



Volume VI, Issue 04

18.05.2009

ECFIN COUNTRY FOCUS

Highlights in this issue:

- Regional disparities in Poland depend on the scale and efficiency of agricultural activity
- Labour market disparities are persistent since standard equalisation mechanisms (labour mobility, wages and investment) do not work properly

The decline in regional unemployment disparities is not matched by a decline in regional income disparities

Regional disparities in Poland

By Piotr Bogumit*

Summary

Regional income and labour market disparities in Poland are characterised by three dimensions: the gap between the western and the eastern parts of the country, the privileged position of the capital region and rising differences between rural and urban regions. Disparities in labour markets are to a large degree the result of the economic transformation process, with unfinished restructuring in agriculture being one of the main features. Regional divergence is further aggravated by the inefficient functioning of traditional mechanisms of regional equalisation (labour mobility, wages and investment). This has resulted in persistently high unemployment and low employment rates in some regions.

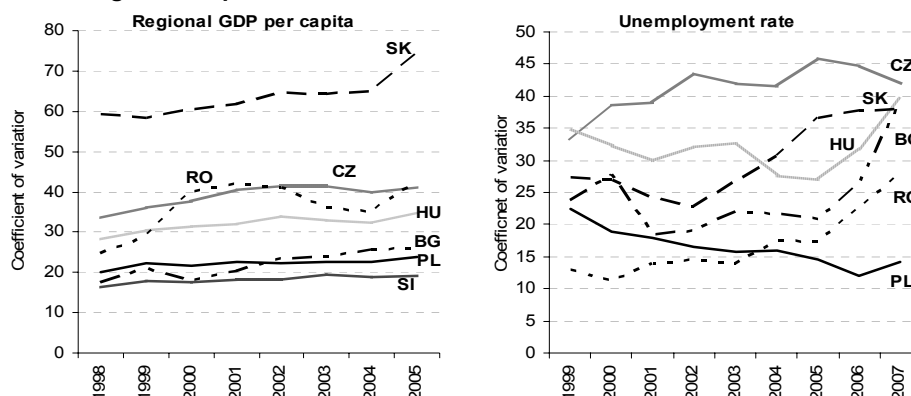
Income disparities across Polish regions

According to the Kuznets-Williamson inverted U-curve hypothesis (Williamson, 1965), regional disparities increase in the early stages of economic development due to the uneven spatial coverage of technological progress (Barrios and Strobl, 2005), the privileged position of more developed areas in terms of capital and labour mobility and the location of decision-makers. However, for countries at more advanced stages of economic development, higher factor costs and diseconomies of agglomeration, matched with knowledge spillovers, should lead to spatial convergence (Szörfi, 2007).

While the income levels were growing steadily in the new Member States, within-country regional disparities at the NUTS-2 level increased substantially in the period 1995-2005¹. In Poland, regional unemployment disparities were declining during the period analysed, while income disparities were growing, indicating that though some new jobs were created in disadvantaged regions they did not contribute to income equalisation. Income disparities are lower in Poland than the average for the analysed countries (Chart 1)². Relatively low spatial divergence of Polish regions at the NUTS-2 level compared to other new Member States hides high inequalities between sub-regions and across regions in Poland. GDP per capita varies across Polish regions along three dimensions: (i) a persistent gap between western and eastern Poland, (ii) increasing disparities between the fast-growing Warsaw region and the rest of the country, and (iii) rising intra-regional differences, mainly due to the urban-rural divide.

* Directorate for the Economies of the Member States.

