

Der Open-Access-Publikationsserver der ZBW – Leibniz-Informationszentrum Wirtschaft
The Open Access Publication Server of the ZBW – Leibniz Information Centre for Economics

Gundlach, Erich; Nunnenkamp, Peter

Article

Globalization and labor markets in the Triad : different adjustment patterns

Transnational corporations

Provided in cooperation with:

Institut für Weltwirtschaft (IfW)

ECONOMISTSONLINE

Suggested citation: Gundlach, Erich; Nunnenkamp, Peter (1998) : Globalization and labor markets in the Triad : different adjustment patterns, Transnational corporations, ISSN 1014-9562, Vol. 6, Iss. 3, pp. 57-85, <http://hdl.handle.net/10419/1794>

Nutzungsbedingungen:

Die ZBW räumt Ihnen als Nutzerin/Nutzer das unentgeltliche, räumlich unbeschränkte und zeitlich auf die Dauer des Schutzrechts beschränkte einfache Recht ein, das ausgewählte Werk im Rahmen der unter

→ <http://www.econstor.eu/dspace/Nutzungsbedingungen> nachzulesenden vollständigen Nutzungsbedingungen zu vervielfältigen, mit denen die Nutzerin/der Nutzer sich durch die erste Nutzung einverstanden erklärt.

Terms of use:

The ZBW grants you, the user, the non-exclusive right to use the selected work free of charge, territorially unrestricted and within the time limit of the term of the property rights according to the terms specified at

→ <http://www.econstor.eu/dspace/Nutzungsbedingungen>
By the first use of the selected work the user agrees and declares to comply with these terms of use.

**Globalization and Labor Markets in the Triad:
Different Adjustment Patterns**

by

Erich Gundlach and Peter Nunnenkamp

(Kiel Institute of World Economics)

revised May 1997

I. Introduction*

Globalization has become a catchword for a number of political, social, environmental and economic trends that are supposed to present challenges on a worldwide scale. In an economic sense, globalization can be best interpreted as an increase in the international division of labor, caused by an increase of international flows of foreign direct investment (FDI) relative to steadily increasing international trade flows (Nunnenkamp et al. 1994). A more stable international macroeconomic environment with a focus on monetary and fiscal discipline, the liberalization of trade initiated by successive GATT rounds, and the deregulation of financial markets and other business services such as banking and insurance have fostered the ongoing globalization of production and markets. Furthermore, thanks to the micro-electronics revolution, new communication technologies have evolved that allow for the international diffusion of new production and organization technologies at low cost. The bottom line is that globalization represents a substantial increase and a new quality in the international division of labor as large countries such as China, India, and Indonesia become part of the world economy. Industrialized countries have adjusted differently to these new challenges.

In a global economy, free trade and capital flows between countries with different factor endowments tend to put adjustment pressure on the relatively scarce factors of production (Stolper and Samuelson 1941). Especially in the Triad of the United States, Japan, and the EU, low-skilled labor is the relatively scarce factor of production, compared with physical and human capital. The adjustment pressure on low-skilled labor results from a fall in the price of goods which are produced by using low-skilled labor intensively. This price decline is the consequence of an increase in supply, since developing countries are making use of their abundant labor supply and are exporting labor intensive products. Hence, employment and earnings of low-skilled labor in industrialized countries tend to be negatively affected in the era of globalization.

The ensuing adjustment needs in industrialized countries have traditionally been contained by restricting labor intensive imports and, thereby, protecting low-skilled workers. However, the effectiveness of such policies is increasingly reduced in an integrating world economy. First, the higher mobility of capital and the easier access to new technologies render it feasible for developing countries to upgrade their exports. Second, technological innovations as well as lower transaction and information costs allow for an international fragmentation of production processes.¹ Moreover, trade barriers may be circumvented by relocating production, which, in turn, may increase trade and competition in domestic areas previously protected against international competition. That is,

* We thank three anonymous referees for helpful comments on an earlier version.

¹ UNCTAD-DTCI (1994: 206) notes that "the greater dispersal of TNC operations is what most distinguishes integrated international production from other forms of TNC strategies ... and individual value-added activities are likely to become more dispersed transnationally".

globalization largely destroys the natural protection of less mobile factors of production, which may have existed before due to technological complementarities between skilled and low-skilled workers in advanced countries. Put differently, globalization means that more jobs are affected by international competition (Campbell 1993).

This paper first discusses the theoretical background for the presumed labor market implications of globalization. Section III compares recent labor market developments in the Triad, and presents some empirical support for the globalization hypothesis. Focusing on the EU, Section IV highlights the relative performance of the Triad with regard to international trade and FDI flows, which mirrors the different adjustment patterns - and labor market experiences - of Europe, Japan, and the United States. Section V concludes by briefly discussing alternative policy options.

II. Globalization, Structural Change, and Relative Wages

The presumed effects of globalization result in a closer integration of worldwide labor markets (see also UNCTAD-DTCI 1994: chapter IV). This development favors high-skilled workers in industrialized countries, who have relatively few foreign competitors. By contrast, low-skilled workers face an almost perfectly elastic supply of low-paid competitors around the world. For them, globalization tends to amplify the adjustment pressure that would have resulted from international trade alone. The net effect of globalization is likely to be positive for the economies involved, because of the additional gains to be realized from trade and investment relations.² However, low-skilled workers may actually lose as a result of globalization, as long as there is no compensating change in the production structure of industrialized countries.

The theoretical framework underlying this reasoning can be outlined in a simple diagram (Figure 1).³ The axes denote quantities of (physical and human) capital and (low-skilled) labor. The right angles represent so-called unit value isoquants, i.e., combinations of capital and labor that are required to produce, say, one dollar's worth of output.⁴ The unit value isoquants are drawn for three different sectors: the automobile industry which is assumed to be relatively human and physical capital intensive, the chemical industry which is assumed to be physical capital intensive, and textiles and clothing, which is assumed to be the most low-skilled labor intensive industry in this illustrative example.

The figure also displays two unit isocost lines, which represent combinations of capital and labor that cost just one dollar to employ. In the initial situation, the isocost line is drawn tangential to the

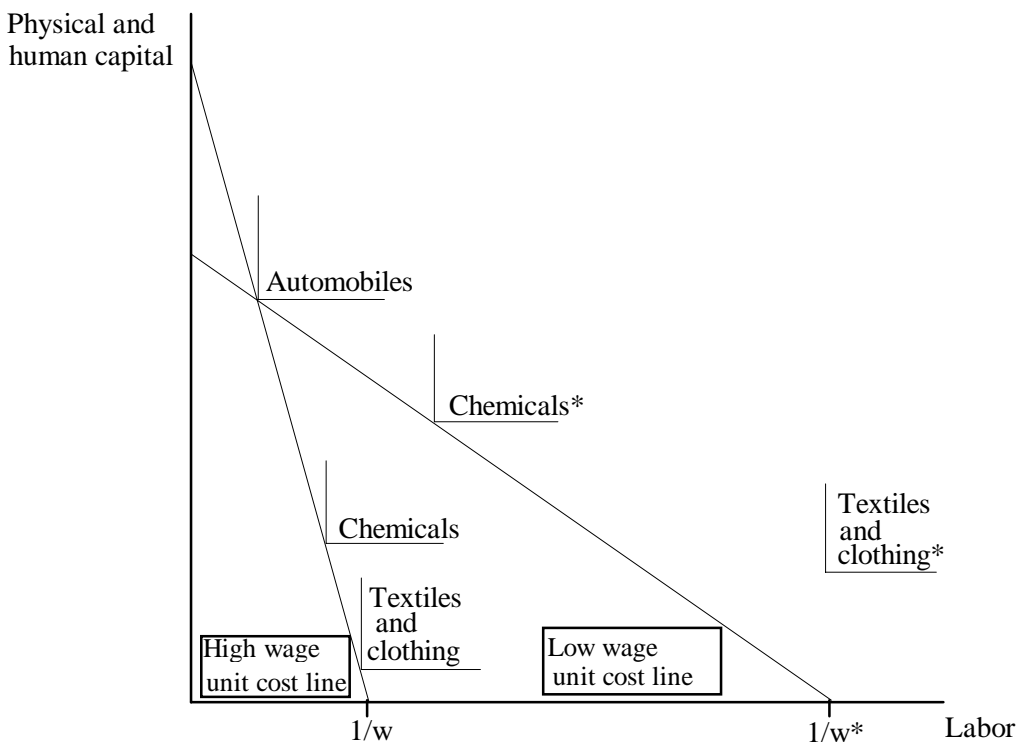
² For a more skeptical view of the presumed positive welfare effects of globalization, see Renshaw (1993).

