at same rate as training allowance. 7 371 average grants awarded monthly in 2002.	Information provided directly to OECD

D. Employment subsidies			
Country	Policy	Description	Source
Finland	Employment subsidies	Employment subsidies to private firms for creation of new jobs. Targeted at wide variety of jobseekers including long-term and older unemployed persons. In 2003, a total of 21 180 jobs were subsidised in the private sector.	Finnish Ministry of Labour
Germany	Wage subsidies for established firms	Employers receive subsidies for hiring unemployed persons from groups facing particular barriers to finding employment, including long-term unemployed, handicapped unemployed and low-qualified unemployed. Subsidies cover a share of wage costs and social security contributions, with the amount and duration of the subsidy varying significantly according to personal characteristics. Approximately 170 000 participants in 2004.	German Ministry of Economics and Labour
Germany	Wage subsidies for newly created firms	Small business start-ups (up to two years old and up to five employees) may receive subsidies for hiring unemployed persons who have been in receipt of unemployment benefits for at least three months. Subsidies cover 50% of wage costs and social security contributions for up to one year. Approximately 20 000 entries in 2004.	German Ministry of Economics and Labour
Greece	Subsidy Program for Enterprises, 2004	Subsidies to private enterprises to hire registered unemployed 18-65 year-olds. Subsidies of EUR 18/day are paid to firms (18 months for SMEs, 24 for large enterprises) hiring disadvantaged persons, including older workers, and EUR 14/day for other unemployed. Job creation target of 15 000.	Information provided directly to OECD
Japan	Special Subsidies for Hiring Displaced Workers	Pays JPY 600 000 to employer (700 000 in growing sectors) for each displaced worker, aged 30 to 60, dismissed by employers undergoing "readjustment". Budget: JPY 110 000 million. First subsidy paid January 2003.	Information provided directly to OECD
New Zealand	Job Connection	Provides wage subsidy of up to NZD 380/week for up to 52 weeks, to a maximum of NZD 11 000. Subsidy covers wage costs, transport allowance and some overheads. Aimed at long-term unemployed.	Information provided directly to OECD

E. Public Sector Job Creation			
Country	Policy	Description	Source
Germany	Structural Adjustment Measures (terminated)	<p>Aimed to create temporary employment for workers in areas where local labour markets were threatened by structural adjustment. Offered monthly wage replacement benefits of up to EUR 1 075 for a maximum of 36 months, 60 if worker is aged over 55.</p> <p>Nearly 70 000 recipients in 2002. Operated primarily in eastern states where use peaked in 1999 with 180 292 beneficiaries.</p>	<i>European Employment Observatory, 2003a</i>
Italy	Socially Useful Work, 1993	<p>Public-sector job created in cultural heritage, environ-mental protection, urban renewal, research, vocational training and retraining, support for small and medium-sized enterprises in the form of services and help with marketing and exports, and personal services. The activities must be extraordinary and thus fixed-term in nature. Target group includes redundant workers and long-term unemployed.</p> <p>Under Legislative Decree No. 486/1997 refusal to do socially useful work may lead to the suspension of unemployment benefits.</p>	<i>European Employment Observatory, 1997</i>
F. Re-employment Bonus			
Japan	Support for early re-employment	<p>Support pays 40% of remaining basic allowance to those re-employed before 2/3 of prescribed term of benefits is exhausted. 30% is paid to those re-employed before 1/3 is exhausted.</p> <p>Began March 2003.</p>	Information provided directly to OECD
Korea	Early re-employment allowance	Lump-sum payment of 50% of the remaining benefits to unemployment benefit recipients starting employment (20 or more hours per week) before one-half of the maximum benefit duration has elapsed.	Information provided directly to OECD
United States	Re-employment bonus experiments, 1984-1996	<p>Pilot re-employment bonus programmes in four states with random assignment. The programmes offered of various rules concerning bonus qualification criteria and amounts and were intended to test whether the reduction in standard unemployment insurance benefits created by re-employment bonuses could exceed the cost of paying them.</p> <p>Results for three out of four of the states indicated that the bonuses tested were not "cost effective".</p>	Meyer (1995)

