

**The economic role of migrants in the production of  
tradeables and nontradeables: the case of Austria**

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**Abstract:** Globalisation has been associated with increased international mobility of capital but, partly due to legal restrictions, it is not often associated with labour mobility. However, free labour mobility and free trade are substitutes in respect of tradeable goods and services. The Austrian migration system channels migrants into industries which produce tradeables, e.g. manufacturing with a low capital to labour ratio, in particular, labour intensive industries like clothing, leather and textiles; and also into activities which are non-tradeables, e.g. tourism, construction and personal, health and domestic services. In the course of the 1990s, the rise in labour mobility lagged as industries employing a high proportion of migrants in the production of tradeable goods declined behind the growth in international trade of goods and services. Technological developments, the reduction in transport costs as well as improved processes for the production capacities of less developed trading partners resulted in a shift in the production of tradeable goods. The structure of migrant labour changed as a consequence and labour mobility lost momentum. Physical labour mobility is necessary only where services are linked directly to the consumers, for example, nursing or tourism industry, or where a particular type of labour is linked to direct capital investment, for example, highly skilled labour which move with multinational companies. Recent developments especially in communications technology, tend to promote mobility of services without the need for labour mobility. As long as capital, technology and managerial skills are mobile, labour may remain in the country of origin, e.g. in the case of Indian computer programmers. Both labour mobility and trade in goods and services will tend to produce a convergence in the pay rates of the countries concerned. (Heckscher-Ohlin) Therefore, forces which promote international movement of goods and services, may be expected to produce a tendency for convergence of pay rates even without a movement of labour.

### **Globalisation, trade and migration: an introductory note**

Globalisation has been associated with increased international mobility of capital but less so of labour (Solimano, 2001). This may be the result of a general notion that commodity trade is in the main a win-win situation, and migration as giving rise to increased inequalities, of producing winners and losers. This view is promoted by the fact that countries tend to impose restrictions on labour mobility while at the same time removing barriers to the free flow of goods and services across borders (GATS) thus discriminating against labour mobility in favour of international trade. This may be a contributory factor to the rising number of illegal migrants who endeavour to improve their economic situation by migrating even if it means working in the informal sector (Ghosh, 1998/99). The existence of informal sector production of goods and services and the creation of jobs and incomes in the non-observed economy, both in developing and developed countries (OECD, 2002, ILO, 2002)<sup>1</sup>, may thus promote illegal migration.

The practice for official statistics to include only flows of goods, services and workers in the formal sector, gives international trade a higher weight than warranted. (Biffi, 1999A, 2002) Nonetheless, the general picture is reasonably accurate. This raises the question whether the policy assumption that trade and migration have different impacts on economic growth, the labour market, prices and income distribution is valid, despite the theoretical proposition that they are in the main substitutes and thus can be expected to have similar impacts. If the latter is true, the encouragement of a freer movement of labour for humanitarian and social reasons - illegal migrants are not subject to the legal and social protection of regular migrants - can be justified on economic grounds.

Another question to be followed up is the impact on the composition and growth rate of international trade and labour migration, of the transfer of different parts of the production and distribution process of a final product to different regions of the world, e.g., from the EU to CEECs, to take advantage of the comparative advantage of alternative production sites and of different rates of technological change. This is often referred to as multinationalisation of production or disintegration of production processes, under which values are added at each stage of production in the various production sites and in the marketing of the product. Multinationalisation of production of goods and services is an integral element of globalisation, (Sachs & Warner, 1995, Schulze & Heinrich, 1999, Sachs, 1998); it may help explain the loss of momentum in demand pull migration. It signifies that physical labour mobility continues to be necessary only where services are linked directly to the consumers, for example, nursing or tourist services, or where a particular type of labour is linked to direct capital investment, for example, highly skilled labour which move with multinational companies.

In what follows, I first focus on the theoretical and empirical research results of the impact of trade and migration on economic growth and the labour market, followed by an overview of the development of international trade and migration in Austria in the 1990s. This is the period in which competition

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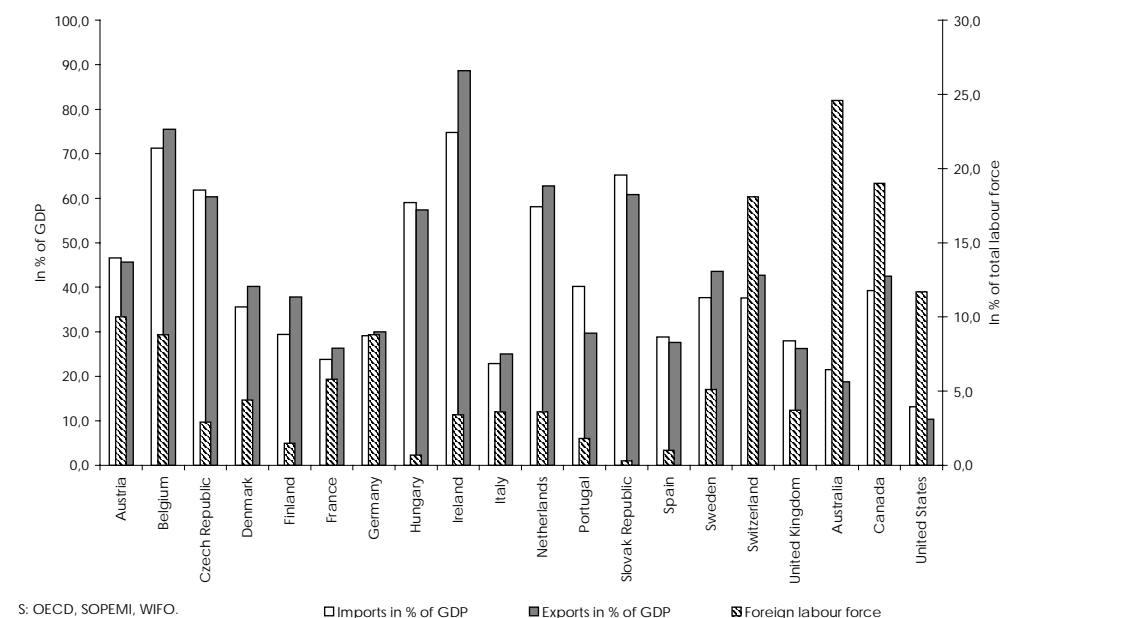
<sup>1</sup> The ILO claims that the bulk of new employment in recent years, especially in developing and transition countries, has been in the informal sector (ILO, 2002, 1).

increased abruptly, on the one hand from the EU - as a result of EU membership in 1995 - and on the other from CEECs - as a result of the break-down of the Iron Curtain. Austria provides a good case study for an analysis of the role of migration and international trade in economic growth and the impact on the labour market, because the main socio-economic forces associated with regional integration with the EU and the opening up of the transition countries also feature in the international economic integration commonly referred to as globalisation.

