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Comparative analysis of the CE4 countries' economic performance

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ABSTRACT
This report compares the economic performance of four Central European countries, namely Czechia, Hungary, Poland, and Slovakia (henceforth: CE4 countries). Many authors emphasise the similarities between the V4 countries – sometimes even the former planned economies of CEE –, i.e., the former 'bloc approach' is still dominant. However, key economic indicators – GDP, productivity, unemployment, inflation, budget deficit, trade balance, and the structure of export – paint a different picture. From a Hungarian perspective, the better performance of the other three countries – also reflected in their ranking in international scoreboards – is particularly noteworthy.

JEL codes: E31, H62, J21, O11, O40, O47, O52, P24
Keywords: Economic performance; Czechia; Hungary; Poland; Slovakia

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A visegrádi országok gazdasági teljesítménye

HAVAS ATTILA

ÖSSZEFOGLALÓ
A tanulmány négy közép-európai ország – az ún. visegrádi négyek (V4): Csehország, Magyarország, Lengyelország és Szlovákia – gazdasági teljesítményét hasonlítja össze. A nemzetközi szakirodalomban sok szerző még mindig a visegrádi országok – sőt, időnként a közép- és kelet-európai volt tervgazdaságok – hasonlóságát hangsúlyozza, azaz a korábbi „blokk szemlélet" továbbra is meghatározó erejű. Nem tartják fontosnak a különbségeket sem a fejlettség szintjét, sem a szerkezeti változások irányát és ütemét tekintve. A legfontosabb gazdasági mutatók – bruttó hozzáadott érték, termelékenység, munkanélküliség, infláció, költségvetési hiány, külkereskedelmi mérleg, az export szerkezete – azonban más képet rajzolnak ki. Magyar szempontból különösen nagy figyelmet követel a másik három ország jobb teljesítménye, ami a nemzetközi versenyképességi rangsorokban is tükröződik.

JEL: E31, H62, J21, O11, O40, O47, O52, P24
Kulcsszavak: Gazdasági teljesítmény; Csehország; Magyarország; Lengyelország; Szlovákia

1 INTRODUCTION[1]

This report compares the economic performance of four Central European countries, namely Czechia, Hungary, Poland, and Slovakia (henceforth: CE4 countries). To avoid possibly misplaced expectations, it has to be made explicit that several major questions are *not* analysed here: (i) the evolution of various economic policies; their impacts on economic performance (whether the policy goals and tools have been appropriate, whether their implementation has been effective and efficient); (ii) the impacts of various other external and internal factors on economic performance, including the 'health' of the EU economy (as a major market for the CE4 countries way before their joining the EU), the global economic trends,[2] as well as the framework conditions, which include, among others, regulations concerning competition, the nature and intensity of competition, the labour market trends, labour market, education, and training policies, entrepreneurial attitudes and behaviour. Any attempt to address just one of these questions would require 4 detailed country case studies, and that has been clearly beyond the means and scope of the current project. Yet, what is presented in this paper still a relevant contribution to the current project and might offer some inputs to other projects, analysing the above questions.

The paper is organised as follows. Data on economic growth – the evolution of GDP, using various measures – are presented in Section 2. Differences between the rankings of CE4 countries by four measures of GDP are described in Section 3. Data on productivity, employment and unemployment rates, inflation, current account balance, general government balance, general government deficit/ surplus, and the structural composition of the gross domestic product the economy are presented in Sections 4–9, respectively.

2 ECONOMIC GROWTH IN THE CE4 COUNTRIES

2.1 GDP per capita relative to EU27 performance, measured in million euros

The CE4 countries started at a rather low level in 2000, compared to the EU27 performance, measured in million euros (at current prices): from below 30% in three countries and 35.5% in Czechia. Then noteworthy changes have occurred by 2017: the Slovak figure more than doubled (increased by 135%), while the Czech, Hungarian, and Polish GDP grew by 76.1, 62.3, 55.3%, respectively. (Table 1) As a result, Czechia remained at the top, Slovakia climbed to No. 2 by 2017 (from No. 4 in 2000), Hungary slipped to No. 3 (from No. 2), while Poland fell No. 4 (from No. 2).