G. Wage insurance			
Country	Policy	Description	Source
Canada	Earnings Supplement Project, 1995-1996	<p>Pilot programme with random assignment offering earnings supplements to displaced workers, who started new full-time jobs at wages inferior to those on their previous job within 26 weeks of being laid-off. Payments equalled 75% of the earnings difference up to a maximum of CAD 250.</p> <p>Results indicate that wage insurance increased the percentage of unemployment benefit recipients who found jobs by 4.4 percentage points.</p>	Bloom <i>et al.</i> , 1999
France	Agreement on Temporary Digressive Allowance (<i>Convention d'allocations temporaires dégressives</i>), 1999	<p>Workers involved in a mass layoff may be paid a subsidy covering up to 75% of the difference in earnings between their new job and the previous, one up to a maximum monthly payment of EUR 153 (EUR 229 should the former employer be unable to make the contribution foreseen by the convention). This subsidy is available for a maximum of two years.</p> <p>EUR 4.57 in 2001.</p>	Information provided directly to OECD
Germany	Wage insurance program (Entgeltsicherung für ältere Arbeitnehmer), 2003	<p>Job losers aged 50 years and older becoming re-employed in a job paying a lower wage than on the previous job qualify for two types of earnings supplements: i) a payment of 50% of the wage gap between the prior and current job; and ii) pension contributions are supported up to 90% of the previous level. Both supplements are tax free and are not time limited.</p>	Information provided directly to OECD and <i>European Employment Observatory</i> , 2003b
United States	Alternative Trade Adjustment Assistance (ATAA), 2002	<p>Trade-displaced workers aged 50 years and older who are certified as being eligible for Trade Adjustment Assistance (TAA, see Panel A above) may instead opt for ATAA. For workers becoming re-employed on a full-time job within 26 weeks of having been laid off, ATAA payments cover 50% of any wage gap between the earnings on the new and old jobs for a period extending until 2 years after the trade-related layoff. Payments are subject to monthly earnings not exceeding USD 50 000 and cumulative ATAA payments not exceeding USD 10 000. Workers receiving ATAA are also eligible for a refundable tax credit for purchasing health insurance.</p> <p>To date, very little use has been made of the ATAA.</p>	Information provided directly to OECD and Kletzer and Rosen (2005).

BIBLIOGRAPHY

- Amiti, M. and S.-J. Wei (2005a), "Fear of Service Outsourcing: Is It Justified?" *Economic Policy*, No. 42, pp. 308-347.
- Amiti, M. and S.-J. Wei (2005b), "Service Outsourcing, Productivity and Employment", IMF Working Paper, Washington, D.C., forthcoming.
- Baily, M., G. Burtless and R. Litan (1993), *Growth with Equity: Economic Policymaking for the Next Century*, The Brookings Institution, Washington, D.C.
- Bednarzik, R.W. (1993), "An Analysis of U.S. Industries Sensitive to Foreign Trade, 1982-87", *Monthly Labor Review*, Vol. 116, No. 2, February, pp. 15-31.
- Bednarzik, R.W. (2001), "The Importance of "Flexible" Markets in Explaining U.S. and European Job Growth and Unemployment Differentials", in *Labor Market Flexibility: Proceedings for a Joint United States and European Union Services*, U.S. Department of Labour, Bureau of International Labour Affairs, Washington D.C., pp. 6-24.
- Bentivogli, C. and P. Pagano (1999), "Trade, Job Destruction and Job Creation in European Manufacturing", *Open Economies Review*, No. 10, pp. 165-184.
- Betcherman, G., K. Olivas and A. Dar (2004), "Impacts of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries", World Bank, Social Protection Discussion Paper Series, Washington, D.C.
- Bloom, H., S. Schwartz, S. Lui-Gurr and S.-W. Lee (1999), "Testing a Re-employment Incentive for Displaced Workers: The Earnings Supplement Project", Social Research and Demonstration Corporation.
- Brainard, L. and R. Litan (2004), "'Offshoring' Service Jobs: Bane or Boon – and What to Do?", Policy Brief No. 132, Brookings Institution, Washington, D.C.
- Burgess, S. and M. Knetter (1998), "An International Comparison of Employment Adjustment to Exchange Rate Fluctuations", *Review of International Economics*, Vol. 6, No. 1, pp. 151-163.
- Burtless, G. and H. Schaefer (2002), "Earnings Insurance for Germany", Policy Brief No. 104, Brookings Institution, Washington, D.C.
- Campa, J. and L. Goldberg (2001), "The Evolving External Orientation of Manufacturing: A Profile of Four Countries", *Federal Reserve Bank of New York Economic Policy Review*, Vol. 3, No. 2, pp. 53-81.
- Dar, A. and I.S. Gill (1995), "Evaluations of Retraining Programs in OECD Countries: Implications for Economies in Transition", World Bank, Washington, D.C.

