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Drivers of Regional Economic Growth in Hungary before and during the Pandemic Crisis

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Abstract. The 2010s saw a gradual improvement in economic growth in Hungary, which was noticeable in all regions. In this research, we examine the post-crisis economic development trends in a NUTS 3 level disaggregation in the context of the dependent market economy model. The research uses descriptive and multivariate statistical analysis to shed light on the main regional trends. Notable changes occurred mainly in the top and middle performing counties in terms of output, while the bottom of the ranking was characterized by stagnation. Territorial disparities have temporarily narrowed, but there has been no significant catching up of lagging regions.

Keywords: regional economic growth, Hungary, foreign direct investments, labour market, dependent market economy model

Introduction

The Hungarian economy has slowly and gradually emerged from the previous economic crisis of 2008/09 and has embarked on a growth path in a high-pressure economic environment (NBH 2016) during the second half of the 2010s. As a result, we could reasonably expect the economic crisis caused by the coronavirus to be only temporary and a return to strong growth soon, though with higher inflationary pressures and a tighter monetary policy environment. By the early months of 2022, the adverse international developments have made it certain that inflation will be persistently high with deteriorating fiscal balance and growth outlook, or even recession concerns. Our economy is highly vulnerable to external shocks (Gál–Lux 2022), while monetary policy instruments are more likely to affect the demand side of the economy, but inflation is currently being driven by supply-side frictions. At the same time, the scope for fiscal policy has also been severely constrained by the international energy crisis and the delay in receiving EU funds.

The above-mentioned macro processes are not affecting the regions of Hungary in the same way: territorial disparities are persistent in the long term, while the position of the regions may change from time to time (Vida 2022, Benedek 2021). In this article, we intend to analyse the regional economic inequality trends in Hungary in a county-level disaggregation. The main focus of our interest is the per capita GDP growth rate and its underlying drivers such as labour productivity or investments, including foreign direct investments (FDI) and labour market developments. These variables were considered the most relevant (and readily available) in the light of the literature on endogenous and exogenous regional development factors (Smętkowski 2018, Bodnár et al. 2022). The major added value of this research is the use of regionally disaggregated FDI data because there are only a few articles that deal with these processes in a regional breakdown in Hungary and Central Europe (see e.g. Gál–Singh n. d., Gál 2019, Lengyel–Varga 2018). In this article, we explore two main research questions: 1) how did the per capita GDP inequalities evolve during the post-crisis period in Hungary at the NUTS 3 level? 2) how did the specific drivers of growth contribute to the per capita GDP growth and labour productivity growth?

In this article, we first depict the nature of spatial inequalities with respect to the per capita GDP. Following Monfort (2020), we also use a decomposition approach highlighting the contribution of changes in labour productivity, employment rates, and demographic indicators to the changes in economic development. In the next part, we intend to get further insights by analysing the evolution of unemployment and investments, including foreign direct investments. The source of our database is the Hungarian Central Statistical Office (HCSO). Time series are available for the period between 2009 and 2020 at the NUTS 3 level, that is, we cannot see the overall impact of the coronavirus crisis, only the impact of its first few months. We assume a certain degree of resilience in the regions, therefore the downturn caused by the crisis was somewhat reversed in the following year, as confirmed by the latest sub-national employment data (HCSO 2022).

The Evolution of per Capita GDP in a Regional Breakdown during the Previous Decade

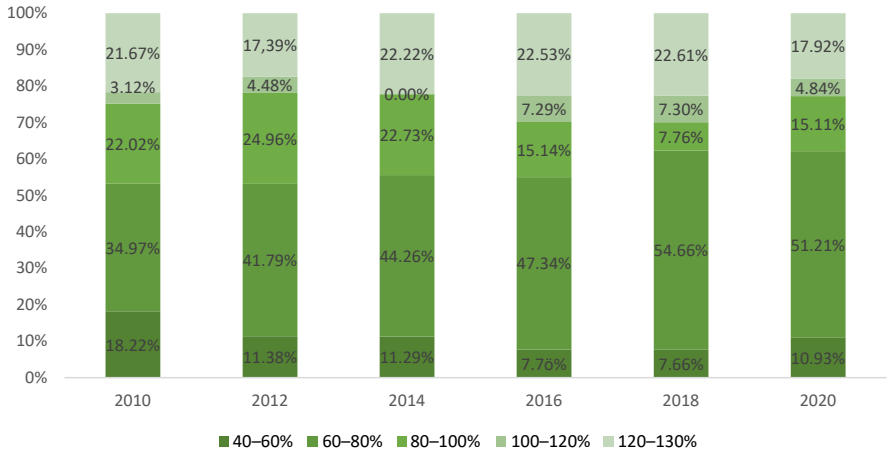
Given the uneven spatial distribution of growth factors (human resources, natural resources, capital stock, technology, entrepreneurship, etc.), understanding the development of regions is an essential dimension of understanding growth at the national level (Lengyel–Varga 2018). Differentials of development are wide and persistent among the Hungarian regions, although there have been notable changes during the previous decade. In terms of GDP per capita (*Table 1*), the counties