³ The following paragraphs draw on Leamer (1992).

⁴ The isoquants are drawn as right angles to indicate that the ratio of capital to labor is assumed to be technologically fixed. This assumption is immaterial for the qualitative results derived below.

unit value isoquants of all three sectors. If this line falls below of one of the unit value isoquants, the costs of production in this industry exceed the value of output and, hence, no output would be produced. By contrast, if the isocost line crosses a unit value isoquant, production costs are lower than the value of output in this industry; excess profits would attract a resource inflow, thereby either raising the factor prices or reducing the product prices so that, finally, the tangency condition would be restored.

Figure 1 — Hypothetical Effects of Globalization on the Structure of Production and Wages in Advanced Countries



Source: Based on Leamer (1992).

The impact of globalization for advanced countries can be demonstrated by an outward shift of the unit value isoquants for textiles and clothing. Globalization means first of all an increase in the worldwide supply of relatively low-skilled labor and second, the general availability of relatively ubiquitous technologies. According to the Rybczynsky Theorem (Rybczynsky 1955), this should lead to an increase in the supply of low-skilled labor intensive goods and of goods that can be produced with standardized technologies. This increase in supply should reduce the relative price of such goods. A declining product price implies an increase in quantities of inputs to keep the unit value constant, and, therefore, the outward shift of the unit value isoquants. From the point of view of advanced countries, this shift will be strongest where the underlying supply effects can be expected to have the strongest effect on the relative product prices.

In the diagram, the strongest shift in relative prices has been assumed for textiles and clothing, which is the most low-skilled labor intensive industry. The new theoretical equilibrium is given by a new isocost line, which is tangential only to automobiles and chemicals. According to the diagram, advanced countries would not produce textiles and clothing any longer, and instead specialize on the more human and physical capital intensive production of automobiles and chemicals. The new equilibrium implies a reduced wage for low-skilled labor, relative to the factor reward for human and physical capital. This is indicated by the new intersection of the isocost line with the labor axis at $1/w^*$.⁵

The upshot of all this is that the wage for low-skilled labor will tend to fall if globalization reduces product prices in the labor intensive industries relative to the prices in the (physical and human) capital intensive industries. In the absence of an exogenous source of productivity growth, low-skilled workers in advanced countries would be worse off under conditions of globalization than under conditions of nationally segmented production and markets, which is the basic message of the Stolper-Samuelson Theorem.

Some of the assumptions underlying this purely theoretical argumentation are that international product prices are given, that there is a high elasticity of substitution between capital and labor, that the advanced countries' factor supplies actually are in the high wage cone, and that labor-rich developing countries are in the low wage cone. In the absence of any barriers hindering international transactions, there would be no output of low-skilled labor intensive goods in advanced countries, and, correspondingly, no output of human capital intensive goods in developing countries. In reality, transport costs, temporary economies of scale, and less than perfect substitution between capital and labor due to immobile inputs all contribute to maintaining an industry structure that would be obsolete otherwise. The message from theory to be stressed is that, in the presence of globalization, there are economic forces at work which push for moving the production of low-skilled labor intensive (final and intermediate) goods to developing countries, with the consequence of a widening wage gap between skilled and low-skilled workers in advanced countries. Some support for this reasoning comes from comparative empirical evidence for the labor market.⁶

III. In Search of Globalization Effects

Globalization, Labor Markets, and Relative Prices

⁵ The wage is given by the inverse of the intersection of the isocost line with the labor axis. The equation for the isocost line reads $1 = wL + rK$, where w is the wage for low-skilled labor L , and r is the factor reward for physical and human capital K . At the intersection of the isocost line with the labor axis, K equals zero. Therefore, $L = 1/w$ at this point.

⁶ For a recent overview of different labor market experiences in OECD countries, see OECD (d).

While the three major players in the world economy should have been confronted with similar adjustment problems raised by the globalization of production and markets, labor market outcomes were strikingly different. EU economies contrast significantly with Japan and the United States:⁷ In Europe, unemployment rose sharply throughout the 1980s, while employment remained unchanged or fell. In Japan and the United States, employment rose, while unemployment remained constant or even declined. A similar pattern prevails for the structure of unemployment with regard to different skill levels. The lower end of the spectrum of qualifications is conventionally assessed by proxies such as long-term unemployment and youth unemployment. These measures indicate that unemployment of low-skilled workers is a more severe problem in EU economies than in Japan and the United States (Figure 2). What is more, the increase in low-skilled unemployment since the early 1980s seems to be most pronounced in EU economies, with the exception of Germany for the case of youth unemployment.⁸ Abstracting from its low level, there is also a relatively strong increase in low-skilled unemployment in Japan.

Changes in the distribution of earnings between low-skilled and high-skilled workers help to explain this puzzling picture, at least partly. It can reasonably be assumed that the higher end of the earnings distribution represents the wages of high-skilled workers, and the lower end represents the wages of low-skilled workers. Figure 3 then suggests a declining or unchanged wage gap in major EU economies and in Japan. By contrast, the wage gap widened in the United Kingdom and, particularly, in the United States. This leads to the conclusion that rising unemployment of low-skilled workers is the price that continental Europe has to pay for insufficient relative wage flexibility. Japan seems to face the same problem, although at substantially lower levels. The remaining puzzle is the case of the United Kingdom, where wage flexibility apparently did not hinder an increase in low-skilled unemployment rates.