Chart 1. Regional disparities in selected new Member States at NUTS-2 level

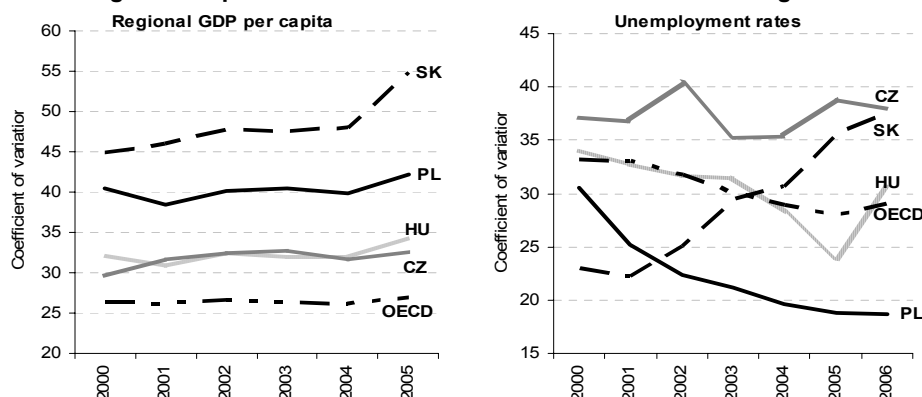


Source: Commission services

The most pronounced divisions are visible between Eastern and Western regions while the capital region maintains a privileged position

While GDP per capita reached 82% of the EU-27 average in Mazowieckie region (including Warsaw), it amounted to less than 40% of the EU-27 average in the 5 eastern regions (Lubelskie, Podkarpackie, Swietokrzyskie, Podlaskie and Warminsko-Mazurskie). The differences in the spatial distribution of income stem from inherited trends in sectoral specialisation, human and social capital endowments and institutional development. Poland's eastern regions are among the poorest in the EU-27 as a result of their dependence on the low-productivity agricultural sector, the distance from well-developed European regions and poor infrastructure, which undermines their attractiveness for investment (Petrakos, 2001). On the other hand, the Mazowieckie region, which surrounds Warsaw, has benefited from its privileged location and has been growing much faster than the other Polish regions, thus playing an important role in the widening of regional disparities.

Chart 2. Regional disparities in selected new Member States at sub-regional level



Notes: OECD indicates an unweighted average of coefficients of variation from OECD European Member States.

Source: OECD regional statistics

While disparities in GDP per capita at the regional level in Poland are relatively subdued, at the sub-regional level (NUTS-3) they rank among the highest in the OECD (OECD, 2008). Intra-regional disparities are explained by the growing gap between, on the one hand, low productivity agricultural areas and small/medium-size towns undergoing industrial restructuring and, on the other hand, fast growing urban areas developing services and medium to high-tech industries. Indeed, a high correlation between population density and output per capita was found, highlighting the importance of urban centres for regional development (Bukowski et al., 2007).

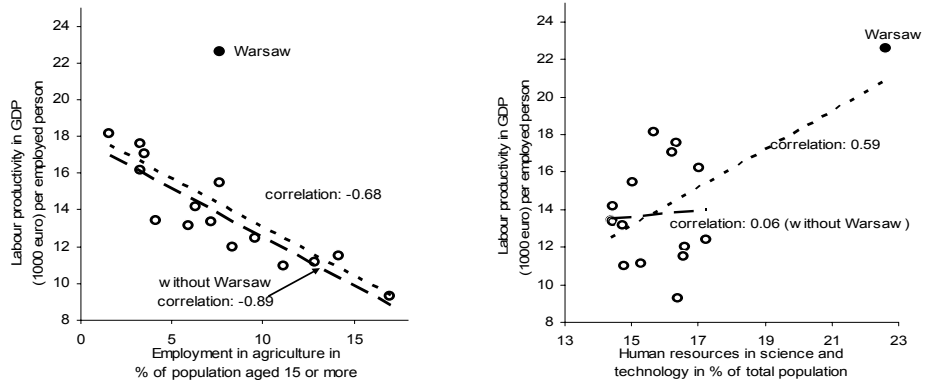
Regional labour markets

Regional labour markets in Poland exhibit similar characteristics to other countries in Eastern Europe, e.g. the much better situation of urban centres and the surrounding areas in comparison to the periphery. However, regional GDP levels cannot fully explain differences in labour market developments as low unemployment levels can be observed in regions with both high (usually metropolitan areas) and low levels of output per capita (rural areas). This stems from the fact that the situation in the

Labour productivity and unemployment rates vary substantially across regions due to different sectoral composition of output, limited mobility and past restructuring of economic activity

labour markets at regional and local levels is strongly linked to the scale and type of agricultural activity, past experiences with industrial restructuring (e.g. Silesia) and reduced mobility of Polish workers.

