



INSTITUTE FOR WORLD ECONOMICS

HUNGARIAN ACADEMY OF SCIENCES

Working Papers

No. 136

June 2003

Kálmán Dezséri

**BUSINESS-CYCLE DEVELOPMENT
IN HUNGARY AND EUROPE:
THE CONSEQUENCES OF EU AND EMU
ACCESSION FOR HUNGARY'S LABOUR MARKET**



1014 Budapest, Orszagház u. 30.
Tel.: (36-1) 224-6760 • Fax: (36-1) 224-6761 • E-mail: vki@vki.hu

SUMMARY

Structural similarities and differences between a country and the economic integration framework to which it belongs show the degree to which the country may be exposed to asymmetric shocks. Synchronization of business cycles implies that asymmetric shock is precluded, or offset by national monetary policies. After joining a monetary union the situation changes. Where synchronization of business cycles is lacking, a common monetary policy will tend to exacerbate differences in the cycles and adversely affect economic performance.

In the case of the EU and EMU, want of synchronization between the business cycles of a candidate country and the EU can be offset partly by labour-market flexibility. Joining the EU may mean foregoing some flexibility in the labour market, because the EU labour markets have become rigid and need reforms and greater flexibility themselves.

Methodologically, the time series of GDP and industrial-production growth rates can be used to measure this synchronization. In the case of Hungary, the EU–Hungarian business-cycle convergence had been no less than the convergence among EU countries. Although the results of the analyses using different methods vary but all of them show that this synchronization has been increasing since the mid-1990s.

Synchronization of national business cycles and national catching-up processes disguise regional differences in synchronization and convergence of development levels. Several recent analyses and studies have shown a combination of convergence of economic development levels among countries and increasing divergence among regions within countries to be a feature of the present global economic situation. The presence or absence of such a feature in Hungary will have far-

reaching consequences to its integration into the EU.

Some major questions arise about other economic-policy options instead of adjusting exchange and interest rates, which EMU precludes. It can be seen that wages have to bear the brunt of adjustment under EMU and need to react flexibly to shocks, lest differences in national unemployment rates develop. Wages therefore have to be highly flexible and differentiated in the various economic zones of EMU. An important governmental task in EU countries is to make the national labour markets more flexible, which could be done through institutional reforms aimed at reducing unemployment.

Although Hungary's economy has visibly converged on those of the EU countries, potential adverse effects of EU accession and EMU could bring about serious economic difficulties. Participation of Hungary in EMU calls for an economy able to adjust either through market forces or adequate economic policy.

The structural differences of labour-market supply and demand are likely to remain on the Hungarian labour market for quite a long time. Labour markets usually react to negative demand shocks by reducing the participation rate and increasing the share of the inactive population. Due to the structural problems in the Hungarian labour force, much of the inactive population cannot be considered as potential labour in periods of economic prosperity or in the medium term. All these features will have effects on the tools of adjustment policy to cope with shocks after Hungary's accession to the EU and EMU.

the salient features of the Hungarian labour market. Part 6 shows the likely consequences.

INTRODUCTION

Hungary, like all Central and Eastern European (CEE) countries has undergone radical economic changes in the transition process of the last 13 years, affecting its economic structure and reallocating its labour force. The forthcoming accession to the EU and subsequent participation in the Economic and Monetary Union (EMU) herald further deep-seated changes. As the country prepares, the issues raised include catching up with EU levels of development, greater structural similarities, and synchronization of business cycles.

Structural similarities and differences between a country and the economic integration framework to which it belongs show the degree to which the country may be exposed to asymmetric shocks. Synchronization of business cycles implies that asymmetric shock is precluded, or offset by national monetary policies. The situation in this respect may be an indication as to whether the optimum currency-area theory applies to that economy. Where synchronization of business cycles is lacking, a common monetary policy will tend to exacerbate differences in the cycles and adversely affect economic performance.

In the case of the EU and EMU, want of synchronization between the business cycles of a candidate country and the EU can be offset partly by labour-market flexibility. Joining the EU may mean foregoing some flexibility in the labour market, because the EU labour markets have become rigid and need reforms and greater flexibility themselves.

This paper discusses some important issues of adjustment mechanisms under the conditions of EMU. Part 1 presents some challenges of EU membership and EMU participation. Part 2 analyses the relations between the business cycles and Part 3 shows regional disparities within Hungary. Part 4 describes what EU and EMU membership entails, and Part 5

1) CHALLENGES BY EU MEMBERSHIP AND EMU PARTICIPATION

Accession to the EU will have positive and negative effects on the economies and societies of the CEE countries. The benefits will outweigh the costs, especially in the long run, but pressure on certain economic, social and political groups will intensify. These can be identified in terms of geographical locations or regions, social strata and occupational groups. The optimum accession policy would aim at maximizing the benefits and minimizing the adverse consequences, so that accession will certainly bring further policy adjustments.

Identification of the potential beneficiaries of accession and the groups at risk is a key integration issue for policy makers and the general public. This is the initial stage in formulating the measures for alleviating the costs for losers and increasing the number of winners.

One urgent need is for a strategy to disseminate information about the expected advantages and drawbacks of accession. EU accession will raise several new economic social and political issues or exacerbate existing economic, political and social issues and problems. The economic aspects of these will be determined by the completion of free movement of production factors (goods, services, capital and labour). Special areas of these are agriculture and EMU. The social problems will include a deepening crisis for vulnerable social groups determined by age structure, educational background, already existing poverty and inequality, and occupational and pay structures. The accession will affect a wide range of political mechanisms and elements. The success of the accession and the optimization of winners' and losers' positions will depend much on the preparedness of the public administration, the activity and efficiency of

non-governmental organizations, the quality of public education, and not at least, the involvement of the public in the accession process.