Austria is a small open economy which owes much of its prosperity to its openness to international trade. In 2001, about 50 percent of GDP went into the production of goods and services for exports<sup>2</sup>. At the same time, some 11 percent of the work force were migrants. This puts Austria amongst the leading European countries in terms of dependence on international trade and migrant labour.

When analysing international labour mobility one should, however, not forget that it constitutes only a minor part of immigration because it refers only to that part of immigration which officially adds to the workforce. This represents about 40 percent in Switzerland, 30 percent in Germany, Austria and France and a mere 20 percent in the traditional immigration countries Canada and Australia. Family reunion and refugee inflows account for the major migration flows into OECD-countries in the 1980s and 1990s. Refugees and asylum seekers are often restricted from accessing the formal labour market thus contributing to the rising importance of informal work.

*Graph 1: Imports and exports as a percentage of GDP and foreign labour in % of total labour force in selected OECD countries (1999)*



<sup>2</sup> In the wake of liberalisation of trade in the first half of the 1990s industry restructuring gained momentum in Austria and the value of imports and exports of goods and services started to diverge. The trade deficit increased somewhat as a result - it rose to on average 5 percent of GDP. In the second half of the 1990s new trade patterns had evolved and the trade deficit declined and settled at the usual long-term level of 3 percent.

### **The role of trade and migration in economic growth: theoretical perspective**

Traditional trade theory predicts that countries specialise in the production of those goods in which they have a comparative cost advantage (Ricardian model of comparative advantage see *Krugman*, 1998) or in which they have a relative abundance of factor endowment (Heckscher-Ohlin model see *Wood*, 1994A); trade allows every trading partner to increase his production and consumption possibilities and thus to promote economic growth and wellbeing. *Ben-David* (1994, 1996) argues that free trade between countries like the EU member states with equal economic development levels causes incomes to converge due to a rapid transfer of modern technology. The new trade theories of the 1980s argue that, akin to different factor endowments, trade may also be caused by differences in technological development levels of countries. According to that theory, less developed countries will specialise in the production of mature goods, with standardised production processes and large inputs of low-skilled labour, while more developed countries specialise in human capital intensive and high technology intensive production.

These theories can explain trade patterns of an inter-industry type, i.e., between countries with differing factor endowments, production technologies and a relative cost advantage (the relative productivity and wage situation between the trading partners). They are not well suited to explain intra-industry trade, i.e., trade of goods which fall in the same product category between countries with similar endowments and technology, which is a major component of trade within EU countries, i.e., of countries with more or less the same economic development level. According to modern trade theory economies of scale and product differentiation provide sufficient incentives (conditions) for intra-industry trade. Industries with faster productivity growth tend to be those with higher output growth, an empirical relationship referred to as Verdoorn's Law (*Verdoorn*, 1949)<sup>3</sup>.

To sum up, international trade in commodities may be caused by: an unequal relative factor endowment (Heckscher-Ohlin), unequal technological development levels, increasing returns to scale (*Melvin*, 1969, *Krugman*, 1980), and imperfect competition on goods and/or factor markets (*Melvin & Warner*, 1973, *Markusen*, 1981, 1983<sup>4</sup>, *Krugman*, 1991).

*Mundell* (1957) was the first to clarify that factor mobility and international trade are only substitutes in the case where factor proportions, and thus international factor prices, differ between countries, i.e., the Heckscher-Ohlin case. Relative factor endowments can, in principle, be modified by migration and/or FDI. If, for example, exports are seen as the vehicle for economic growth, in the absence of an adequate

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<sup>3</sup> The direction of causality is still disputed. One explanation for this relationship may be that faster productivity growth may be passed on to the consumer through lower prices thus allowing faster demand/output growth (*Salter*, 1969).

<sup>4</sup> *Markusen* points out that factor mobility may limit monopoly power on product markets, but also of labour markets - a point of particular relevance in the context of Eastern European enlargement of the EU. Services mobility and thus cross-border trade affects the goods market and thus impacts on the production of goods for local demand - in particular housing industry. By that token it also reduces the monopoly power of construction workers, a highly unionised industry in Austria, which has so far profited from their almost exclusive production for local demand.

local labour supply, migrants may be employed in the production of export goods in order to preserve the competitiveness of the export industry (commodity price or cost competitiveness). Migration would, therefore, ensure that the export industry is well endowed with those factors of production, which are intensively used in the production of export goods<sup>5</sup>. Thus, according to theory, migrants will tend to flow disproportionately into export oriented industries which are using labour intensive technology in the production of goods. *Markusen* (1983) points out that international differences in factor prices, e.g., wages, generate factor movements, e.g., labour migration, which — if employed in the tradeable goods production sector — result in an increase of exports<sup>6</sup>.

If less developed countries manage to expand their production capacity, e.g., in the case of mature industries like textiles and clothing, the transfer of production sites from high-wage countries to low wage countries will ensue, if transport costs warrant such a transfer. Then commodity trade will be the major vehicle for the satisfaction of the demand for mature goods. This would result in a decline in employment in the mature industry in the high-wage country and an increase in the low-wage country. This is the counterpart to the point first made by *Kaldor* (1981) that trade between unequal partners may cause divergence in incomes if trade shifts the structure of production in the developed country towards industries with high growth potential (knowledge intensive production) and in the less developed countries to industries with low growth potential.

The modern economic geography models of the 1990s focus on the proposition that trade and factor mobility are complements (*Krugman*, 1991). In those models factor movements often lead to divergence in factor and even in goods prices. This is the case, for example, of highly skilled scientists moving into a region, e.g., Silicon Valley, because of the potential for increasing returns. The concentration of highly skilled and highly paid scientists in Silicon Valley contributed to a widening of factor prices between regions. Another case is when highly skilled labour (management) moves with FDI for example from the Western developed countries to Asia to promote export led growth (*Pang Eng Fong & Linda Lim*, 1996, *Lim*, 1980). The establishment of export processing zones in Mexico is of a similar nature in that FDI and management are complements and are put in place in order to tap the locally abundant resources of un- and semiskilled labour which are employed intensively in the production of export goods (see *Sassen*, 1988, 2002). In that case, factor mobility is a prerequisite for the establishment of the production potential which will result in increasing trade up to the point where specialisation has reached a free trade equilibrium, i.e., a point where an increase in factor trade will

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<sup>5</sup> Thus migration changes the relative factor endowments, a point *Rybczynski* (1955) made in his seminal paper, in which he points out that resource changes effect relative commodity prices. Factor price equalisation will occur if the trading partners specialise. Only in that case will the trading partners be well endowed with the factors used intensively in the production of export goods.