of Nógrád, Szabolcs-Szatmár-Bereg, Békés, Somogy, Jász-Nagykun-Szolnok, and Baranya are persistently the most backward areas. After 2010, Borsod-Abaúj-Zemplén, Heves, and especially Bács-Kiskun counties started to show spectacular progress, and Veszprém County also improved its position. Hajdú-Bihar and Tolna counties have fallen back slightly compared to their performance at the beginning of the decade, while Zala County has deteriorated significantly and Csongrád-Csanád County has stayed at around three quarters of the national level. Pest County has seen a significant decline, with Bács-Kiskun County on a par with its GDP per capita. Vas County followed a similar trajectory to Fejér County in the first half of the decade, approaching the national average year on year, but then gradually declined, while Fejér and Komárom-Esztergom counties hover close to the national level. Győr-Moson-Sopron is the only county outside the capital that has consistently exceeded the national average, moving further away from it until 2016, but since then it has been on the decline. An important feature that adds to the overall picture is the fact that the development of the national average GDP per capita itself is strongly influenced by the economic growth of Budapest, which gradually declined until 2015 but then accelerated again, and it has always been above twice the national average. Of course, the primacy of the capital city (or capital-city centricity) is not a unique, Hungarian feature in Central and Eastern Europe (see Rácz 2019).

Table 1. *The ranking of the Hungarian NUTS 3 regions by GDP per capita (as a percentage of the national average), 2010–2020*

	2010	**2015**	**2020**		**2010**	**2015**	**2020**
Budapest	219.1	200.2	207.2	Heves	68.6	71.6	75.5
Győr-Moson-Sopron	121.2	130.4	113.0	Hajdú-Bihar	74.8	71.2	71.9
Fejér	87.6	103.6	98.8	Zala	86.2	81.7	71.8
Komárom-Esztergom	100.8	102.4	96.3	Borsod-Abaúj-Zemplén	59.9	71.1	70.5
Vas	86.5	97.5	86.3	Baranya	66.6	64.3	68.5
Bács-Kiskun	66.6	78.2	80.3	Jász-Nagykun-Szolnok	61.1	65.3	68.2
Pest	87.6	83.5	79.9	Somogy	63.6	62.5	64.9
Csongrád-Csanád	73.7	75.3	76.3	Békés	57.7	60.7	59.5
Veszprém	72.9	74.3	75.6	Szabolcs-Szatmár-Bereg	54.1	55.8	57.9
Tolna	73.9	75.3	75.5	Nógrád	44.4	44.3	45.2

Source: author's elaboration based on HCSO data



Source: author's elaboration based on HCSO data

Figure 1. *Population distribution between regions in different development categories in Hungary, 2010–2020*

It should be kept in mind that compared to 2010 only the city of Budapest and the counties of Pest and Győr-Moson-Sopron have seen a population growth, so the GDP per capita figures are also affected by the general population decline, which is most severe in Békés, Baranya, Nógrád, and Borsod-Abaúj-Zemplén counties. In this context, we also examined the change in the population distribution between regions of different levels of development by dividing our regions into five development categories (*Figure 1*). Since 2010, the lowest development category has narrowed, but an increasing share of the population lives in regions with a GDP per capita between 60% and 80% of the national average level. This indicates a kind of middle-income trap, as there seems to be a lack of endogenous development factors that could boost our non-core areas out of this level (Diemer et al. 2022, Lux 2021). The biggest changes are in the categories around the national average, and the share of these categories is decreasing. The size of the population in the highest development category is determined by whether or not Győr-Moson-Sopron County exceeds 120 percent of the national average in a given period (see also Zsibók 2022).

