

Slovakia's Productivity Shift: Grounds for Optimism or Cause for Concern?

Ivan Sutóris[†]
Milan Vaňko[†]

This brief analyses recent changes in Slovak labour productivity using Eurostat data. It finds that productivity growth was particularly strong during the pandemic years, driven mainly by within-sector gains in services, but has moderated since, while industry has lost momentum and industrial unit labour costs have risen far faster than in the EU27. This pattern suggests that the recent improvement in productivity may not be durable: without a broader and sustained recovery in tradable sectors, especially industry, Slovakia is unlikely to achieve lasting productivity growth, renewed convergence, and stronger competitiveness.



Slovakia's growth is now driven more by productivity than by adding more workers.



The recent productivity improvement came mostly from services, not from industry.



Industry has lost strength since 2020 and was no longer the main engine of productivity growth



Unit labour costs have risen much faster than in the EU in industry, which puts competitiveness at risk.

* We thank Michal Horváth, Branislav Reľovský, Joan Paredes, André Casalis, Michal Doliak and Viera Mráziková for fruitful discussions and helpful suggestions. The views expressed in this brief are those of the authors and do not necessarily reflect the official position of the National Bank of Slovakia or the Eurosystem. All errors and omissions remain the responsibility of the authors.

† Strategic Initiatives Department, National Bank of Slovakia.

Introduction

Slovakia's aggregate growth has continued to slow, but the underlying drivers of growth have shifted fundamentally from labour expansion to productivity. Prior to the COVID-19 pandemic, growth in Slovak GDP per capita was driven primarily by employment gains, while productivity growth weakened. Since 2020, this pattern reversed, productivity growth has accelerated and become the main contributor to GDP per capita growth, albeit not enough to offset the broader slowdown in economic growth.

While the acceleration in labour productivity growth is welcome, the aggregate picture conceals important sectoral differences. The post-pandemic productivity pickup has been concentrated in a narrow set of service activities, while the industrial base that historically supported Slovak growth has weakened.¹ Shift-share decomposition shows that productivity growth was driven primarily by within-sector productivity gains in these service sectors whereas resource reallocation — the channel through which labour and capital move toward more productive uses — made only a limited contribution, even smaller than in the already weak pre-pandemic period.

These developments have important implications for Slovakia's competitiveness. Diverging productivity trajectories across sectors translate into diverging nominal unit labour cost (ULC) dynamics. While aggregate ULCs have grown only slightly faster than in the EU27 average since 2020, industrial ULCs have increased at more than twice the EU27 rate. Given the central role of industry in a small, open, export-oriented economy, the persistence of these trends lends support to concerns that Slovakia faces growing competitiveness vulnerabilities (European Commission, 2025a; European Commission, 2025b).

The key question raised by this evidence is whether the improvement in aggregate productivity can be sustained and extended to the tradable sectors that largely determine Slovakia's competitiveness. A narrow, service-led, and potentially temporary rebound that leaves industry facing deteriorating competitiveness does not resolve Slovakia's convergence challenge (Novak and Vanko, 2025; NBS, 2025).

A Reversal of Roles – But Not of the Growth Slowdown

Slovakia's output growth slowdown reflects a shift in its underlying growth drivers. Prior to the COVID-19 pandemic, labour input was the primary driver of GDP per capita growth, while labour productivity, growth in GDP per hour worked, contributed comparatively little to overall economic expansion. Since 2020, however, this pattern has reversed: GDP per hour worked has accelerated and become the main contributor to growth, whereas the contribution of employment has declined sharply, as illustrated in Chart 1. The productivity improvements were driven mainly

