

Hishow, Ognian N.

Research Report

Economic effects of EU Eastern expansion: High growth in the new member economies with a continuing prosperity gap

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SWP Research Paper

Stiftung Wissenschaft und Politik
German Institute for International
and Security Affairs

Ognian N. Hishov

Economic Effects of EU Eastern Expansion

High Growth in the New Member Economies
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SWP
Stiftung Wissenschaft und
Politik
Deutsches Institut für
Internationale Politik und
Sicherheit

Ludwigkirchplatz 3-4
10719 Berlin
Germany
Phone +49 30 880 07-0
Fax +49 30 880 07-100
www.swp-berlin.org
swp@swp-berlin.org

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**Economic Effects of EU Eastern Expansion.
High Growth in the New Member Economies
with a Continuing Prosperity Gap**

The EU accession on May 1, 2004 of several economies with a relatively low level of income has increased the development and prosperity gap within the Union. The population grew by 20%, while economic output (GDP) went up by only about 5%. Per capita income in the expanded Union is now 12% lower than it was in the former EU-15.

Immediately after the political upheaval of 1989/99, the eastern part of the continent began a process of catching up that as a result of admission to the EU will be continued, albeit without a noticeable acceleration. Depending on the starting level and growth rate, it can last several decades.

However, the major East-West economic gap is also a prerequisite for a successful convergence of income levels if market forces prevail. As capital mobility is no longer hindered, investment will flow from capital-rich western Europe to the capital-poor Eastern and Central European (ECE) nations, where it will ensure the expansion of capital stock per worker and thus lead to productivity growth. The effect will be a gradual East-West convergence of input and output prices, including wages, and this even without labor mobility.

Transformation in eastern Europe has in fact progressed according to the above pattern. But the increased growth was not a result of the political opening *per se* but because structural faults inherent in the planned economy had been overcome. Domestic demand played a larger role in accelerating growth in the new member countries than foreign trade and direct investment (with and from the European Union or Germany).

It would thus be unwise to slow down the process of catching up by excessive demands for (tax) harmonization. Such harmonization might bring short-term advantages to the countries and economies of the EU-15, but they would be more than neutralized by the effect of slowing down the ECE countries in their efforts to catch up economically.

The transformation in general and EU integration with its specialization effects in particular will probably increase the subregional gap in the economies of the eastern members instead of decreasing it. The

continued structural change in industry is responsible for this phenomenon. It will create a boom for some industries and a serious threat for others, with the accompanying consequences for the respective locations.

Against this background it should be examined whether the present distribution policy of EU Structural Funds (funds for three target groups: regions with per capita income of under 75% of the EU average, for depressed regions with old industry and for regions with high unemployment) inhibits more than it induces structural change. Mobility as a means to assist problem regions should be incorporated to a greater extent in the concept of regional structural change supported by EU funds in order to distribute the limited funds more efficiently and not to hinder the adaptation process.

Since both economic regions have liberalized their dealings with each other to a great extent and already brought their institutional structures in line with each other in the 1990s, the intensive phase of structural change and the transformation boom in eastern Europe should be over. In this respect May 1, 2004—all other things being equal—will probably have little effect on the real East-West convergence, at least in the mid-term.

Due to the variety of economic structures, income levels and consumer preferences, negative effects for Germany could emerge, however. Due to the difference in economic development, capital will no doubt continue to flow to the new member countries to cover their investment needs. To date net flows of less than one percentage point of German GDP have been recorded. In addition, there has only been a minimal slackening of growth and a slight loss of jobs. Since the 1990s the trade surpluses of western Europe/Germany with the ECE countries have resulted in net capital exports to these countries. The German export surplus in commodity trade has created jobs in Germany, but the trade balance in recent years has been on average, a billion euros per year too low to create enough new jobs to be worth mentioning. This is because the average investment needed per job in the former EU-15 or in Germany is around EUR 60,000. In economic terms moving production to eastern Europe makes sense. Outsourcing will therefore most likely continue.

It would be worthwhile considering whether the agreed seven-year transition period before full labor force mobility is allowed should not be shortened. A flow of labor from the ECE countries will reduce the labor supply in these countries, raise overall wage

levels, and counteract the outsourcing tendency in Germany.

Furthermore, the new EU members will continue to be net receivers of transfers from Brussels while Germany will be a net contributor for some time. Germany's payments reduce its domestic demand and impede its growth. Particularly in times of very low growth rates this effect is noticeable. A reduction of the German net transfer to Brussels would be, *ceteris paribus*, advantageous from a national point of view.

It would be wise to investigate any additional options for reducing the net German contribution. For example the unjustified British rebate should be addressed more strongly, since GDP expenditure patterns of the United Kingdom and Germany have in the meantime converged.

A long-lasting, considerable East-West income gap bears the potential of a two-class Union in which political tensions and conflicts about distribution policies would render decision-making impossible. Faster growth in eastern Europe would provide relief; unfortunately there are various non-material hindrances, including above all corruption, increased investment and other economic activities that stand in the way.

The EU should support, to a greater extent than has been done in the past, the countries of Eastern and Central Europe in their efforts to fight corruption. A public discussion of the problem, the dispatch of advisers, as well as financial and technical support are helpful instruments. The reduction of corruption in eastern Europe would result in immediate, positive output effects, which in turn would have an impact on the actual convergence process with the EU-15, on West-East transfers, and on growth in Germany. It would be necessary, however, to deal with corruption as an economic problem and not only as a matter of public order and judiciary co-operation.

The Economic Aspects of Eastern Expansion

Fundamental considerations and experience

After the collapse of the former East Bloc, the already existing income and productivity gap between the ECE countries and the then European Community (EC) increased as a result of the transformation process. To correct this, a high degree of constant growth was necessary. Membership in the EC/EU promised to provide the necessary prerequisites for ensuring growth. Above all economists and economic policy-makers in Warsaw, Budapest, Prague and Ljubljana pointed to the advantages of large, integrated markets for stimulating an increase in production, productivity and income in the young market economies. Membership in a historically successful economic community was seen as the only alternative.

Participation in regional integration provides the certainty of being able to deal better with external shocks. Countries in the catching-up process find it advantageous if they are able to integrate their national policies in a common set of rules together with their partners. Small countries want to be part of economic blocs in order to protect themselves from discriminating measures of large countries or from political pressure from the outside.

And although blocs of this kind are free-trade zones or customs unions, the access to a common market is only the second most important incentive. In the wake of the general trade liberalization within the framework of the GATT, and now the WTO, market access has been completely or partially achieved. Custom advantages for new members are also of little value, because even before membership numerous forms of most-favored-nation rates have already been implemented in their trade with the Union. The WTO rules do not tolerate trade coalitions that lead to trade diversion at the cost of previous partners. The creation of trade is in contrast welcomed.

Thus, what was more important was the confidence in the politically and economically stimulating effect of the largest economic community of the world. This confidence was also the crucial factor in the internal discussion of the pros and cons of expansion in some accession countries (Slovakia), which strengthened their willingness to undertake specific steps to become

members. For example, the candidates had to implement unilateral opening measures because their economies were, in general, less liberalized than those of the old members.¹ The effect of these measures on prosperity was positive, because small, open economies are usually wealthier than small, closed economies. Furthermore they follow the institutional framework, especially with respect to direct investments, of the large countries. The resulting lower risk premium for capital makes these countries more attractive for direct investment than countries outside the economic community.