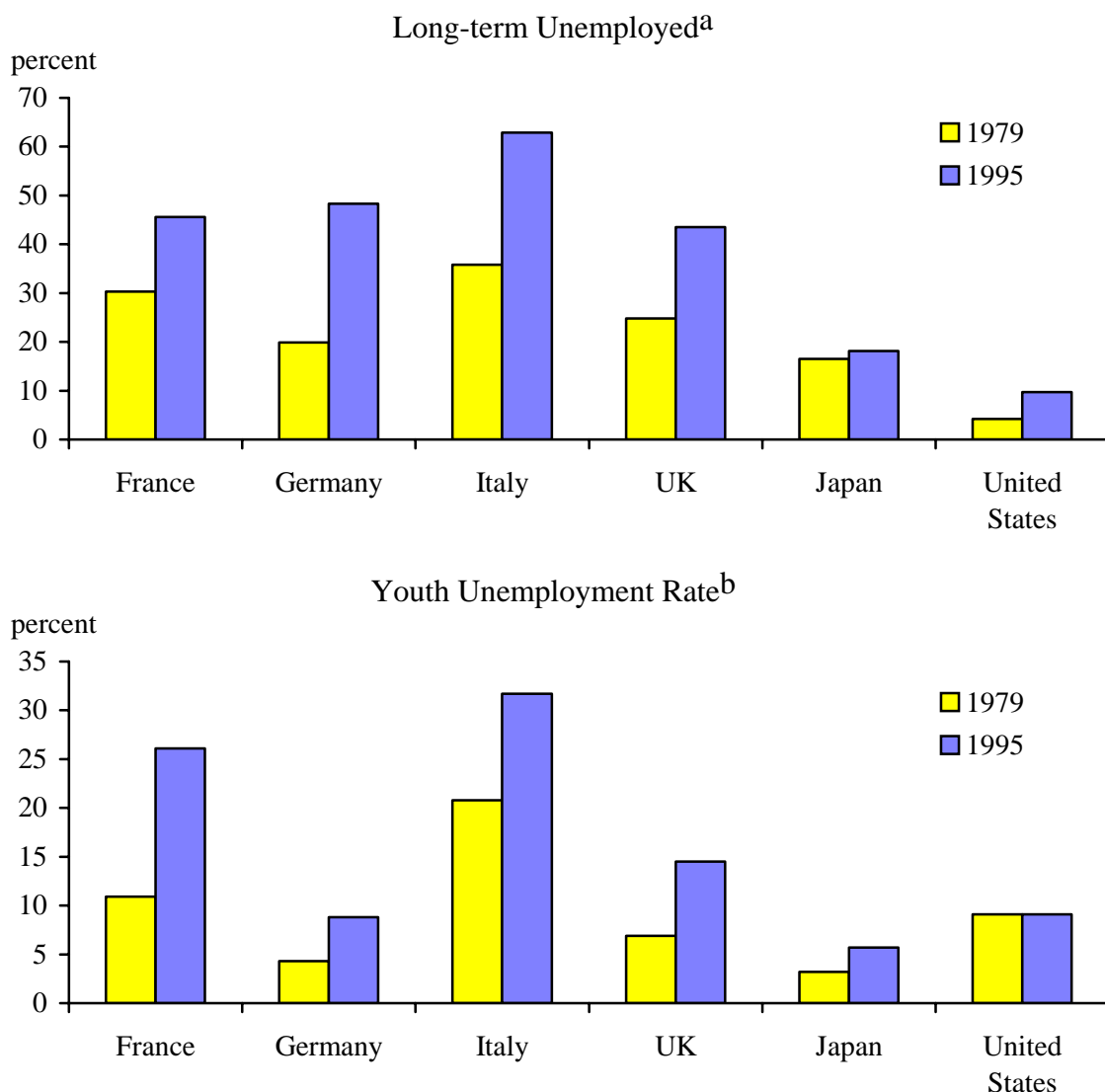
Changes in the structure of employment in manufacturing further support the proposition that economic policies in Europe were inappropriate to deal with the challenges raised by globalization (Figure 4). The EU experienced a drastic cut in employment in textiles and clothing, even relative to overall declining manufacturing employment. This contrasts sharply with the United States, where the increase in wage dispersion helped to secure more employment in textiles and clothing. At the same time, employment creation in capital (chemicals) and skill intensive (automobiles) industries remained small in the EU as compared to Japan and the United States. As it seems, structural change in employment required by fiercer worldwide competition was handled most successfully in Japan, where economy-wide employment problems were largely avoided. The average figures for the EU disguise the fact that the structural pattern of Germany is very similar to the structural pattern of Japan, but the major difference is that Japan's manufacturing employment

⁷ The following observations refer to data provided by OECD (b).

⁸ The reported increase in youth unemployment rates is most likely to be underestimated for the case of Germany, Italy, the United Kingdom and the United States because the data include a break in the series.

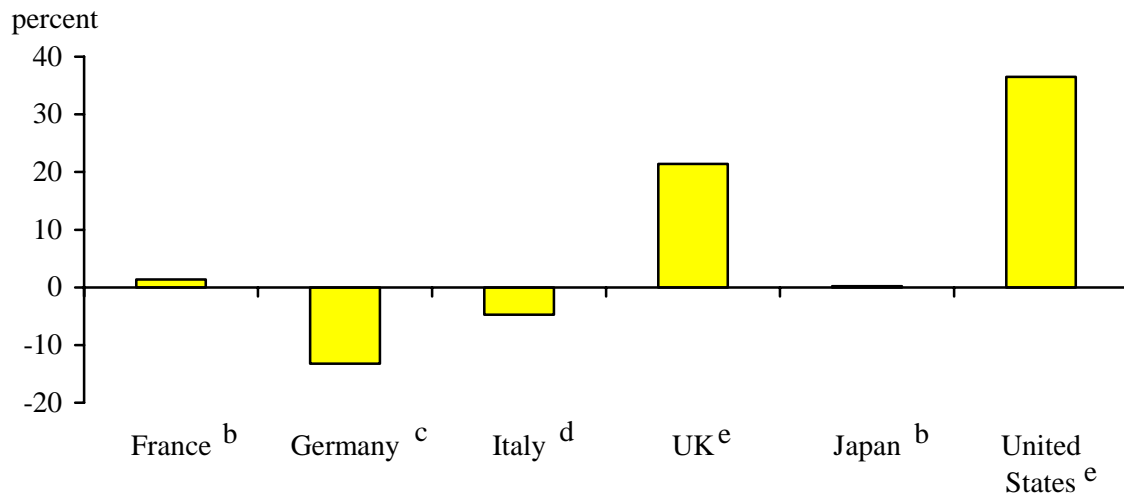
increased at about 0.4 percent per year in 1979-1996, while Germany's manufacturing employment declined at about 1.2 percent per year in 1979-1994 (OECD e). US labor markets have responded to increasing globalization by remarkably flexible wage policies, but seem to lag behind Japan in terms of employment restructuring towards capital and skill intensive industries. Europe ranks only third within the Triad in terms of successful structural adjustment: Larger relative employment losses in labor intensive industries, smaller relative employment gains in capital intensive industries, and relative losses in skill intensive industries where other countries report relative employment gains.

Figure 2 — Changes in the Structure of Unemployment, 1979-1995



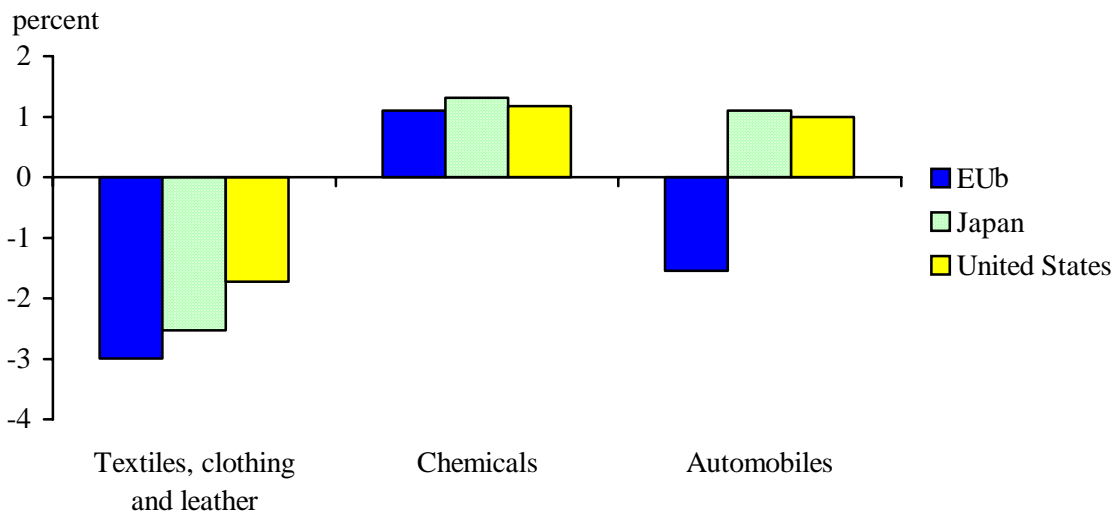
^a Percentage of total unemployment, 12 months and over. — ^bAge 20-24, data for Germany, Italy, the United Kingdom and the United States include a break in the series.