Chart 3. Determinants of labour productivity across NUTS-2 regions in Poland in 2001-2005

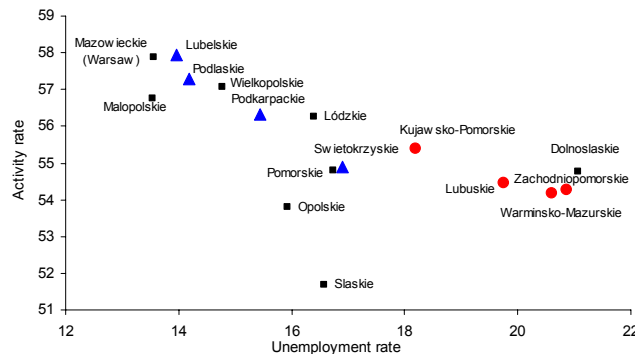


Source: Commission services

Labour productivity in Poland is strongly and negatively correlated with the share of employment in agriculture

Labour productivity is highest in urban, industrial regions (Mazowieckie, Slaskie) and lowest in rural regions of Eastern Poland where employment is concentrated in subsistence agriculture. There is a negative correlation between labour productivity and the share of employment in agriculture which results from the low productivity in agriculture, characterised by underinvestment and the small size of farms (Chart 3). The counterpart of low productivity in the agricultural sector is hidden unemployment, defined as employment above the level consistent with potential labour productivity. Hidden unemployment was estimated at about 1.8-1.9 million in 1996-2001, over 60% of employment in agriculture, with the highest incidence in Mazowieckie, Lubelskie, Malopolskie and Podkarpackie (Kwiatkowski et al., 2004). On the other hand, hidden unemployment and overall employment in agriculture tend to be low in the North-Western part of Poland, where the liquidation of state-owned farms resulted directly in high unemployment. Apart from the sectoral structure of GDP and employment, labour productivity differentiation is also explained by regional disparities in the physical capital stock per employee (Tokarski, 2005). Finally, differences in human capital (as measured by human resources in science and technology) also play a role as high employment in agriculture in several regions coexists with low levels of education and investment in human capital, while human capital investment is concentrated in the Warsaw region.

Chart 4. Activity and unemployment rates across Polish regions in 1999-2007



Notes: Both unemployment and activity rates are in % of population aged 15 and more, averages for 1999-2007. Triangles symbolise Eastern regions and circles North-Western regions.
Source: Commission services

North-Western Poland is plagued by low employment rates and high unemployment, while the high employment rates in the Eastern part are driven by hidden unemployment in agriculture

The relatively low unemployment and high participation rates characterise both urban, well-developed regions (Warsaw, Wielkopolskie) as well as rural areas plagued by hidden unemployment in the Eastern Poland. On the other hand high unemployment and low activity rates persist in the regions with either highly productive agriculture, which was successfully transformed into high areal, relatively

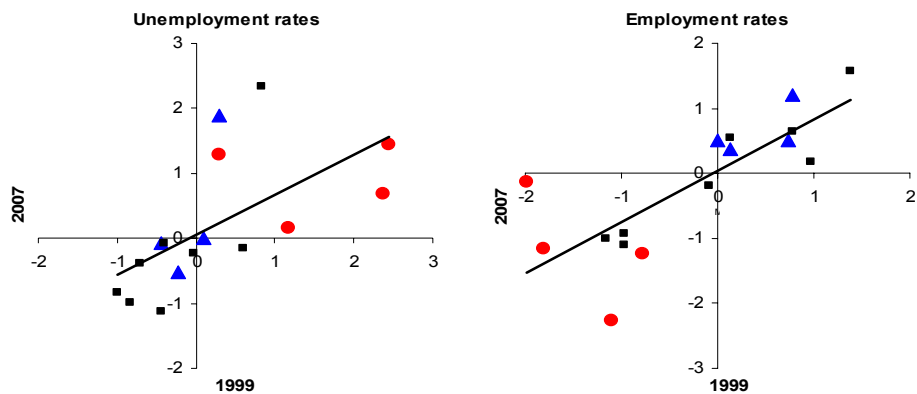
well capitalised private farming after the fall of state-owned farms at the expense of high long-term unemployment (North-Western Poland) or regions that experienced relatively deep restructuring of industry in the beginning of the nineties (Dolnoslaskie).