Participation in EMU has more complex consequences. In a monetary union, exchange and interest rates can no longer be used as adjustment measures for differences of economic development between member countries. Such differences may emerge due to asymmetric shocks affecting the members or through diverging business cycles. A shock will cause production and employment to fall rapidly. Before EMU, countries were able to devalue their currencies and so regain economic competitiveness. Now the range of possible policy measures has been reduced.

2) RELATIONS BETWEEN THE HUNGARIAN AND EU BUSINESS CYCLES

Hungary developed strong dependence on the EU economy in the 1990s, as the transition to a market economy transferred its economic ties there from the former Comecon countries. The reorientation in its economic relations has rested on increasing merchandise trading with EU countries and mounting flows of inward FDI from Western European companies.

The structure of the Hungarian economy has become very similar to that of the twelve EMU countries. This can be shown in the sector distribution of value added and of employment (*Table 2*)

It is important to know whether Hungary's business cycle has converged with that of the EU over the last decade. Methodologically, the time series of GDP and industrial-production growth rates can be used to measure this synchronization, on which several

studies have been published in recent years.¹ Although their methods of analysis differed, the general conclusion in most cases was that the EU–Hungarian business-cycle convergence had been no less than the convergence among EU countries. This synchronization has been increasing since the mid-1990s.

Table 1
Hungary's foreign trade with the world
and with the EU

	Exports (USD mn)		EU (%)	Imports (USD mn)		EU (%)
	World	EU		World	EU	
1991	10187	4659	45.7	11382	4682	41.1
1992	10705	5327	49.8	11079	4734	42.7
1993	8907	4140	46.5	12530	5024	40.1
1994	10701	5457	51.0	14554	6600	45.3
1995	12867	8080	62.8	15466	9515	61.5
1996	13145	8250	62.8	16209	9685	59.8
1996*	15704	10949	69.7	18144	11301	62.3
1997*	19100	13602	71.2	21234	13326	62.8
1998*	23005	16782	72.9	25706	16479	64.1
1999*	25013	19068	76.2	28002	18049	64.5
2000*	28092	21117	75.2	32079	18761	58.5
2001*	30498	22651	74.3	33682	19464	57.8

* Including foreign trade in industrial free-trade zones.
Source: Central Statistical Office (CSO), Budapest.

Table 2
Sector structure of value added and employment in Hungary and
the EMU countries, 2000, %

Sector	Value added		Employment	
	EMU 12*	Hungary	EMU 12*	Hungary
Agriculture, forestry	2.9	4.4	5.3	5.9
Industry (incl. energy)	23.2	28.0	20.4	28.1
Construction	5.5	4.8	7.3	6.4
Wholesale, retail, transport, hotels, restaurants	21.3	22.3	25.0	24.5
Finance, real estate	26.1	20.9	13.0	7.2
Other services	21.0	19.2	29.1	27.9

* Weighted average.

Sources: OECD, Eurostat and CSO.

EU Commission analyses have shown that Hungary's GDP growth rate has achieved a fairly high correlation of 0.79 with that of the EU 15 (*Table 3*). Indeed, it had the strongest coefficient found among the 13 applicant countries, where the others showed lower, very low or even negative correlations. Comparing the trends of pure GDP growth rates suggests that the cyclical movements of the

¹ *E.g.* Frenkel, Nickel and Schmidt (1999), Boone and Maurel (1999), IMF (2000), EU Commission (2001), and Fidrmuc and Korhonen (2001).

Hungarian economy and the EU economies were usually being influenced by the same economic factors over the last decade.

Table 3
Correlation between the GDP growth rates of Hungary and of the EU

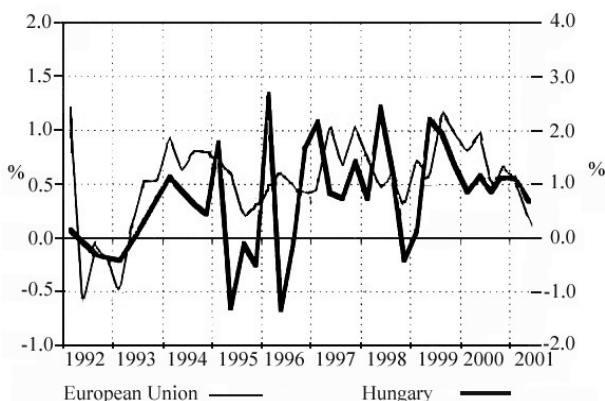
Average GDP (monthly values, annual growth rates), 1994–2000	3.5
Correlation coefficient with EU 15, January 1996–February 2001	0.79

Source: EU Commission (2001).

The synchronized movements of GDP growth rates in Hungary and the EU during the first half of the 1990s were not brought about by symmetrical economic shocks. The slowdown in Hungary's economic growth rate was caused partly by the systemic change and partly by the economic recession in the EU, which was resulted by German reunification. Much has changed since then, so that true similarities could be observed in their business cycles in the second half of the 1990s. Both were affected by the Russian crises and the subsequent slowdown in economic growth rates, and finally by the global slowdown in economic performance.

The same conclusion can be drawn from a comparison of the seasonally adjusted real GDP figures (*Figure 1*).

Figure 1
Seasonally adjusted real GDP growth rates (quarterly data)



Source: Csajbók and Csermely (2002).

A more precise presentation of the synchronization of business cycles could be achieved by separating the trends for GDP growth (potential GDP) and for output gap,

but shortcomings in the statistical data prevent this being done in Hungary's case.