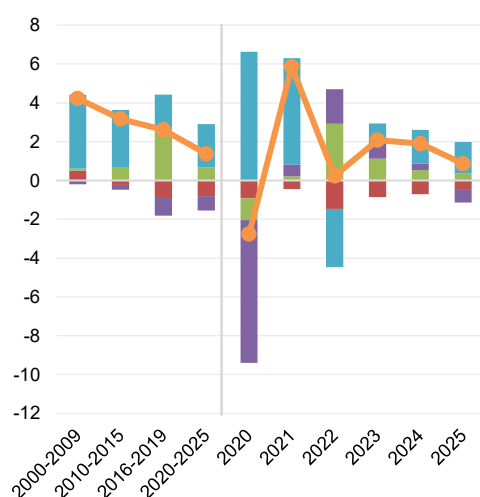
¹ See Novák and Vaňko (2025) for overview of historical productivity trends in Slovakia.

by the pandemic years but have moderated more recently, raising questions about the durability of these gains.²

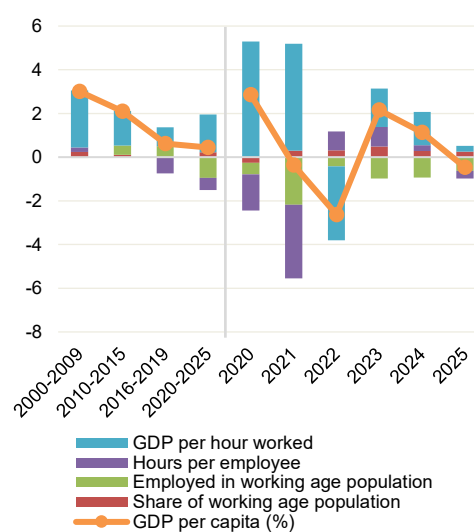
The picture is similar when considering convergence to the EU27. The differential in GDP per capita growth relative to the EU27 points to a continued slowdown in Slovakia's convergence process. Although Slovakia's productivity differential vis-à-vis the EU-27 has improved since 2020, this improvement has not been sufficient to offset the drag from weaker employment growth.

Chart 1 – Contributions to real GDP per capita growth

a) Slovakia
(percentage points)



b) Differential with EU27
(percentage points)



Source: Eurostat, authors calculations

Slovakia's productivity and employment developments stand out even in the broader EU context. Chart 2 plots average growth in productivity per hour and total hours worked across EU countries in 2016–2019 and 2020–2025. In the pre-COVID period, Slovakia combined moderate productivity growth alongside positive growth in total hours worked, positioning it broadly in the middle of the EU distribution on both metrics. Since 2020, however, this pattern has changed: Slovakia has been among the top performers in productivity growth, while recording the second-steepest decline in hours worked in the EU, after Latvia.

² NBS (2022) finds some evidence that reallocation towards more productive firms may have temporarily boosted productivity growth during the COVID pandemics. Similarly, the favourable productivity developments relative to EU27 since 2020 may be linked to lower labour hoarding in Slovakia (Ostapenko, 2025; ECB, 2023).

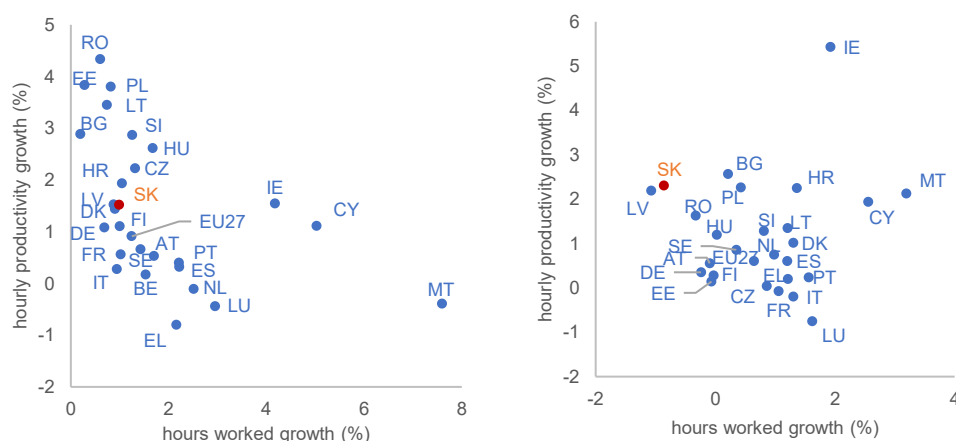
Chart 2 – Average growth in productivity and hours worked

a) 2016 – 2019

b) 2020 – 2025

(percent)

(percent)



Source: Eurostat, authors calculations

Note: Productivity is defined as real value added per hour worked.