The Decomposition of the per Capita GDP Change

According to a growth-accounting framework (Kónya 2018), GDP per capita can be decomposed into its underlying factors, namely labour productivity, the share of the working-age population in the total population, and the employment rate. These factors are central to the concept and measurement of regional competitiveness.

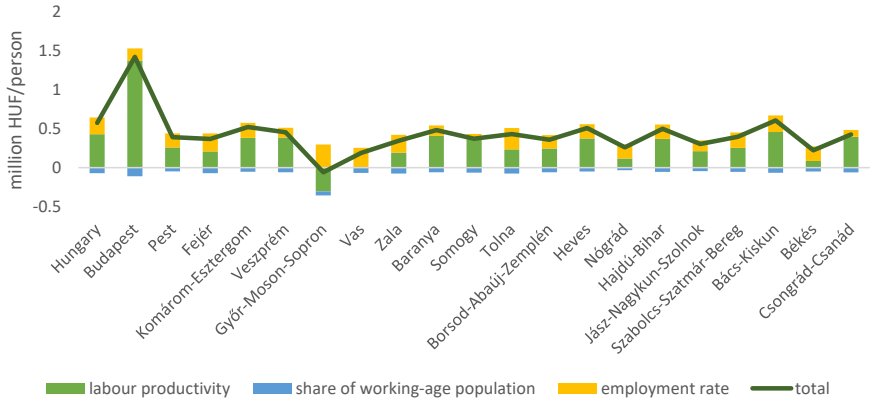
According to Lengyel (2000: 976), regional competitiveness is defined as the size and growth rate of income per capita generated in a region, which is the result of both high labour productivity and high levels of employment. In other words, competitiveness is sustainable economic growth that results from high productivity combined with a high employment rate (see also Nemes Nagy 2005):

$$\frac{GDP}{population} = \frac{GDP}{employed\ persons} \cdot \frac{employed\ persons}{working\text{–}age\ population} \cdot \frac{working\text{–}age\ population}{population} \quad (1)$$

This decomposition applies also to the changes of per capita GDP in an additive manner:

$$\Delta\frac{GDP}{population} = \Delta\frac{GDP}{employed\ persons} + \Delta\frac{employed\ persons}{working\text{–}age\ population} + \Delta\frac{working\text{–}age\ population}{population}, \quad (2)$$

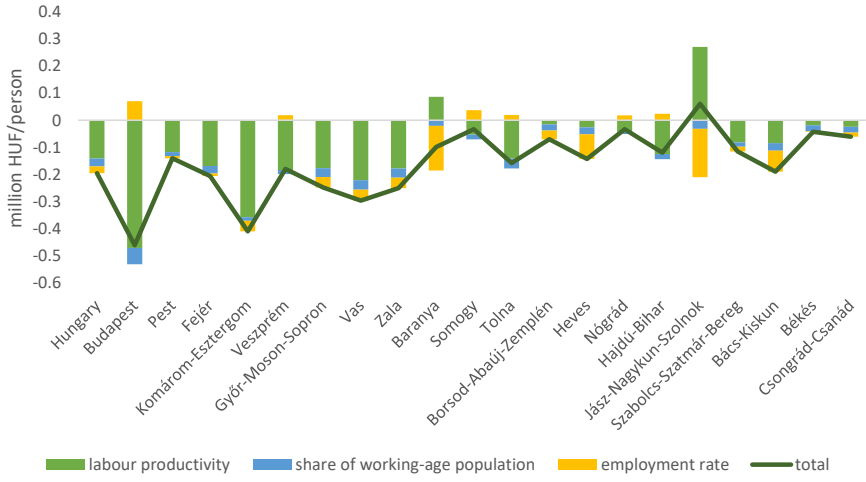
where Δ refers to the change of the variable between two periods. As explained in the next section, the second half of the 2010s brought significant changes in the contribution of the underlying factors to GDP per capita due to the shift from unemployment to labour shortages. These changes were analysed in detail by Zsibók and Páger (2021); therefore, in our calculations, we first focus on the era of the high-pressure economy (roughly between 2016 and 2019), and then we study separately the period of the COVID-19 crisis (the change between 2019 and 2020). This kind of decomposition does not separate the contribution of capital deepening and total factor productivity within labour productivity; therefore, we have to keep in mind that the contribution of labour productivity can be attributed to both efficiency improvements (or deterioration) and capital intensity growth (or decline).