<sup>6</sup> Another way of increasing exports is to invest in new technology, i.e., to increase the capital input in the production of export goods. In that case productivity of labour increases. Capital deepening raises labour productivity, which promotes exports by lowering relative commodity prices.

lead to a reduction in commodity trade and vice versa<sup>7</sup>. Thus, in the case of differences in production technology and economies of scale, trade in goods and factors are complements rather than substitutes.

While it has been clarified what role migration plays in the promotion of commodity trade and thus in the production of tradeables, the question remains to be resolved why migrant labour is employed in the production of non-tradeables. Non-tradeables do not face competition from abroad but only from within the country. Industries concerned are housing, private sector personal and consumer oriented services and public sector services, like education, health and welfare services. The pressure for keeping costs down comes in the case of public goods from budgetary constraints<sup>8</sup>, in the private sector from limited consumer demand. Personal services tend to have limited possibilities for productivity growth in the technical sense, i.e., the ratio of inputs to outputs — e.g., the student/teacher ratio, the patient/nurse ratio or the consumer/hairdresser ratio — cannot be reduced by technology to the same extent as business oriented services or the production of manufactured goods, if the quality of the service is to be preserved. Thus, the costs of these labour intensive services relative to manufactured goods tend to increase over time as wage disparities are not to exceed conventional social norms of fairness. In those occupations in which wages do not rise in line with the rest of the economy, labour supply may become scarce. In order to ensure sufficient labour supply, labour may be imported from abroad, i.e., migrant labour represents a means to keep costs of non-tradeables low. Thus, migrants can be expected to be employed dis-proportionately in low wage/low skilled jobs in the area of non-tradeables, e.g., cleaning and domestic services.

### **Empirical evidence of the impact of trade and migration on the labour market**

Many factors influence labour market outcomes, and to isolate the effect of trade and migration on labour market outcomes is not an easy task. Important in the analysis of the impact of trade on the labour market is the impact of trade on industry structure and thus on the demand for labour. In an open economy, changes in the allocation of labour to the various industries reflect changes in the structure of production of tradeables and non-tradeables; while changes in trade reflect changes in the structure of demand for goods and services. Changes in the composition of traded goods and services as well as changes in net trade have, thus, an impact on the labour market. The effect of migration and trade on the labour market relates to the impact on employment, wages and unemployment, but not from a macroeconomic but microeconomic point of view. The centre of concern is with industry restructuring and reallocation of labour from declining to growing industries, with intermittent periods of unemployment, wage variability, retraining and geographical relocation of labour. Such adjustment costs may outweigh the gains from trade.

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<sup>7</sup> Factor price equalisation will not occur as long as the trading partners are diversified.

<sup>8</sup> Governments face budgetary pressure from expenditure in competing programmes while being constrained politically from increasing taxes or incurring budget deficits.

A large body of literature asserts (see *Helpman and Krugman, 1985, Haynes et al., 2002*) that the impact of trade on labour markets differs in the case of inter- and intra-industry trade<sup>9</sup>. According to this literature, the risk of creating unemployment or lowering wages, is higher under increased inter-industry trade, i.e., a demand shift of labour away from an industry, than intra-industry trade. The argument is that skills of workers tend to be sector specific; if employment declines in a sector due to a transfer of production to another country, the laid off workers in the declining industry will find it hard to fully transfer their skills to another, growing industry. They may be confronted with various options, e.g., downskilling and thus wage declines or up- or re-skilling and thus investment in human capital.

*Lovely and Nelson (2002)* show, however, that it is difficult to separate inter- and intra-industry trade and their effect on the labour market. Pure intra-industry trade may generate inter-industry trade via supply and demand adjustments. Take as an example the relocation of textile and clothing production from Austria to Bohemia in the first half of the 1990s. It was planned as an element in a value chain, Austria investing heavily in the artistic design part of textiles, in computer aided cutting of cloth, and marketing of the final product at home — thus promoting economic and job growth in Austria in business oriented services — and transferring the labour intensive stages of production to Bohemia — thus dismantling production entities (production equipment and machines) and relocating them to Bohemia<sup>10</sup>. Austria's value share of the final product may have remained as high as it was before the transfer of production. The relative final goods price has declined as a result of trade liberalisation and specialisation. Given a certain price elasticity of demand for the final product, a positive income effect ensues, which may raise domestic demand. Thus, final goods demand may shift and affect in turn labour allocation in the production of goods and services. The latter point makes clear that the changing pattern of trade cannot fully explain the reallocation of labour in the whole economy and not even in the tradeable sector, basically because of price and income elasticities of domestic demand.

An explanation for the view that the labour adjustment costs of intra-industry trade are lower compared to inter-industry trade is that there is greater homogeneity of skills of workers within industries than between industries (*Lundberg & Hansson, 1986*), i.e., wage differentials, which can be taken as an indicator for labour specificity, are larger between than within industries. This result has to be modified, however. *Haynes et al. (2002)* show that workers moving within industries fare no better nor worse than workers moving between industries as long as no occupational change is involved. Since a move between industries is more often linked to occupational change than intra-industry mobility, the adjustment cost of the latter is not as high on average. This explains why inter-industry trade is said to cause higher wage variability and unemployment than intra-industry trade, assuming that labour redundancy in the latter is transient.

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<sup>9</sup> The seminal paper was from *Balassa (1966)* who saw the reason for the smooth adjustment of the EEC-countries to greater economic integration in trade expansion taking mainly the form of intra-industry trade (smooth adjustment hypothesis).

<sup>10</sup> In Austria, job opportunities were created in occupations in which the traditional skills of textile and clothing workers are not of much use. Thus the laid off workers bore the negative adjustment costs - or the public sector by subsidising their investment in re- and upskilling.



Trade in goods and services impacts on changes in labour demand, migration on the other hand affects labour supply. While migration is to a certain extent demand driven, also autonomous forces promote migration, e.g., family reunion and refugee movements. The skills of the latter tend to be below average and thus augment the un- and semiskilled domestic labour supply. Migration research indicates that migration may contribute to a rise in unemployment and to a widening of wage differentials; this is the case in which migrants are concentrated in skills/occupations which are facing a decline in relative demand, i.e., if labour supply growth as a result of immigration outpaces labour demand growth in those specific skill segments (*Borjas, 1990, Stalker, 1994, Faini, 1999 et al.*). *Borjas, Freeman and Katz (1992)* point out that the large share of new immigrants with less than high school education in the 1980s and the concentration of the trade deficit in industries which intensively employ unskilled labour (import substitution)<sup>11</sup> have contributed to the declining earnings and employment opportunities of unskilled workers in the US. They estimate that 30 percent to 50 percent of the decline in the weekly earnings of unskilled workers in the 1980s can be attributed to trade and immigration flows. These results are consistent with research into the effect of trade on earnings and employment on industry level (*Freeman and Katz, 1991, MacPherson & Stewart, 1990*), but contrast with research results of labour economists (*Butcher & Card, 1991*, for a literature survey see *Pollan, 2000*). The latter tend to underestimate the labour market effects of immigration because they tend to focus on segments of the labour market rather than the change in economy wide factor endowments.