Beneath the Aggregate: Sectoral Divergence

Aggregate productivity gains mask deeply divergent sectoral dynamics, with post-2020 growth concentrated in a subset of service activities, while Slovakia's industrial base experienced a simultaneous deterioration in both productivity and hours worked. Chart 3 shows that the acceleration in GDP per hour worked was not broad-based but rather driven by a subset of service activities, concealing an opposing contraction in industry. In the pre-pandemic period of 2016–2019, sectoral outcomes in Slovakia and the EU27 were mixed but not dramatically differentiated, with notable exception of construction (F) and professional and administrative services (M-N), which recorded large productivity declines not observed among their EU27 counterparts. Slovak industry (B-E) posted comparatively stronger productivity growth.

The post-2020 period marks a significant structural break, with service sectors emerging as productivity leaders while industry deteriorated sharply relative to both its prior trajectory and its EU27 peers. Professional and administrative services (M-N) and trade, transport, accommodation and food services (G-I) recorded strong gains in productivity per hour, albeit alongside falling hours worked. By contrast, industry (B-E) experienced simultaneous declines in both productivity and hours worked, underperforming its EU27 counterpart on both dimensions.³

³ While changes in employment tend to be less pronounced, owing to the decline in hours worked per employee, and productivity per person employed points to a less significant boost in Slovakia, the overall picture changes very little.

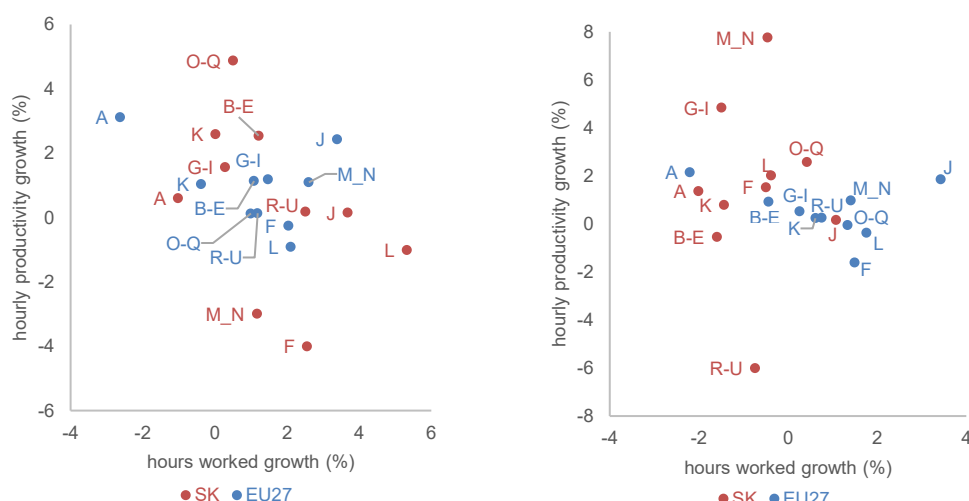
Chart 3 - Productivity and hours worked average growth at sectoral level (%)

a) 2016-2019

(percent)

b) 2020-2025

(percent)



Source: Eurostat, authors calculations

Note: Productivity is defined as real value added per hour worked. Sector abbreviations: A agriculture; B-E industry; F construction; G-I trade, transport, accommodation and food services; J information and communication; K finance and insurance; L real estate; M-N professional and administrative services; O-Q public and social services; R-U arts and other services.

The majority of productivity growth can be attributed to within-industry productivity dynamics rather than to the reallocation of labour across sectors.