Source: author's elaboration based on HCSO data

Figure 2a. *The decomposition of the per capita GDP change (at constant prices) in a NUTS 3 level breakdown in Hungary between 2016 and 2019*

The main driver of GDP per capita growth (at constant prices) during the period of high-pressure economy was productivity improvements (except in Győr-Moson-Sopron and Vas counties), while the mobilization of employment reserves was also successful, although not to the same extent as in the first half of the 2010s (*Figure 2a*). The decline in the working-age population contributed only slightly (with a negative sign) to the change in GDP per capita in all areas, and this effect is most striking in Budapest. Budapest and Bács-Kiskun County were the forerunners in this period in terms of per capita GDP growth, while Győr-Moson-Sopron and Vas counties showed the smallest improvement. In the first year of the pandemic crisis, the economic adjustment took place largely in the labour productivity, while employment has been less affected by the negative impacts. Budapest suffered the biggest decline in 2020 (*Figure 2b*) although it was somewhat offset by the improvement in the employment rate.



Source: author's elaboration based on HCSO data

Figure 2b. *The decomposition of the per capita GDP change in a NUTS 3 level breakdown in Hungary between 2019 and 2020*

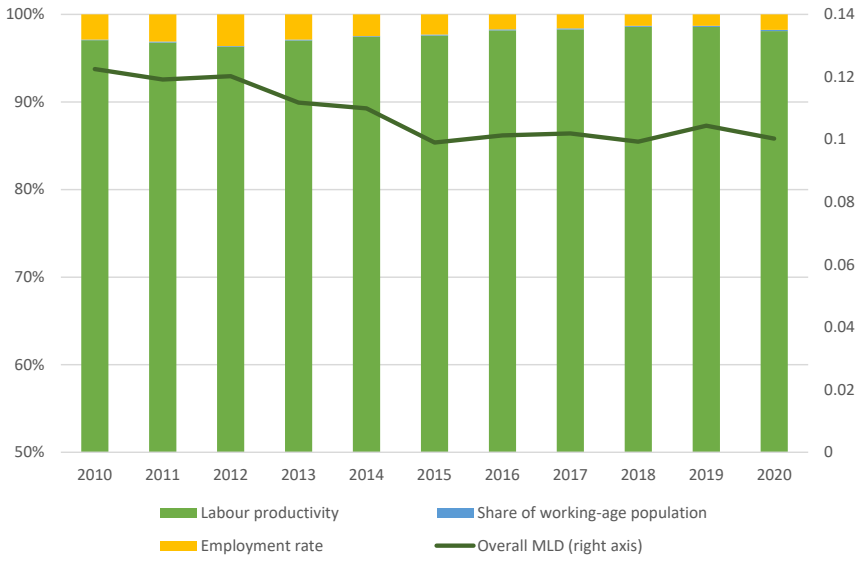
Outside the capital city, employment rates also increased in Veszprém, Somogy, Tolna, Nógrád, and Hajdú-Bihar counties. The sharpest falls were seen in Baranya, Jász-Nagykun-Szolnok, Heves, and Bács-Kiskun counties, so improvement in productivity can be probably explained by the higher number of job losses in lower-status jobs in Baranya and Jász-Nagykun-Szolnok counties.

The territorial dispersion of the growth factors examined above is certainly different in the sense that, e.g., demographic indicators are inherently much more homogenous among the regions than economic indicators. In this vein, we

examine to what extent the inter-regional dispersion of these three underlying factors contributes to the overall cross-sectional dispersion of GDP per capita. To study this, we compute the mean log deviation (MLD), an indicator of inequality in the group of generalized entropy (Eq. 3), one of whose positive properties is that it can be additively decomposed (see Monfort 2020). The calculation of the decomposed MLD index is as follows:

$$MLD\left(\frac{GDP}{population}\right) = \sum_{i=1}^{N} w_i * ln \frac{GDP_{country} / population_{country}}{GDP_i / population_i} =$$
$$\sum_{i=1}^{N} w_i * ln \frac{GDP_{country} / employees_{country}}{GDP_i / employees_i} + \sum_{i=1}^{N} w_i * ln \frac{employees_{country} / active\ population_{country}}{employees_i / active\ population_i} \quad (3)$$
$$+ \sum_{i=1}^{N} w_i * ln \frac{active\ population_{country} / population_{country}}{active\ population_i / population_i} =$$
$$MLD\left(\frac{GDP}{employees}\right) + MLD\left(\frac{employees}{active\ population}\right) + MLD\left(\frac{active\ population}{population}\right),$$

where the weights w_i reflect the population weight of each region, and $I = 1…N$ denotes the number of NUTS 3 regions ($N = 20$). The MLD index is obtained by dividing the country-level average by the individual values of the distribution and then taking the average of the logarithms of the resulting values.



Source: author's elaboration based on HCSO data

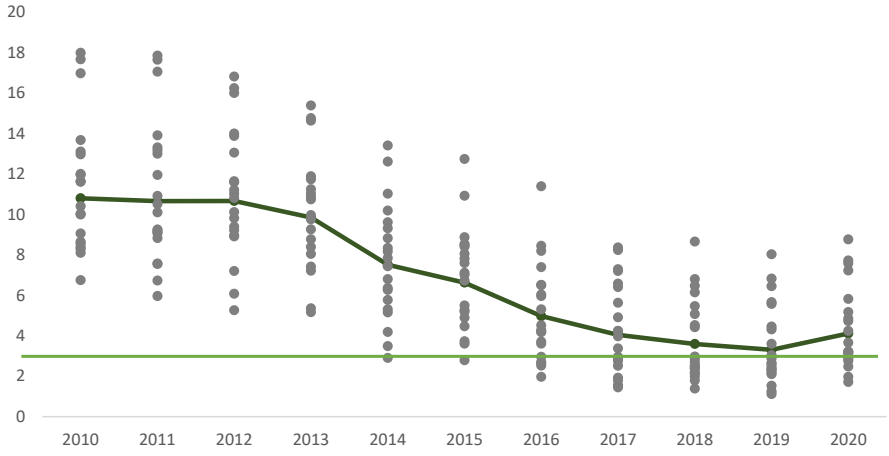
Figure 3. *The decomposition of the MLD index and the overall MLD index, 2010–2020*

Inequality in GDP per capita in Hungary, as measured by the MLD indicator, increased until 2009 and then started to decline, but this trend stopped in 2015 and has stagnated since then (*Figure 3*). In line with the results of Monfort (2020), in Hungary, like most other EU countries, productivity differentials are largely responsible for the spatial dispersion of GDP per capita. Demographic indicators, by their very nature, make only a marginal contribution to inequalities, and the role of employment rate differentials has been declining markedly since the financial and economic crisis. As a result of the tightness of the labour market, employment rates have converged significantly across regions of the country, but convergence in the efficiency dimension of employment (labour productivity) has not yet been achieved. In line with the overall MLD index, spatial disparities in labour productivity have not decreased since 2015. As a corollary, the spatial rebalancing of the labour market will no longer be a driver of diminishing territorial inequalities; instead, the only source of catching up in the peripheries can be the improving labour productivity, including better capital endowment, technological and institutional efficiency.

Drivers of Growth in the Hungarian Counties between the Two Crises

Smętkowski (2018) highlighted that in the Central and Eastern European countries achieving a high level of development in the context of post-socialist transformation was possible mainly owing to exogenous factors such as the influx of foreign direct investment (FDI) and multimodal transport accessibility. The 2008/09 crisis further strengthened the role of exogenous growth factors, that is, the role of FDI inflow as well as of EU funds. However, the spatial distribution of these growth factors is highly uneven in Hungary. At the same time, recent strands of research confirm the role of endogenous factors of regional economic development in Central and Eastern Europe, as well (Bodnár et al. 2022). Nevertheless, the most important driver of growth in this era was the labour market expansion in Hungary thanks to the work-based society model imposed by the government (Czirfusz 2020). Its spatial distribution was more even; therefore, employment growth appeared as the most important growth factor in the backward areas. In Hungary, the unemployment problem started to turn into labour shortage difficulties in the mid-2010s, but this was also accompanied by increased investment in job creation, especially in low-status segments. The unemployment rate thus fell below 5 percent on average after 2016 (a level between 3 and 6 percent is considered by the literature to be consistent with full employment), but this was already the case in Komárom-Esztergom, Győr-Moson-Sopron and Vas counties in 2014, in

Budapest and Fejér counties in 2015, and in 2016 it was above 5 percent in only 9 counties. In Baranya, Nógrád, and Szabolcs-Szatmár-Bereg counties, the indicator has remained consistently between 6 and 8 percent despite a significant decrease after 2012 (*Figure 4*).