The western European economy, which in the past few years has been suffering from stagnating growth (especially in Germany, Italy and France), also hopes for a growth-promoting effect from the new members in the mid to long term. In the end the costs of the EU expansion are expected to be made up for by the resulting benefits. The German capital goods industry especially, but also the food industry and some service areas, such as banking and telecommunications, see opportunities in the new eastern markets with their overall potential for growth.

After the reorientation of foreign trade, several of the Eastern and Central European economies, the three largest among them in the fore (Poland, Czech Republic and Hungary), were ranked higher on the list of German trade partners than some western European countries. At the moment Poland and the Czech Republic rank 10 and 11 among the recipients of German exports. It is primarily the degree of openness that the "new" economies exhibit that is responsible for this development. Small economies in general have higher export and import shares because they have a narrower range of specialization due to their limited potential and domestic market. In this way economies of scale can be taken advantage of and contribute to the competitiveness of specialized suppliers from the East.

¹ For the EU expansion of 1973 this was only partially true. Only Ireland's economic policy was protectionist; the economies of the United Kingdom and Denmark were not. In 1995 three open economies joined the EU: Austria, Finland and Sweden.

Thus what is important—in addition to trade—is a continuous expansion of the interconnections between the less-developed eastern and the highly developed western European economic region. The result of the East-West integration should be the ability of the ECE countries to sustain higher growth rates than the countries of the former EU-15 and to achieve income parity with them.

This is not wishful thinking. In the history of the European Community/EU there are examples of economies with above-average growth that succeeded in approximating the average level of the EU economies. In the 1980s Spain was able to catch up a bit and in the 1990s there was spectacular economic growth in Ireland. Between 1995 and 2000 the GDP of the emerald island increased by 10% in real terms and remained expansive after that as well. Unemployment was overcome and the living standard was noticeably improved. In 1991 per capita national income in Ireland was still only 76% of the EU-15 average; ten years later it was approaching 100% and it is still increasing. Ireland achieved comparative advantages as an investment location for the booming internet technology at the beginning of the 1990s (English-speaking, well-trained young workers; cultural and geographic vicinity to Britain and the United States with their dynamic economies). Finland also succeeded in 1990s in overcoming the economic crisis after the collapse of the Soviet Union and in achieving the highest growth rates in the EU. It accomplished this by re-orienting its economic relations to western Europe and moving into important specialization niches (among other areas in the rapidly expanding mobile phone sector).

These prospects are also open for the new ECE members. Their hope is based on the expectation that they will be able to achieve sustainable, higher growth rates than in the former EU-15, which will soon enable them to reach EU prosperity standards. This hope is both empirically and theoretically founded. The task of national and EU economic policy is to create the prerequisites for dynamic growth in the ECE countries.

Up to the early 1990s eastern Europe and western Europe were relatively isolated from each other with relatively little trade and practically no capital linkages. There was also de facto no labor migration. Regions isolated from each other produce goods using different technologies, have in general differing capital and labor structures, and different levels of productivity and income. (The situation changes when the two regions decide on mutual integration).

As is well known, economies vary in their per capita provision of capital and thus also in their per capita income. Capital stock per inhabitant in the EU-15 member nations is around 2.5 times higher than the average in ECE countries. Such differences occur if some countries provide fewer investment funds for the development of their capital stock than others. In such countries a state is achieved more quickly in which the amortization of capital and replacement investment are in balance and financial means for further development of capital are lacking. Examples are the ECE countries with their low per-capita income, and in comparison to the former EU-15 they are considered “poor.” To make up for the deficit in capital provision on their own, they would have to invest more, i.e. save more to the detriment of their limited consumer spending.

A new phenomenon and one of the most important consequences of the economic opening of the ECE countries was a dramatic increase in the flow of capital from the West into the new market economies. This was triggered by the fact that the yield of direct investment in many sectors and industries of the ECE countries were higher than in the EU-15. The rush of western investors was so great because they were aware that this situation would not last forever. The initial profit margin also decreases over time. Under the conditions of free capital flows the market encourages investments in undercapitalized regions of the East until their profitability reaches western levels. Thus free capital mobility is important for East-West economic convergence, because the resources of both areas (particularly the savings with which the investments are fed) are available for the growth of capital stock in the entire region.

Opening up to the EU and integration with it (and the rest of the world) have done their part: Foreign direct investment has increased the ratio of investment to GDP of the region by up to 5 percentage points (from 15% to 20% of the GDP of all the new member countries).² In this way a capital market extending beyond borders and made up of a bundling of the capital resources of the entire EU can overcome the initial East-West fragmentation of investment development and strengthen the trend to a convergence in capital stock and incomes throughout the EU. For this process two features are characteristic.

² At the peak reached in 2002 the FDI influx reached 21.5 billion U.S. dollars, or around a fourth of gross capital investments in the new member countries.

First of all, in the process of capital stock convergence, problems can arise, as happened to Ireland when growth was temporarily above average, and to Greece when growth was temporarily below average. Secondly, the flow of capital to the East can lead to a slackening of investment in the West. This means that the situation arises that is causing much current concern: the export of jobs. The slower the income gap is reduced, the longer this situation will continue. For example, foreign direct investment from the EU-15 in the ECE member countries between 2001 and 2003 was approximately 40 billion euros. About one fifth of that went to the automobile industry, where it probably created between 8,000 and 10,000 jobs alone.

This net capital export is not permanent, however. The less competition is hindered in the markets of the EU, the faster the price level for commodities will stabilize on the goods market. This implies a similar capital yield in both regions, and as a result the net export of jobs will decline. At the same time unhindered trading of goods in the long term will result in similar income levels in the ECE countries and in the EU-15. The result will be the creation of a supra-regional income parity with open capital and commodity markets by means of market mechanisms even without labor mobility.

Similar wage rates in the East and West have for their part a dampening effect on job exports to eastern Europe. Furthermore, they contribute to a reduction in the immigration of ECE workers and individuals to the EU-15 area. As a result of the most recent expansion, the four freedoms³ of the EU will only be partially extended to the ECE countries. Whereas the free flow of goods, services and capital existed before their membership, the unhindered movement of labor will only gradually be permitted. This can surely be criticized in terms of just treatment. Nevertheless, economic integration without labor mobility does not have to have, *ceteris paribus*, negative effects on the process of catching up for the new members.

The long interim phase for labor force mobility will have a limiting effect on growth in the West with its comparably scarce supply of labor.⁴ When, as a result

of the investment mechanism, demand for labor in this region exceeds the supply, wages will tend to rise. This, however, will not bring about a decline in unemployment, for example, in eastern Germany. The reason is that in the new member countries the cost of labor will remain low in the long term. Instead there will be a diversion of investment flows toward the East with its cheaper labor supply until wage equality is achieved. If the markets were not open, the former EU-15 would try to maintain growth by the utilization of more capital. The relationship of capital to labor—capital intensity—would increase and a capital-intense growth pattern would ensue. With the opening to the East the pressure has been removed from businesses to substitute the scarce factor labor with capital, which will result in continued growth in the region with an abundance of labor resources (the East).

This situation is also temporary, however, because a continual flow of capital from the West to the East will soon lead to an exhaustion of the labor reserves in the East. Now growth can only be sustained by the simultaneous expansion of the capital stock using technological advances in both regions at the same time. The more households and the economy of the ECE countries and the EU-15 save, the higher the growth in both regions. If, however, the new member countries have a low savings rate, the growth rate in the economic community will tend to decline and *visa versa* (capital imports from other regions, for example, the United States or Japan, will provide some relief, but they cannot take the place of own savings).