Industrial-production trends can also provide useful information. Looking at Hungary's quarterly data, the long-term time series reveals an increasing correlation with the EU industrial cycle. The result of the calculation of this made by the EU Commission is comparable with the correlation result for GDP growth rates. The correlation has increased over the last decade. At the same time, the amplitude of the Hungarian industrial-production cycle has increased beyond the value for the EU. This implies a firm positive correspondence between the EU economy and the Hungarian economy, so that further catching up by Hungary would be more easily attained in the presence of strong GDP growth rate in the EU countries.

Table 4
Correlation of Hungary's industrial-production growth rates with those of the EU

	1994–7	1997–June 2001	Change
Average industrial production (monthly values, annual growth rates)	7.2	13.0	5.8
Correlation coefficient with EU-15	0.577	0.66	0.09
Standard deviation (multiple of EU standard deviation)	2.5	3.2	0.7

Source: EU Commission (2001).

The Hungarian National Bank, in its calculations, replaced the trend in GDP growth (potential GDP) and output gap with analysis of industrial-production data, and determined the business cycles with the Baxter-King filter² and logarithms of real quarterly data.³ Although industrial production is only part of total output, it makes a good indicator of the business cycle. International experience has shown that between GDP and industrial production there is a strong correlation. Moreo-

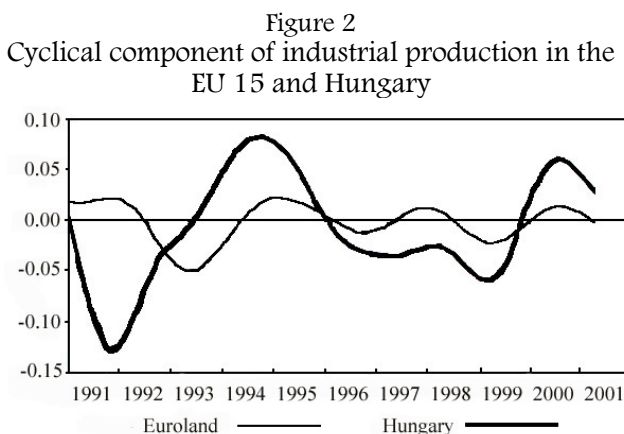
² The two parameters of the filter were 6 and 32, which eliminated cycles shorter than one-and-a-half and longer than eight years.

³ Csajbók and Csermely (2002).

ver, there are more frequent and reliable industrial production time series than GDP data.

Hungary and the EU showed opposite trends in their business cycles in the early 1990s, as German unification was still having positive effects on industrial demand in the EU, while Hungary was dominated by the effects of the transformation recession. Later, the EMS crisis of 1993 triggered an economic recession in the EU countries, but this affected the already-recovering level of Hungarian industrial production only slightly.

The connection between the industrial production cycles of the EU and Hungary had changed substantially by the mid-1990s. The previously dominant contrasting trends were gradually replaced by synchronized cycles. This change was mainly brought about by the shift in the structure of foreign trade. After the collapse of Hungary's Comecon-related trade, the share of the EU rapidly increased to 50–70 per cent of exports and imports. In parallel with this, the correlation coefficient between the industrial-production cycles of the EU and Hungary gradually increased from 0.22 per cent in 1992 to 0.66 in 2000. During the whole decade, Hungarian business cycles showed greater volatility than those of the EU, due to the higher growth rates of the transition period.



Source: Based on Csajbók and Csermely (2002).

Business-cycle development can also be analysed in a way that distinguishes supply-side and demand-side effects, for instance with structural vector auto-regressive (VAR) models. This method has two advantages. (i) The supply-side shocks can be considered autonomous factors and always affect an economy in

the same way, irrespective of whether it belongs to a monetary union or not. The reason for this is that the effects of a monetary policy always appear on the demand side, where the symmetry of shocks is usually influenced by differences of reaction to the single monetary policy by members of the monetary union. So the demand-side shocks and the symmetry have less relevance under monetary-union conditions to evaluating their possible symmetry. (ii) The separation of supply and demand-side shocks explicitly distinguishes long-term (supply-side) and short-term (demand-side) effects. The supply shocks can be considered long lasting because many result from development or changes in production technologies. This is important because modern understanding of monetary policy defines the primary task differently: monetary policy should smooth temporary fluctuations, not influence main trends. So it can achieve price stability and contribute to a permanent increase of output by offsetting demand shocks. That means the optimality of a currency zone depends on the similarity of demand shocks.

The two arguments come to different, perhaps contradictory conclusions and their relevance may differ from various vantage points. In Hungary's case, the second argument has more relevance, because of the radical structural changes of the 1990s gave a series of country-specific supply shocks, determined basically by imports of technology. So there were fewer or more limited synchronized movements among the supply effects in the EU and Hungary. However, the catching-up process in Hungary will reduce such supply-side asymmetries and increase the correlation of supply-side cycles in the near future.