Source: author's elaboration based on HCSO data

Figure 4. *The national-level (solid line) and the NUTS 3-level unemployment rates and the level of full employment (line chart)*

The fact that in the last years of the 2010s KSH reported unemployment rates below 3 percent in Budapest, Pest County, the counties of the Central Transdanubian and Western Transdanubian NUTS 2 regions, and in Tolna, Heves, Bács-Kiskun, and Csongrád-Csanád counties indicates a very tight labour market. Moreover, the unemployment rate in Komárom-Esztergom, Veszprém, and Győr-Moson-Sopron counties was below 2 percent. At the same time, the vacancy rate has been gradually increasing since 2013 (from 1.2 percent), reaching its highest level in 2018, when it was 2.7 percent on average across the country. The highest vacancy rates can be found in the city of Budapest and in Pest, Fejér, and Komárom-Esztergom counties, where the vacancy rate is close to or above 3 percent, and in Győr-Moson-Sopron, Somogy, and Jász-Nagykun-Szolnok counties, where the vacancy rate is above 2.5 percent.

Employment rate improved steadily between 2010 and 2019, rising from 50.6 percent to 62.6 percent nationally (in the 15–74 age group), but it only exceeded the 60 percent level in the city of Budapest and in Pest, Fejér, Komárom-Esztergom, Veszprém, Győr-Moson-Sopron, Vas, Zala, Bács-Kiskun, Hajdú-Bihar, and Csongrád-Csanád counties. The lowest employment rates (between 56 and 60%) were recorded in the counties of South Transdanubia, North Hungary, the

North Great Plain, and in Békés County. The trend in spatial disparities (cross-sectional relative dispersion) was clearly downwards during this period, but there still remained a gap of around 12-13 percentage points between the highest and lowest employment rates between the regions.

Table 2. *Selected economic indicators of the Hungarian NUTS 3 regions: averages between 2017 and 2019*

NUTS 3 Region	Employment Rate	Unemploy-Ment Rate	Vacancy Rate	Investments-to-GDP Ratio	FDI-to-GDP Ratio	Labour Productivity (HU = 100)
Budapest	66.10	2.69	2.77	12.59	76.05	194.96
Pest	64.04	2.32	3.13	18.62	50.40	76.95
Fejér	64.05	2.67	2.97	14.84	70.53	97.95
Komárom-Esztergom	63.97	1.75	2.73	26.29	111.07	96.44
Veszprém	63.25	1.56	2.30	16.99	42.29	72.99
Győr-Moson-Sopron	66.37	1.36	2.33	17.69	68.55	112.52
Vas	65.05	2.21	2.30	15.69	61.56	86.22
Zala	62.23	2.95	1.73	11.76	13.20	73.06
Baranya	58.31	6.85	1.57	13.65	13.75	70.79
Somogy	53.45	5.65	2.73	21.39	7.74	73.79
Tolna	57.31	2.73	2.23	22.16	14.44	79.94
Borsod-Abaúj-Zemplén	56.87	5.00	1.97	21.89	51.58	78.48
Heves	59.01	3.07	1.90	27.55	47.18	78.63
Nógrád	57.98	7.18	2.03	20.63	24.08	46.90
Hajdú-Bihar	59.46	5.44	1.70	21.64	22.30	74.91
Jász-Nagykun-Szolnok	59.01	5.55	2.60	25.52	39.89	67.74
Szabolcs-Szatmár-Bereg	58.32	8.35	1.77	16.36	55.79	59.01
Bács-Kiskun	61.61	3.18	1.73	19.33	26.11	79.86
Békés	59.28	5.00	1.63	15.90	11.65	61.41
Csongrád-Csanád	60.87	2.80	1.47	16.30	14.82	75.58
Hungary	61.85	3.65	2.47	16.76	59.65	100.00