What is important is that the entire EU-wide savings potential is used above all to promote growth. In most western EU countries the state redistributes up to one half of economic output (GDP). In phases of weak growth it sustains private demand by additional borrowing. The share of consumption expenditure also increases to the detriment of investments. This is a problem when all EU governments pursue deficit-ridden fiscal policies, because a large economic bloc like the EU has an impact on capital markets. Its demand for capital forces the interest rates to rise via crowding-out effects and the scope for private investors is diminished. This occurs even if the eastern European governments maintain a course of fiscal discipline. As a result of its economic dominance in the common market, the high indebtedness of the West creates a strong undertow, pulling in funds to

some ECE countries with their, in general, low rates of unemployment.

³ The Maastricht Treaty defines the four basic freedoms as the prerequisite for the final establishment of the European Single Market: free movement of individuals, services, goods and capital.

⁴ “Scarce” and “abundant” are used as economic categories in this context. Despite higher rates of unemployment, labor is scarce in Germany because it is more expensive than in

meet public-sector demand, while the development of the backward ECE is delayed. As a result of the expanding globalization of capital markets this effect is defused to a certain extent; nevertheless care should be taken to ensure that high government debt does not dampen regional and overall economic growth.

As resources, industry structures and technological development gradually become similar in both regions, so-called intra-industrial trade and inner-branch specialization characterizes the division of labor between the regions. Intra-industrial trade is typical for highly-developed regions: Western industrial countries trade goods amongst themselves that are similar to each other, such as machinery, computers, vehicles and bank services. Today eastern European exports are influenced by the goods that come from the production facilities of western investors and that are produced for the western European market.

Because the factor endowment of both regions was markedly different in the early phase of integration, intra-industrial trade was weakly developed. After several decades of forced industrialization, eastern Europe had considerable capacity for the manufacture of low-tech products, which were competitive on the western European markets. This was especially true for steel and chemicals. But it was the extensive western direct investment that brought the necessary technology and know-how to the ECE to bring the industry and production structures in line with western standards. The resource structures of the new member states are similar to that of the old members and also provide—freed from the constraints of a planned economy—similar specialization patterns. The Czech Republic does not have many natural resources and Polish agriculture is not in a position to become the breadbasket of the EU. Slovenia and Slovakia do not have an excess of manpower, and Hungary has a large stock of production capital for intermediate and final products for the western market that requires a specialization in intra-industrial trade. With their location and experience, the Baltic States will become a center for high-quality services such as banking, harbor and transport services, business consulting for the Russian/CIS region, etc. Malta and Cyprus are too small to influence large-scale specialization patterns.

The next question is what economic pattern will emerge in the subregions of the East and West. Experience with the EU-15 has shown that integration is indeed accompanied by a convergence in per capita

economic output of the member countries. The productivity gap and income gap in the EU-15 has diminished in the last twenty years, with Ireland and Spain in particular having made substantial progress. However, this process has not been uniform. Two so-called catching-up economies, Spain and Greece, whose per capita income was approximately 80% of the EC average in the mid-1970s, experience a decline in the 1980s by around 10 percentage points before Spain, together with Portugal, were able to reduce the gap again. Greece's gap to the EU average is, however, larger than it was 25 years ago (per capita income however has increased by a third in the meantime).

In the EU-15 the less developed "Club Méditerranée" (Spain, Portugal, Greece) have managed to approach the EU average, or the relative gap between members has at least not become larger (United Kingdom, Scandinavia). Within the individual economies the integration has had, however, a variety of effects on the subregional developmental pattern. Regions with weak structures and peripheral locations can experience a greater economic isolation, while at the same time more highly developed areas with comparative cost advantages are strengthened. The discrepancy between center and periphery can become even greater. With respect to the recent EU expansion, integration can contribute to a better national economy but at the same time also to an increased regional disparity in the new member countries. The local adaptation pressure, which leads to emigration, closure of capacities and a restructuring of the local economy, will increase. Although an adaptation process of this sort is often economically efficient,⁵ it is frequently accompanied by social hardship, especially when the adaptation process is rapid.

Effects of integration on regional development and demand

A central issue of EU economic policy has always been to promote effective social cohesion at the regional level. A true convergence is seen as an essential goal of economic policy, also after eastward expansion. The main instrument of this economic policy includes the deliberate steering of funds to economically depressed

⁵ An economically efficient adaptation occurs when excess capacity (unemployment, unused production facilities) is avoided. Underemployment, for example, is eliminated by migration to other regions.

regions (according to the EU classification of Objective 1, Objective 2 and Objective 3), complimented by an active employment policy. This policy is financed by the EU Regional Funds.

EU policy aimed at regional social cohesion is reflected in the success of the prosperity convergence in the regions of the EU member countries. It can, however, be suboptimal in economic terms. In other words, if there were no funds for promoting backward regions, a convergence at a national level could be accompanied by a drifting apart at the regional level. In economic terms regional restructuring is probably a better approach than cementing obsolete structures with the help of EU resources. Instead, convergence at a national (macroeconomic) level is what should be promoted by economic policies. In the case of the EU there is empirical evidence for the assumption that poorer member countries catch up with the income average of the Community in the course of the conversion process.

To date regional economic research has made no recommendation on how convergence can be reached at the regional level. Theoretical models point to the possibility that as a result of integration, the given spatial order is changed by agglomeration and regional specialization advantages. A clear pattern for regional development after EU membership is not recognizable, however.⁶ Accordingly it is not clear in terms of economic efficiency what is better: to aid structurally-weak regions regardless of the cost or to choose natural adjustment at the cost of a greater regional disparity between countries. This issue is controversial in the EU because of the contrary economic interests and growth policies of the affected countries. There are voices that support EU promotion only at a national level. Sweden and the Netherlands

⁶ Regression calculations with panel data from long time series appear to confirm an asymmetrical effect of integration, according to which the less developed members exhibit faster growth after joining the EU. It is not clear, however, if this is just a pure scale effect of access to advanced technology in the technology-scarce economies of the new members and other "natural" integration effects or whether the EU promotion (fund transfer) is responsible for this growth (see Österreichische Nationalbank, *Wachstumseffekte der europäischen Integration: Implikationen für die EU-Erweiterung*, Berichte und Studien, vol. 2 [Vienna, 2002], pp. 194–208). Krugman and Venables argue for a center-periphery gap as the elimination of trade barriers promotes the spatial concentration of industry in agglomerations (see Paul Krugman and Anthony Venables, "Integration, Specialization, and Adjustment," *European Economic Review*, vol. 40 [1996], pp. 959–967).

are examples of countries that approve of structural support aimed at reducing the difference in prosperity between member states and not between regions (the cohesion approach, derived from the idea of a cohesion fund that promotes national and not regional economies).⁷

The contribution made by the EU Cohesion Fund to the economic growth of the most important receiver countries—Greece, Portugal and Spain—is not significant. In 2004 it will range between 0.37% and 0.24% of their GDP. Taking into account all net transfers, including those from the agricultural and structural funds, the southern members received in the last few years up to 3.7% (Greece) of their economic output in transfers from Brussels (Ireland and Portugal 2.5%, Spain 1.6%).⁸ While the transfers have a positive effect with respect to regional policy in the recipient countries, their economic effect in view of misdirected capital and loss in efficiency is less clear. In some cases transfer funds from Brussels are used to decrease the country's own net burden and do not actually contribute to the promotion of cohesive efforts: the increased quality of physical and human capital in the regional areas.⁹ They also have contrary effects on the terms of trade among EU member states. Because countries show a preference for nationally produced goods,¹⁰ the transfers contribute in the target country (the net recipient) to an increase in demand for such goods, and more resources are fed into their production. The result is a decrease in the supply of export goods and a concomitant increase in the price of exports. Accordingly, the terms of trade

⁷ Andreas Maurer/Wolfram Schroff, "Geben und Nehmen. Die Positionen europäischer und deutscher Akteure zur finanziellen Vorausschau 2007," SWP discussion paper, (Berlin: Stiftung Wissenschaft und Politik, January 2004, p. 9, <http://www.swp-berlin.org/common/get_document.php?id=744&PHPSESSID=dc2adef28ecb3fbf6f5b71b0565e272d>.