- Dar, A. and Z. Tzannatos (1999), "Active Labor Market Programs: A Review of the Evidence from Evaluations", World Bank, Washington, D.C.
- Davis, S.J. and J. Haltiwanger (2001), "Sectoral Job Creation and Destruction Responses to Oil Price Changes", *Journal of Monetary Economics*, No. 48, pp. 465-512.
- European Employment Observatory (1997), *Basic Information Report, Italy 1997*, Birmingham, available from: <http://www.eu-employment-observatory.net/en/publications/bir/>
- European Employment Observatory (2002a), *Basic Information Report, Austria 2002*, Birmingham, available from: www.eu-employment-observatory.net/en/publications/bir/
- European Employment Observatory (2002b), *Basic Information Report, France 2002*, Birmingham, available from: www.eu-employment-observatory.net/en/publications/bir/
- European Employment Observatory (2002c), *Basic Information Report, Finland 2002*, Birmingham, available from: www.eu-employment-observatory.net/en/publications/bir/
- European Employment Observatory (2003a), *Basic Information Report, Germany 2003*, Birmingham, available from: www.eu-employment-observatory.net/en/publications/bir/
- European Employment Observatory (2003b), *Review: Spring 2003*, available from http://europa.eu.int/comm/employment_social/publications/2004/kean03001_en.html.
- Evans-Klock, C., P. Kelly, P. Richards and C. Vargha (1998), "Worker Displacement: Public Policy and Labour-Management Initiatives in Selected OECD Countries", ILO Employment and Training Papers, No. 24, Geneva.
- Fay, R.G. (1996), "Enhancing the Effectiveness of Active Labour Market Policies: Evidence from Programme Evaluations in OECD Countries", Labour Market and Social Policy Occasional Papers, No. 18, OECD, Paris.
- Freeman, R. and A. Revenga (1999), "How Much Has LDC Trade Affected Western Job Markets?", Chapter 1 in *Trade and Jobs in Europe —Much Ado about Nothing?*, in Mathias Dewatripont,, André Sapir and Khalid Sekkat (eds.), Oxford University Press, N.Y.
- Ghose, A. (2003), *Jobs and Incomes in a Globalizing World*, ILO, Geneva.
- Goldberg, L. and J. Tracey (2000), "Exchange Rates and Local Labor Markets", in Robert Feenstra (ed.), *The Impact of International Trade on Wages*, NBER Conference Volume, University of Chicago Press, Chicago, pp. 269-308.
- Golberg, L., J. Tracey and S. Aaronson (1999), "Exchange Rates and Employment Instability: Evidence from Matched CPS Data", *The American Economic Review*, Vol. 89, No. 2, Papers and Proceedings of the One Hundred Eleventh Annual Meeting of the American Economic Association, pp. 204-210.
- Gourinchas, P.-O. (1998), "Exchange Rates and Jobs: What do we learn from Job Flows?", NBER, *Macroeconomics Annual 1998*, the MIT Press, pp. 153-204.

- Gourinchas, P.-O. (1999), "Exchange Rates do Matter: French Job Reallocation and Exchange Rate Turbulence, 1984-1992", *European Economic Review*, No. 43, pp. 1279-1316.
- Haveman, J.D. (1998), "The Influence of Changing Trade Patterns on Displacements of Labor", *The International Trade Journal*, Vol. XII, No. 2, Summer, pp. 259-292.
- Jacobson, L., R. LaLonde and D. Sullivan (1993), *The Costs of Worker Dislocation*, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI
- Jacobson, L., R.J. LaLonde and D. Sullivan (2004), "The Impact of Community College Retraining on Older Displaced Workers: Should We Teach Old Dogs New Tricks?", Harris School Working Paper, Series 04.12, Chicago.
- Jamet, S. (2005), "De l'impact sectoriel à l'effet macroéconomique des allègements de cotisations sociales", *Revue Française d'Économie*, Vol. 19, No. 3, pp. 57-90.
- Klein, M., S. Schuh and R.K. Triest (2003), *Job Creation, Job Destruction, and International Competition*, W.E. Upjohn Institute, Kalamazoo, MI.
- Kletzer, L.G. (2001), *Job Loss from Imports: Measuring the Loss*, Institute for International Economics, Washington, D.C.
- Kletzer, L.G. (2002), *Imports, Exports and Jobs: What Does Trade Mean for Employment and Job Loss?*, W.E. Upjohn Institute, Kalamazoo, MI.
- Kletzer, L.G. (2003), "Trade-related Job Loss and Wage Insurance: A Synthetic Review", Working Paper 02-28, Santa Cruz Center for International Economics, <http://repositories.cdlib.org/sccie/02-28>
- Kletzer, L.G., and W.L. Koch (2004), "International Experience with Job Training: Lessons for the U.S.", in C. O'Leary, R. Straits and S. Wandner (eds.), *Job Training Policy in the United States*, W. E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Kletzer, L.G. and R.E. Litan (2001), "A Prescription to Relieve Worker Anxiety", Brookings Institution, Policy Brief No. 73, Washington, D.C.
- Kletzer, L.G. and H. Rosen (2005), *Easing the Adjustment Burden on US Workers*, Institute for International Economics, Washington, D.C.
- Kongsrud, P.M. and I. Wanner (2005), "The Impact of Structural Policies on Trade-related Adjustments and the Shift to Services", OECD Economics Department, Working Papers, No. 427, Paris.
- Kucera, D. and W. Milberg (2002), "Trade and the loss of manufacturing jobs in the OECD: New factor content calculations for 1978-1995", International Institute for Labour Studies, Discussion Paper 135/2002, ILO, Geneva.
- Lawrence, R.Z. and R.E. Litan (1986), *Saving Free Trade: A Pragmatic Approach*, The Bookings Institution, Washington, D.C.