Inefficient mechanisms of equalisation

Standard mechanisms for equalisation of regional income and labour market disparities in Europe include labour mobility, wages, foreign direct investment and EU funds inflows. The role played by social security was already discussed in Country Focus, Vol. 6, Issue 3, 2009. If these equalisation mechanisms do not function properly, adjustment can take place through variation in participation rates, as discouraged workers leave the labour force in bad times and return only when the situation improves. In Poland the differences in labour market characteristics and income levels between regions are persistent over time (Chart 5) as the usual mechanisms of regional equalisation are ineffective and most of adjustment takes place through changes in labour force participation.

Chart 5. Persistence of relative regional unemployment and employment rates in 2007 as compared to 1999



Notes: The relative unemployment and employment rates are defined as regional unemployment (employment) rate minus the national average in each year divided by the standard deviation. Triangles symbolise Eastern regions and circles North-Western regions.
Source: Commission services

Labour mobility

Internal labour mobility is limited and adjustment takes place through changes in the participation rate

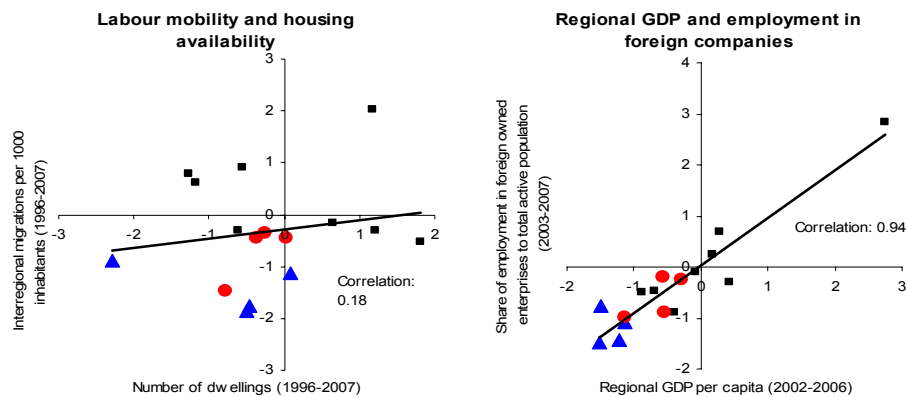
Labour mobility³ inside countries has remained limited in new Member States. This may be linked to the high share of owner-occupied housing, high relocation costs (both social and economic), poor information about job opportunities in other regions and liquidity constraints (see Huber, 2007 for a comprehensive review of the literature). Additionally, the initial human capital endowment is important in explaining the ineffective response of labour mobility to regional differences as skilled labour is more likely to migrate to better developed parts of the country, thus increasing the disparities between regions (Jurajda, 2007). Despite widening labour market and income disparities across regions in Central and Eastern Europe, labour mobility is falling. Commuting, which normally constitutes a close substitute for labour mobility, has facilitated the transition from unemployment to employment but this has not been sufficient to compensate for low labour mobility (Paci, 2007).

Internal labour mobility between Polish regions is low compared to other new Member States. This could be explained by the lack of sufficient housing and the underdeveloped transport infrastructure in the destination regions (Ghatak, 2008). Moreover, underdeveloped regions characterised by low labour mobility flows are contiguous to regions with better economic conditions experiencing relatively high labour mobility (Fidrmuc, 2004), which points to labour market mismatches linked to human capital endowment and occupational structure of the labour force in the regions. Interregional mobility is particularly low for both the eastern and north-western parts of the country (Chart 6, left panel). This could be attributed to the relatively low levels of both urbanisation and human capital in these regions. The capital region stands out as the main migration destination due to relatively high incomes and education opportunities coupled with a relatively well developed

housing market (23% of new housing investment is located in the region) and transport infrastructure.