Source: author's elaboration based on HCSO data

Investments recovered only very slowly in the period following the 2008–09 economic crisis, with the investment-to-GDP ratio only surpassing pre-crisis levels (14%) from 2014, but the real recovery took off from 2017, rising to 18% by 2019 – although regional disparities are persistent and substantial. In Budapest, the investment rate is typically low (between 8 and 14 percent), while outside the central region, the lowest investment activity is found in Zala and Baranya counties (between 8 and 19 percent) and in Csongrád-Csanád County (between 10 and 19 percent). Nevertheless, Budapest accounts for about 25 percent of the national investment volume, Pest County for about 11 percent, the most developed areas outside the capital city for 4–7 percent, but nearly half of the counties account for less than 3 percent of the total investment volume. In terms of investment rates, Komárom-Esztergom, Borsod-Abaúj-Zemplén, Jász-Nagykun-Szolnok, Somogy, Tolna, Heves, Nógrád, Hajdú-Bihar, and Bács-Kiskun counties were at the forefront at the end of 2010 (above 20 percent, but in some places even above 30 percent).

FDI as a share of GDP grew strongly until 2015 (from 61 percent in 2008 to 79 percent in 2015), but it later declined in importance, reaching only 58 percent of GDP in 2019. There are significant territorial disparities in this respect. FDI as a share of GDP exceeds 50 percent on a sustained basis only in the city of Budapest and in Pest, Fejér, Komárom-Esztergom, Győr-Moson-Sopron, Vas, and Szabolcs-Szatmár-Bereg counties. Veszprém and Borsod-Abaúj-Zemplén counties also caught up during the period of high-pressure economy, but the other regions lag far behind, in many cases not even reaching 20 percent. Looking at the distribution of FDI between the regions, almost half of the investment comes to the capital, but the share is decreasing, from 64 percent in the 2008/09 crisis period. A similar decline can be seen in Pest County (its share has fallen from 12 to 8 percent). The biggest change has been in Győr-Moson-Sopron County, where, after a rapid upswing, the role of FDI has been declining since 2016 (its share of the national volume has fallen from 13 percent in 2013 to 5.5 percent in 2019). The biggest increases are seen in Komárom-Esztergom, Borsod-Abaúj-Zemplén, and Fejér counties, with their share rising from 2-3 percent to 4-6 percent in the second half of the decade. At the bottom of the scale, the share of Zala, Baranya, Somogy, Tolna, Nógrád, Békés, and Csongrád-Csanád counties is less than 1% each.

In what follows, we intend to provide some deeper insight into the evolution of the above-mentioned drivers of growth. Our aim is to include variables describing the contribution of both labour market development and investments to regional growth because we are interested in the local consequences of labour market tightness and FDI inflow for economic and labour productivity growth. Our data can be structured into a balanced panel database covering the growth rates of seven variables measured in a NUTS 3 level disaggregation throughout eleven years from 2010 to 2020. Looking at the pairwise correlations between the seven variables suggests that the signs of these correlation coefficients are as expected (*Table 3*).

The negative correlation coefficient between the growth rate of employment and labour productivity growth follows the logic that in the short term the expansion of labour force is not accompanied by a proportional increase in the GDP (see *Equation 1*). Productivity gains in the long run can only be achieved by improving other factors of competitiveness, too (Szilágyi–Debrenti 2020). Interestingly, the growth rate of FDI is not associated with larger per capita GDP growth or labour productivity growth throughout the examined period. We assume that the relationship is valid in certain periods and certain areas, but in general it does not seem to hold.

Table 3. *Pairwise correlations between the growth rates of selected economic variables measured at the NUTS 3 level*

	Per Capita GDP	Labour Productivity	Employment	Unemployment Rate	Vacancy Rate	Investments	FDI
Per Capita GDP	1						
Labour Productivity	***0.7608***	1					
Employment	***0.2096***	***−0.4343***	1				
Unemployment Rate	***−0.3704***	0.0062	***−0.5139***	1			
Vacancy Rate	***0.3278***	***0.2678***	0.0714	***−0.2545***	1		
Investments	***0.2537***	***0.1965***	0.051	−0.0742	0.1158	1	
FDI	−0.0025	−0.023	−0.0004	−0.0545	0.0501	0.1035	1

Source: author's elaboration based on HCSO data

Note: ***italic bold*** coefficients are significant at the 5% level.