Source: OECD (b).

Figure 3 — The Changing Wage Gap^a

^aPercentage change in the earnings of high paid workers (decile 9) relative to the earnings of low paid workers (decile 1). — ^b1979-1994. — ^c1981-1993. — ^d1979-1993. — ^e1979-1995, males only.

Source: OECD (b).

Figure 4 — Changing Patterns of Employment in Manufacturing in the Triad, 1979-1996^a

^aFor each industry, annual rate of change of employment minus annual rate of change of employment in total manufacturing (percent); ISIC categories; values for 1996 partly based on first three quarters. — ^bUnweighted average of France, Germany and United Kingdom; France and Germany: 1979-1994.

Source: OECD (e).

Although the observed labor market outcomes are in line with the hypothesis of an increasing globalization of markets and production, one has to concede that other explanations such as exogenous labor saving technological progress are also compatible with the empirical facts.⁹ However, it is open to question to which extent technological change itself is driven by the trend towards globalization. That is, globalization may affect the labor market either directly, or indirectly through technological change. According to Figure 1, the impaired wage and employment prospects of low-skilled labor in advanced economies are caused by a fall in the relative price of labor intensive products. An important empirical question is, thus, whether the relative price of low-skilled labor intensive goods has declined. We focus on the relative price of clothing, which clearly is a low-skilled labor intensive sector. A comparison with the relative prices for other sectors may provide hints on the relevance of globalization effects on the labor market, despite a certain degree of ambiguity in classifying products as physical or human capital intensive. Especially chemicals can also be considered as a skill intensive industry, whereas iron and steel as well as textiles are fairly standardized physical capital intensive industries.

Table 1 presents changes in US producer price indexes between 1982 and 1995. Since the United States constitutes a relatively large and open market, the price data can be interpreted as rough indicators of relative world market prices. The entries show that the relative price of clothing has fallen indeed, compared with the prices of goods here classified as human capital intensive. The evidence with respect to physical capital intensive goods is mixed. Yet, US data tend to support the relative price changes predicted by the Stolper-Samuelson Theorem given that iron and steel as well as textiles are more standardized goods than chemicals, the production of which requires relatively more human capital. This result is not confined to a specific recent year, as is shown by the fairly steady changes in 1993-1995 and by a comparison with data taken from Lücke (1993) for 1978-1987.

Globalization, Trade, and FDI

Instead of looking at labor market outcomes or relative price changes, the relevance of the globalization hypothesis can also be assessed by an empirical analysis of international trade and FDI flows. If the globalization hypothesis holds, FDI outflows of investor countries should be positively correlated with both exports to, and imports from host economies. This is because globalization encourages an international fragmentation of production, so that firms may place their production around the world, sourcing this component from one country and that component from another

⁹ On the relevance of trade and technological progress for determining labor market outcomes, see, e.g., Krugman and Lawrence (1994), Lawrence and Slaughter (1993), and Wood (1994).

Table 1 — US Producer Price Indexes for Selected Commodities^a (1982 = 100)

Product category	1993	1994	1995	Note: average annual price increase 1978-1987
Human capital intensive				
Industrial machinery and equipment	143.7	146.2	149.8	5.08
Transport equipment	133.7	137.2	139.7	5.50
Motor vehicles	134.2	131.4	140.3	..
Physical capital intensive				
Chemicals	128.2	132.1	142.5	4.31
Iron and steel	116.0	122.0	128.8	3.88
Textiles ^b	115.3	114.8	118.6	3.11
Labor intensive				
Clothing	123.2	123.5	124.2	3.67

^aUS commodity code. — ^bAverage of code numbers 032-034.

Source: Lücke (1993); US Department of Labor (various issues).

country, where the direction of sourcing may change continuously due to changes in "kaleidoscopic" comparative advantage (Bhagwati and Dehejia 1994): small changes in costs can cause comparative advantage to shift suddenly from one country to another. Put differently, new production locations are equally likely to export to, and import from investor countries once these locations become integrated into the international division of labor through FDI as the major instrument of technology transfer.

An alternative hypothesis would be that FDI flows to host economies are just a substitute for trade flows in order to circumvent trade barriers. If this were the case, FDI flows should be negatively correlated with exports of investor countries. Moreover, FDI flows should be by and large uncorrelated with imports of investor countries from host countries, if FDI flows do not indicate an internationally fragmented production structure, but were aiming exclusively at the local market of host economies.

Table 2 presents simple cross-section correlation coefficients for bilateral trade and FDI flows for Germany, Japan, and the United States in recent years. German and Japanese FDI flows to host countries, including developing and industrialized countries, are positively correlated in a statistically significant way with trade flows (both exports and imports); and the same broad picture holds for lagged FDI flows (one and two years, respectively). Hence the higher are contemporary and past FDI flows to foreign countries in absolute value, the higher are German and Japanese

exports to the host countries and the higher are German and Japanese imports from these countries. This finding is in conflict with the widespread belief that FDI simply replaces trade, whereas it is in line with the globalization hypothesis. The correlation between bilateral trade and FDI flows is much weaker for the United States. This can be attributed to some peculiarities with respect to the sectoral and regional distribution of US FDI outflows.¹⁰ The primary sector, in which globalization strategies play

Table 2 — Trade and FDI Flows: Pearson Correlation Coefficients^{a,b}

Year	FDI vs Exports			FDI vs Imports		
	t	t+1	t+2	t	t+1	t+2
	1. Germany					
1989	0.67** (34)	0.66** (34)	0.62** (34)	0.63** (34)	0.61** (34)	0.61** (34)
1990	0.70** (34)	0.67** (34)	0.68** (34)	0.66** (34)	0.65** (34)	0.66** (34)
1991	0.59** (34)	0.60** (34)	-	0.58** (34)	0.58** (34)	-
1992	0.72** (31)	-	-	0.69** (31)	-	-
	2. Japan					
1989	0.96** (40)	0.95** (40)	0.94** (40)	0.89** (40)	0.90** (39)	0.89** (40)
1990	0.94** (42)	0.93** (42)	0.93** (42)	0.90** (41)	0.89** (42)	0.88** (42)
1991	0.93** (44)	0.93** (44)	-	0.90** (44)	0.89** (44)	-
1992	0.93** (42)	-	-	0.92** (41)	-	-
	3. United States					
1989	0.19 (37)	0.20 (37)	0.19 (37)	0.07 (37)	0.09 (37)	0.07 (37)
1990	0.41** (39)	0.43** (39)	-	0.32* (39)	0.31 (39)	-
1991	0.35* (38)	-	-	0.24 (38)	-	-

^a(**) indicates statistical significance at the 5 percent (1 percent) level. — ^aIn parentheses: number of countries. — ^bt refers to contemporary trade and FDI flows; t+1 (t+2) refers to lagged (one and two periods) FDI flows.

Source: Nunnenkamp et al. (1994).

¹⁰ For a detailed discussion of these peculiarities, see Nunnenkamp et al. (1994: 82-88).

a minor role, accounted for a relatively high share of US FDI outflows.¹¹ Furthermore, US investors focused relatively strongly on Latin American host countries, where market-seeking FDI dominated over efficiency-seeking FDI (Agarwal et al. 1991).