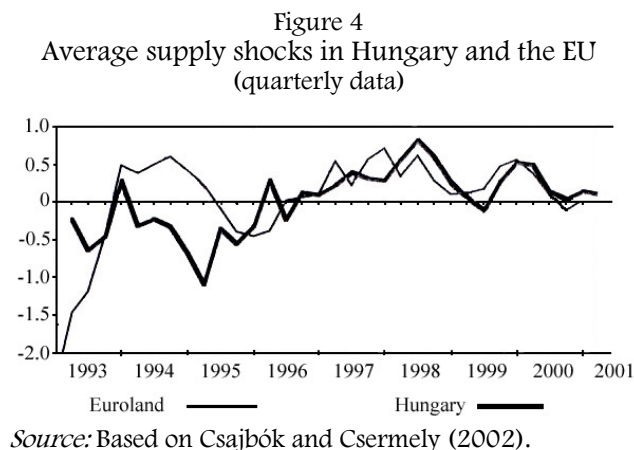
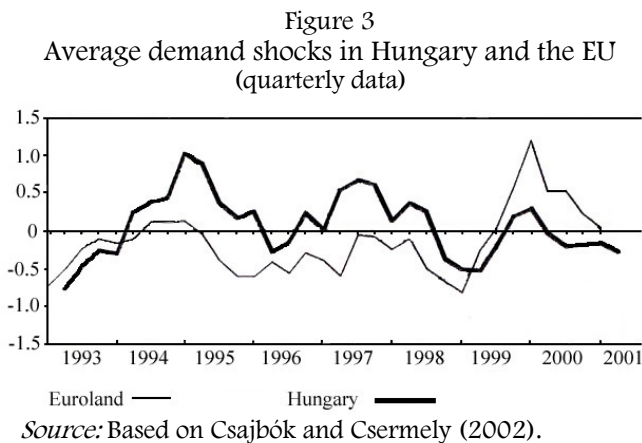
In Hungary's case, a generally used calculation and analytical method was applied.⁴ The separation of supply and demand rests on the simple assumption that demand-led price-level increases result in a temporary increase in output and supply-led price-level increases in a lasting decrease in output. First, demand and supply shocks were calculated for each EU country from quarterly data. Then three types

⁴ Based on Blachard and Quah (1989) and developed by Bayoumi and Eichengreen (1993).

of characteristic weighted averages were calculated so that the variance of the time series was determined by (a) the first main component (coefficient) (b) inflation, or (c) the shares of EU countries in total Hungarian exports.

The result of the calculation based on (a) was that the demand-side correlation showed a level of symmetry corresponding to that of most present EU members. The supply-side correlation showed a weaker level, however. This implies that the possibility of exchange-rate adjustment may still be a useful policy weapon for adjusting the Hungarian economy. The situation may improve after EU accession, as the features of the catching-up process already mentioned will increase the symmetry of future supply-side shocks.

The calculation using inflation (b) as weights showed that the supply and demand correlation between Hungary and the EU increased. The correlation coefficient for the period from the first quarter of 1992 to the fourth quarter of 2000 was about 0.23 and for the period from the first quarter of 1996 to the fourth quarter of 2000 it was 0.7.



The demand for Hungarian exports influenced significantly the development of the business cycle and external balances, which means that shares of EU countries in total Hungarian exports (c) can be reasonable weights for constructing a specific, weighted average time series of demand and supply shocks. The symmetry between the supply and demand fluctuations of the Hungarian economy and its main trading partners can be measured under the condition of disability to adjust by using own exchange-rate policy.

With the time series calculated with export shares (c) as weights, there is a weaker correlation between the supply and demand shocks, mainly because the symmetry between the Hungarian business cycle and that of its two main trading partners, Germany and Austria, was rather limited for the whole of the last decade. However, the supply and demand correlation between the Hungarian and German data increased slightly.

Table 5
Supply and demand correlation between Hungary
and the EU
(1Q/1992–4Q/2000)

Country	Demand	Supply	Share in Hungary's exports (%)
Germany	0.12	-0.08	52.1
Austria	0.10	-0.07	11.3
Italy	0.36	0.23	9.1
France	0.39	0.19	8.6
Netherlands	0.15	0.17	6.6
Belgium	0.03	0.33	4.8
Finland	0.23	0.05	2.9
Spain	0.17	0.17	4.8
EU*	0.22	0.04	

* Weighted average.

Source: Csajbók and Csermely (2002).

Besides the National Bank of Hungary, similar SVAR-model analyses were made by Fidrmuc and Korhonen (2001) and Frenkel, Nickel and Schmidt (1999). A thorough comparison of their results could provide a more accurate description, as there are significant differences between them. However, they agree in saying that there is increasing symmetry and a strengthening correlation between the business cycles of Hungary and the EU.

3) REGIONAL DISPARITIES IN HUNGARY AND POTENTIAL CONSEQUENCES OF THEM

Synchronization of national business cycles and national catching-up processes may disguise regional differences in synchronization and convergence of development levels. Several recent analyses and studies have shown a combination of convergence of economic development levels among countries and increasing divergence among regions within countries to be a feature of the present global economic situation. The presence or absence of such a feature in Hungary will have far-reaching consequences to its integration into the EU.

The income level of Hungary, in terms of purchasing-power parity (PPS), is about 51 per cent of the EU average. There has been a moderate but gradually strengthening process of catching up in the last decade, with a relatively strong gain of about 6 percentage points between 1995 and 2001. However, income differ-

ences within the country widened the same period, as the data for income development at regional levels (NUTS3 or NUTS2) confirm. Higher income regions (Central and the three Transdanubian regions) posted higher-than-average gains, so that regional income differentials increased. Participation rates and unemployment rates in the rich regions diverged one from the rest as well as from the national average.