*Krugman (2002)* points out, however, that America's widening income differentials cannot be attributed to the combined workings of growing international trade and skill biased technological change only but rather to changed social norms, in particular a change in corporate culture<sup>12</sup>. *Krugman* in effect says that wage differences in a country are not so much the result of differences in labour productivity and thus the result of economic forces of demand and supply but rather of social norms, which set limits to inequality.

To sum up, the effect of migration on the labour market depends on the occupational and skill mix of the migrants. If they contribute to a larger labour supply increase in certain skill segments or occupations (supply push) than warranted by demand growth (demand pull) they lead to a widening of wage differentials and/or unemployment; the weight of one or the other depends on the degree of wage rigidities, i.e., monopoly power, in certain sectors of the labour market.

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<sup>11</sup> Imported goods may be substituted for domestically produced goods thus driving the least efficient producers of that good in the domestic market out of business. Thus, as the share of imports in a particular goods market rises, productivity of production increases with the usual detrimental effect on employment and earning opportunities in the production of that traded good.

<sup>12</sup> Economists are only starting to analyse the effect of a changeover from managerial capitalism to investor capitalism - a rise of institutional investors - since the 1980s on economic growth and income inequality.

### **The role of trade and migration in economic growth: the case of Austria**

The Austrian migration system channels migrants into industries which produce tradeables, e.g., manufacturing with a low capital to labour ratio, in particular, labour intensive industries like clothing, leather and textiles as well as tourism; and also into activities which are non-tradeables, e.g., construction, personal, health and domestic services. The economic rationale for the employment of migrant labour differs as between the production of tradeables and non-tradeables.

In the following, I first analyse the development of labour migration and trade in goods and services in Austria<sup>13</sup>. I focus on the rising growth rates of trade and migration in the late 1980s and early 1990s as Austria's economy became increasingly internationalised in the wake of the opening up of CEECs to international trade on the one hand and the integration of Austria into the EU as a member state on the other. Secondly, I deal with the changing composition of imports/exports of goods and services resulting from changes in the competitive position of Austria in the new international setting. I then proceed to the deployment of migrant labour on export oriented industries on the one hand and industries focusing on the production of non-tradeables on the other. The latter serves as a starting point for the research into the economic rationale for the employment of migrant labour and the changing context of Eastern European enlargement of the EU.

The rapid catching up process of the neighbouring countries in productivity and wages (*Havlik*, 1998) suggests that regional socio-economic integration largely takes the form of trade in goods and services, but migrant labour also plays an important role. Labour migration from the neighbouring countries is becoming increasingly specialised as is production in goods and services in a quest to maximise economic and productivity growth in Austria and the neighbouring countries. Productivity growth is linked to specialisation on either side of the border, reflected in increased inter- and intra-industry trade. The impact on the labour market, in particular on employment and wage growth, differs as specialisation takes the road of increased inter-industry trade rather than intra-industry trade.

The skill composition of labour, in particular migrant labour, plays a key role in the regional integration of Austria. While migrants from the EU and CEECs tend to work in occupations with an above average skill content, migrants from the traditional source countries, former Yugoslavia and Turkey, continue to work dis-proportionately in low skill/low wage jobs (see *Biffel et al.*, 2001). A theoretical underpinning for this development is proposed together with an outlook for future trends in trade and migration with CEECs.

### **Substantial rise in migration and trade in Austria in the late 1980s and 1990s**

In Austria the international economic and political environment has changed at the end of the 1980s as a result of the opening up of the neighbouring CEECs to international trade and again in the mid 1990s in the wake of the integration of Austria into the EU. Both factors increased competition suddenly and significantly, the former in labour intensive export industries — in particular consumer goods

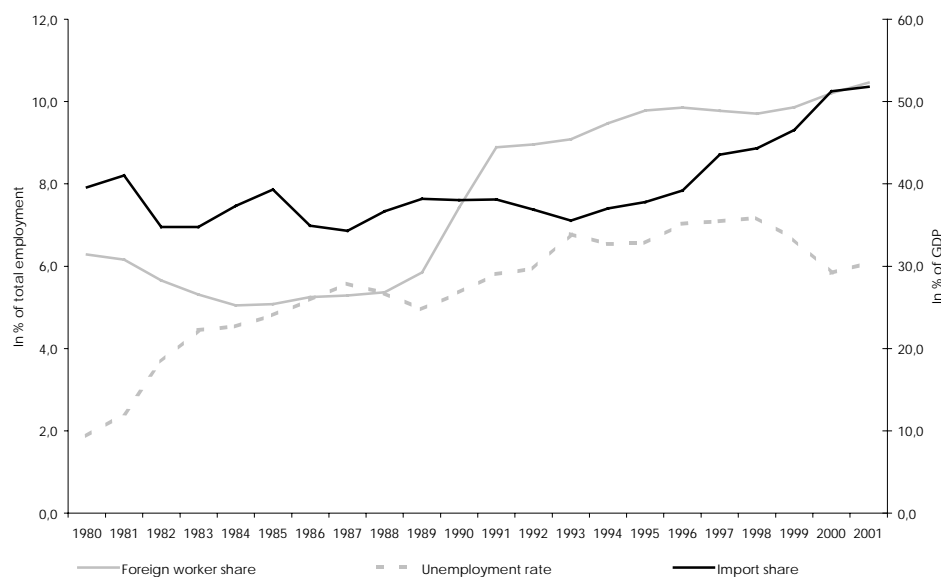
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<sup>13</sup> For an overview of labour migration in Europe see *Biffel* (1999B).

production — the latter in quasi public sector services. Austria's membership of the EU hastened deregulation of former sheltered public and quasi public sector services (telecom, banking and insurance, postal services). Employment growth took a steep dive as a result. But industrial restructuring was necessary in order to increase productivity and thus regain the former international competitive position. In this economic and labour market environment, the unemployment rate increased from 5 percent (of the labour supply of wage and salary earners) in 1989 to 7.2 percent in 1998. It declined slightly thereafter and reached some 6 percent in 2001.