Using a shift-share decomposition,⁴ Chart 4 shows that industry was a significant positive contributor to growth in productivity-per-hour during the pre-pandemic period. Since 2020, however, this pattern has reversed. On average, industry has made a negative contribution to productivity growth, while trade, transport, accommodation and food services, together with professional and administrative services, have emerged as the main drivers. As a result, sectors that historically underpinned Slovak productivity growth, particularly manufacturing, have been overtaken by service-sector activities as the main engine of productivity expansion. Resource reallocation towards more productive activities made only a modest contribution to aggregate productivity growth, smaller than in the pre-pandemic period, consistent with its historically limited role in Slovakia (Novak and Vanko, 2025). The limited contribution of reallocation is also in line with evidence from other OECD countries (e.g. OECD 2025).

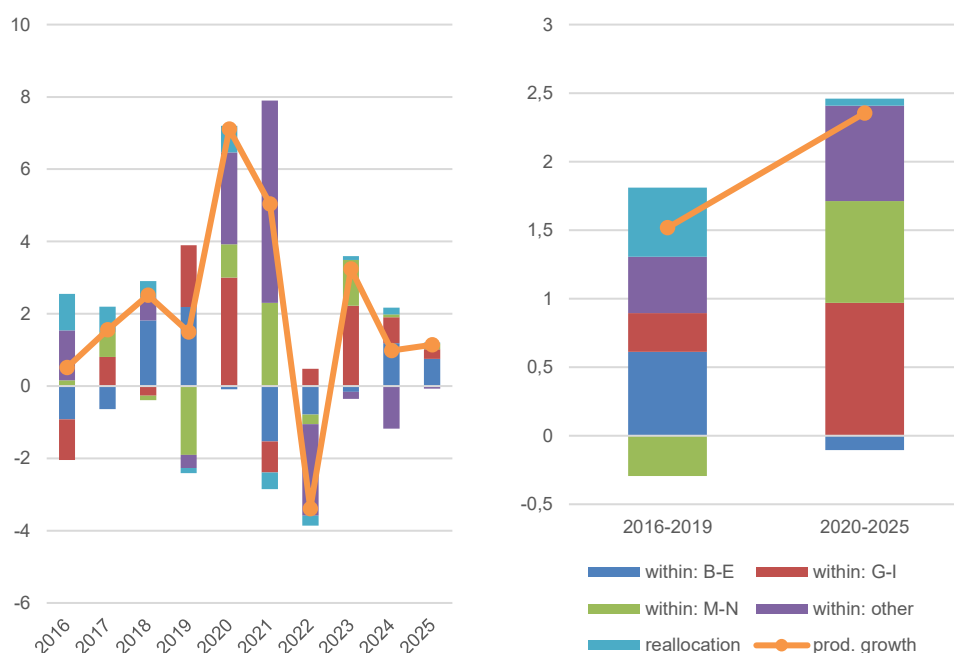
⁴ We follow Tang-Wang (2004). As sectoral real value added is measured in chain-linked volumes, sectoral real levels are not strictly additive across sectors. The Tang-Wang method keeps the decomposition consistent by combining sector productivity growth with changes in price-adjusted relative size:

$$g_{X,t} = \sum_i w_{i,t-1} g_{X_{i,t}} + \sum_i x_{i,t-1} \Delta s_{i,t} + \sum_i x_{i,t-1} g_{X_{i,t}} \Delta s_{i,t}$$

Here $g_{X,t}$ is aggregate labour-productivity growth between $t-1$ and t , and $g_{X_{i,t}}$ is labour-productivity growth in sector i over the same period. The weight $w_{i,t-1}$ is sector i 's nominal value-added share in the initial year. The term $x_{i,t-1}$ is sector i 's productivity relative to aggregate productivity in the initial year. The term $\Delta s_{(i,t)}$ is the change in sector i price-adjusted relative size. The first term is the within-sector effect, the second is the between-sector effect, and the third is the interaction effect. In the charts, the between and interaction terms are combined and shown as reallocation.