⁸ Source: European Commission, *Allocation of 2002 EU Operating Expenditure by Member State*, (Brussels, September 2003), <http://europa.eu.int/comm/budget/agenda2000/reports_en.htm>.

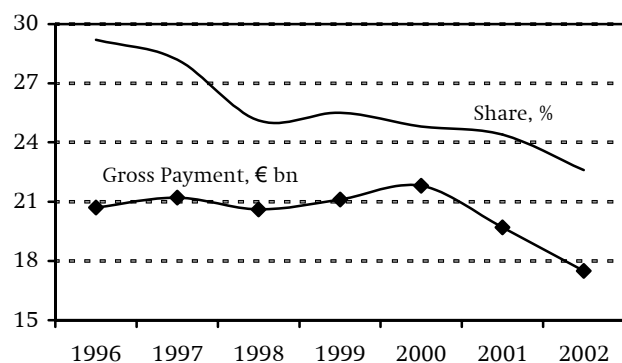
⁹ See the Sapir Report of the European Commission, *An Agenda for a Growing Europe: Making the EU System Deliver*, (Brussels, 2003).

¹⁰ This statement can be made convincingly with a view to imports: while Germany, for example, accounts for approximately 5% of the global economic output (95% is thus produced by the rest of the world), imports have a share of only one quarter of the German GDP. If consumption was indifferent nationally, the import share would also have to be at ca. 95%.

between importing partners and these countries become worse.

The transfer of resources to other countries results in reduced demand in one's own country. Since domestic demand is largely directed toward nationally produced goods, this has a negative impact on economic growth. In light of this, the reduction in the German contribution to the financing of the EU budget can be seen in positive terms if it also involves a simultaneous boost of domestic demand. Especially in the 1990s the German contribution to the budget of the Union was relatively large (Graph 1).

Graph 1
Germany's gross contribution to the EU budget.
1996–2002 (contribution of all EU-15 = 100%)



Source: European Commission, *Allocation of 2002 EU Operating Expenditure by Member State*, (Brussels, September 2003), <http://europa.eu.int/comm/budget/agenda2000/reports_en.htm>.

This fact partially explains the poor growth in the last decade: Due to the relationship between demand and output, the multiplier effect of the fall in demand caused by the transfer is detrimental to output. Every euro less of autonomous demand results in a two and a half to three times higher euro value in output loss. The problem becomes clear if one realizes that just a few years ago the net transfer to Brussels was about 0.4% to 0.5% of German GDP; it probably caused growth to slacken by about one percentage point. As of 2003 it had declined to 0.26% of GDP, thereby reducing its dampening effect on growth.

As a result, the direct economic effects of EU integration, meaning convergence and accelerated growth, cannot be adequately measured, even in the long term. Germany, for example, had the highest growth rates of its history in the 1950s, when integration had not yet progressed very far. Parallel with the integration process, these rates then declined. The positive effects of the Common Market were coun-

teracted by the dampening effects of other economic policies. A similar situation can be seen in numerous western and northern European countries whose income levels fell in relation to the EU average despite integration. And in eastern Europe the growth rates are currently lower than at the beginning of the last decade—despite the comprehensive interconnection to the western part of the continent. In this context even the European Commission points out that the figures often present a warped image; the effects of integration and their implications for growth, such as advantages resulting from political stability and planning security for companies, cannot be quantified in an adequate manner. With respect to eastern expansion, possible macroeconomic effects will only come to the fore gradually. In contrast at a sectoral and local level positive or negative effects will be felt more quickly.

Excursus: On the institutional prerequisites for overcoming the East-West gap after EU expansion

The fourth round of EU expansion carries with it several economic advantages, which, however, are asymmetrical. The members of the former EU-15 will profit less from the inclusion of the eastern Europeans. The new members have the possibility of increased growth and thus of catching up with the West.¹¹ If the past trend in growth of 4% p.a. continues in the region as a whole, the time needed to catch up will be relatively long. This means that some states of the East can only hope for a per-capita income similar to the West in two generations.¹² It will be even more difficult to catch up with the most prosperous EU countries (Table 1, p. 13).

Table 1 shows the current income per inhabitant at purchasing power parity. As the EU is a community of politically equal partners, it is alarming if within the country structure there are great differences in economic power. It can hardly be an advantage, for example, if in an unfavorable scenario an important member like Poland were to remain economically

11 This prospect is possible due to the advantages of integration, especially the declining risk premium for investment capital within a politically and economically stable community.

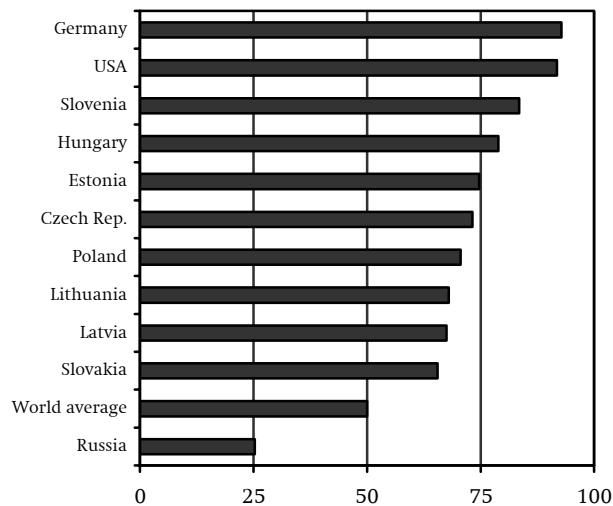
12 In Table 1 Germany serves as a comparison as its per capita income was the exact average for the EU-15 at the end of 2003.

Table 1
Time necessary to achieve the per capita income of the EU-15

World rating	Country	GDP/capita 2002 (US dollars)	Number of years necessary to catch up with Germany at a growth rate p.a. of		
18	Germany (EU-15 average)	26,600	4%	5%	6%
47	Slovenia	18,000	19.7	13.2	10.0
51	Malta	17,000	22.6	15.1	11.4
53	Czech Republic	15,300	27.9	18.7	14.1
54	Cyprus	15,000	28.9	19.4	14.6
59	Hungary	13,300	35.0	23.4	17.7
61	Slovakia	12,200	39.4	26.4	19.9
67	Estonia	10,900	45.1	30.2	22.7
76	Poland	9,500	52.0	34.8	26.3
86	Lithuania	8,400	58.2	39.0	29.4
87	Latvia	8,300	58.8	39.4	29.7
96	Rumania	7,400	64.6	43.3	32.6
98	Turkey	7,000	67.4	45.2	34.0
101	Bulgaria	6,600	70.4	47.2	35.5

Assumption: constant yearly GDP growth rate of 2% p.a. in Germany.
 Source: World Bank, World Facts and Figures, GDP per capita, 1.8.2003. <http://www.worldfactsandfigures.com/gdp_country_desc.php>.

