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High-pressure economy in the Hungarian regions before and after the pandemic crisis

Zsuzsanna Zsibók, PhD

research fellow, Centre for Economic and Regional Studies, Pécs, Hungary

zsibok.zsuzsanna@krtk.hu



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Background of the research

- After the 2008/09 global financial and economic crisis, Central and Eastern European countries underwent a remarkable economic development, which brought a spectacular convergence process for these countries towards the European average level of economic development.
- Behind these trends, several aspects of the so-called high-pressure economy emerged, such as
 - the tightness of the labour market
 - the intensive investment activity (primarily from EU sources and government initiatives)
 - and strong income growth
- In this research we evaluate the Hungarian growth trends in a regional disaggregation after 2010.
- Our focus is on the main economic development indicator, the (per capita) GDP and its underlying
 growth factors
 - the demographic,
 - the employment
 - and the productivity trends.
- Primarily due to structural reasons, the post-crisis recovery resulted in quite different growth paths at the regional level.





Background of the research





Tér és Társadalom

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Hosszú távú megyei gazdasági növekedési pályák Magyarországon

Long-run economic growth paths in the Hungarian counties

ZSIBÓK ZSUZSANNA, PÁGER BALÁZS

ZSIBÓK Zsuzsanna: tudományos munkatárs, Közgazdaság- és Regionális Tudományi Kutatóközpont, Regionális Kutatások Intézete; 7621 Pécs, Papnövelde u. 22.; zsíbok.zsuzsanna@krtk.hu; https://orcid.org/0000-0001-9383-1134 PÁGER Balázs: tudományos segédmunkatárs, Közgazdaság- és Regionális Tudományi Kutatóközpont, Regionális Kutatások Intézete; 7621 Pécs, Papnövelde u. 22.; pager.balazs@krtk.hu; https://orcid.org/0000-0001-9061-1300

KULCSSZAVAK: gazdasági növekedés; GDP; területi különbségek; Magyarország; hosszú távú pályák

ABSZTRAKT: A gazdasági növekedés és annak területi különbségei folyamatosan a hazai regionális tudományi kutatások előterében állnak. Tanulmányunk célja, hogy területi statisztikai adatok alapján azonosítsa az eredförduló óta mutatkozó főbb trendeket és az ezekből levezethető hosznű távú megyei növekedési pályákat 2060-ig bezárólag. A gazdasági növekedést a növekedési számvítel gyakorlatának megfelelően, tényezőkre bontva vizsgáljuk, ami által lehetőségünk van területi egységenként elkülöníteni a demográfiai mutatók (a népesség és ezen belül az aktív korúak aránya), a termelékenység és a foglalkoztatás változásának hatását a gazdasági kibocsátásra. Tanulmányunk második felében e tapasztalatokkol kiindulva, egy felülfől építkező szemléletben hoszui távú előrejlezéselete készítűnk a megyei növekedési pályákra, figyelemmel a négy növekedési tényező elkülönített hatására. Terdményeinket az áttekinthetőség és az összehasonlíthatóság érdekében a szakírodalomban már korábban alkalmasott megyetípusok szerinti összesítésben is bemutatjuk. A kutatásunk célja nem pontos, számszerű előrejlezések készítése, hanem "mi lenne, ha…" típuvű kérdések felvetése és kötüljárása.

Két területi forgatókönyvet vizsgálunk, amelyek egyilte időben csökkenő ütemű területi differenciálódást vetit előre, a másik pedig időben folyamatosan növekvő különbségeket feltételez, ezek mögött olyan növekedési pálya van, amelyeben nemzeti szinten megvalósulhat az európai uniós egy főre jutó bruttó hazai össztermékhez való felzárkózás. Eredményeink rámutatnak arra, hogy a gazdaság területi koncentrálódása a jövőben is folytatódhat, és a kedvezőtlen demográfiai folyamatok miatt a fenntartható felzárkózás forrása hoszú távon kizebb rúllyal a foglalkoztatás további javulásából, nagyobb súllyal a munkatermelékenység javulásából származhat.

Zsuzsānnā ZSIBÓK: research fellow, Institute for Regional Studies, Centre for Economic and Regional Studies; Papnövelde u. 22., H-7621 Pécs, Hungary; zsibokzsuzsanna@krtk.hu; https:// orcid.org/0000-0001-9383-1134

Balázs PÁGER: junior research fellow, Institute for Regional Studies, Centre for Economic and Regional Studies; Papnövelde u. 22., H-7621 Pécs, Hungary; pagerbalazs@krtk.hu; https://orcid.org/0000-0001-8061-1300

KEYWORDS: economic growth; GDP; regional differentials; Hungary; long-term paths



Economic growth in Hungary after the 2008/09 crisis at the national level





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Economic growth in Hungary after the 2008/09 crisis in regional disaggregation