Chart 4 - Annual decomposition of growth in productivity per hour worked in Slovakia

(2016 – 2025, productivity growth in percent, contributions in percentage points)



Source: Eurostat, authors calculations

Note: The shift-share analysis is estimated year on year and summarized with arithmetic averages for 2016–2019 and 2020–2025. Within-sector contributions are grouped into industry (B-E), trade, transport, accommodation and food services (G-I), professional and administrative services (M-N), and other sectors.

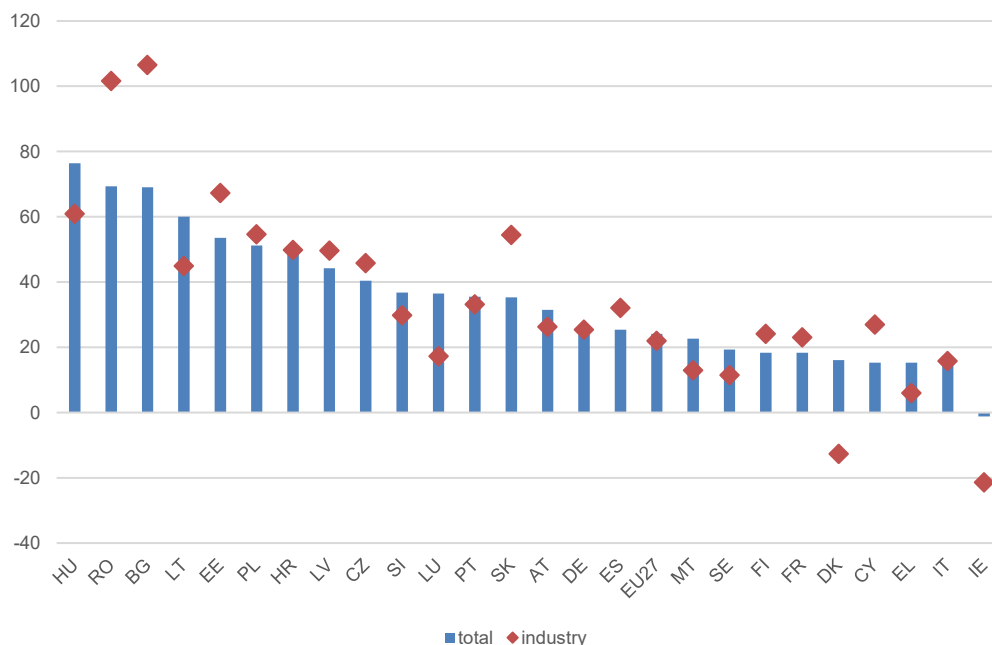
The post-pandemic productivity gains observed in Slovakia's service sectors may prove transitory, as recent data for 2024–2025 point to a moderation in aggregate productivity growth alongside a partial rebalancing towards industry. A closer examination of year-on-year productivity growth in 2024 and 2025 suggests that, following the COVID-era surge, productivity growth has moderated towards — and even slightly below — the rates observed shortly before 2020. Over the same period, the contribution of industry to productivity growth has recovered, while that of service sectors has weakened.

The Competitiveness Side of Productivity

The sectoral productivity divergence has a direct consequential counterpart in unit labour costs dynamics, with Slovak industry recording cumulative nominal ULC growth of more than twice that observed in the EU27 since 2020 — a development of particular concern for a small, export-oriented economy whose competitiveness depends heavily on industrial performance. As shown in Chart 5, Slovakia's aggregate nominal ULC grew by around 35% since 2020, compared to roughly 24% in the EU27. The picture is, considerably more alarming at the sectoral level. Industry, a crucial sector of Slovakia's export-oriented economy, recorded cumulative nominal ULC growth of more than 54% compared with about 22% in the EU27. Although Slovakia's aggregate ULC growth places it broadly in the middle of the EU distribution, industrial ULC growth ranks among the fastest in the EU, despite remaining below the extreme increases recorded in Bulgaria and

Romania, raising important questions about the sustainability of Slovakia's external competitiveness and its ability to maintain export-led convergence over the medium term.⁵