Graph 2
Rule of law in the new member countries in an international comparison, 2003



Source: World Bank.

marginal for decades. The slow closure of the prosperity gap will mean long-term transfer of funds from the West to the East for structural measures and for

subsidizing agriculture in eastern European countries. Similar to the case of the new Länder after German reunification the transfers will probably provoke a variety of reactions, including disapproval in the general public of the transferring states, which will not contribute to the cohesion of the Union.

If, however, the long-term growth rate could be increased by one percentage point—to an annual five instead of four percent—the time necessary to catch up could be shortened, and the disadvantages of the East-West disparity in prosperity would not last as long. Even better would be a growth rate of six percent. Economic history has shown however, that only very few countries are able to achieve such a goal.

Growth is achieved by investment in real and human capital, which increases the capital stock of labor and thus of productivity. Investment occurs when businesses expect an increase in demand for their products and when there are reasonable conditions for investment. As international experience has shown, the latter is the decisive element: In many countries it was possible to increase output, but unrest, corruption, lack of legal security, insufficient

infrastructure and institutional weaknesses hinder investment.

The ten new members are implementing the body of institutional rules and regulations of the EU-15 or have already adjusted their national regulations so that they comply with it and have an adequate infrastructure and communications industry. On the other hand, corruption is a growth hindrance that still has to be overcome. Studies on the economic costs of corruption in eastern Europe have proved that businesses pay a part of their revenue for protection against criminal groups, for bribing civil servants, for the purchase of security equipment, bodyguards, etc. These costs are passed on to the consumer, resulting in higher priced merchandise and reduced competitiveness.

Those businesses that opt instead for a reduction in profits, lack funds for investment. Thus corruption is both a commercial and an economic problem.

This means that stemming corruption is a prerequisite for growth and prosperity. Prosperous states are thus less corrupt and corrupt states are less prosperous. In an international comparison of countries where the rule of law applies, some of the new members already do quite well (Graph 2), but on average the ECE countries do not achieve the levels of the West.¹³

The top ranking countries that are institutionally honest and economically in the forefront have a value close to 100. The world average is around 50. The new member countries exceed this value. Several reform economies with a longer free-market tradition, such as Slovenia and Hungary, but also westernized Estonia are ranked just below the top. These countries already have a relatively high per capita income (Slovenia) or high economic growth (Estonia).¹⁴ For the rest it can be said that they have reserves that will allow them to catch up with the EU average.

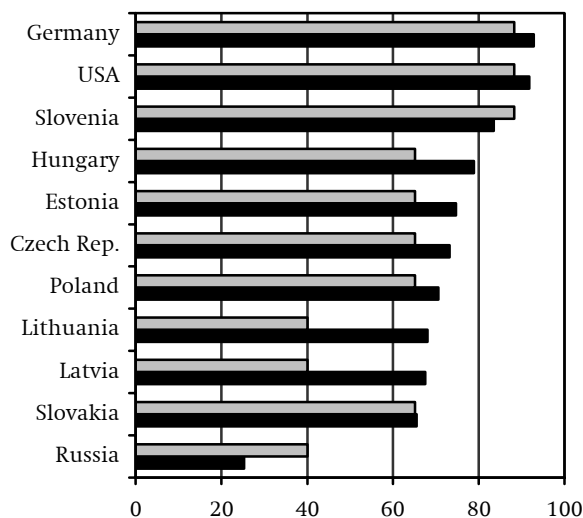
What has been achieved and the path ahead becomes obvious when comparing the average values

¹³ The weighted average is close to the Polish value, since Poland has a share of around 50% in its evaluation. To simplify matters only two western countries were chosen for a comparison: Germany as representative of the EU average for per capita income and the US as the leading economic nation.

¹⁴ Russia, whose legal certainty lies under that of the reform countries and the world average, was included for the sake of comparison. Irregardless of this fact, the Russian economy is currently growing at considerable speed. In the 1990s when there was massive uncertainty in the legal system, economic output declined by 50%.

with those of the same income group (Graph 3, p. 14). In addition to the “rule of law” indicators, the average value for the highly developed countries, the countries with a medium and those with a low income are listed. Slovenia, which is considered an industrial nation, lies with its rule of law evaluation behind Germany and the U.S. The countries with a medium per capita income—Hungary, Estonia, Czech Republic and Poland—do better than the average of their group. The same is true for Slovakia, which is ranked slightly above the average. The new member countries with low incomes—Latvia and Lithuania—are already comparable to the average of the group of wealthier countries with a medium per capita income; in fact their values are even above those of this average.

Graph 3
Rule of law (black bars) in relationship to the individual group average (gray bars). 2003



Source: World Bank.

Two conclusions can be drawn from these figures: Firstly the new member countries have a firm grip on corruption, which explains their good economic output especially in the 1990s. They will not increase the crime rate in the EU; on the contrary, with their membership the institutional and psychological prerequisites necessary to effectively implement European standards or rule of law have been improved.

Secondly, the reduction of corruption to an acceptable level, which keeps growth loss to a minimum (as in Germany and the U.S., etc.) is subject to the law of diminishing returns. With continued progress in fighting corruption, it becomes ever harder to eliminate it entirely. Thus these countries have succeeded

in a series of steps in stemming the visible excesses of corruption—bribing civil servants to influence the awarding of state-financed contracts, insider trading when privatizing, embezzlement of large amounts and their transfer to “safe havens.” Now they face the challenge of bringing under control the diffuse and legally unclear forms of influential networks, the lack of sense of right and wrong, and the bribery of civil servants and other service officials. This is the more difficult task, but it will result in larger gains, namely a higher institutional and economic level in eastern Europe.

Experience of East-West Integration and the Mid-term Prospects of Sub-regions

Previous integration of the new member countries only partially effective in increasing growth

After many years of integration and prospects of EU membership, it could be expected that the economic interconnections within the EU have led to an economic boom in the ECE countries. This is not the case, however. The initial expansion of the ECE economies came about because economic reserves that to date had not been used were exhausted. The analysis of growth in five Central European economies based on various demand and supply factors (see Appendix: Tables A1 and A2, p. 24, regression analysis) indicates that primarily investment and a demand arising from private consumption were the causative factors. From 1990 to 2002 the growth indices of Poland, the Czech Republic, Slovakia, Hungary and Slovenia were investigated.

In a first step the correlation was evaluated between the index of individual GDP and the indices of private consumption, supply of labor and real capital, including foreign direct investment (FDI), in each of these countries. FDI should reflect the opening effect: The integration of the eastern economies into the western European economy should occur as a result of the capital flow from the West. In addition FDI will reflect the technological modernization of the capital stock in the East, which should result in a higher rate of growth.

The resulting values of the analysis indicate that the development of economic output (of GDP) was dominated in all the ECE countries except for Hungary by the demand of private households (Appendix, Table A1, p. 24). That is not unusual as it is the largest component affecting demand in every economy. Poland, the Czech Republic, Slovakia and Slovenia have a private consumption index that is clearly ahead of their index for economic output. In Hungary both indexes are similar, which implies that household consumption was not the strongest factor driving growth in the 1990s. In Hungary the provision of real capital played an important role. Investments, especially net invest-

ments, influenced the supply side of growth and made this growth possible in the mid term because the demand for goods and services could only be met by the growing supply of inflation-free capital. In Hungary after the political upheaval, investment activity did not fall as it did in the partner countries. This decline is probably the reason for the lower amount of investment activity in relation to the GDP index in Poland, the Czech Republic, Slovakia and Slovenia.