GDP at constant prices as a percentage of the 2008 value, where > 100%

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Budapest						100.1%	100.5%	103.3%	109.2%	114.9%	122.5%
Pest							103.6%	104.2%	107.3%	114.5%	122.7%
Fejér						104.5%	113.8%	117.9%	122.5%	128.4%	129.1%
Komárom-Esztergom								101.2%	102.9%	109.2%	114.8%
Veszprém							102.4%	106.8%	108.6%	114.8%	122.5%
Győr-Moson-Sopron			101.9%		101.0%	110.8%	119.7%	126.2%	125.2%	129.9%	127.9%
Vas				101.9%	107.7%	113.5%	116.2%	119.7%	121.5%	124.0%	127.0%
Zala							100.1%			102.3%	105.7%
Baranya									100.8%	108.1%	113.1%
Somogy							102.8%	104.7%	112.7%	118.8%	122.3%
Tolna					104.1%	101.8%	104.5%	106.7%	107.6%	117.3%	120.3%
Borsod-Abaúj-Zemplén						102.3%	115.2%	115.0%	126.6%	131.3%	126.8%
Heves							104.4%	108.7%	112.8%	121.2%	130.2%
Nógrád									103.8%	108.9%	112.7%
Hajdú-Bihar			100.5%			101.9%	104.3%	103.1%	111.7%	118.1%	121.6%
Jász-Nagykun-Szolnok							103.9%	105.2%	110.2%	113.7%	118.1%
Szabolcs-Szatmár-Bereg			100.1%	101.7%	103.8%	109.7%	113.2%	116.3%	120.4%	128.6%	138.1%
Bács-Kiskun					103.8%	107.5%	115.9%	116.5%	121.3%	134.2%	139.5%
Békés							102.5%	103.7%	105.4%	110.7%	112.0%
Csongrád-Csanád						100.8%	103.1%	103.3%	107.9%	112.1%	117.6%
HUNGARY						100.8%	104.6%	106.7%	111.6%	117.7%	123.0%

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Reasons behind the slow recovery

- Hysteresis
 - The crisis caused a hysteretic effect on trend growth, which means that the negative shock was more than a temporary downturn with a fast bounce-back as then expected by many experts.
 - Instead, the potential output itself proved to be endogenous as it decreased with the declining aggregate demand and the austerity measures (Fatás-Summers 2016, MNB 2016).
- In short:
 - Demand-side shocks have a permanent negative effect on potential (trend) growth
 - The endogeneity of potential output means that the long-run sustainable growth rate of the economy is not independent from the cyclical position
- Reasons behind hysteresis:
 - A crisis has permanent negative effect on both the quantity and the quality of the factors of production
 - labour force, physical capital, human capital, R&D&I expenditures, adaptation of new technology
 - Balance sheet adjustment induced shrinking aggregate demand
 - Credit demand and supply were both weak and the structure of the lending was unfavourable (credit defaults)
- See the 2016 Growth Report of the MNB



The ,novel' recipe for recovery: high-pressure economy

- Originated from Okun 1973
- An approach in contrast to the austerity-based recovery
- Novel adaptation of the concept to the post-crisis recovery by Ball 2009, Ball 2015
- Anti-cyclical economic policy: high demand-side pressure sustained by both fiscal and monetary policy measures
 - Goal: permanent increase of the potential output
 - The anti-cyclical policy turned to a pro-cyclical policy with the threat of over-heating the economy
- High-pressure economy in practice:
 - Persistent and predictable demand-side pressure \rightarrow increasing corporate demand for physical capital and human resources
 - Stable employment and income \rightarrow increasing consumer demand for goods and services
- Risks:
 - The potential output and the output gap is not observable, therefore the estimates are incorrect which may result in overcooling or overheating of the economy
 - Inflationary risks
 - They were not really effective due to the well-anchored inflation expectations and the flattening Phillips curve (which means that the relationship between the output gap and the inflation is weaker)
 - Asset price bubbles, external and internal imbalances
 - Tightening room for manouvre for economic policy in a case when anti-cyclical measures would become necessary





High-pressure economy in Hungary in the previous decade

- Accommodative monetary environment
 - Near-zero domestic and foreign nominal interest rates, negative real interest rates, weak domestic currency
 - Beneficial for FDI-driven, export-oriented sectors and regions
 - Quantitative easing central bank programme to purchase financial assets to stimulate the economy
- Widening fiscal policy discretion
 - Low budget deficit, declining government debt
- High level of investments (government + FDI + domestic private sector), intensive use of the EU's financial resources
- Improving labour market participation:
 - The employment rate increased in an extensive manner after the extreme low levels measured before the 2010s
 - The share of the working-age population decreased due to the natural population decline (ageing) and the Western outmigration
 - Tightening labour market
 - Labour shortage and unemployment coexist due to structural reasons (skill mismatch)
 - Wage growth exceeded productivity growth
 - The extensive increase of employment was accompanied by low productivity growth (an EU-wide and also a global phenomenon, called "productivity puzzle")
 - Low-educated labour force entered the labour market