Chart 5 - Nominal unit labour cost growth in the total economy across EU countries, with industry benchmark
(percentage growth between 2019 and 2025)



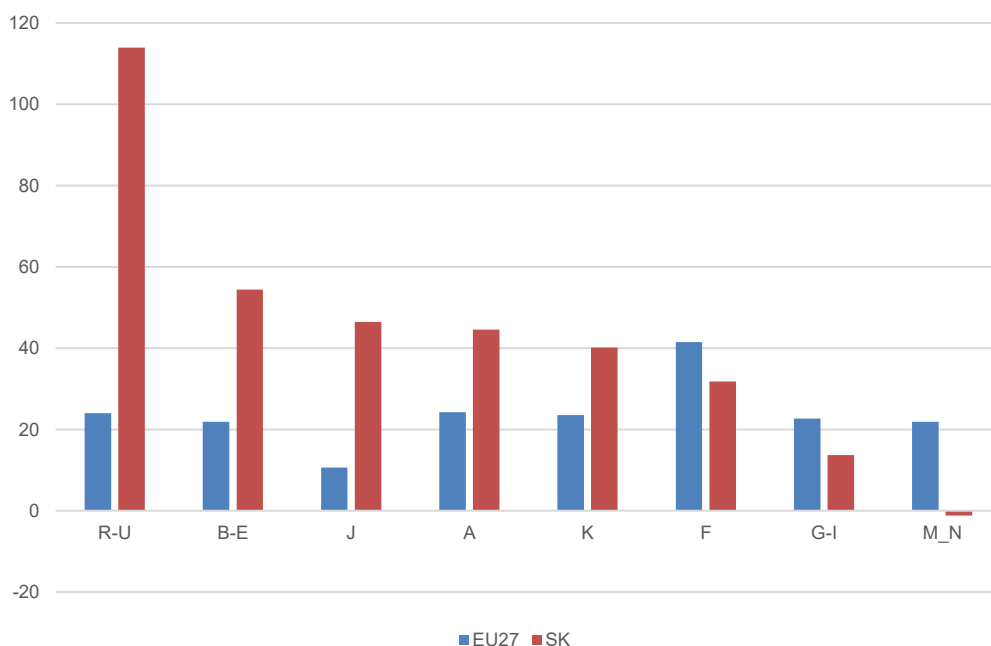
Source: Eurostat, authors calculations

Note: Bars show cumulative nominal unit labour cost growth in the total economy between 2019 and 2025. Diamonds show the same measure for industry (B-E).

Productivity gains in service sectors have served as a material buffer against broader unit labour cost pressures. As illustrated in Chart 6, Slovakia's trade, transport, accommodation and food services (G–I) recorded cumulative ULC growth of around 14% between 2019 and 2025, well below the roughly 23% observed in the EU27. Similarly, professional and administrative services (M–N) registered near-zero cumulative ULC growth over the same period, substantially below that of their EU27 peers. As a result, these predominantly non-tradable sectors helped contain aggregate ULC growth.

⁵ See also Casalis, Doliak and Mráziková (2026) for a complementary discussion of public-private sector divergences, wage-productivity misalignment and rising cost-competitiveness pressures in Slovakia.

Chart 6 - Nominal unit labour cost growth by sector, Slovakia versus EU27
(percentage growth between 2019 and 2025)



Source: Eurostat, authors calculations

Note: A is agriculture, forestry and fishing; B-E industry except construction; C manufacturing; F construction; G-I wholesale and retail trade, transport, accommodation and food services; J information and communication; K financial and insurance activities; M-N professional, scientific, technical, administrative and support services; R-U arts and other services.

Sustained cost pressures in Slovak industry pose a material risk to overall economic competitiveness, as favourable unit labour cost dynamics in non-tradable sectors cannot compensate for deteriorating conditions in the tradable sector that underpins the country's export base. Given that manufacturing and industry account for most of Slovak exports, competitiveness losses in this sector cannot be offset by cost restraint or productivity gains elsewhere in the economy. Against this challenging backdrop — characterised by elevated energy costs and intensifying international competition — the recent recovery of productivity growth in industry represents an important, albeit still nascent, positive development.