The change in the competitive position of Austria's export industries and the opening up of sheltered services to competition did not only give rise to unemployment but boosted also international trade (measured in terms of imports as a percentage of GDP)<sup>14</sup> and labour migration (measured as a percentage of total employment).

*Graph 2: Development of unemployment, foreign worker share and imports as a percentage of GDP*



S: OECD, Austrian Labour Market Service.

The share of the foreign work force in total employment increased from 6.3 percent in 1980 to 11 percent today. There were, of course, pull and push factors which boosted migration. In the late 1980s, the reunification of Germany gave a boost to economic growth and thus labour demand, as Austria is plugged into the German production system as a major supplier of intermediate goods — particularly for the machine and automobile industry. This together with rising labour scarcities as a result of substantial recourse to early retirement schemes and disability pensions in the first half of the

<sup>14</sup> Imports as a percentage of GDP provide better insight into the increasing competition resulting from international trade than exports. In Austria, international reallocation of production, which entailed significant transfer of capital to CEECs, was concentrated on the first half of the 1990s; increased import substitution drove the least efficient producers out of the market; also a transfer of stages of production in particular industries increased inter- and intra-industry trade which contributed to a widening of the trade deficit.

1980s<sup>15</sup>, constituted the major pull factor for foreign workers. They did not only open up employment opportunities for Serbs, Croatians, Bosnians, and Kosovars, the major foreign worker groups in Austria, but also for Turks, the second largest single nationality of foreign workers in Austria, and to persons from Central and Eastern European countries, who could, after the fall of the iron curtain, for the first time take up jobs in Austria in larger numbers.

The civil war and ethnic cleansing in the region of former Yugoslavia represented the major push factor for immigration to Austria in the early years of the 1990s. Later, family reunion became the major driving force for migrant inflows, together with increasing cross-border worker flows as regional economic integration with CEECs gained momentum.

The sequencing of factor and goods mobility differed. Migration had a head start and subsided as international trade gained momentum in the mid 1990s. Imports and exports amounted to some 52 percent of GDP in the year 2001 after some 39 percent in the year 1990, and 40 percent 1980. The increase of the trade volume (exports and imports) was in the late 1980s and early 1990s in the main a result of the cyclical boost to economic growth, while the continuous rise from the mid 1990s onwards was in the main a result of increased inter- and intra-industry trade resulting from closer economic integration with the EU and with CEECs.

### **Changing composition of imports and exports in the 1990s**

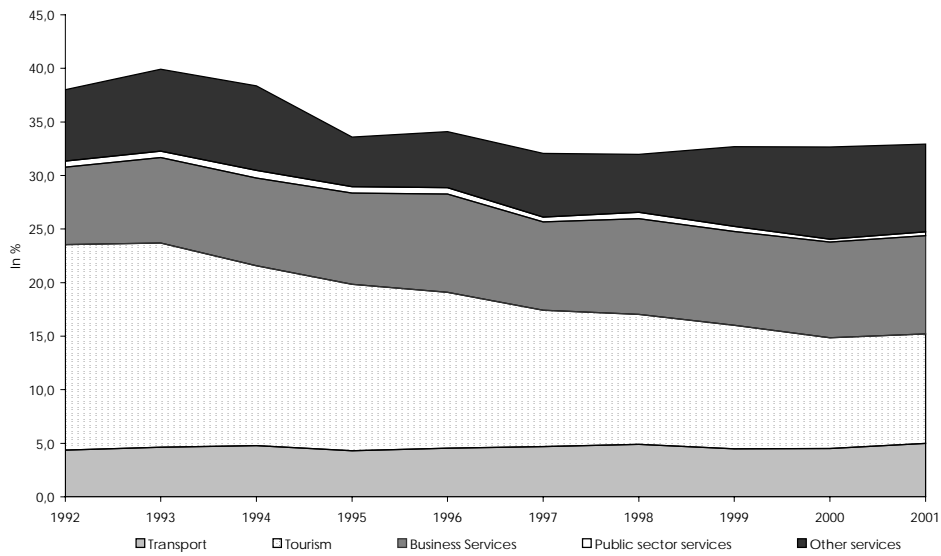
Not only the value of traded goods and services as a percentage of GDP increased since the early 1990s but also the composition of traded goods and services. In the last 10 years inter- and intra-industry trade of goods and services gained momentum featuring in a reduction of the difference in the share of services in imports and exports. Today (2001) 67.1 percent of all exports and 68.4 percent of all imports relate to goods. Imports became more service intensive — a rise from 25 to 32 percent in the last decade — and exports more commodity intensive (a decline of the share of services from 38 to 33 percent). The declining role of services in exports was solely the result of a reduced role of tourism in Austria's exports. Its share in exports declined from 19.2 percent in 1992 to 10.2 percent 2001. As to imports, the composition of services has changed, the conglomerate of other services growing significantly since the mid 1990s (reaching 12 percent 2001, after only 2.5 percent 1992) and tourism losing somewhat (from 11.3 percent 1992 to 8.9 percent 2001). Today, 98 percent of the exported goods and 97 percent of the imported goods are manufactured goods.

The structure of traded commodities by major groupings of the Standard Industrial and Trade Classification (SITC1) did not change much, but already at SITC two-digit level (*Fidrmuc et al*, 1998) the structural change in import-export relationships is quite obvious; it relates primarily to trade between Austria and CEECs.

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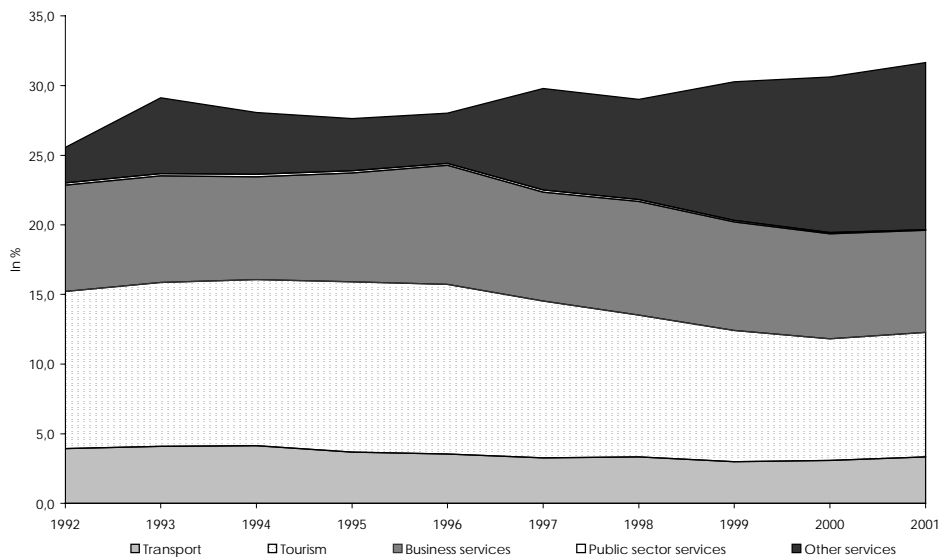
<sup>15</sup> Major industry restructuring in the early 1980s brought about substantial employment reductions thus raising unemployment. Early exit routes from the labour market became the preferred instruments to keep unemployment down. *Biffel (1996)*.