This divergence *per se* contradicts the Neoclassical view of economic integration. In theory, higher marginal rates of factor productivity should have pushed up the degree of real convergence in the low-income regions, and should have reduced the difference between these regions and the high-income ones. However, it should be borne in mind that this

Table 6
Economic activity by regions in Hungary, in 2001

Region	GDP/capita as a proportion of the national average (%)					
	1995	1996	1997	1998	1999	2000
Central Hungary	142	147	149	148	154	155
Central Transdanubia	92	92	96	98	94	101
Western Transdanubia	103	105	105	110	115	114
Southern Transdanubia	85	80	78	77	77	74
Northern Hungary	74	69	67	68	66	64
Northern Great Plain	72	70	69	68	64	63
Southern Great Plain	83	81	78	76	74	71
<i>Total Hungary</i>						

Region	Participation rate (%)									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Central Hungary	61.1	58.3	56.3	54.9	54.9	54.1	54.3	56.2	57.1	56.9
Central Transdanubia	59.8	57.4	55.1	53.6	52.8	52.2	53.7	55.7	55.7	55.9
Western Transdanubia	60.1	59.2	57.6	55.5	56.3	56.2	57.8	58.1	58.5	58.5
Southern Transdanubia	57.2	54.4	53.1	49.1	49.1	48.9	50.1	50.7	51.3	50.5
Northern Hungary	54.7	52.6	49.9	48.8	47.7	46.8	46.4	48.1	48.5	47.8
Northern Great Plain	54.6	51.4	49.5	48.1	46.9	45.7	46.3	48.3	48.1	48.3
Southern Great Plain	58.2	54.4	52.3	51.4	50.6	50.9	51.1	51.5	51.8	52.4
<i>Total Hungary</i>	<i>58.3</i>	<i>55.7</i>	<i>53.7</i>	<i>52.1</i>	<i>51.6</i>	<i>51.1</i>	<i>51.6</i>	<i>53.1</i>	<i>53.4</i>	<i>53.3</i>

Region	Unemployment rate (%)									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Central Hungary	7.4	9.9	8.8	7.4	8.2	7.1	5.7	5.2	5.3	4.3
Central Transdanubia	11.7	12.6	10.7	11.1	10.4	8.1	6.8	6.1	4.9	4.3
Western Transdanubia	7.3	9.1	7.7	6.9	7.1	6.1	6.1	4.4	4.2	4.2
Southern Transdanubia	9.6	12.8	12.1	12.1	9.4	9.9	9.4	8.3	7.8	7.8
Northern Hungary	14.1	16.1	15.2	16.1	15.5	14.1	12.2	11.6	10.1	8.5
Northern Great Plain	12.5	14.8	13.8	13.8	13.2	12.1	11.1	10.2	9.3	7.8
Southern Great Plain	10.2	12.4	10.5	9.3	8.4	7.3	7.1	5.8	5.1	5.4
<i>Total Hungary</i>	<i>9.9</i>	<i>12.1</i>	<i>10.8</i>	<i>10.3</i>	<i>10.1</i>	<i>8.8</i>	<i>7.8</i>	<i>7.1</i>	<i>6.4</i>	<i>5.7</i>

Source: CSO.

is a long-term, equilibrium view that does not take into account the specificity of transformation and temporary, transformation-related costs in terms of lower incomes. These arguments support the view that a catching-up process in a region will initially increase inequality within a country, but the inequality will start to diminish later.

4) SOME LABOUR-MARKET EFFECTS OF EU MEMBERSHIP AND EMU PARTICIPATION

From the point of view of the effects of economic shocks, the homogeneity and heterogeneity of the economic structures of EMU member countries are important. Homogeneity of structures means that shocks in these countries are correlated and their economies interdependent. Several analyses have shown the positive effects of participating in the EU integration. First, it has had a positive and asymmetric effects on long-term economic growth – relatively higher rates for poorer member countries (e.g. Crespo-Cuaresma *et al.* 2002). Secondly, it has increased the correlation of output, stock-market indices and prices within EMU (e.g. Angeloni and Dedola 1999). However, heterogeneity has remained in some countries, such as the UK. It is important to know whether a monetary union will bring about a greater specialization in space (Krugman 1993) or make the economic structure more homogenous.

Some major questions arise about other economic-policy options instead of adjusting exchange and interest rates, which EMU precludes. The first option is to replace currency devaluation with labour migration, but although the four freedoms prevail in the EU single market, labour migration from depressed to prospering countries remains limited by language and cultural diversity. It is not likely to play more than a modest role as an adjustment mechanism. Capital mobility does not make a good substitute for labour migra-

tion, because it accentuates development divergence and increases competition among locations. This leaves the option of relative price changes. Competitiveness can be improved by real depreciation (falling relative prices of non-tradables) and stimulating production of tradables.

This means that wages bear the brunt of adjustment under EMU and need to react flexibly to shocks, lest differences in national unemployment rates develop. The shock-absorbing role should then be taken over by financial transfers, but the current system of EU financial transfers cannot cope with this or the financial needs of adjustment. Wages therefore have to be highly flexible and differentiated in the various economic zones of EMU. An important governmental task in EU countries is to make the national labour markets more flexible, which could be done through institutional reforms aimed at reducing unemployment. Few EU countries have yet managed to introduce the kind of genuine reforms required by a monetary union.

Policy-making comes under constant pressure from economic lobbies and interest groups. Institutional changes on the labour market generate political debate and opposition from certain economic and political interests, while others seek to shape the system of the labour markets and wage bargaining on a national or even EU level. The alternatives before labour-market reform – national or joint wage and employment policies – would create significantly different conditions for the future functioning of EMU.