The decomposition of GDP-growth

• The decomposition of per capita GDP:

 $\frac{Y}{N} = \frac{Y}{L} \cdot \frac{L}{NA} \cdot \frac{NA}{N} = \text{labour productivity} \cdot \text{employment rate} \cdot \text{share of working-age population}$

• Hence, GDP can be decomposed as

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$$Y = N \cdot \frac{Y}{L} \cdot \frac{L}{NA} \cdot \frac{NA}{N}$$

 The contribution of the elements to the change of the GDP between period 0 and 1:

$$Y_{1} - Y_{0}$$

$$= \left(N_{1} - N_{0}\right) \cdot \left(\frac{Y}{L}\right)_{0} \cdot \left(\frac{L}{NA}\right)_{0} \cdot \left(\frac{NA}{N}\right)_{0} + \left(\left(\frac{Y}{L}\right)_{1} - \left(\frac{Y}{L}\right)_{0}\right) \cdot N_{1} \cdot \left(\frac{L}{NA}\right)_{0} \cdot \left(\frac{NA}{N}\right)_{0}$$

$$+ \left(\left(\frac{L}{NA}\right)_{1} - \left(\frac{L}{NA}\right)_{0}\right) \cdot N_{1} \cdot \left(\frac{Y}{L}\right)_{1} \cdot \left(\frac{NA}{N}\right)_{0} + \left(\left(\frac{NA}{N}\right)_{1} - \left(\frac{NA}{N}\right)_{0}\right) \cdot N_{1} \cdot \left(\frac{Y}{L}\right)_{1} \cdot \left(\frac{L}{NA}\right)_{1}$$



Growth factors during the 2010s at the national level



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Spatial disaggregation

- Territorial classification
 - Based on economic structure, the level of development and growth dynamics
- See:

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Regionális Kutatásol

- Lengyel-Varga 2018
- Konka-Török 2019

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- Lux 2017
 - Central regions
 - Intermediate regions
 - Peripheral regions



Sub-national distribution of the GDP



NUTS3-level breakdown of the national GDP in 2019

Hirschmann-Herfindahl index (NUTS 3 -level GDP)



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The growth factors in the different county groups after the crisis



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Regionális Kutatások



The growth factors in the different county groups in the high-pressure economy



Regionális Kutatásol



What can we expect ,after' the Covid-19 crisis?

- The high-pressure economy seems to return, however, in a different form
 - Labour shortage remains to be a great challenge
 - Due to increasing inflation and the weak currency, the monetary environment is unfavourable and it has adverse effects on real income and domestic demand
 - Large-scale EU and governmental supports boost economic recovery (strong investment dynamics)
 - Their efficient use will be a challenge
- Regional development remains to be path-dependent, thereby imbalances are persistent
 - The extent of the temporary downturn is not that important compared to the economic resilience (adaptive capacity) of the regions
 - Those areas that have been originally better-off are expected to recover faster (primarily manufacturing and FDI-oriented regions)
 - In the long run, these areas may benefit from a potential/partial de-globalisation (nearshoring) tendency
 - The recovery may widen the gap between local SMEs and large multinational companies and the areas reliant on them.
 - Hysteresis is expected to appear after the Covid-19 crisis, too, due to the high level of uncertainty which detriorates private investments and restructures employment in certain sectors (tourism, catering).
 - Peripheral areas will possibly face an L-shaped growth path due to their lower level of resilience.
- The emerging new economic trends include digitisation and green economy
 - Digitization and teleworking may have a positive effect on peripheral economies but they possibly won't be able to counterbalance the lack of
 resources
 - Digital innovations need a high level of adaptive capacity regarding human resources and infrastructural environment
 - Circular economy is a key element in the renewal of peripheral areas, but it may be effective only in the long run





Conclusions

- All regions benefited from the results of high-pressure economy but to different degrees
- We cannot expect that spatial inequalities will diminish in the short or medium run
- The years of extensive employment growth will soon end, therefore upgrading the quality of the labour force is essential
 - Jobs with high value-added
 - Human resource development (including managerial skills) is number one priority
 - Improving local business environment
- (see: Vorley-McCann 2021)
- Further research
 - extend this partial analysis with other important aspects of the high-pressure economy, namely, private, public (incl. EU) and FDI investment activities as well as income dynamics at the sub-national level.

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Thank you for your attention!

Zsuzsanna ZSIBÓK, PhD zsibok.zsuzsanna@krtk.hu

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