Graph 3: Tourism is losing weight in Austria's exports in the 1990s



S: Austrian National Bank, ST.AT., WIFO.

Graph 4: Composition of services imports becomes more diverse in the 1990s



S: Austrian National Bank, ST.AT., WIFO.

The main reasons for Austria's growing trade flows in the 1990s were increased interlinkages with the CEECs. Its share of exports to CEECs increased from 9.9 percent in 1989 to 17.7 percent 1999 making it the EU country with the highest ratio of exports to Eastern Europe. About two thirds of Austria's exports to Eastern Europe are with Hungary, the Czech and Slovak Republic, Poland and Slovenia, the economically most successful countries in transition. In 1997 Hungary replaced Switzerland from rank number 3 of Austrian export countries, behind Germany and Italy. It was in the main the manufacturing sector which profited from trade liberalisation with CEECs.

The specialisation processes visible in the compositional change of imports and exports indicate that precisely in those industries, in which migrants have a dis-proportionate share in employment, the labour intensive and low to medium technology intensive stages in the production and value chain, were relocated to CEECs. Migrants had contributed to the survival of these stages of production of tradeables in Austria until a break in the competitiveness of these production units in Austria occurred with the onset of trade liberalisation with CEECs<sup>16</sup>. Costs of relocation of production and transport costs of intermediate goods in the production process were more than compensated by the lower production costs in CEECs, given their ample supply of significantly cheaper labour in the required skill segments. Five industries were concerned with major restructuring and specialisation, i.e., chemical industry, which is human capital and resource intensive and medium tech (SITC 52), construction material, cement, stone, glass and ceramics industry which is resource intensive (SITC 66), printing, paper, pulp, food processing, manufacturing of equipment and machines in the mature, medium tech field with great labour intensity in production (SITC 72 and 74), and of course in the labour intensive textile and clothing industry (SITC 84).

CEECs are aware of the danger of a lock-in in a low-wage/low-technology equilibrium (*Rodrik, 1993*); they have therefore diversified their production. Their specialisation is fairly complex, as the composition of traded goods indicates. CEECs have overcome their mono-dimensional export structure which used to be strong in resources, and have entered the production chain of machines and labour intensive goods in the mature, medium tech industry segment. They used their obvious relative production cost advantages in many industries and skill segments. In addition, they gave incentives to potential investors to invest in skill intensive production and drew attention to the good educational attainment level of their work force, which in effect is in line with the EU average. The CEECs are aware of the fact that they have a lot to lose if their highly skilled labour emigrates. They thus want to ensure that the demand for educated labour rises such that educated people have adequate employment opportunities in their own countries. By attracting FDI, they hope to import higher technology and organise the knowledge transfer to their own countries by providing highly skilled labour at low cost, by European standards. They thus hope to enter the arena of production in tradeables which has the potential of above average market growth rates, a strategy not dissimilar to many newly industrialised countries (NICs) in Asia.

### **The impact of trade specialisation on the Austrian labour market and migrants**

Total employment increased between 1990 and 2001 by 0.7 percent annually on average together with significant increases in labour productivity. Export growth and trade specialisation were among the major driving forces for both, economic and productivity growth. The significant change in the composition of manufactured goods indicates that industrial restructuring and reallocation of labour

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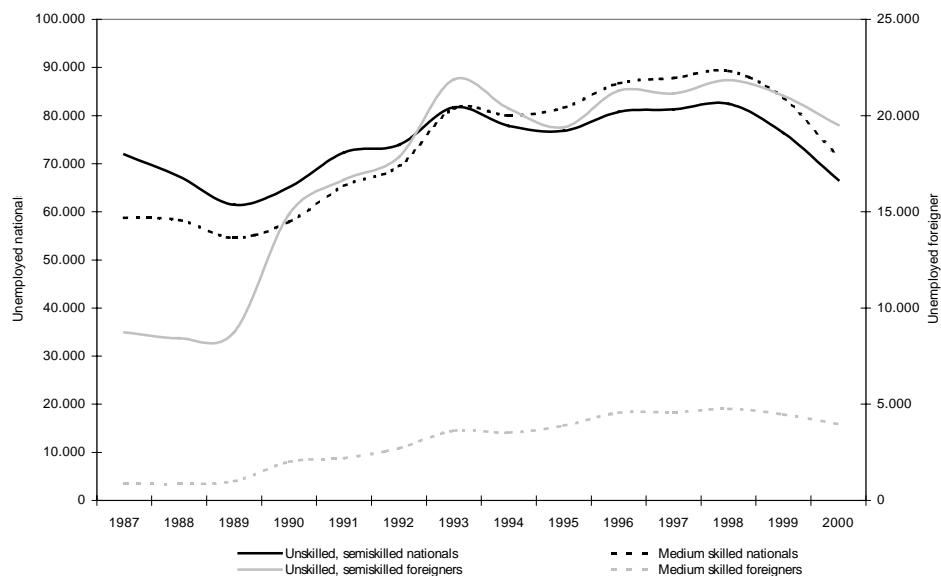
<sup>16</sup> Austria had signed already in 1991, i.e. before becoming members of the EU, the EU Association Agreements (the so-called Europe Agreements) with Hungary, former Czechoslovakia and Poland, and entered into Free Trade Agreements with other Eastern European Countries, thus effectively liberalising trade between Austria and the CEECs.

were prominent features of regional economic integration of Austria with its Eastern European neighbours. This process of reallocation had winners and losers. Workers employed in industries specialising in human skill and advanced technology intensive production of goods and services were the winners and workers in medium-tech and low to medium skill intensive production industries the losers.

The least productive firms in the industries affected by increased imports went out of business, often as a result of relocation of stages of production in the value added chain of the more productive enterprises in that industry. The production activity which moved to CEECs was in the main in medium tech and labour intensive production of machines and consumer goods. In these industries migrant workers are highly concentrated. Table 1 shows that the share of migrant labour has traditionally been highest in the textile and clothing industry, in the chemical industry, in the stone/ceramics/glass industry, in food and machine production. Austria developed a complex system of work contracts with migrants since the very beginnings of immigration to Austria in the 1960s, precisely because of the labour intensity of production of goods in these industries. It did so not with the intention of becoming a country of immigration but rather to promote economic growth by remedying perceived temporary labour scarcities in export industries. Contracts have been signed with less developed countries in order to recruit migrants with special skills (craft skills in the clothing, leather and textile industry as well as mechanics and machine operators in the production of equipment and machines) to improve the competitive edge of these export industries. (*Biffel*, 1985, 1994) Through family reunion and refugee intake, i.e., endogenous and autonomous immigration, the number of unskilled labourers increased disproportionately. Tourism industries, another export industry under severe international competition, was soaking up a lot of the unskilled labour supply in order to ensure competitive prices by keeping wages low.

