Adrian Burda

Why some regions of Poland develop faster than others
Regional accounts for 2000-2010, which were published by the Central Statistical Office of Poland (GUS) in December 2012, indicate that there were considerable differences in economic growth rates between the individual regions of Poland. For example: while the Legnica and Glogow subregion’s real per capita GDP increased by more than 100% during that period, the same measure for the city of Szczecin grew by only 14%.

At a glance, it may seem that the country’s richer regions have been enjoying faster growth, and poorer areas have experienced slower development. The gap between the wealthiest and poorest regions has grown noticeably. In 2000, the per capita GDP of the Polish capital, Warsaw, was five times higher than in the poorest subregion, which at the time was the Krakow region, excluding the city of Krakow. By contrast, 10 years later the same index for Warsaw was 5.7 times higher than in the Przemysl subregion, then the poorest subregion. Also, differences between the incomes in Poland’s regions had increased in that period, with the coefficient of variation rising from 40% to 43%. Interestingly, data from the GUS suggest that economic disparities are increasing both between the wealthy and moderately wealthy regions and between the moderately wealthy and poorer regions.

Real GDP growth in subregions in Poland in 2000-2010

Source: Central Statistical Office of Poland, PMR 2013
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A closer analysis shows that the varied growth rates seen between 2000 and 2010 were to a greater degree brought on by factors relating to economic structure and geographic location. Therefore, some of the less wealthy regions, such as the Krakow subregion, developed much faster than the entire economy of Poland (real GDP growth at over 80% and 46.4%, respectively). At the same time, there were exceptions among the richer regions with very low growth rates, such as the aforementioned Szczecin, which in 2000 was the fourth-richest region of Poland.

Suburbs expanding rapidly, border areas left behind

The agglomerations found around the major cities of Poland developed much faster than the entire country. In the analysed decade, the Wroclaw and Krakow subregions increased their real GDP by more than 80%. Interestingly, the largest cities grew slower on average than the surrounding areas, and only slightly faster than the Polish economy in general (even if we exclude Szczecin from the analysis). Looking at the individual results for Polish cities, we can see that only in Warsaw and Wroclaw did real GDP rise faster than in the entire country, while in Lodz, Krakow, Poznan and Tricity, real GDP grew somewhat slower. This is most likely a result of the suburbanisation process, in which the inhabitants of large cities move to the neighbouring towns, thus generating additional demand for local services and boosting the revenues of local budgets. Also, the areas around the large cities often become an attractive location for investment, including Kobierzycy near Wroclaw; Zabierzow and Niepolomice near Krakow; and Tarnowo Podgorne near Poznan.

Areas with weaker growth included regions by the eastern border, as well as – which comes as a surprise – by the western border (even if we were to exclude Szczecin from the analysis). In eastern Poland, factors that may explain the relatively low economic growth rate include a high share of agriculture in the employment and product structure, the continued poor availability of transportation connections both to Western European markets and to the main centres of development in Poland, and the peripheral character of the area. By comparison, the issues are much more complex in western Poland. On one hand, these regions are relatively peripheral (except Szczecin); on the other hand, transport connections to Western European markets are better than in other areas of Poland due to proximity to the western border. Also, the share of agriculture in the employment and product structures in the western regions of Poland is limited. In terms of investment, it is as attractive as the rest of the country, unlike eastern Poland. In fact, the city of Szczecin and the Szczecin subregion have been rated as highly attractive. In order to explain this phenomenon, we require a closer analysis based on statistical and econometric methods.
Both economic structure and geographic location matter

In order to properly assess which factors had an impact on the disparities of growth rates for the individual regions, PMR analysts used an econometric model with a broad range of variables. The model reflected both the changes in the structures of regional economies and the spatial effects (e.g., proximity to metropolitan areas). The main advantage of the model was that it allowed PMR analysts to estimate the influence of individual factors (e.g., location by the western border), while also taking into account other variables, such as the changes of level of industrialisation of the region, which was related to the collapse of unprofitable industrial plants. The model used by PMR econometricists also helped to assess which factors were or were not statistically significant.

The prepared model explains with 73% of the variability of real GDP growth per capita between the subregions. It has also good statistical properties, such normality of residuals, statistical significance of all coefficients and lack of significant heteroscedascity of residuals. The key factor explaining the variation in the regions’ growth rates was the change in the share of Gross Value Added (GVA) in industry within a region in the structure of the total GVA. The increase in the share of GVA by one percentage point meant that the real GDP per capita in a subregion rose over the decade by 2% faster. The change in the shares of other categories of economic activity in the structure of the total GVA i.e., market services, construction, finance and insurance activities, proved to be statistically insignificant.