Conclusion

Slovakia's post-2020 productivity acceleration, while welcome, should be interpreted with caution. The productivity rebound was concentrated in service activities, driven mainly by within-sector efficiency gains rather than by the reallocation of resources towards more productive uses. At the same time, the industrial base that historically underpinned Slovak growth weakened, while unit labour costs in manufacturing and industry increased sharply relative to EU peers. As most changes in aggregate productivity stem from within-industry growth rather than reallocation of activity between industries, understanding sectoral dynamics is crucial for assessing the sustainability of productivity growth. Importantly, the sectors driving recent productivity gains are not the sectors that drive external competitiveness; those most critical for exports have experienced more pronounced deterioration in relative cost competitiveness than the broader economy.

A return to durable convergence will require productivity gains to broaden into the tradable sectors that underpin Slovakia's external competitiveness, as the risk of premature deindustrialisation poses a structural threat for a small, export-oriented economy. While a gradual diversification away from the traditional manufacturing-based growth model may prove beneficial over the long term, premature deindustrialisation before alternative sources of growth are firmly in place would represent a significant risk. Restoring competitiveness in industry and reinvigorating productivity growth in the tradable sector therefore remain key policy priorities for reigniting economic convergence.

References

- Casalis, A., Doliak, M. and Mráziková, V. (2026) Diverging Wage Dynamics in Slovakia: Public Sector Growth Amid Private Stagnation. NBS Policy Brief No. 22/2026. Bratislava: National Bank of Slovakia. Available at: <https://nbs.sk/dokument/3feb0e1e-955f-49a4-ab5b-6814d045eed0/stiahnut?force=false> (
- ECB (2023). More jobs but fewer working hours. ECB Blog, 7 June. Available at: <https://www.ecb.europa.eu/press/blog/date/2023/html/ecb.blog230607~9d31b379c8.en.html>
- NBS (2022). Structural Challenges 2022. Bratislava: National Bank of Slovakia. Available at: <https://nbs.sk/en/publications/structural-challenges/>
- Novák, V. and Vaňko, M. (2025). Stylised facts of Slovak productivity and business demography (1995-2019). NBS Occasional Paper 1/2025. Bratislava: National Bank of Slovakia. Available at: <https://nbs.sk/dokument/6da17aa9-64b6-49d9-8acc-b6ce94f8694d/stiahnut/?force=false>
- OECD (2025). OECD Compendium of Productivity Indicators 2025. Available at: https://www.oecd.org/en/publications/oecd-compendium-of-productivity-indicators-2025_b024d9e1-en.html
- Tang, J. and Wang, W. (2004). 'Sources of aggregate labour productivity growth in Canada and the United States', Canadian Journal of Economics/Revue canadienne d'economie, 37(2), pp. 421-444. Available at: <https://doi.org/10.1111/j.0008-4085.2004.00009.x>
- European Commission (2025a). 2025 Country Report - Slovakia. Commission Staff Working Document SWD(2025) 225 final. Brussels: European Commission. Available at: https://economy-finance.ec.europa.eu/economic-surveillance-eu-member-states/country-pages/country-report-slovakia_en
- Ostapenko, N. (2025). Global Shocks and Local Responses: Labour Hoarding in Slovakia and Beyond. NBS Occasional Paper 2/2025. Bratislava: National Bank of Slovakia. Available at: <https://nbs.sk/dokument/00cabf98-d096-40dd-a5d0-38c69651cb2a/stiahnut/?force=false>
- European Commission (2025b). In-Depth Review 2025 – Slovakia. European Economy Institutional Paper 315. Brussels: European Commission.
- NBS (2025). Structural Challenges 2025. Bratislava: Národná banka Slovenska. Available at: <https://nbs.sk/en/publications/structural-challenges/>