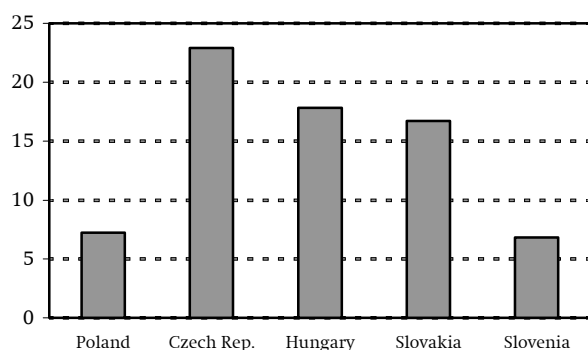
In the same period of time in all five countries there was a general decline of dependent employment (in Hungary and Slovenia it was sharper, see Table A1, p. 24, line 4). This decline was probably accompanied by an increase in the number of self-employed. Within the framework of the multiple regression carried out here (as a combination of several causative factors) this decline is in fact not negative.¹⁵ Nevertheless, the downward trend in the number of employed must be looked at critically: Labor productivity had increased due to the consolidation of the labor force but the parallel increase in unemployment probably led, following Okun's Law,¹⁶ to a loss in output of several percentage points.

Whereas domestic factors can adequately explain the growth in the 1990s, the role of foreign direct investment in the advancement of the integration process of the eastern European economies is less clear. As line 13 in Table A1 (p. 24) shows, growth in all countries responded very weakly to FDI, although the FDI flow was so high that by 2002 the accumulated FDI stock made up a major share of the capital stock of the these countries (Graph 4).

¹⁵ The employment index did not develop in a linear pattern. In several countries it reached the lowest point in the mid-1990s, thereafter employment increased, which probably accelerated growth.

¹⁶ According to Okun's Law every percentage point of unemployment results in a two percentage point decline in GDP.

Graph 4
Share of FDI 1990–2002 in the capital stock in 2002 (percentage)



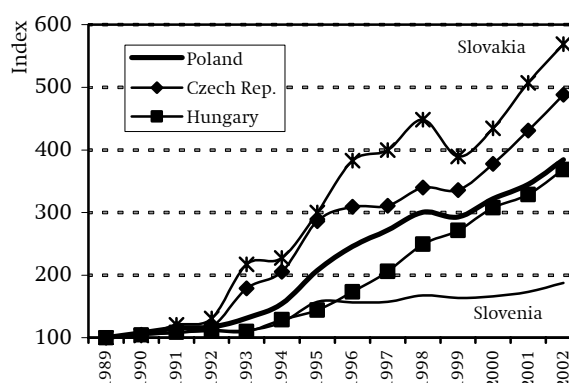
Source: German Federal Statistical Office, UN Economic Commission for Europe.

The weak correlation can be partially explained by the fact that the FDI impact on the factor “investments,” which statistically can also include the foreign components, has already been registered. Furthermore, most of the countries did not receive the largest part of the investments until the late 1990s, and its effect on growth will not be reflected in the statistics for some time to come. Since the technological and sectoral structure change is accompanied by FDI and is even dependent on it, it can be expected that FDI will have a stronger impact on growth.

In a second step the correlation was estimated between the individual index of GDP and its dependence on the indices of private consumption, gross fixed capital formation, exports and imports in each of the countries. This regression was carried out to determine what role trade—the second central integration factor after FDI—plays in the economic development of the countries investigated since the opening in 1990.

Since the beginning of the transformation, the new member countries have rapidly expanded their export trade. The increase has been considerable, especially in the formerly isolated economies of the Czech and the Slovakian Republics. On the whole the export trade of all new member candidates has developed more rapidly than economic output (Table A2, p. 24, lines 4 and 5). This is a reflection of the increased intra-industrial exchange with the EU-15 as well as the development of new specialization patterns in the ECE economies. The hypothesis that export trade

Graph 5
Index of export trade turnover, 1989–2002 (1989 = 100)



Source: UN ECE.

has played an important role in the growth of the regions seems to be convincing.

Nevertheless, no clear connection between the growth of GDP and the indices of private consumer demand, gross fixed capital formation, as well as export and imports could be determined. The results of the analysis point to a strong influence of external economic factors on the dynamics of GDP in three of the five countries (Table A2, p. 24, lines 12 and 13). In the Czech and Slovakian Republics this influence—in combination with private consumer demand—is in comparison to Poland, Hungary and Slovenia relatively unimportant.¹⁷ Possibly the opening of these two economies took place too quickly: Whereas the extent to which Poland has opened up to the West, measured as the share of exports and imports in the GDP, was the least, for Hungary and Slovenia imports and exports increased at a slower pace in the 1990s than in the former Czechoslovakia countries. As a result of the rapid opening to the West, the (growth-hampering) effect of imports, at least in the first half of the 1990, was probably greater.¹⁸

Trade liberalization no doubt led to a series of macroeconomic shocks connected with, among others, price, demand and productivity. In the economies of the Czech Republic and Slovakia, which in comparison to Poland are smaller and in comparison to Hungary and Slovenia are less open to the West,

¹⁷ Furthermore the t statistic is not significant. (The t statistic tests the assumption that with high probability the resulting coefficients are not zero and positive and thus true.)

¹⁸ In Central and Eastern Europe the growth in exports was accompanied by an over proportional growth in imports, which diminishes the positive effect of growth.

these shocks were probably much greater. In this case it becomes apparent that trade cannot replace the necessary structural measures and liberalization can have undesirable short-term effects, such as decelerated growth.

No noticeable change in the future

If, then, the effects of the East-West convergence on growth during the comprehensive opening of the economies of Central and Eastern Europe has been considerably less than assumed, how noticeable are the effects after joining? Will the flow of capital and goods at sinking costs (due to the common market) promote growth a priori or do the “traditional” economic measures, such as price stability and strengthening of competition via moderate wage policies promote savings and thus investment?

Based on the data of the last thirteen years, possible trends for the individual ECE EU members and for Central and Eastern Europe can be predicted.¹⁹

If one considers the demand of private households as the largest demand component, on the one hand, and an economy’s total economic supply of labor and capital, on the other, an increase in demand in combination with an expansion of the supply of labor will strengthen economic growth to the greatest extent. This assumption is supported by the prognosis that the growth stimulus of foreign direct investment from the former EU-15 will be weaker in the future. This means that the integrated EU capital market will tend to play a supportive role in the growth of the ECE countries. In the expanded EU, massive capital will not, as the theory predicts, flow in the midterm from the West to the East as a result of the different interest levels and initiate higher growth. The higher growth will be achieved by private households, while the capital flow measured in terms of modernization needs will remain limited in the region on the whole.

Private consumption contributes to more than two thirds of the overall economic demand in the ECE countries. Due to the low tax rate (with a low savings rate as well, however) the income multiplier of the region on average is estimated to be about 3.0. This means that every euro that private households additionally spend will lead to an increase in output of

3 euros, and that holds for over two-thirds of the economy.

The minimal impact of expanded capital stock can be understood in light of the high unemployment rate in the region: If unemployment dominates, the relative price of the factor capital increases with a dampening effect on the demand for investment. That is why capital does not flow automatically from the capital-rich to the capital-poor economies; poor countries tend to attract less capital than more prosperous ones.²⁰ Amongst the new members the economies with the regionally lowest unemployment rate confirm this—for example Hungary with an estimated 5.7% between 2003 and 2005.²¹ Investment in non-monetary capital in Hungary currently provides a larger stimulus to growth than in Poland, for example, with an unemployment rate that is three times higher.