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[1] Financial support from the National Research, Development, and Innovation Fund, Hungary (grant No. 124858) is gratefully acknowledged.

[2] As an exception, the impacts of the 2008–2009 global financial and economic crisis are briefly noted in Section 2.

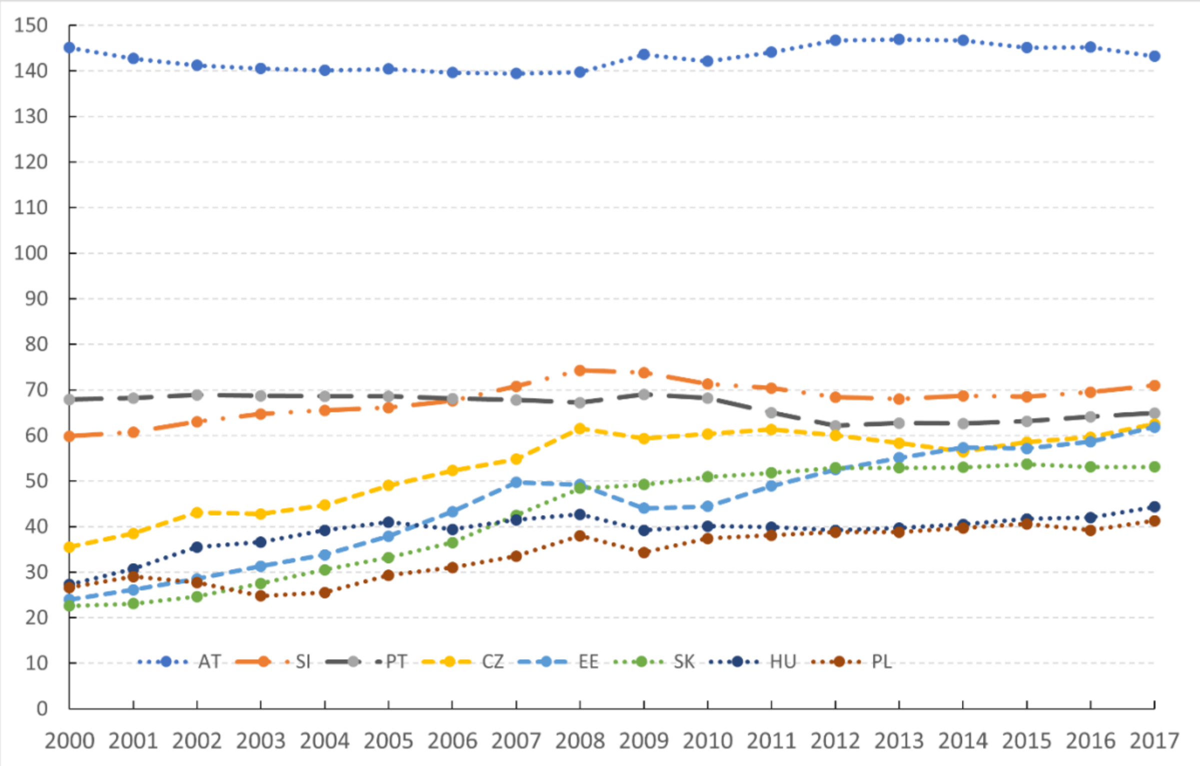
Table 1: GDP per capita in the CE4 countries, percentage of EU27 total per capita (based on million euro), 2000 and 2017

	2000	2017	change by 2017 (percentage point)	growth (%)
Czechia	35.5	62.5	27.0	76.1
Slovakia	22.6	53.1	30.5	135.0
Hungary	27.3	44.3	17.0	62.3
Poland	26.6	41.3	14.7	55.3

Source: Eurostat and own calculation

Figure 1 presents annual data for the entire period and covers four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. These data show that (i) Austria is still way ahead of the CE4 countries, although Czechia is notably narrowed her gap by 2017; (ii) Slovenia improved her GDP per capita to a smaller extent then the CE4 countries, but that was still sufficient to overtake Portugal, and thus became No. 2 in this larger group; (iii) Portugal lost 3 percentage points compared to 2000, and thus slipped to No. 3 by 2017 from No. 2 in 2000; and (iv) Estonia almost caught up with Czechia, although it was just slightly ahead of Slovakia in 2000, i.e. No. 7 in this group. In brief, Estonia outperformed all the CE4 countries in terms of her growth performance, and her GDP per capita almost reached the Czech level.