Spatial effects proved to be highly significant. For instance, agglomeration regions observed a GDP per capita growth 15% faster on average than did other regions in Poland, even when taking

### Cumulative growth of real GDP in subregions in Poland in 2000-2010

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agglomerations</td>
<td>67.2%</td>
</tr>
<tr>
<td>Large cities (excluding Szczecin)</td>
<td>49.2%</td>
</tr>
<tr>
<td>Large cities (including Szczecin)</td>
<td>47.1%</td>
</tr>
<tr>
<td>Poland, on average</td>
<td>46.4%</td>
</tr>
<tr>
<td>Non-metropolitan areas</td>
<td>42.9%</td>
</tr>
<tr>
<td>Eastern border areas</td>
<td>35.8%</td>
</tr>
<tr>
<td>Western border areas (excluding Szczecin)</td>
<td>35.0%</td>
</tr>
<tr>
<td>Western border areas (including Szczecin)</td>
<td>29.9%</td>
</tr>
</tbody>
</table>

Source: Central Statistical Office of Poland, PMR 2013
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into consideration the changes in the economic structure of the regions, i.e., the significant growth of industrialisation in the Wroclaw and Krakow subregions (increased share of GVA in industry in the structure of total value added by more than 10 percentage points).

On the other hand, regions located by the western border observed GDP growth lower by 16% on average than in other regions of Poland, considering other explanatory factors. Interestingly, the low GDP growth rate was not only the result of Szczecin's weak growth. It is worth noting that even the Zielona Gora subregion and Gorzow subregion expanded at rates slightly slower than that of the Polish economy, despite the clear reindustrialisation (increased share of industry in the total GVA by, respectively, over 7 and nearly 6 percentage points) that was mainly prompted by new investment in the Kostrzyn-Slubice Special Economic Zone. We can therefore propose that the areas adjacent to Poland’s western border have become less attractive due to the opening of the borders and the availability of transport connections improved in other regions in central and eastern Poland following infrastructure investments. In order to boost growth rates, Poland’s western border areas should increase their activity in close proximity to major cities.

Influence of selected factors on the growth of real GDP per capita in subregions in Poland in 2000-2010

Source: Central Statistical Office of Poland, PMR 2013

- Agglomeration +15%
- Location by the western border -16.1%
- Location by the eastern border -6.6%
- Legnica-Glogow subregion +40.9%
- Subregion city of Warsaw +28%
Regions at the eastern border have also been growing much slower than other regions of Poland: -7% slower on average when taking into account the remaining factors. It is worth noting that for these subregions, the negative impact of location was twice as low as the western border regions. However, these regions profited from their proximity to the eastern border to a much lesser extent than did the regions adjacent to Germany in the period before the EU accession in 2004. Therefore, potential losses were smaller, too. A much more serious issue for the eastern border region seems to be its inability to attract a greater degree of investment related to industry and advanced services. It is worth noting that the eastern border, broadly understood to be the voivodeships bordering the CIS countries, has not been developing slower, considering the changes in economic structure; the Rzeszow subregion has indeed been growing more rapidly than the entire economy of Poland. This suggests that prudent economic policies, which take advantage of local academic centres and the potential generated by economic zones, could bring measurable benefits even to this peripheral area of the country.

As outliers, the Legnica and Glogow subregion and the city of Warsaw had to be analysed separately. The former noted growth as much as 40% higher than the rate suggested by the model. This was mainly thanks to the excellent results during the analysed decade of KGHM Polska Miedz, a mining and metallurgy company. The results were due to the company’s expansion and, most of all, to an increase in copper prices. At the same time, the region is highly dependent on industry, which generated over 60% of value added to the region in 2010, to which KGHM Polska Miedz contributed the largest share. The city of Warsaw, on the other hand, has a well-developed service sector that in the last decade grew dynamically and accounted for a high value added. The service sector added to the rapid economic expansion of the Polish capital: its growth was 28% higher than suggested by the model used by PMR analysts. Other analysed factors, i.e., the change of value added from market services to the value added structure, typical major city effects, the characteristics of the city of Szczecin and income per capita in 2000, all proved to be statistically insignificant.

Role of proper economic policies

The disparities in growth rates between the individual regions were the result of location and changes to economic structures. Regions that enjoyed particularly rapid growth were those where branches of industry prospered and where investments in industrial activity and agglomerations surrounding major cities were numerous. Regions with losses were located by the eastern border, and, seemingly unexpectedly, by the western border. However, with the right economic policies even unfavourable geographic location does not need to be a serious barrier to growth, as in the case of the Rzeszow subregion, which is now catching up with the rest of the country. The weak growth of some regions, such as Szczecin and surrounding areas, is also the result of unsuccessful economic policies in these areas that have resulted from a negative investment climate, a lack of a clear regional development strategy, and ineffective spending of public resources.
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