The most visible effect of the expansion to the East in 2004 and 2007 will probably be the increase of trade amongst the EU 25 (27). This would be in accord with the international trend of the last decades, during which world trade increased at a faster rate than world output. This progress is a result of trade barriers being reduced within the framework of the GATT and the WTO. In the expanded EU the fact that western and eastern Europe have similar resources will lead to specialization of products rather than sectors. The result is intensification of intra-industrial trade, which is characterized by greater trade revenue than that of inter-industrial trade.

The intensification of trade resulting from eastern expansion will contribute to economic growth in the new member nations. But it will not be the central factor. The estimation of mid-term, future growth in dependence on trade (as an integration factor) as well as on private consumption, on the demand side, and on investment, on the supply side, points to a stronger role for investment and consumer demand. This could be due to the ambivalent role of trade (here: exports and imports) in the growth process: Because the new EU members will continue to have a negative balance of payments, the resulting decline in overall demand will have a dampening effect on growth.

²⁰ The theory postulates that the capital stock of both regions will only be similar with similar technology. Economies with abundant labor supply initially show a work-intensive production structure, while in the industrial countries production is capital intensive.

²¹ OECD forecast for 2004 and 2005; source: DIW, *Wochenbericht*, no. 1–2 (Berlin, 2004), Table 1.1.

¹⁹ This estimate is unsure because several t statistic values (see explanation, footnote 17) lie under the critical t value.

Effects of eastern expansion on Germany: slight acceleration in growth

If eastern expansion is to have no significant effect on the growth rates of the new members, the question must be raised as to the economic advantage for the former EU-15, especially for Germany. It has already been pointed out that the differing demand preferences and the change in the terms of trade could have a negative effect on the former EU-15, while the new members will most likely be at an advantage. Because of the initial difference in production technology—Germany's production is capital-intensive, while the production of the new members is largely labor-intensive—labor-intensive sectors could face cost pressure and jobs be endangered.²² In this situation either productivity must be increased in the relevant industries or real wages have to be reduced, which in terms of labor market policy is hardly realistic. Thus, for Germany it cannot be expected that expansion to the East will bring a short-term advantage.

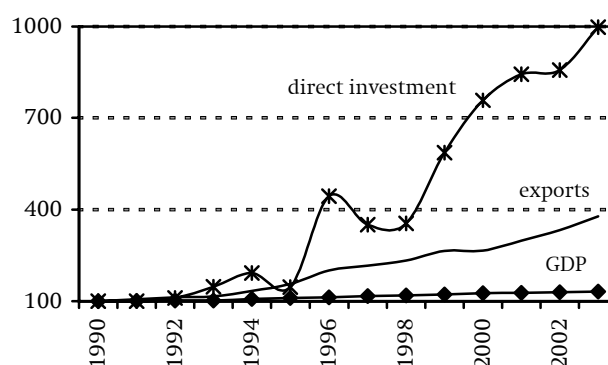
Empirically it has been shown that despite initial, overly optimistic expectations the geographic vicinity, the already existing economic relations and the historic experience of the German economy with eastern Europe contribute to Germany being the western forerunner of integration—with all its economic advantages and disadvantages. After the Berlin Wall fell, the prevailing optimism thought trade with the new economies and the opportunity for investment in all sectors would boost the Germany economy. Indeed, Germany exports and direct investment increased in the five countries investigated by a factor of between almost 5 and 10 (Graph 6).

The high indices obscure, however, the actual order of magnitude. On average for the last 14 years German direct investment in the new market economies made up less than 1% of German gross fixed capital formation annually. The economic output of Germany hardly profited from this and since 1990 there has only been an overall increase by a factor of 0.3. Apparently the effects of post-Communist transformation and of new EU membership will only be noticeable in the long run.

²² The Stolper-Samuelson Theorem predicts that the relative price of goods is proportional to the relative factor prices. Thus if a "West" product is more expensive than a comparable "East" product, the western input must be less expensive so that it is still competitive.

Graph 6

Indices of German GDP, Germany exports and direct investment in five ECE new member nations, 1990–2003 (1990 = 100)



Source: Federal Statistical Office; UNECE.

Not only did growth in Germany fall behind expectations, it also was more restrained than in most other countries of the EU-15 that were not so closely connected with the new market economies in eastern Europe. Must we conclude that the dampening effects of the political upheaval in the eastern part of the continent in the last 13 years were stronger than the growth stimulus coming from the interconnections with the new member countries?

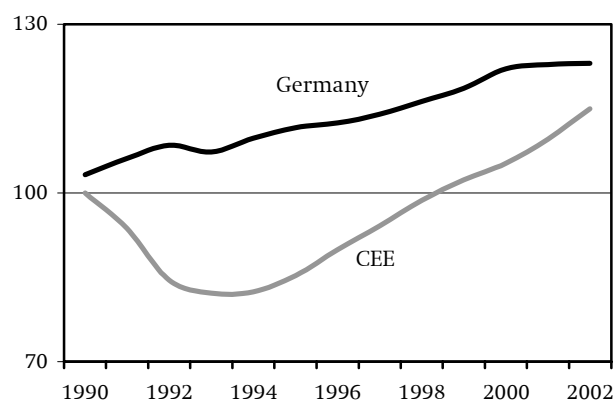
Most likely several factors have resulted in both positive and negative effects. Firstly, growth in the economic output in the ECE countries has been slower than GDP growth in Germany due to the serious economic crisis of the 1990s (Graph 7). This fact, no doubt, had an effect on the German economy: According to the regression calculation German economic output was 1.3 % lower for every 10% fall in output in the ECE region. Secondly, German exports to eastern Europe support domestic growth—a 10% increase in exports results in a 0.7% rise in German GDP. Thirdly, direct investment from Germany had basically no (or only a minimal) positive effect on German growth.²³

²³ Linear regression of GDP growth in Germany based on the index of output in the new member countries investigated as well as those of German exports and direct investment to these countries resulted in the following values: with $R^2 = 0.96$ (results only partially significant):

	Inter-section point	GDP index	Export index	FDI index
Coefficients	106.31	-0.13	0.07	0.004
statistic	9.24	-0.93	3.19	0.38

The question as to the future effects of the economic connections between Germany and the new members must be posed in the light of previous integration experience. It is assumed that the recession brought about by the political transformation in the eastern European countries was a unique phenomenon that will not be repeated. A serious slump in the economic output of the new members is thus not likely. Adjusted for the effects of the economic crisis of the 1990s, it appears that the connection between growth in the new member nations and in Germany is more favorable. A prognosis of the expected (positive) effects of eastern expansion sees growth accelerating in Germany after 2004—assuming that eastern European GDP grows at a rate of approximately 4% and the growth rate of German exports and direct investment lies above this value.

Graph 7
GDP index in Germany and new member countries from Eastern Central Europe, 1990–2003 (1990 = 100)



Source: Eurostat, UNECE.

This makes sense since the German economy will benefit if there is a greater demand for German goods and services in this region. Thus overall demand in Germany will increase and initiate economic growth. However the current and midterm demand potential of the new members is low, as is their output volume. With a value of German exports in the five investigated countries of around 50 billion euros and an assumed yearly growth in exports of 5% (exports would increase more rapidly than the economy on a long-term basis), the additional demand would, *ceteris paribus*, initially amount to approximately 2.5 billion euros or 0.11% of German GDP. This calculation would only be accurate if German imports from these coun-

tries were to stagnate. This, however, is not to be expected because the bilateral capital interconnections between Germany and the region will result in an increase, above all in re-imports. This reflects the continued outsourcing and licensed production with which the German economy is reducing labor-intensive activities in its territory—a tendency that increased in the 1990s. As a result the German trade balance with the five eastern European nations was initially slightly negative (Table 2).