Employment declined in the industries which underwent substantial restructuring — between 1990 and 2001 employment in manufacturing industries (excluding mining) declined by 2.1 percent annually on average (see Table 1). Firms in these industries invested either in labour saving technology or specialised in production higher up in the quality ladder or in the marketing of the final product. In that process, certain occupations in the medium skill segment (tradesmen, i.e., persons with apprenticeship education) and unskilled labourers were most affected by job losses. As a result, unemployment increased more than proportionately for persons with medium skills in manufacturing in the process of massive industry restructuring in the 1990s, followed by un- and semiskilled labour (graph 5). Unemployment of unskilled nationals increased between 1989 and 2000 by 8 percent — in the case of migrants their number more than doubled; in the case of medium skilled national workers (Apprenticeship) unemployment increased by 30 percent; In the case of foreign tradesmen unemployment in 2000 was 4 times as high as in 1989.

Graph 5: Dis-proportionate rise in unemployment of workers with medium skills in the period of industry restructuring in the 1990s



S. Austrian Employment Service.

In the medium skill segment, migrants bore the brunt of labour adjustments, since their chances for retraining were lower than for Austrians, either because of language barriers or because of limited financial means to invest in human capital. They did not only experience a significant rise in unemployment but also a growing wage gap relative to indigenous workers (graph 6). While wages of migrants in the late 1980s were on average 11 percent lower than of natives (men: -15 percent, women: -10 percent), the differential increased to 21 percent in the early 1990s. As industry restructuring gained momentum and migrants either dropped out of the labour market or moved into the nontradeable sector, wage differences between migrants and natives declined again to the levels of the mid 1980s.



Table 1: Median Income by Industry 1980, 1994 and 2001 and share of foreign workers in employment

	Median income of total employment (annual average)			Employment by industry in percent of total employment (annual average)			Share of foreign workers in percent (annual average)		
	1980	1994	2001	1980	1994	2001	1980	1994	2001
Primary and secondary sector									
<i>Low wage segment</i>				5,9	2,9	2,1	13,9	21,4	25,3
Clothing	65	69	.	2,3	1,0	0,4	9,6	15,3	21,8
Leather, shoes	68	70	75	0,2	0,1	0,2	17,0	19,9	21,6
Agriculture	83	72	65	1,3	0,9	0,8	8,7	19,3	24,0
Textiles	78	85	85	2,0	1,0	0,6	22,1	29,3	30,7
<i>Medium wage segment</i>				16,3	14,5	13,0		16,1	16,4
Wood, furniture <sup>1)</sup>	93	92	96	3,2	2,9	2,5	4,0	11,9	11,1
Food, beverages, tobacco	96	95	91	3,8	3,0	2,4		13,0	16,2
Construction	110	110	113	9,2	8,5	8,0	7,8	18,7	18,2
<i>High wage segment</i>				23,2	18,0	15,1		8,8	10,3
Printing, publishing	114	126	133	1,3	1,1	0,9	4,1	5,7	7,5
Chemical industry	117	120	124	2,8	2,1	2,0	7,2	10,5	13,5
Stone, glass	118	117	120	1,4	1,1	1,0	5,1	11,0	12,4
Metal industry	117	117	126	14,8	11,4	9,3	7,5	9,6	11,0
Paper, pulp	120	126	.	0,9	0,7	0,6	7,5	8,4	8,7
Mining	139	137	136	0,9	0,5	0,4		5,2	5,4
Energy, water	155	165	167	1,1	1,1	0,9		0,3	0,8
Tertiary sector									
<i>Low wage segment</i>				23,7	27,6	31,0	5,1	13,4	12,2
Personal services,	60	62	78	1,5	2,0	3,6	3,9	26,5	10,2

entertainment <sup>2)</sup>									
Tourism	71	71	69	3,8	4,7	4,9	18,4	27,8	28,1
Health	83	90	88	2,8	4,4	5,1	0,5	7,2	7,4
Trade, repairing	88	89	88	13,2	14,4	16,2	3,2	7,8	9,5
Entertainment, culture, sports	91	91	.	0,8	1,0	1,1	2,9	8,6	11,4
<i>Medium wage segment</i>				27,7	33,3	35,3		3,6	7,3
Transport	94	96	98	7,4	7,7	7,3	2,7	5,3	9,0
Business services	93	97	90	2,5	3,9	8,7	0,2	6,3	16,5
Education	83	84	96	3,7	4,3	4,1		2,6	2,4
Public administration	98	99	100	14,2	17,4	15,3		2,6	2,6
<i>High wage segment</i>				3,3	3,7	3,6	0,4	1,3	2,4
Banking, insurance	113	136	143	3,3	3,7	3,6	0,4	1,3	2,4
All branches	100	100	100	100,0	100,0	100,0	6,4	9,5	10,7

S: Social Security Department, Ministry of Labour and Economic Affairs, WIFO-calculations. -

<sup>1)</sup> Break in the industry classification (BS68 to ÖNACE). - <sup>2)</sup> Including cleaning services.

Graph 6: Increasing wage gap between Austrian and foreign workers in the period of massive industry restructuring in the first half of the 1990s (average difference in median income in %)