Exploiting the panel structure of our database (see e.g. Elhorst 2003; Györfy–Madaras 2017, 2021), we ran cross-section fixed- and random-effect models with either the growth rate of per capita GDP or the growth rate of labour productivity as dependent variables. We entered five possible explanatory variables one by one, separately. The fixed- and the random-effect models delivered quite similar results; therefore, we only present the outputs of the fixed-effect models (*tables 4a* and *4b*).

Table 4a. *Results of the fixed-effect panel regression models analysing the relationship between the growth rates of selected economic variables and the per capita GDP growth rate at the NUTS 3 level between 2009 and 2020*

Dependent Variable: Per Capita GDP Growth Rate					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Employment	0.3099**				
Unemployment rate		−0.0618***			
Vacancy rate			0.0657***		
Investments				0.0430***	
FDI					−0.0031
Constant	2.2679***	2.3785***	2.0807***	2.2527***	2.7547***
N	220	220	220	220	220
R^2	0.0765	0.1660	0.1391	0.0946	0.0342
Adjusted R^2	−0.0164	0.0822	0.0526	0.0036	−0.0628

Source: author's elaboration based on HCSO data

Notes: * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4b. *Results of the fixed-effect panel regression models analysing the relationship between the growth rates of selected economic variables and the labour productivity growth rate at the NUTS 3 level between 2009 and 2020*

Dependent Variable: Labour Productivity Growth Rate					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Employment	−0.6871***				
Unemployment rate		0.0016			
Vacancy rate			0.0563***		
Investments				0.0362**	
FDI					−0.0043
Constant	1.9044***	0.9158**	0.3615	0.5160	0.9594**
N	220	220	220	220	220
R^2	0.2092	0.0215	0.0905	0.0599	0.0223
Adjusted R^2	0.1297	−0.0769	−0.0009	−0.0346	−0.0759

Source: author's elaboration based on HCSO data

Notes: * p < 0.05; ** p < 0.01; *** p < 0.001.

The results presented in *Table 4a* indicate that the association between the growth rate of per capita GDP and the growth rates of employment, unemployment rate, vacancy rate, and investments were significant during the analysed period in a NUTS 3 level disaggregation, but the growth rate of FDI does not seem to play a role. The signs of the regression coefficients are as expected. With respect to the relationship between labour productivity growth and the selected five variables, the picture is somewhat different because the role of unemployment growth (or decline) is not significant but employment growth rate is significant and negative (*Table 4b*). Intuitively, when employment increases, output growth may not keep pace with it in the short term, or this result may be a sign that employment growth has taken place in less efficient segments of the labour market. Our findings regarding the lack of positive impact of FDI in regional growth are in line with previous literature such as Gál (2019, 2021) and Pavlínek (2022).

Conclusions

The high-pressure economy in Hungary has triggered a number of positive developments, but these do not include a reduction in territorial economic disparities. Although the most backward regions have been able to make progress in relation to themselves, this is not reflected by a change in their position *vis-à-vis* the national-level average development, as their development started from a low base. The biggest winner in the second half of 2010 was the capital city, Budapest, while the counties with an already strong or strengthening manufacturing sector were able to take their share of the recovery, with the exception of Győr-Moson-Sopron County. It is clear that many of our regions are threatened by the development trap, as non-capital regions with strong economies have also been exposed to adverse international market developments, cross-border activities (e.g. labour migration), and decisions by international and domestic government investors (increasing profit repatriation, government subsidies). In peripheral areas, endogenous resources for development are scarce, and the sources of extensive employment-led growth are in deficit. Based on our analysis using descriptive statistical methods, growth decomposition and regression analysis, we conclude that labour market reserves are becoming increasingly scarce in all regions of the country and that more spatially balanced economic development is crucially hampered by productivity differentials. Similar to the impact of the financial and economic crisis, the most developed regions, relying mainly on manufacturing, suffered the most severe decline during the period of the crisis, but these regions have the ability to recover quickly, while peripheral regions continue to stagnate.

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