In the long run the Germany economy could again be net exporter in trade with these countries. Germany should be able to maintain its position as the main supplier of high-value consumer goods and motor vehicles. The resulting real growth effect would, however, remain limited as the possible level of net exports will be minimal in terms of German GDP. Furthermore, the income multiplier in Germany is relatively low so that the effect of this additional demand in exports will remain quite limited.²⁴

Table 2
German export trade with Eastern Central Europe in 2003 (billion euro)

Country	Export	Import
Poland	16.4	15.8
Czech Republic	16.7	17.5
Hungary	11.9	12.2
Slovakia	5.1	7.3
Slovenia	2.4	2.4
Total	52.5	55.2
Balance: -2.7		

Source: Federal Statistical Office, *Rangfolge der Handelspartner im Außenhandel*, (Wiesbaden, 2003), <<http://www.destatis.de/download/d/aussh/rang2.pdf>>.

²⁴ Due to a relatively high tax and savings rate and low consumption rate, the multiplier is approximately 2.5.

Conclusion

After the growth rates of the Eastern Central European economies had initially increased as a result of the transformation depression, they now are only two percentage points above the growth rates of the former EU-15. The lead is thus so minimal that it is hardly capable of closing the income gap between western and eastern EU countries. A realistic time-frame is thought to be several decades. Neither the western nor the eastern Europeans are interested in having a permanent difference in income, and hopes prevail that the EU membership of the ECE countries will promote the elimination of the income gap. Nevertheless, experience has shown that the stimulus for growth that occurred after the political change in the East came more from internal (domestic demand) than external factors (integration with the EU-15 via foreign trade and direct investments).

In the future, domestic demand will be important for growth in the ECE countries. After joining the EU, trade with the former EU-15 countries will continue to expand. This is true not only for exports but for imports as well, which can have a dampening effect on growth. Initially May 1, 2004 will contribute little to the modernization of capital stock because direct investments will not suddenly rise. Aside from specific projects, especially in automobile production, they cannot carry the entire task of modernization. Modernization and development will require a national effort and still take considerable time due to the generally insufficient state of capital stock in the East. This will have consequences for the old EU members, including Germany: Low capital costs in the ECE region mean either relocation of jobs to the new member countries or a reduction in real wages in the old member countries.

In contrast, growth in the former EU-15 countries or in Germany can profit from an increased labor supply from eastern Europe. If, namely, the new member nations have a trade deficit with the former EU-15 but the currency exchange rate to the euro remains relatively stable, there is pressure to adjust, one valve being, for example, a drop in real wages or an increase in productivity. Especially in the latter case it can lead to the loss of jobs in the new member countries. The dismissed workers can move to economically healthier

regions, in general, to western Europe, where they can support growth. The migration from eastern Europe can be stopped if German/western European net capital export to and net import from eastern Europe occur simultaneously. A simultaneous process like this does not, however, last for an unlimited amount of time, as the partner currencies will have to appreciate in real terms. Alternatively the wages in the new member countries will have to rise or decline in the former EU-15 nations. That will only be required after the euro has been introduced in the new member countries. Where new jobs are created, on balance, does not depend entirely on low per capita income or low labor cost. The economic policy of the ECE countries will also influence the East-West allocation of labor.

The West should, however, not be overly critical of the liberal economic policy of the new members by demanding, for example, tax harmonization. The complaint, which can only be understood from a western European point of view, about disadvantageous tax competition is not to the benefit of the new member economies. In these economies growth is still not very intense and higher tax rates may not lead to higher tax revenue. The insufficient growth dynamic of the new member countries could be threatened in the process.

Appendix

Table A1
Macroeconomic indices, 2003, and regression statistics for five new member countries (1990 = 100)

No.		Poland	Hungary	Czech Republic	Slovakia	Slovenia
1	GDP index	129.8	111.8	105.1	105	116.9
2	Consumption index	146.4	113.6	114.5	115	135
3	Investment index	149.4	146.4	127	127	185.4
4	Employment index	87.0	74.0	87.8	88	82.8
5	FDI index	4119	66	1861	5731	3730
<i>Coefficient linear regression*</i>						
6	Multiplier correlations coefficient	0.99	1.00	0.98	0.98	0.99
7	R ²	0.99	0.99	0.97	0.97	0.99
8	Adjusted R ²	0.98	0.99	0.95	0.95	0.98
9	Constants	-126.06 (-3.79)	5.18 (0.93)	-12.60 (-1.07)	-5.32 (-0.49)	-36.61 (-2.13)
10	Private consumption	1.12 (6.64)	0.08 (1.24)	0.40 (2.71)	0.37 (2.28)	0.54 (2.88)
11	Investment	-0.22 (-1.73)	0.45 (21.08)	0.10 (1.65)	0.14 (2.03)	0.10 (1.58)
12	Employment	1.35 (4.51)	0.40 (10.85)	0.60 (3.73)	0.53 (3.71)	0.70 (8.23)
13	FDI	0.002 (1.72)	0.01 (2.73)	0.003 (2.21)	0.001 (2.11)	0.001 (1.66)

* t values in parentheses.

Source: UN Economic Commission for Europe, *Economic Survey of Europe*, vol. 3 (Geneva, 2003), pp. 112ff.

Table A2
Macroeconomic indices, 2003, and regression statistics for five new member countries (1990 = 100)

No.		Poland	Hungary	Czech Republic	Slovakia	Slovenia
1	GDP index	129.8	111.8	105.1	105	116.9
2	Consumption index	146.4	113.6	114.5	115	135
3	Investment index	149.4	146.4	127	127	185.4
4	Export index	372.7	361.1	512	500	177.6
5	Import index	393.6	376	467.8	569	198.2
<i>Linear regression coefficients*</i>						
6	Multiple correlation coefficient	0.99	0.99	0.97	0.97	0.98
7	R ²	0.99	0.98	0.94	0.94	0.96
8	Adjusted R ²	0.98	0.97	0.91	0.91	0.94
9	Constants	50.26 (3.18)		24.06 (2.35)	23.58 (23.58)	7.05 (0.33)
10	Private consumption	-0.03 (-0.12)	0.17 (1.73)	0.61 (2.94)	0.62 (0.62)	0.89 (2.54)
11	Investment	0.44 (5.58)	0.73 (7.15)	0.14 (0.99)	0.14 (0.14)	0.11 (1.03)
12	Export	0.20 (3.88)	0.13 (2.45)	0.002 (0.06)	0.00 (-0.18)	0.28 (1.96)
13	Import	-0.15 (-3.18)	-0.21 (-4.76)	-0.02 (-0.42)	-0.01 (-0.39)	-0.41 (-3.95)

* t values in parentheses.

Source: UN Economic Commission for Europe, *Economic Survey of Europe*, vol. 3 (Geneva, 2003), pp. 112ff.

Abbreviations

CIS	Commonwealth of Independent States
DIW	Deutsches Institut für Wirtschaftsforschung
EC	European Community
ECE	Eastern and Central Europe
EU	European Union
FDI	Foreign direct investment
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
UNECE	United Nations Economic Commission for Europe
WTO	World Trade Organization