The robustness of the trade-FDI correlations reported in Table 2 can be tested by introducing market size of host countries as an additional explanatory variable. The question then is whether market size, as measured by Gross Domestic Product (GDP) in the host country, or FDI flows have a larger statistical impact on trade flows. Market size should not dominate the statistical impact of FDI, if globalization strategies explain the positive link between FDI and trade flows. Table A1 presents beta coefficients which were derived from a cross-country regression of bilateral exports (imports) on bilateral FDI flows and GDP in the host country.¹² Since beta coefficients are independent of the units of measurement, they can be used to compare the relative impact of the explanatory variables. The results are largely in line with a priori expectations. For a statistical explanation of bilateral Japanese trade data, FDI flows seem to be more important than market size. For Germany, both market size and FDI flows seem to be important statistical determinants of trade, but the weight of FDI has increased in recent years. These findings confirm the globalization hypothesis. Not surprisingly, market size seems to be more important than FDI flows in most calculations for the United States. This finding means that given the data at hand, the globalization hypothesis can neither be confirmed nor rejected for the United States. It cannot be concluded that globalization is irrelevant for US investors, since the results still point to a positive correlation of FDI and trade flows.

All in all, our findings support the consensus result of empirical research in this field: FDI and trade flows are positively correlated,¹³ which is in line with the globalization hypothesis.¹⁴ Rather than FDI causing trade, or trade causing FDI in a unidirectional way, the direction and extent of trade and FDI flows seem to be simultaneously determined by globalization strategies. As a consequence, FDI is not only positively correlated with exports of investor countries to host countries, but also with exports of host countries to investor countries.

¹¹ A more appropriate test of the globalization hypothesis would be to correlate trade flows with bilateral FDI flows for manufacturing industries, rather than with total FDI flows. Yet sectorally disaggregated data on FDI flows by host countries are not available from official statistical sources. OECD statistics report FDI flows by either regional or sectoral disaggregation; US statistics report disaggregated FDI *stocks*, but not FDI flows.

¹² Beta coefficients measure the change in exports (imports) in standard deviation units for a unit change in each explanatory variable in standard deviation units, holding constant the other variable.

¹³ This result is also confirmed by a recent empirical analysis which focuses on extra-EU trade and investment flows (Greenaway 1993).

¹⁴ However, the regression results also demonstrate that there is no clear-cut pattern regarding trade and investment flows that can be identified by a simple cross-section analysis. The different results for the three major investor countries indicate that the positive correlation between FDI and trade flows should be carefully interpreted. Obviously, other variables such as different productivity levels, different sectoral and regional preferences of investors, and the sometimes volatile character of FDI flows should be taken into account for a more comprehensive analysis of cross-country trade flows.

IV. Trade and FDI Performance of Triad Members

As argued before, globalization represents a substantial increase and a new quality in the international division of labor, largely because of the integration of various developing and transition economies into the world economy. This involved similar challenges for all members of the Triad. Yet, different adjustment patterns are not confined to wages and employment. Likewise, the relative performance of Triad members with regard to FDI and trade flows reveals interesting differences.

The following discussion indicates that the EU has made relatively little use of the opportunities for cost savings through global sourcing, and of profit chances through penetrating newly emerging markets. At the same time, the EU has become a major target of globalization strategies by foreign competitors. On world markets, the EU has been outperformed by both Japan and the United States. The share of EU exports (excluding intra-EU trade) in world manufacturing exports declined by 5 percentage points to 17.1 percent in the period 1980-1994 (UN various issues). By contrast, the corresponding loss was only about one percentage point for the United States, and Japan increased its market share from 10.8 percent in 1980 to 12.1 percent in 1994. On the import side, the EU has become a major target of trade expansion and globalization strategies by traditional and newly emerging competitors. Since the 1980s, the EU's trade balance for high-tech products has worsened progressively (Commission of the EC 1993); the growth rate of EU imports of high-tech products was nearly twice the growth rate of the corresponding EU exports. Arguably, European integration has retarded the globalization of EU investors, which tend to prefer regionalization strategies.

New competitive suppliers

The Internal Market program, launched by the EU Commission in 1985, represented a major step towards the deepening of EU integration, and was widely expected to stimulate intra-EU trade. Yet, EU imports of manufactures from non-member countries increased at a higher rate than intra-EU imports between 1980 and 1994; the share of intra-EU imports in total EU imports declined from 63 to 57 percent (Table 3).¹⁵ In addition to the United States and Japan, developing countries have established themselves as serious competitors on EU markets. All non-OECD countries taken together raised their import market share by nearly five percentage points to about 17 percent in 1994. The share of all non-OECD countries in *extra*-EU imports (1994: 40 percent) was comparable with their share in total imports of Japan and the United States in 1994, while the increase in their import shares since 1980 was clearly more pronounced in the two latter markets than in the EU.

¹⁵ UN data suggest that the share of intra-EU imports in total EU imports of manufactures declined particularly between 1990 and 1993, and recovered somewhat in 1994 (UN, various issues).

As concerns manufacturing exports by developing countries to the EU, the first generation of newly industrializing economies (NIEs) in Asia (Hong Kong, Republic of Korea, Singapore, and Taiwan

Table 3 — Regional Structure of Manufactured Imports of the EU, Japan and the United States, 1980 and 1994(percent)

Importing country/	Year	Imports from:								Memo-randum: Total imports (US\$ billion)
		EU(12)	Japan	US	Non-OECD countries	Asian NIEs ^a	ASEAN (4) ^b	China	Latin America	
All manufactures^c										
EU(12)	1980	63.0	4.8	9.8	12.3	3.0	0.4	0.4	0.7	383.2
	1994	56.9	6.0	9.2	17.2	3.9	1.9	2.5	0.7	1014.2
Japan	1980	26.3	—	38.4	27.2	15.4	2.2	3.6	1.9	24.2
	1994	21.7	—	29.0	43.0	15.8	8.8	14.1	0.7	132.5
United States	1980	25.0	24.5	—	27.8	14.9	2.2	0.6	5.7	116.1
	1994	17.3	22.3	—	40.9	13.4	6.1	7.5	10.1	525.1
Machinery and transport equipment^d										
EU(12)	1980	64.4	7.8	12.6	6.7	1.7	0.2	0.0	0.4	164.6
	1994	57.1	9.6	11.7	12.9	4.9	1.7	1.2	0.5	489.8
Japan	1980	27.0	—	50.7	14.6	8.7	1.4	0.1	2.2	8.4
	1994	21.3	—	40.3	33.7	18.4	9.9	4.7	0.4	52.9
United States	1980	25.5	34.9	—	16.1	8.2	2.4	0.0	4.5	63.8
	1994	15.6	30.8	—	32.6	13.4	6.0	3.0	9.5	314.6
Chemicals^e										
EU(12)	1980	71.1	1.4	10.1	8.4	0.2	0.1	0.4	0.8	60.6
	1994	69.7	2.3	8.0	8.5	0.7	0.2	0.8	0.7	159.9
Japan	1980	28.8	—	42.8	17.7	7.0	1.7	2.9	2.7	5.9
	1994	36.6	—	31.7	20.0	7.4	3.1	4.4	1.7	19.9
United States	1980	39.9	8.3	—	14.4	1.4	0.4	1.3	6.7	9.0
	1994	38.8	12.5	—	20.6	4.1	1.0	2.2	7.2	35.5
Clothing and textiles^f										
EU(12)	1980	60.2	1.1	3.9	27.7	9.6	1.3	1.6	1.6	44.7
	1994	47.2	0.8	1.9	40.9	5.5	4.5	6.6	0.7	100.1
Japan	1980	22.3	—	6.7	67.4	43.0	3.0	16.4	0.7	3.3
	1994	13.8	—	5.9	79.2	17.6	6.6	48.5	0.2	20.5
United States	1980	11.7	6.4	—	79.5	50.8	4.3	4.5	9.2	9.5
	1994	8.3	1.6	—	84.4	23.5	11.0	16.1	17.1	48.3

^aHong Kong, Republic of Korea, Singapore, Taiwan Province of China. — ^bIndonesia, Malaysia, Philippines, Thailand. — ^cSITC 5 + 6 + 7 + 8 - 67 - 68. — ^dSITC 7. — ^eSITC 5. — ^fSITC 65 + 84.