Chart 6. Determinants of labour mobility and FDI inflows across Polish regions

Both FDI and EU funds inflows tend to concentrate in the western and urban regions, thus increasing regional disparities



Notes: All variables are transformed by subtracting the national average and dividing by the standard deviation. Triangles symbolise Eastern regions and circles North-Western regions.
Source: Polish Statistical Office (GUS)

Wages

Regional wages in new Member States are slightly more responsive to regional market conditions than in the EU-15. They constitute the main channel of adjustment to regional asymmetric shocks (Huber, 2004; Buettner, 2007), but are found to be 'insufficient to accommodate completely to shocks' (Bornhorst, 2006). Wage flexibility in Poland is comparable to other new Member States, but the adjustment appears to be taking somewhat more time (Iara, 2004). Moreover, minimum wages are fixed at the national level and there is no differentiation by age, occupation or qualification thus leading to higher unemployment in less developed regions and within these regions, among younger, less productive workers (Feldmann, 2004).

Foreign direct investment

Foreign direct investment in new Member States, especially in the services sector, tends to be spatially concentrated in metropolitan areas (Pavlinek, 2004). In Poland the existence of a common border with the EU-15 is particularly important for the location of FDI as the western border region benefits from the proximity to a large export market (Germany) and relatively good inter-connections with the pan-European transport network. On the other hand, the least developed regions of Poland attract less FDI inflows despite the advantages offered by "special economic zones" (Cieslik, 2005; Guagliano 2005).

Thus, foreign firms operating in Poland are predominantly located in the capital region (Mazowieckie) and the western part of the country (Dolnoslaskie, Slaskie and Wielkopolskie). These regions attracted a high share of FDI because of a relatively high level of economic development (Chart 6, right panel), a high concentration of human capital and agglomeration economies. In addition, urbanisation, a high share of domestic manufacturing industry and easy access to the European market all play a role. Overall, there is no evidence of a clear link between FDI and regional GDP dispersion in the long term (European Commission, 2009), while, in the short term the uneven concentration of FDI activity in Poland accelerates regional disparities leaving low-income agricultural regions on the Eastern border behind (Cieslik, 2005).

EU funds

Some authors (Kaczor and Socha, 2008) find that EU funds inflows have reduced regional disparities in Poland. On the other hand, different models show a much weaker impact of EU funding in the eastern regions compared to the rest of the country (Zaleski et al., 2008), which could be partly explained by their relatively short implementation period and is in line with the mixed results found in the literature in general (Boldrin and Canova, 2001; Ederveen and Gorter, 2002; De la Fuente 2002; Cappelen et al., 2003). The effectiveness of EU funds depends crucially on the quality of the framework which supports their implementation, both in terms of formulation of the regional policy objectives and administrative capacity of the regions and in terms of individual project selection (European Commission, 2009).

Moreover, the investment mix plays a role, with better results stemming from investment in human capital and education compared to infrastructure investment or direct business support (Rodriguez-Pose and Fratesi, 2004), while the financial support is conditionally effective on the institutional quality and openness of the receiving region (Ederveen et al., 2006).

In the previous programming period (2004-2006) the bulk of the EU co-financed investment in Poland (in terms of funding per capita) was directed to more developed regions. However, investment in human capital and education as well as direct business support was more intense across the eastern regions, while the infrastructure investment went to the more affluent regions in Western Poland (Ministry of Regional Development, 2008). This dualism of investment flows is related to the better quality of regional institutions and the stronger financial position of urban and western regions, as they can better respond to the need of co-financing which EU funds require, especially for infrastructure projects. It also underlines the different funding needs in the eastern part of the country where a low educational attainment and a high share of hidden unemployment calls for an approach focused on improving human capital. All in all, the relative concentration of funding in the urban and western parts of Poland favours the creation of growth poles around main agglomerations, while investment in education in the rural areas improves the level of human capital in the least developed regions. In the short term, this tends to increase regional disparities, but it should stimulate labour mobility and bridge the regional divisions in the long term.