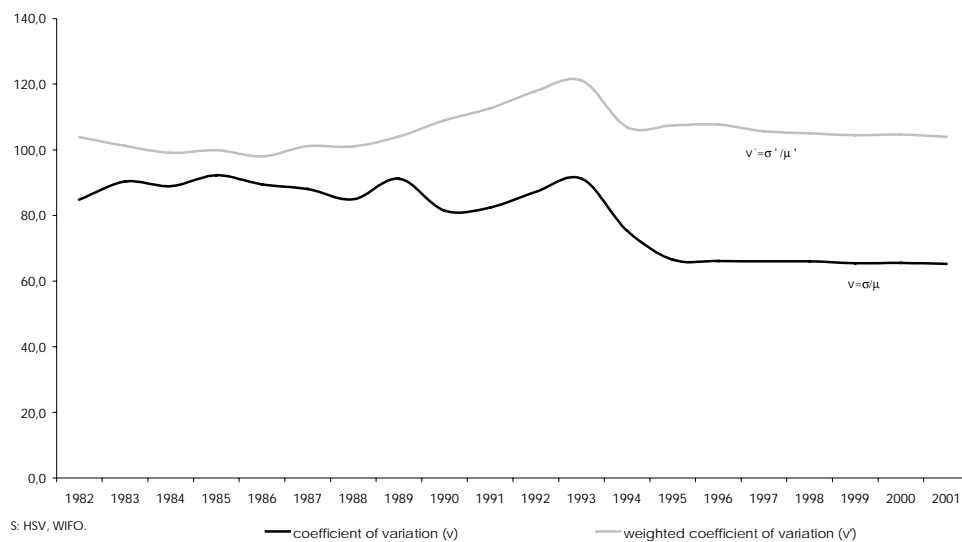


As job opportunities dried up in the traditional trade skill segment in the course of the 1990s, migrants concentrated even more in certain industries than in the 1980s. By 2001 25.3 percent of the work force in low wage manufacturing industries and agriculture, i.e., in the tradeable sector, were foreign workers. In tourism the share reached even 28.1 percent. If one takes into consideration that targeted migration has been an ongoing process for more than three decades — which means that many former foreign workers have long since taken up Austrian citizenship — the proportion of migrant labour in these industries and in tourism is even more pronounced. Graph 7 shows the increasing degree of concentration of migrants in the first half of the 1990s, measured by the coefficient of variation ( $v$ )<sup>17</sup>. In 1990 the weighted coefficient of variation ( $v'$ , weights are the share of the industry in total employment) amounted to 109; it rose to 121.2 in 1993 and declined thereafter abruptly to 106.9, where it remained more or less ever since. The reduction of concentration of migrants on certain industries indicates that migrants could enter in larger numbers in other industries, often non-tradeables, and often in tasks in which they are unable to fully utilise their original occupational skills. The different development of the weighted and unweighted coefficient of variation indicates that there is significant change in the industrial structure of employment. Those industries, in which migrants are particularly concentrated, suffered the most severe declines in employment.

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<sup>17</sup> Definition:  $v = \frac{\sigma}{\mu}$ ,  $\sigma = \sqrt{\frac{\sum_{i=1}^N (x_i - \mu)^2}{N}}$ ,  $\mu = \frac{1}{N} \sum_{i=1}^N x_i$  whereby  $x_i$  = share of foreign workers in total employment and  $i = 1, \dots, N$  industries.

Graph 7: Increasing degree of concentration of foreign labour in certain industries



Migrants moved, however, also into the nontradeable sector, a segment of the economy which, with certain exceptions noted below, is characterised by imperfect competition in the goods market and a large degree of unionisation. Both factors contribute to the limited chances of migrants to access jobs in these services (Insider-Outsider problem, see *Biffi*, 2000). The major employer in non-tradeables is the public sector, i.e., public administration, education, health and welfare services, social security associations, social partner associations, public transport, telecom and postal services, utilities, etc.; In the early 1990s banking and insurance were also part of public sector infrastructure. With the onset of privatisation of banking and insurance, and decentralisation and deregulation of telecom and postal services in the early 1990s, employment expansion came to an end as more and more services were imported and, equally important, as technological upgrading took place in order to increase the competitiveness of service provision in telecommunication and postal services, to a certain extent also public transport. Migrants are hardly able to find employment in the public and quasi public sector, except maybe as unskilled labourers or as skilled personnel (nurses) in health services. Migrants could, however, move into private sector nontradeable services, basically cleaning (a major reason for the rapidly rising share of foreign workers in business services), in trade and repair work (laid off mechanics and unskilled labourers), in domestic and personal services and the construction industry. The construction sector has not had to face any medium to long-term employment declines in the 1990s; foreign workers have a long tradition of working hand in hand with Austrians in this industry, often in a complementary position. The high degree of unionisation ensured that native and migrant workers are granted equal treatment.

### **Concluding observations**

All that said, it is clear that migrants have contributed to the rise in economic growth in Austria in the years before 1990, as they were intensively employed in the production of tradeables, in particular manufactured goods and tourist services. The sudden change in comparative advantage in the production of manufactured goods, as trade with CEECs was liberalised in the early 1990s, and the relatively small transport costs due to the geographical vicinity of the new trading partners, triggered off reallocation of production within the enlarged trading zone. Austria could take advantage of the impressive economic growth performance of our major Eastern European trading partners by specialising in more skill and technology intensive production of manufactured goods thus creating jobs for the more highly skilled workers, mainly native workers. The brunt of labour market adjustment resulting from industry restructuring had to be borne by unskilled workers and special trade-skills in manufacturing, often migrant workers, since they are concentrated in those jobs and occupations which were to a large extent transferred to CEECs in a specialisation process of production.

Austrian experience shows that migration and trade are only substitutes up to a certain point, namely, so long as the prevailing difference in production costs remains substantially the same. This was made possible by the intake of migrants in those stages of production of tradeables in which domestic labour supply dried up at the going wage rates. The increase of labour supply in the skills in question through targeted migration had a significant effect on wage differentials in Austria. After some 20 years of continued and targeted immigration, Austria had turned from a country with low wage inequalities into one with the highest wage differentials by industry in Europe.

But as relative production costs changed abruptly and significantly with the opening up of the former Eastern Block countries, the economic rationale for a continuation of the existing pattern of migration was nullified. Indeed, the reorientation of the economies of the CEECs towards the West did not only open up production capacity but also markets, thus providing additional incentives for investors to tap into resources less efficiently used than in Austria. The specialisation in production on either side of the border and the resulting increase in inter- and intra-industry trade increased economic growth. It did, however, also entail adjustment costs in the labour market, which were unevenly shared among the population. As job opportunities dried up in the traditional employment sectors of migrants, they increasingly turned to the nontradeable sector in search of employment. Given the limited transferability of their craft skills to the occupations of the nontradeable sector, they either faced deskilling or a move into the informal sector.

Thus, the forces which reduced the need for large migration flows in the wake of increased trade, were economic rather than political. Increased immigration was warranted only where complementarity between trade and migration was the rule, i.e., in the case of highly skilled labour (*OECD, 2002*).

Austria has thus reached a level of economic and technological development which, in the present circumstances, cannot accommodate rising numbers of unskilled migrants; the latter would contribute to increased unemployment or to the widening of earnings differentials between unskilled and higher skilled workers, either of which would jeopardise social stability. Only a reduction in population growth and the ageing of the Austrian population, provides a strong argument in favour of increased

migration. A major challenge in that context is, however, to provide adequate education and training for migrants so that they can fully participate in the specialised economic production processes of a learning society to which Austria has set its sights.

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