Figure 1: GDP per capita in the CE4 countries and four selected other EU members, percentage of EU27 total per capita (based on million euro), 2000–2017



Source: own compilation based on Eurostat data

The 2008–2009 global financial and economic crisis has impacted these eight countries in a rather diverse way. In Austria, Portugal, and Slovakia the GDP per capita was already higher in 2009 compared to 2008 and stayed higher in 2010, too. In Austria and Slovakia, it has stood higher in every single year up to 2017, while in Portugal it remained below the 2008 level for seven years in 2011–2017. There were some slight fluctuations in Austria in 2010–2017, but we can observe a monotonous – although not strictly monotonous – growth in Slovakia. In Poland, the GDP per capita exceeded its 2008 level in three years, that is, in 2011 and remained above that throughout the remaining years until 2017. In Estonia, it has taken one more four years to 'beat' the 2008 performance. In Czechia and Hungary, it has taken the entire observed period to surpass the 2008 figure. Finally, Slovenia remained below her 2008 level even in 2017. (Table 2)

One needs to keep in mind that this is relative performance, as it is measured as a percentage of EU27 total per capita, itself changing every year. The absolute performance can be assessed using GDP per capita measured in euro (see section 2.3).

Clearly, it would require a separate paper to establish and analyse the reasons behind this observed diversity.

Table 2: GDP per capita in the CE4 countries and four selected other EU members, percentage of EU27 total per capita (based on million euro), 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	139.7	**143.6**	142.1	144.1	146.7	146.9	146.7	145.1	145.2	143.2
Slovenia	74.3	73.8	71.3	70.4	68.4	68.0	68.7	68.5	69.5	71.0
Portugal	67.2	**69.0**	68.2	65.0	62.1	62.7	62.6	63.1	64.1	64.9
Czechia	61.5	59.3	60.3	61.3	60.0	58.3	56.4	58.5	59.6	**62.5**
Estonia	49.2	44.0	44.4	48.9	**52.5**	55.1	57.3	57.1	58.6	61.8
Slovakia	48.4	**49.2**	50.9	51.8	52.9	52.9	53.0	53.7	53.1	53.1
Hungary	42.7	39.2	40.1	39.9	39.2	39.7	40.5	41.7	42.0	**44.3**
Poland	38.0	34.3	37.4	**38.1**	38.8	38.8	39.7	40.6	39.2	41.3

Source: Eurostat
Notes: Numbers in bold indicate GDP figures exceeding the 2008 level for the first time. Numbers in red indicate GDP figures below the2008 level.

2.2 GDP per capita relative to EU27 performance, measured in million purchasing power standards

When using GDP measured in purchasing power standards (PPS), we arrive at a somewhat different picture. Most importantly, the gap is significantly narrower vis-à-vis the EU27 performance. This measure shows that the CE4 countries started at a higher level in 2000: Czechia from close to 75%, while the other three countries from around 50%. Then the changes occurred by 2017 are less noteworthy when using data measured in million euros and the ranking is also slightly different. Poland has achieved the highest growth (43.7%), followed by Slovakia (37.6%), Hungary (28.9%), and Czechia (24.1%). (Table 3: GDP per capita in the CE4 countries, percentage of EU27 total per capita (based on million PPS), 2000 and 2017Table 3) Czechia remained at the top, reaching 91.0% of the EU27 total, Slovakia climbed to No. 2 by 2017 (from No. 3 in 2000), Hungary slipped to No. 4 (from No. 2), while Poland ascended to No. 3 (from No. 4). It should be mentioned, though, that the difference among the latter three countries became rather small by 2017. While the range was 5.2 percentage points in 2000, it shrunk to 1.5 percentage points by 2017.