Source: OECD (a).

Province of China) still figures most prominently (Table 3). However, other Asian developing countries are catching up quickly. Especially since the mid-1980s, booming market shares are recorded for China and ASEAN countries. China and ASEAN countries have not only emerged as new competitors in the EU, but even more so in Japan and the United States.¹⁶ Competition from developing countries is likely to gain further momentum as many Latin American countries have stabilized and liberalized their economies recently. Latin America is thus better prepared to participate in the international division of labor. As a matter of fact, Latin American countries already succeeded to raise their share in US imports. Likewise, additional import pressure will result from the proceeding integration of Central and Eastern Europe into the world economy. This will affect especially the EU, which can be considered the "natural" trading partner of Central and Eastern Europe.

Table 3 further reveals that the growth of developing countries' exports to the EU, Japan and the United States was not restricted to traditional industries such as clothing and textiles. Competitive pressure was strong in human capital intensive sectors such as machinery and transport equipment as well.¹⁷ Asian developing countries have moved rapidly into sophisticated segments of manufacturing. This development has been indirectly supported by trade policies of industrialized countries, notably in the EU. Market access for low-cost suppliers was restricted for products considered "sensitive" (e.g., textiles and clothing, iron and steel) so that different factor endowments were partly denied their role in shaping the international division of labor. Developing countries were more or less forced to compete on markets for more sophisticated products. Their chances to do so were enhanced by greater mobility of financial capital and easier access to new technologies since the early 1980s. The changing pattern of imports of the Triad thus provides indications as to the limited effectiveness of trade policy in restricting import competition. As a result of protection granted to ailing industries, part of the adjustment burden has been shifted towards sectors in which advanced economies should possess comparative advantages.

The EU as a target of globalization strategies

In the era of globalization, worldwide sourcing and marketing have become major parameters of competitiveness by offering cost savings and new sales outlets. The EU figured prominently among the principal targets of globalization strategies by international investors. The region attracted nearly half of world FDI inflows in 1989-1991, and still about 36 percent in 1992-1995, whereas its share was 30 percent in 1983-1988 (Table 4). FDI stocks held by US and Japanese investors in the

¹⁶ China and ASEAN(4) together accounted for 10 percent of extra-EU imports in 1994, as compared with 23 percent of Japan's imports and 14 percent of US imports (Table 3).

¹⁷ For the case of the EU, see also Commission of the EC (1993).

EU increased relative to their overall outward FDI stocks.¹⁸ The EU's attractiveness for foreign risk capital was largely because international investors anticipated the completion of the Internal Market and its extension to prospective EU member countries (Hiemenz et al. 1994). Fears of restrictive EU trade policies may have induced FDI in some instances, e.g., Japanese investment in the automobile industry, as FDI provided a means to jump over protectionist fences. However, the larger part of FDI appears to be motivated by market integration (both in manufacturing and services) and cost advantages at the EU periphery, which did not only benefit EU producers but also outside investors. Somewhat ironically, European integration has strengthened the globalization of major competitors.

Table 4 — Regional Distribution of FDI Inflows, 1983-1995 (percent)

Host countries	1983-88 ^a	1989-91 ^a	1992-94 ^a	1995 ^b
EU(15)	30.0	47.0	36.3	35.5
Japan	0.4	0.7	0.8	0.0
United States	37.6	24.1	18.0	19.1
Central and Eastern Europe	0.0	0.5	2.5	3.8
Developing countries	21.6	18.3	35.0	31.6
Memorandum:				
World inflows (US\$ billion)	91.6	190.2	200.6	314.9

^aAnnual average. — ^bEstimates.

Source: UNCTAD-DTCI (1995: Annex Table 1); UNCTAD (1996: Annex Table 1).

FDI flows to the EU should have contributed to the creation of new jobs in EU economies.¹⁹ However, earlier expectations according to which the Internal Market program would help significantly to overcome competitive disadvantages of domestic industries were not well founded. Exactly the opposite may happen, if policy makers and entrepreneurs in the EU consider regional integration to be an alternative to globalization and ignore the effects of fiercer competition on labor markets.

¹⁸ Comparing 1984 and 1994, the EU's share in US FDI stocks increased from 34 to 42 percent; the respective shares in Japanese FDI stocks amounted to 9 and 18 percent (OECD c).

¹⁹ Hamill (1993: 92), however, expects major job losses in Europe as a consequence of TNC restructuring. For a comprehensive assessment of the role of TNCs in generating, displacing or relocating jobs, see UNCTAD-DTCI (1994: chapter IV).

Regionalization versus globalization of EU investors

The Internal Market program provoked unprecedented FDI flows among EU member countries. The intra-EU share of overall EU FDI outflows soared from less than one third in 1985-1987 to more than half in 1991-1994 (Table 5). Non-EU hosts within Europe, too, attracted rising shares in EU FDI outflows, which can be attributed to the pending widening of European integration. The regional distribution of FDI outflows is consistent with the view that EU investors focused their attention on the emerging Internal Market.

Table 5 — Regional Distribution of FDI Outflows of the EU, Japan and the United States,^a 1985-1994 (percent)

Host countries	EU ^b			Japan			United States		
	1985-87	1988-90	1991-94	1985-87	1988-90	1991-94	1985-87	1988-90	1991-94
Industrialized countries	87.7	88.9	81.9	67.9	77.1	68.5	64.3	65.9	60.4
EU(12)	30.3	51.1	54.3	16.9	20.8	18.6	38.8	41.1	42.6
Other Europe	3.3	4.2	12.0	0.8	1.3	0.9	5.4	6.5	6.4
US and Canada	50.5	29.7	18.0	46.1	48.6	43.5	—	—	—
Japan	0.6	0.9	0.1	—	—	—	3.1	2.7	2.2
Central and Eastern Europe	0.1	0.2	3.1	0.0	0.0	0.4	1.6
Developing countries ^c	9.5	9.1	12.1	32.1	22.9	31.5	36.9	33.7	37.6
Africa	0.7	1.1	1.0	1.1	1.1	1.2	-0.1	-1.8	0.5
Latin America	5.6	4.9	5.8	17.9	8.9	10.0	33.0	29.2	25.1
Middle East	0.6	0.6	0.3	0.2	0.2	0.9	0.4	-0.3	1.3
South and East Asia	2.2	1.7	4.6	12.7	12.2	18.8	3.5	6.3	10.3
DAEs ^d	1.8	1.1	3.0	8.3	9.7	10.0	3.2	5.4	8.0
Other ^e	0.5	0.6	1.6	4.4	2.5	8.8	0.4	1.0	2.3
Memorandum:									
World (US\$ billion)	42.8	90.8	87.4	22.6	57.2	38.2	19.8	28.8	51.4

^aAnnual average. — ^bWithout Greece and Ireland. — ^cIncluding Mexico and Turkey. Data for particular groups of developing countries are sometimes incomplete. — ^dThe following countries are included in the source under "dynamic Asian economies": Hong Kong, Malaysia, Republic of Korea, Singapore, Taiwan Province of China, Thailand. — ^eIncluding, inter alia, China, India, Indonesia, the Philippines.

Source: OECD (c).

The increasing regional concentration of FDI outflows of the EU was mainly at the expense of the EU's engagement in North America, whose share in FDI outflows dwindled to 18 percent in 1991-1994 (Table 5). The absolute amount of EU FDI outflows to North America was cut half in the early 1990s, as compared with annual average outflows in 1985-1989 (OECD c). Significantly reduced FDI outflows to North America are also reported by Japan since 1991. In contrast to the

EU, however, the share of North America in Japanese FDI outflows persistently exceeded 40 percent (Table 5).