- Leigh, D. (1995), *Assisting Workers Displaced by Structural Change, an International Perspective*, W.E Upjohn Institute for Employment Research, Kalamazoo, MI.
- Levinsohn, J. (1999), "Employment Responses to International Liberalization in Chile", *Journal of International Economics*, No. 47, pp. 321-344.
- Martin, J.P. and D. Grubb (2001), "What Works and for whom: A review of OECD Countries' Experiences with Active Labour Market Policies", *Swedish Economic Policy Review*, Vol. 8, No. 2, Fall, pp. 9-56.
- McKinsey Global Institute (2004), "Can Germany Win from Offshoring?", McKinsey & Co., Washington D.C.
- Meyer, B.D. (1995), "Lessons from the U.S. Unemployment Insurance Experiments", *Journal of Economic Literature*, Vol. 33, No. 1, pp. 91-131.
- OECD (1993), *Employment Outlook*, Paris.
- OECD (1994), *The OECD Jobs Study: Evidence and Explanations*, Paris.
- OECD (1997), *Employment Outlook*, Paris.
- OECD (1999), *Implementing the OECD Jobs Strategy: Assessing Performance and Policy*, Paris.
- OECD (2002), *Employment Outlook*, Paris.
- OECD (2003a), *Employment Outlook*, Paris.
- OECD (2003b), *The Sources of Economic Growth in OECD Countries*, Paris.
- OECD (2004), *Employment Outlook*, Paris.
- OECD (2005a), *Employment Outlook*, Paris.
- OECD (2005b), *Trade and Structural Adjustment: Embracing Globalisation*, Paris (forthcoming).
- OECD (2005c), *Enhancing the Performance of the Services Sector*, Paris (forthcoming).
- OECD (2005d), *Ageing Populations: High Time for Action*, Background paper prepared for the Meeting of G8 Employment and Labour Ministers, London, 10-11 March, (<http://www.oecd.org/dataoecd/61/50/34600619.pdf>).
- O'Leary, C.J., P.T. Decker and S.A. Wandner (2005), "Cost-Effectiveness of Targeting Reemployment Bonuses," *Journal of Human Resources*, Vol. 40, No. 1, pp. 270-279.
- Park, N., B. Power, W.C. Riddell and G. Wong (1996), "An Assessment of the Impact of Government-Sponsored Training", *The Canadian Journal of Economics*, Vol. 29, pp. S93-S98.
- Revenga, A.L. (1992), "Exporting Jobs? The Impact of Import Competition on Employment and Wages in US Manufacturing", *Quarterly Journal of Economics*, Vol. 107, No. 1, pp. 255-284.

- Sachs, Jeffery and H.J. Schatz (1994), "Trade and Jobs in U.S. Manufacturing", *Brookings Papers on Economic Activity*, Vol. 1, Washington, D.C., pp. 1-84.
- Schoepfle, G. (1982), "Imports and Domestic Employment: Identifying Affected Industries", *Monthly Labor Review*, Vol. 105, No. 8, pp. 13-26.
- Treffer, D. (2001), "The Long and Short of the Canada-U.S. Free Trade Agreement", NBER Working Paper 8293, Cambridge, MA., May.
- Wacziarg, R. and J.S. Walack (2004), "Trade Liberalization and Intersectoral Labor Movements", *Journal of International Economics*, Vol. 64, Issue 2, pp. 411-439.
- Winter-Ebmer, R. (2003), "Coping with a Structural Crisis: Evaluating an Innovative Redundancy-retraining Project," IZA Discussion Paper No. 277, Bonn.
- Wood, A. (1994), *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Drive World*, Clarendon Press, Oxford.