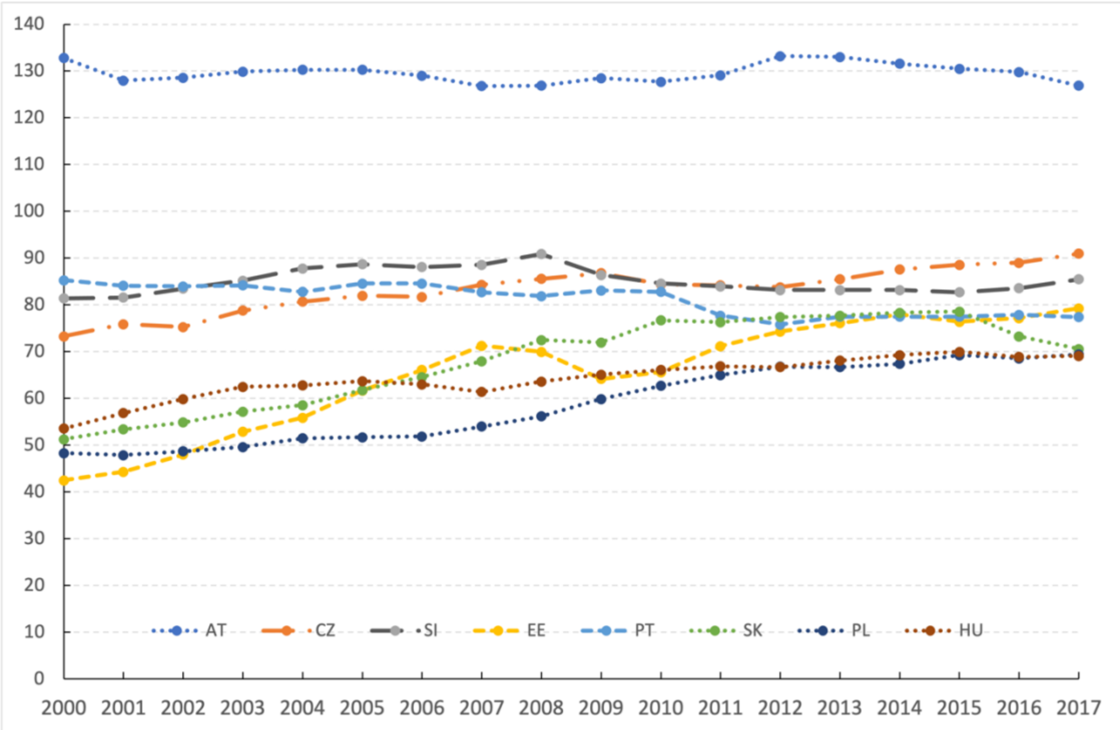
Table 3: GDP per capita in the CE4 countries, percentage of EU27 total per capita (based on million PPS), 2000 and 2017

	2000	2017	change by 2017 (percentage point)	growth (%)
Czechia	73.3	91.0	17.7	24.1
Slovakia	51.3	70.6	19.3	37.6
Poland	48.3	69.4	21.1	43.7
Hungary	53.6	69.1	15.5	28.9

Source: Eurostat and own calculation

Figure 2 presents annual data for the entire period and covers four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. These data show significantly narrower gap between Austria and the CE4 countries. Yet (i) Austria is still considerably ahead of the CE4 countries, although Czechia is notably narrowed her gap (from nearly 50 percentage points in 2000 to around 36 percentage points in 2017; (ii) Slovenia improved her GDP per capita to a smaller extent then the CE4 countries, and thus was overtaken by Czechia already in 2013, but staying still No. 3 in this larger group as Portugal lost 8 percentage points compared to 2000, and thus slipped to No. 5 by 2017 from No. 2 in 2000; and (iv) Estonia was the laggard in this group in 2000, but overtook 3 CE4 countries, as well as Portugal by 2017, and thus became No. 4.