A joint European wage policy runs counter to the economic rationale of a monetary union, which calls for decentralization of wage formation, so that regional competitiveness can be restored and unemployment reduced whenever asymmetric shocks occur. With a joint wage policy, political pressure on monetary policy will inevitably increase whenever the jobless rate exceeds a level perceived as politically tolerable. Solving unemployment is not and should not be a task assigned to monetary policy. An easy-money policy will undermine price stability in EMU. EU countries need to have wage policies and a possibly

harmonized employment policy as policy tools, based on their different unemployment rates, labour market conditions and national approaches.⁵

5) MAIN FEATURES OF THE HUNGARIAN LABOUR MARKET

The labour market is an area of the Hungarian economy that has undergone radical changes during the transition period. Unemployment rose in the early 1990s from virtually zero in 1989 to double digits, *i.e.* to levels prevalent in the EU countries. The employment structure has also changed profoundly, in occupational and geographical terms.

Interestingly, Okun's Law seems to have applied in a limited way. Large, one-off changes in labour participation wreaked havoc with the figures, but more so with the link between output and employment than between output and unemployment. Quite substantial

declines in unemployment have occurred since 1997.

Under central planning, there were high rates of male and female labour participation. The transition to market economy brought radical changes in perceptions of the benefits and costs of being active and of job opportunities. These led to a dramatic decline in labour participation rates in the years following the economic transformation. However, Hungary's participation rate has remained above the average for OECD economies at similar levels of development, but more comparable with those of EU countries. Male participation has sunk below the EU level, while female participation remains considerably higher. Employment rates in Hungary are roughly comparable with those of OECD and EU countries (To a large extent, high unemployment rates can be attributed to above-average labour participation.)

The unprecedented rearrangement of economic activity during the transformation not only put labour out of work and abolished workplaces, but also reallocated resources to other uses. Only a modest reduction in indus-

Table 7
Sectoral structure of employment, %

	1992	1993	1994	1999	2000	2001	July 2002
<i>Agriculture, forestry</i>	11.27	9.13	8.73	7.09	6.54	6.20	6.19
Mining	1.29	1.10	1.04	0.64	0.50	0.34	0.39
Manufacturing	25.80	24.50	23.69	24.37	24.20	24.76	24.79
Electricity, gas, water	2.65	2.75	2.89	2.36	2.08	2.06	1.86
Construction	5.31	5.41	5.36	6.64	6.96	7.07	6.97
<i>Industry</i>	35.05	33.76	32.98	34.00	33.73	34.23	34.00
Wholesale, retail trade	11.77	12.27	12.46	13.58	14.05	14.21	14.33
Hotels, restaurant	2.83	2.88	2.95	3.49	3.46	3.71	3.55
Transport, telecom	8.48	8.79	8.38	8.09	8.10	8.06	8.12
Financial intermediation	1.68	1.90	1.94	2.12	2.17	2.04	1.98
Real estate, renting	3.44	3.60	3.35	4.82	32	0.69	5.93
Public administration, defence, social security	7.19	7.83	8.54	7.92	7.77	0.50	7.57
Education	7.64	8.96	9.03	8.05	8.26	8.03	8.08
Health, social work	5.79	6.31	6.37	6.28	6.28	6.09	6.09
Other community, social and personal service	4.75	4.54	5.26	4.54	4.32	4.25	4.17
<i>Services</i>	53.57	57.07	58.27	58.90	59.73	59.57	59.81
	99.89	99.96	99.98	100.00	100.00	100.00	100.00
<i>Total number of employed</i>	4082.70	3827.30	3751.50	3811.50	3849.10	3859.50	3858.90

Source: CSO.

⁵ The employment chapter added to the EU Treaty at the Amsterdam summit can be interpreted in this way.

trial employment was observable in Hungary, because the service sector was already important. However, there was a marked shift away from agriculture.

Regional-mismatch unemployment is interpreted as reflecting a big deficit in labour mobility and travel-related infrastructure (roads, highways, trains, buses, *etc.*), as well as the nature of social insurance and family networks. The effective commuting radius of Hungarian workers is severely limited by infrastructural considerations.

The transition to a market economy includes aspirations to avoid substantial inequality by means of state-managed social welfare. Political demands for social insurance were enhanced by the mounting strains on individuals during the course of the transition. Unemployment compensation (*e.g.* early retirement, benefits and severance payments) were introduced in the early phase of transition, before the full force of the transformation was felt and without much consideration for potential costs. One of the big challenges was to develop alternative systems of social insurance to cover basic needs. At the same time, the aim was to ensure that labour mobility was not impeded, which was a central element of transition to market economy.

The transition to a market economy necessitated redeploying the labour force, with associated losses of human capital and reductions in expected lifetime income. Historical experience has shown that most attempts to protect a displaced labour force are made at the expense of postponing needful structural adjustment. The mobility deriving from struc-

tural adjustment is not restricted to moving labour resources from overmanned manufacturing to underdeveloped services. Mobility is also needed within industry – labour has to be relocated from shrinking and failing firms to new and growing ones, often in the same industry. An elaborate welfare net can reduce the cost of failing to act and make a wait-and-see policy more attractive, thereby raising the implicit costs of mobility.

The development of total employment in Hungary has changed significantly. The transformation shock increased unemployment in the first half of the 1990s, but between 1995 and 2000, there was an employment increase of about 5 per cent. The alteration seems to be accountable largely in terms of corresponding differences in economic activity. However, statistics shows that employment followed increases in output only weakly and falteringly. Overall growth was driven mainly by improvements in productivity levels rather than increases of labour inputs.

The productivity increase of the 1990s exceeded the rate sustainable in the long term and tended to reflect rapid, massive initial restructuring of the economy. In a sense, this significant increase came about more through slow employment creation due to labour-market rigidities. Comparing the period 1990–97 with 1997–2001, there was a pronounced slowdown in the rate of productivity increase. This at first sight could be evidence against the presence of Schumpeterian creative destruction, which would bring a gradually rising rate of increase in labour productivity over the period. However, the slowing of the improvement is consistent with the presence of rigidities on the Hungarian labour market.