Conclusions

Regional income disparities in Poland are growing steadily in line with the Williamson hypothesis, although on average they remain smaller than in other new Member States. However, spatial aggregation at the regional level hides very high inequalities between sub-regions. Persistent disparities in employment, unemployment and labour productivity across Polish regions stem from different paths of restructuring in agriculture, human capital endowment and spatial concentration of investment in metropolitan areas.

Labour mobility and wages do not fully play their roles in equalising regional disparities, with adverse consequences for participation rates. Better housing (spatial planning reform, more flexible rental market) and differentiation of minimum wages could improve the adjustment mechanisms. EU funds can also contribute to bridging the regional divide, if certain framework conditions are fulfilled and an appropriate investment mix is applied. Investment in human capital in the most disadvantaged areas and better transport connections between Polish regions are important to attract FDI and increase labour mobility, which should reduce the existing regional income dispersion in the long term.



References

- Barrios, S. and E. Strobl (2005)**, "The dynamics of regional inequalities", European Commission, European Economy Economic Papers, No. 229.
- Boldrin, M. and F. Canova (2001)**, "Inequality and convergence in Europe's regions: Reconsidering European regional policies", *Economic Policy*, Vol. 16, No. 32, pp. 205-253.
- Bukowski, M. et al. (2007)**, "Employment in Poland 2006: productivity and jobs", Ministry of Labour and Social Policy
- Boeri, T. and P. Garibaldi (2006)**, "Are labour markets in the new member states sufficiently flexible for EMU?", *Journal of Banking & Finance*, Vol. 30, pp. 1393-1407.
- Bornhorst, F. and S. Commander (2006)**, "regional unemployment and its persistence in transition countries", *Economics of Transition*, Vol. 14(2), pp. 269-288
- Buettner, T. (2007)**, "Unemployment disparities and regional wage flexibility: comparing EU members and EU-accession countries", *Empirica*, Vol 34, pp. 287-297.
- Cappelen, A. et al (2003)**, "The impact of EU regional support on growth and convergence in the European Union", *Journal of Common Market Studies*, Vol. 41, No.4, pp.621-624.
- Cieslik, A. (2005)**, "Location of foreign firms and national border effects: the case of Poland", *Tijdschrift voor economische en Sociale Geografie*, Vol. 96, No. 3, pp. 287-297
- De la Fuente, A. (2002)**, "The effect of structural Fund spending on the Spanish regions: an assessment of the 1994-99 objective 1 CSF", CEPR Discussion Paper 3673.
- Ederveen, S. and J. Gorter (2002)**, "Does European cohesion policy reduce regional disparities?", CPB Discussion Paper 15.
- Ederveen, S. et al. (2006)**, "Fertile Soil for Structural Funds? A panel data analysis of the conditional effectiveness of European cohesion policy", *Kyklos*, Vol.59, No.1, pp.17-42.