The drastic decline of EU FDI in North America may be a cyclical phenomenon to some extent. Yet it may also indicate that European integration has retarded the globalization of EU investors. It is consistent with this interpretation that EU FDI in Asia remained relatively low, although the economies in this region represent the world economy's growth pole and have emerged as most competitive suppliers of goods and services. Especially in dynamic Asian economies, EU investors have traditionally been underrepresented as compared with Japanese and US investors.²⁰ In 1988-1990, for example, South and East Asian economies received less than 2 percent of total EU FDI outflows, whereas their share in Japanese and US FDI outflows amounted to 6.3 and 12.2 percent (Table 5). Although the share of South and East Asian economies in EU FDI outflows increased in 1991-1994, it remained far below the corresponding figures for Japan and the United States. In absolute terms, annual average FDI flows from the EU to South and East Asian economies amounted to US\$ 4 billion, which fell considerably short of absolute flows from the United States (US\$ 5.3 billion) and Japan (US\$ 7.2 billion) (OECD c).

Other developing regions such as Latin America, too, attracted a relatively low share of EU FDI outflows, as compared with their share in Japanese and US FDI. In other words, developing countries as a whole received less attention by EU investors than by major competitors within the Triad.²¹ This suggests that the latter made better use of the chances for cost savings through global sourcing, and of profit opportunities through penetrating newly emerging markets.

Relatively weak efforts towards globalization by EU companies, measured by Japanese and US standards, can be attributed at least partly to economic policies in the EU. Direct government involvement, e.g., in the automobile industry, and financial incentives to locate production facilities in backward regions of EU member countries have discouraged globalization. Trade restrictions, e.g., the export restraint agreement on Japanese cars, have retarded the adjustment and restructuring of EU companies. At the same time, such restrictions provided a further stimulus to globalization of foreign competitors, as FDI offered a means to circumvent export restraints.

Recent policy initiatives by the EU Commission cannot solve this dilemma. The attempt to support coordinated efforts by EU manufacturers and input suppliers to strengthen their innovative capacity and competitiveness through joint R&D projects, training programs, and the dissemination of new production techniques is likely to remain ineffective for two reasons. First, the targeting of policy

²⁰ For a detailed analysis, see European Commission and UNCTAD-DTCI (1996).

²¹ This is also true when absolute FDI outflows to all developing countries are compared. In 1985-1994, absolute flows from the EU were persistently below flows from each Japan and the United States. All members of the Triad have in common, however, that absolute FDI outflows to all developing countries were higher in 1991-1994 than in 1985-1987. This indicates that the increased share of EU hosts in overall FDI outflows of the EU, Japan and the United States was due to additional FDI, rather than FDI diversion at the expense of developing countries.

incentives is becoming increasingly difficult, the more non-EU competitors are operating in the EU and the more interlinkages among producers of different origin exist.²² Second, closer cooperation among EU companies is insufficient to meet the global challenge of fiercer competition on EU markets. Regionalization is no promising alternative to going global in view of greater cost efficiency and innovativeness of traditional competitors, notably of Japanese producers,²³ and the emergence of new competitors, especially in Asia.

V. Conclusion: What Policies May Work?

Economic policy makers are facing a major dilemma in the era of globalization. Competitive pressures are mounting as international investors benefit from an increasing number of options to realize cost savings and to exploit profit opportunities at a worldwide scale. The implication of enterprises being less constrained in their strategic choices is that the economic autonomy of governments is shrinking; the scope of economic policy making declines.²⁴ In particular, the effectiveness of traditional means to protect non-competitive factors of production is seriously eroded. The exceptionally high unemployment in the EU, especially of low-skilled workers, indicates that policy constraints are binding not only on the national level, but also on the level of large regional integration schemes. It follows that regionalization is insufficient to meet the competitive challenges stemming from low-cost labor areas *and* advanced economies striving for technological leadership.

There appears to be a growing awareness that impaired competitiveness of EU industries and the failure to adapt satisfactorily to structural change is at the heart of labor market problems. The EU Commission's White Paper "Growth, Competitiveness, Unemployment", published in December 1993, and the OECD Jobs Study (OECD d) both pay tribute to this emerging consensus. However, it is still highly controversial in which way governments can contribute to reducing unemployment and regaining technological leadership.

Protectionist "innovations": A counterproductive strategy

²² It can, of course, be argued that the targeting of incentives on EU companies is unreasonable anyway. Rather than supporting the competitiveness of EU companies, economic policy should aim at improving the EU's attractiveness for domestic *and* foreign investors. FDI inflows may well contribute to an improved world market performance of EU economies.

²³ For example, the average productivity of assembly plants of European car producers was only half the productivity of their competitors in Japan (Womack et al. 1990). The unit cost reductions of about 5 percent expected from the Internal Market program were, thus, insufficient to restore competitiveness.

²⁴ The loss of national economic autonomy is also mentioned by UNCTAD-DTCI (1994) and in several contributions to the volume edited by Bailey et al. (1993). Renshaw (1993: 314), for example, notes a "regulatory deficit" in the sense that national labor market legislation and institutions are becoming increasingly emasculated".

The limited effectiveness of conventional protectionist measures has led to an increasing demand for stricter and more sophisticated protection. Examples include: trade-related investment measures (TRIMs) such as local content requirements imposed on foreign investors, and a multilateral harmonization of production standards (e.g., with respect to social and ecological production conditions):

- TRIMs may render the globalization of foreign competitors more difficult and costly. However, the experience with fairly restrictive local content requirements in the case of FDI of Japanese car manufacturers in the EU indicates that TRIMs cannot halt the trend towards globalization. Rather, they may induce follow-up FDI by foreign input suppliers. Even if the restrictions imposed on FDI were prohibitive, evasion would be possible by referring to non-equity arrangements such as licensing, cooperation agreements, R & D partnerships, etc.
- Common production standards may impede the process of catching up of lower income countries, if developing countries are required to adhere to the more demanding social and ecological standards of industrialized economies. This may ease the adjustment burden of ailing industries for a while, but only at the cost of technologically more advanced industries. The latter will suffer from lower demand for their products in newly emerging markets and from upgrading of developing countries' exports, if locational characteristics are denied their role in shaping the international division of labor.

In summary, innovative protectionist measures resemble more traditional means: They lead to allocative inefficiency and structural rigidity in the protected economies, while the incentives to increase productivity through technological innovation are weakened.

Industrial policy: High costs, uncertain returns

Governments are inclined to tackle unemployment and insufficient innovativeness by selective industrial policies. The drawbacks of high and persistent subsidies granted to ailing industries are similar to those mentioned in the context of protectionism: Non-favored sectors have to pay the bill; their competitiveness deteriorates due to higher input prices or rising taxes. These costs should no longer be ignored.

The more recent experience of the EU with industrial targeting at high-tech industries is not encouraging either. Typically, huge fiscal outlays failed to produce a significantly improved world market performance of the promoted industries.²⁵ This suggests that the underlying assumption, namely that technological leadership of Japanese competitors is because they enjoy the advantages of an unlevel playing field, is not valid. Contrary to conventional wisdom, a disproportionate amount of Japanese industrial policy targeting obviously occurred in low growth sectors, and

²⁵ For a more detailed discussion of this issue, see Nunnenkamp et al. (1994).

productivity was not enhanced as a result of industrial policy measures (Beason and Weinstein 1996).

Government attempts at picking the winners are inherently flawed for various reasons: Governments face serious constraints in identifying future growth industries; the targeting of support schemes becomes increasingly difficult under conditions of globalized production; lobbying by large companies is encouraged, while small innovative enterprises will typically suffer from discrimination; and, finally, retaliation by foreign trading partners is highly likely.