Table 8
Economic activity of the Hungarian population –
unemployment rate, participation rate, %

	Male		Female		Total	
	Unemployment	Participation	Unemployment	Participation	Unemployment	Participation
1992	10.7	66.7	8.7	51.1	9.8	58.6
1993	13.2	64.3	10.4	54.5	11.9	56.1
1994	11.8	62.4	9.4	46.3	10.7	54.1
1995	11.3	61.7	8.7	43.8	10.2	52.4
1996	10.7	61.1	8.8	43.4	9.9	51.8
1997	9.5	60.4	7.8	42.8	8.7	51.2
1998	8.5	60.1	7.1	44.1	7.8	51.7
1999	7.5	61.4	6.3	45.4	7.1	53.1
2000	7.1	61.9	5.6	45.8	6.4	53.5
2001	6.3	61.7	5.1	45.6	5.7	53.3
July 2002	6.1	61.6	5.1	45.8	5.6	53.4

Source: CSO.

6) POSSIBLE CONSEQUENCES OF EU ACCESSION AND EMU FOR HUNGARY'S

LABOUR MARKET

The OCA theory lists several criteria for economies to fulfil before they can integrate their monetary systems without suffering employment losses and labour-market problems. Hungary's economy has visibly converged on those of the EU countries. Its structure has approached closely to the EU average. The EU is by far its most important trading partner, and the business cycles have become very similar. Nevertheless, the appearance of asymmetric shocks cannot be excluded. Despite the similarities that have developed in the last decade, potential adverse effects of EU accession and EMU could bring about serious economic difficulties. Participation in EMU calls for an economy able to adjust either through market forces or adequate economic policy. Exchange-rate policy ceases to be available as an economic-policy tool, being replaced by flexible price and wage adjustment or labour migration. Fiscal policy remains as a way of smoothing the fluctuations in the business cycle.

The following special features of the Hungarian economy and economic policy can be detected in terms of the OCA criteria:

- (a) Asymmetric shocks occur more on a regional than a national level.
- (b) There is rather limited empirical evidence of price flexibility. Some findings suggest that it is probably high by international standards, but this cannot really be proved because the market economy only has a decade's history, in which relatively high inflation rates will have distorted measurements of flexibility.
- (c) Wage and labour-market flexibility is rated by the OECD as fairly flexible by European standards.⁶ Pay negotiations at national level include representatives of three social partners (government, employees and employers), who agree upon a suggested annual average pay increase in

the private sector and some general aspects of labour-market policy. The effective decisions are then taken at company level by management and employee representatives, who may take into account productivity developments in the firm. This system contains no element that might hinder wage flexibility during or after EU or EMU accession. The unemployment elasticity of real wages in Hungary has undergone changes in the last decade. Pay in the early 1990s declined in the regions more exposed to the shocks of the transformation process. Within a few years, the unemployment elasticity of wages grew from -0.015 to -0.1 , which is a level common in market economies. Some years later, during the course of stabilization and completion of transformation, these regions lost much of the advantage they derived from lower labour costs, as the productivity advantages of regions with lower unemployment rates gradually increased. The unemployment elasticity of wages has decreased since 1996 and the causality between wages and unemployment has weakened.

- (d) Contrary to some views, labour migration, as a form of adjustment to asymmetric shocks within a monetary union, should be on a comparable scale among countries within the EU or EMU and among regions within any country. Migration has particular importance because nominal wages are supposed to be sticky downwards and unable to adjust when an adverse or negative demand shock occurs. This may lead to an increase in unemployment. However, migration can be a substitute for higher unemployment. Some analyses question the link between migration and monetary union, arguing that migration cannot bring adjustment to shocks, which can only be handled by monetary policy. Monetary policy can smooth, above all, temporary demand shocks. Moreover, migration is inflexible because it is unlikely that reversed migration will take place as soon as a temporary negative demand shock is over. In the longer term, a shortage of skilled labour may come to hinder

⁶ Nioletti, G., *et al.* (2000).

the development of the region from which the migration takes place. This means that price and pay flexibility should be the main means of adjustment. Of course, migration may be necessary as an adjustment to permanent shock effects, in which case, it will take place as an adjustment mechanism both in a monetary union and in a country with an autonomous monetary policy. The extent of migration depends much on factors such as structural policy, education and retraining, language knowledge and real estate-market mobility.

Analyses of current and future cross-border and domestic migration by the Hungarian labour force give a mixed picture, but the labour force turns out to be rather immobile.