- European Commission (2009)**, "Five years of an enlarged EU. Economic achievements and challenges", European Economy 1/2009.
- Feldmann, H. (2004)**, "How flexible are labour markets in the EU accession countries Poland, Hungary and the Czech Republic", *Comparative Economic studies*, Vol. 46, pp. 272-310.
- Fidmuc, J. (2004)**, "Migration and regional adjustment to asymmetric shocks in transition economies", *Journal of Comparative Economics*, Vol 32, pp. 230-247.
- Guagliano, C. and S. Riela (2005)**, "Do special economic areas matter in attracting FDI? Evidence from Poland, Hungary and Czech Republic", ISLA Bocconi Working Paper 21.
- Ghatak, S. et al. (2008)**, "Inter-regional migration in transition economies: the case of Poland", *Review of Development Economics*, vol. 12(1), pp. 209-222.
- Huber, P. (2004)**, "Intra-national labor market adjustment in the candidate countries", *Journal of Comparative Economics*, Vol. 32, pp. 248-264.
- Huber, P. (2007)**, "Regional labour market developments in transition: a survey of the empirical literature", *The European Journal of Comparative Economics*, Vol. 4, No. 2, pp. 263-298.
- Iara, A. and I. Traistaru (2004)**, "How flexible are wages in EU accession countries", *Labour Economics*, Vol. 11, pp. 431-450
- Jurajda, S. and K. Terrell (2007)**, "Regional unemployment and human capital in transition economies", IZA Discussion Paper, No. 3176.
- Kaczor T. and R. Socha (2008)**, "Badanie wpływu Narodowego Planu Rozwoju 2004-2006 oraz NSRO 2007-2013 na wybrane wskaźniki dokumentów strategicznych", Research Project commissioned by the Ministry of Regional Development.
- Kwiatkowski, E. et al. (2004)**, "Agricultural regions and regional policy in Poland", Research Project commissioned by the European Commission, Contract No. VC/2003/0367
- Ministry of Regional Development (2008)**, "Oddziaływanie funduszy strukturalnych i Funduszu Spójności na gospodarkę Polski w okresie 2004 – I połowa 2007"
- Narożny, M. (2006)**, "High unemployment in Poland – not only a labour market problem", European Commission, Directorate General Economic and Financial Affairs, Country Focus, No. 6.
- OECD (2008)**, National Territorial Review of Poland, GOV/TDPC(2008)2
- Pavlinek, P. (2004)**, "Regional Development Implications of Foreign Direct Investment in Central Europe", *European Urban and Regional Studies*, 11(1), pp. 47-70.
- Petrakos, G. (2001)**, "Patterns of Regional Inequality in Transition Economies", *European Planning Studies*, 9:3, pp. 359-383.
- Paci, P. et al. (2007)**, "Internal labor mobility in Central Europe and the Baltic region", World Bank working paper, No.105.
- Rodriguez-Pose, A. and U. Fratesi (2004)**, "Between development and social policies: The impact of European Structural Funds in objective 1 regions", *Regional Studies*, Vol. 38, No.1, pp. 97-113.
- Rutkowski, A. (2009)**, "Impact of social expenditure on regional disparities in Poland", European Commission, Directorate General for Economic and Financial Affairs, Country Focus, Vol. 6, Issue 3.
- Szörfi, B. (2007)**, "Development and Regional Disparities – Testing the Williamson Curve Hypothesis in the European Union", Oesterreichische Nationalbank, Focus on European Economic Integration, No. 2/07, pp. 100-121.
- Tokarski, T. (2005)**, "The differentiation of the economic development in the Polish regions and sub-regions" in: *The Dilemmas of Economic Policy, Development and Regional Economic Intergration* (ed. Bukowski S.), pp. 97-119.
- Williamson, J.G. (1965)**, "Regional Inequality and the Process of National Development: A Description of the Patterns", *Economic Development and Cultural Change*, Vol. 13, No. 4, part 2, pp. 1-84.
- Zaleski, J. et al. (2008)**, "Wpływ realizacji inwestycji finansowanych z funduszy unijnych na kształtowanie się głównych wskaźników dokumentów strategicznych – Narodowego Planu Rozwoju i Narodowej Strategii Spójności oraz innych wybranych wskaźników makroekonomicznych na poziomie krajowym i regionalnym za pomocą modelu krajowego i modeli regionalnych HERMIN", Research project commissioned by the Ministry of Regional Development.

¹ Latvia, Lithuania and Estonia are not included in the sample, as in these countries the NUTS-2 level corresponds to the whole territory of the country. NUTS-2 (Nomenclature of territorial units for statistics level 2) is a class of statistically disaggregated administrative units comprising between 800,000 and 3 million of inhabitants.

² The use of different measures of regional convergence (Gini index and maximum to minimum ratios) corroborates these results.

³ The analysis concentrates on interregional labour mobility and does not take into account international labour flows after EU enlargement.

The *ECFIN Country Focus* provides concise analysis of a policy-relevant economic question for one or more of the EU Member States. It appears fortnightly.

Chief Editors: Elena Flores, Jürgen Kröger, Directors – Economic and Financial Affairs

Coordinating Committee: Heinz Jansen, Mary McCarthy, Stefaan Pauwels, Ann Westman

Layout: Yves Bouquiaux, Fabrizio Melcarne

E-mail: ECFIN-CountryFocus@cec.eu.int

Website: http://ec.europa.eu/economy_finance/publications/countryfocus_en.htm