Wage flexibility: Buying time efficiently

What can policy makers do about unemployment if trade and industrial policy interventions are counterproductive? In the short run, there is no alternative but to accept that the trade-off between employment and wages has become much more pronounced in the era of globalization. The US example shows that the employment chances of low-skilled workers improve considerably if relative wages are flexible. Trade unions, especially in the EU, have to agree to higher wage flexibility and more wage differentiation. Governments have a major role to play in order to overcome incentive problems that have characterized wage bargaining in the past:

- Generous unemployment benefits need to be revised to the extent that they provide strong disincentives to accept lower paid job offers.
- Governments must be credibly committed not to make up for adverse employment effects of collective wage agreements.

Flexible wage policies help to ease employment problems in industries under heavy competitive pressure. They cannot halt globalization and the ensuing devaluation of low-skilled labor in advanced economies, but they provide a cushion until a long-term strategy becomes effective.

Human capital formation: The long-term therapy

From low-skilled labor being the major problem, it follows that a long-term strategy of tackling the causes of impaired competitiveness must focus on human capital formation. Advanced economies have to strengthen their comparative advantage in skill intensive sectors by improving the qualification of the workforce. As globalization implies a permanent change of job requirements, human capital has to be built in a way that allows for flexibility and mobility of the workforce. For example, existing systems of vocational training, including the widely admired German apprenticeship system, may need major revisions, as the life-cycle of vocational skills is shortened with proceeding globalization.

While specific training may be largely left to the market, there is reason for governments to support human capital formation especially by improving the quality of basic education, where the social

returns are particularly high (Psacharopoulos 1993). A bigger stock of skilled labor delivers social benefits in terms of greater flexibility in responding to economic change. However, reforming the system of education and training takes considerable time to strengthen the competitive position in skill intensive sectors. It is exactly because of these time lags that reforms should no longer be postponed.

References

- Agarwal, Jamuna P., Andrea Gubitz, and Peter Nunnenkamp (1991). *Foreign Direct Investment in Developing Countries: The Case of Germany*. Kieler Studien 238, Tübingen.
- Bailey, Paul, Aurelio Parisotto, and Geoffrey Renshaw (eds.) (1993). *Multinationals and Employment. The Global Economy of the 1990s*. International Labour Office, Geneva.
- Beason, Richard, and David E. Weinstein (1996). Growth, Economies of Scale, and Targeting in Japan (1955-1990). *Review of Economics and Statistics* 78: 286–295.
- Bhagwati, Jagdish, and Vivek H. Dehejia (1994). Freer Trade and Wages of the Unskilled - Is Marx Striking Again? In Jagdish Bhagwati and Marwin H. Koster (eds.), *Trade and Wages. Leveling Wages Down?* Washington, D.C.: 36–75.
- Campbell, Duncan (1993). The Globalizing Firm and Labour Institutions. In Paul Bailey, Aurelio Parisotto and Geoffrey Renshaw (eds.), *Multinationals and Employment. The Global Economy of the 1990s*. International Labour Office, Geneva: 267–291.
- Commission of the European Communities (1993). *European Economy* 52. Brussels.
- European Commission and UNCTAD Division on Transnational Corporations and Investment (1996). *Investing in Asia's Dynamism: European Union Direct Investment in Asia*. Brussels.
- Greenaway, David (1993). Trade and Foreign Direct Investment. *European Economy* 52: 103–128.
- Hamill, James (1993). Employment Effects of the Changing Strategies of Multinational Enterprises. In Paul Bailey, Aurelio Parisotto and Geoffrey Renshaw (eds.), *Multinationals and Employment. The Global Economy of the 1990s*. International Labour Office, Geneva: 69–93.
- Hiemenz, Ulrich et al. (1994). EC Economic Integration and Its Impact on Foreign Direct Investment and Developing Countries. In Koichi Ohno, and Yumiko Okamoto (eds.), *Regional Integration and Foreign Direct Investment: Implications for Developing Countries*. Institute of Developing Economies, Tokyo: 283–384.
- Krugman, Paul, and Robert Z. Lawrence (1994). Trade, Jobs, and Wages. *Scientific American* 270 (4): 22–27.
- Lawrence, Robert Z., and Matthew J. Slaughter (1993). International Trade and American Wages in the 1980s: Giant Sucking Sound or Small Hiccup? *Brookings Papers on Economic Activity* (2): 161–226.
- Leamer, Edward E. (1992). *Wage Effects of a U.S.-Mexican Free Trade Agreement*. NBER Working Paper 3991.
- Lücke, Matthias (1993). Developing Countries' Terms of Trade in Manufactures, 1967–87: A Note. *The Journal of Development Studies* 29: 588–595.
- Nunnenkamp, Peter, Erich Gundlach, and Jamuna P. Agarwal (1994). *Globalisation of Production and Markets*. Kieler Studien 262, Tübingen.
- OECD (a). *Foreign Trade by Commodities*. Series C, Paris, various issues.
- (b). *Employment Outlook*. Paris, various issues.
- (c). *International Direct Investment Statistics Yearbook*. Paris, various issues.
- (d) (1994). *The OECD Jobs Study. Facts, Analysis, Strategies*. Paris.

- (e). *Indicators of Industrial Activity*. Paris, various issues.
- Psacharopoulos, George (1993). *Returns to Investment in Education*. World Bank, Policy Research Working Paper 1067, Washington, D.C.
- Renshaw, Geoffrey (1993). Overview and Conclusions. In Paul Bailey, Aurelio Parisotto and Geoffrey Renshaw (eds.), *Multinationals and Employment. The Global Economy of the 1990s*. International Labour Office, Geneva: 293–325.
- Rybczynski, T.M. (1955). Factor Endowments and Relative Commodity Prices. *Economica* 22: 336–341.
- Stolper, Wolfgang and Paul A. Samuelson (1941). Protection and Real Wages. *Review of Economic Studies* 9: 58–73.
- UNCTAD (1996). *World Investment Report 1996: Investment, Trade and International Policy Arrangements*. New York and Geneva.
- UNCTAD-DTCI (1994). *World Investment Report 1994: Transnational Corporations, Employment and the Workplace*. New York and Geneva.
- (1995). *World Investment Report 1995: Transnational Corporations and Competitiveness*. New York and Geneva.
- United Nations (UN). *Monthly Bulletin of Statistics*. New York, various issues.
- US Department of Labor, Bureau of Labor Statistics. *Producer Price Indexes, Annual Supplement*. Washington, D.C., various issues.
- Womack, James P., Daniel T. Jones and Daniel Roos (1990). *The Machine That Changed the World*. New York.
- Wood, Adrian (1994). *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World*. Oxford.

Table A1 — The Statistical Impact of FDI and GDP on Trade (Beta coefficients)^a

Year	1. Germany			
	Exports		Imports	
	GDP	FDI	GDP	FDI
1989	0.50*	0.44*	0.55*	0.37*
1990	0.50*	0.48*	0.54*	0.40*
1991	0.40*	0.55*	0.40*	0.53*
1992	0.31*	0.72*	0.30*	0.70**
	2. Japan			
	Exports		Imports	
	GDP	FDI	GDP	FDI
1989	0.25*	0.68*	0.34*	0.49*
1990	0.22*	0.64*	0.31*	0.55*
1991	0.30*	0.59*	0.37*	0.48*
1992	0.31	0.59*	0.17	0.67*
	3. United States			
	Exports		Imports	
	GDP	FDI	GDP	FDI
1989	0.56*	0.36*	0.68*	0.15
1990	0.39*	0.53*	0.45*	0.43*
1991	0.54*	0.29	0.55*	0.30

*indicates statistical significance at the 5 percent level. — ^aBeta coefficients computed from a regression of exports (imports) on Gross Domestic Product and FDI flows; all variables in logs; annual data.

Source: Nunnenkamp et al. (1994).