- (a) EU accession implies additional structural shocks to the whole economy, particularly agriculture and certain industrial and service industries, which have already been subjected to transformation shocks. The accession could also bring higher unemployment, because adjustment will be much slower to the new steady state. Several analysts emphasise that without a fast catching-up process in the next couple of decades, a possible detour would be an outward flow of labour, particularly to the EU. This would be a possible constraint on real catching up, as it would result in a net transfer of human capital to more developed EU regions. The more sustained this process is, the more serious problems will be. Various arguments for and against the potential migration can be mentioned. The experience of catching-up countries in previous rounds of enlargement points to relatively small migration effects being induced by accession. However, economic situations, such as wage differentials and geographical proximity to important EU labour markets, may not be fully comparable. In the last decade, net migration from Hungary to the EU has been relatively moderate and Hungarian survey data based on interviews do not suggest that a big increase or a radical alteration in the trend will ensue. A study by Bauer and Zimmermann (1999) assessing various prospects and labour-market implications of EU migration after enlargement suggested that the economic and demographic situation in the EU and the applicant countries would make further migration unavoidable. Most migration pressure is expected to be on Germany and Austria. According to their calculations, 2–3 per cent of the acceding countries' population (about 3 million people) is expected to migrate to the West within the next 10–15 years. This means an East-West flow of about 200,000 people a year, which if distributed evenly, would mean a flow out of Hungary of about 20,000 people a year.⁷ This scale of migration cannot be considered an adequate adjustment mechanism in the case of an asymmetric shock.
- (b) Migration inflows may be another matter, as immigration of ethnic Hungarians from neighbouring countries has been increasing, and in some years, reached substantial numbers. The trend may continue after EU accession.
- (c) Domestic migration has not been insignificant: 3.5–4.6 per cent of the population moved regions in the 1990–95 period. But this did not reduce the regional unemployment differences. According to statistical calculations, if this rate of migration is sustained for 20 years, a 20 per cent difference in unemployment rates will fall to 13–15 per cent. The differences in regional unemployment rates, pay and income levels have been substantial and stable in Hungary in the last decade. Among the main reasons has been the skill structure of the labour force and immobility on the real-estate market. The differences could not be reduced by commuting because of the transport infrastructure and the high cost of travel.

⁷ The population of the 12 acceding countries is about 106 million and that of Hungary about 10 million.

Table 9
Regional differences in the Hungarian labour market – unemployment, income, migration

	Differences in regional unemployment rates (percentage points)	Differences in gross monthly regional incomes (%)	Regional migration among 15–59 age group (% of total population)
1989		21.1	2.2
1992	6.7	38.9	2.3
1993	7.1	35.8	2.3
1994	7.3	38.2	2.3
1995	9.1	39.7	2.3
1996	8.2	41.1	2.2
1997	7.9	41.9	2.3
1998	6.6	48.5	2.4
1999	7.1	48.4	2.4
2000	5.9	55.8	2.6

Source: Csajbók and Csermely (2002).

The Hungarian labour market is marked by relatively low employment (56 per cent in 2000) and participation rates by comparison with the EU average (63.1 per cent in 2000), which in turn is relatively low internationally. The EU aims to increase its employment rate to 67 per cent by 2005. The low Hungarian rates arose from the structural changes of the transformation process, the regional disparities between created and lost jobs, and regional skill-structure problems.

The structural differences of labour-market supply and demand are likely to remain on the Hungarian labour market for quite a long time. Labour markets usually react to negative demand shocks by reducing the participation rate and increasing the share of the inactive population. Due to the structural problems in the Hungarian labour force, much of the inactive population cannot be considered as potential labour in periods of economic prosperity or in the medium term. All these features will have effects on the tools of adjustment policy to cope with shocks after Hungary's accession to the EU and EMU.

* * * * *

REFERENCES

- Angeloni, I. and L. Dedola (1999): *From the ERM to the Euro: New Evidence on Economic and Policy Convergence among EU Countries*. ECB Working Paper No.4. Frankfurt/M: ECB.
- Bauer, T., and K. Zimmermann (1999): *Assessment of Possible Migration Pressure and Its Labour Market Impact Following EU Enlargement To CEE*. Research Report No.139. Bonn: DfEE.
- Bayoumi, T.A., and B.J. Eichengreen (1993): 'Shocking Aspects of European Monetary Integration', in Giavazzi, F. and F.Torres (ed.): *Growth and Adjustment in the European Monetary Union*, Cambridge University Press
- Blachard, O. and D. Quah (1989): 'The Dynamic Effects of Aggregate Demand and Supply Disturbances', *American Economic Review*, Vol. 79
- Boone, L. and M. Maurel (1999): *An Optimal Currency Area Perspective of the EU Enlargement to the CEECs*. CEPR Discussion Paper, No. 2119, London: CEPR
- Burda, M. (1998): *The Consequences of EU enlargement for Central and East European Labour Markets*. CEPR Discussion Paper, No. 1881, London: CEPR.
- Crespo-Cuaresma, J. et al. (2002): *Growth, Convergence and EU Membership*. ÖNB Working Paper, No. 62, Vienna: ÖNB.
- Csajbók, A., and Á. Csermely, eds. (2002): *Az euró hazai bevezetésének várható haszna, költségei és időzítése* (Likely Utility, Costs and Timing of Euro Introduction into Hungary). National Bank of Hungary Workshop Studies, No. 24, Budapest: National Bank of Hungary.

- EC (1998): *The Future European Labour Supply*. Employment & Social Affairs, Employment and European Social Fund Research Paper, Brussels: EC.
- EU Commission (2001): 'Real Convergence in Candidate Countries – Past Performance and Scenarios', in: *The Pre-Accession Economic Programmes*, ECFIN/708/01-EN, Brussels: EU Commission.
- Fidrmuc, J., and I. Korhonen (2001): 'Similarity of Supply and Demand Shocks between the Euro Area and the Accession Countries', in: *ÖNB East-West Conference 2001*, Vienna: ÖNB.
- Frenkel, M.C., C. Nickel and G. Schmidt (1999): *Some Shocking Aspects of EMU Enlargement*. DBResearch Note No.99/4. Frankfurt/M: DBR.
- Krugman, P. (1993): 'Six Sceptical Propositions about EMU'. *Greek Economic Review* 15 (1), pp. 93–104.
- Nicoletti, G., S. Scarpetta and O. Boylaud (2000): *Summary Indicators of Product Market Regulation with an Employment Protection Legislation*. Economics Department Working Papers, No. 226, Paris: OECD