Figure 2: GDP per capita in the CE4 countries and four selected other EU members, percentage of EU27 total per capita (based on million PPS), 2000–2017



Source: own compilation based on Eurostat data

The 2008–2009 global financial and economic crisis has impacted these eight countries in a rather diverse way. In Austria, Hungary, Poland, and Portugal the GDP per capita was already higher in 2009 compared to 2008 and stayed higher in 2010, too. In Austria and Poland, it stood higher in every single year up to 2016. In Austria it dropped to the 2008 level in 2017, while in Poland it continued to grow. There were some slight fluctuations in Austria in 2010–2017, but we can observe growth in Poland with the exceptions of 2013 and 2016, as well as in Hungary, except for 2012 and 2016. In Portugal, in contrast, GDP per capita – measured in this way – contracted already in 2010 and with some fluctuations it remained below the 2008 level for seven years in 2011–2017. The Czech GDP also surpassed its 2008 level in 2009, but then dropped below its 2018 level and stayed there until 2013. After that it followed a strictly monotonous growth path in the remaining years. In Slovakia, the GDP per capita exceeded its 2008 level in 2010 and stayed above that until 2016. In Estonia, it has taken one more year to 'beat' the 2008 performance, compared to Slovakia, and then the GDP continued to grow apart from 2015. Finally, in Slovenia it remained below the 2008 level in the entire period observed here. (Table 4)

One needs to keep in mind that this is relative performance, as it is measured as a percentage of EU27 total per capita, itself changing every year. The absolute performance can be assessed using GDP per capita measured in euro (see section 2.3). Further, it would be beyond the scope of this background paper to establish and analyse the reasons behind this observed diversity.

Table 4: GDP per capita in the CE4 countries and four selected other EU members, percentage of EU27 total per capita (based on million PPS), 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	126.9	**128.5**	127.7	129.1	133.2	133.0	131.6	130.5	129.8	126.9
Czechia	85.6	**86.8**	84.4	84.2	83.8	85.5	87.6	88.6	89.0	91.0
Slovenia	90.9	86.4	84.6	84.0	83.2	83.2	83.2	82.7	83.6	85.5
Estonia	70.0	64.2	65.6	**71.2**	74.3	76.1	78.0	76.4	77.2	79.3
Portugal	81.9	**83.1**	82.8	77.7	75.8	77.5	77.5	77.5	77.9	77.4
Slovakia	72.5	72.0	**76.7**	76.3	77.4	77.7	78.3	78.6	73.3	70.6
Poland	56.2	**59.9**	62.7	65.0	66.8	66.7	67.4	69.3	68.6	69.4
Hungary	63.6	**65.1**	66.1	66.9	66.7	68.1	69.3	70.0	68.9	69.1

Source: Eurostat
Notes: Numbers in bold indicate GDP figures exceeding the 2008 level for the first time. Numbers in red indicate GDP figures below the2008 level.

2.3 GDP per capita measured in euro at current prices

When using GDP per capita data, measured in euro at current prices, we arrive at a somewhat different picture yet again. Most importantly, the gap is significantly wider vis-à-vis the EU27 performance (as opposed to the case when GDP is measured in PPS). This measure shows that the CE4 countries started at a low level in 2000: Czechia from 34.6%, while the other three countries from 22.6–27.3%. The CE4 countries achieved a significantly higher growth than the EU27 total: 60% vs 250–375%. Slovakia has achieved the highest growth (375.2%), followed by Czechia (280.7%), Hungary (258.6%), and Poland (248.4%). In absolute terms, however, only Czechia and Slovakia achieved a higher increase in its GDP per capita than the EU27, Hungary and Poland were significantly behind the EU27 total. (Table 3: GDP per capita in the CE4 countries, percentage of EU27 total per capita (based on million PPS), 2000 and 2017Table 5) Czechia remained at the top among the CE group, Slovakia climbed to No. 2 by 2017 (from No. 4 in 2000), Hungary slipped to No. 3 (from No. 2) Poland ascended to No. 4 (from No. 3). The difference – measured in this way – increased among the latter three countries by 2017. While the range was 870 euros in 2000, it grew to 3450 euros by 2017.

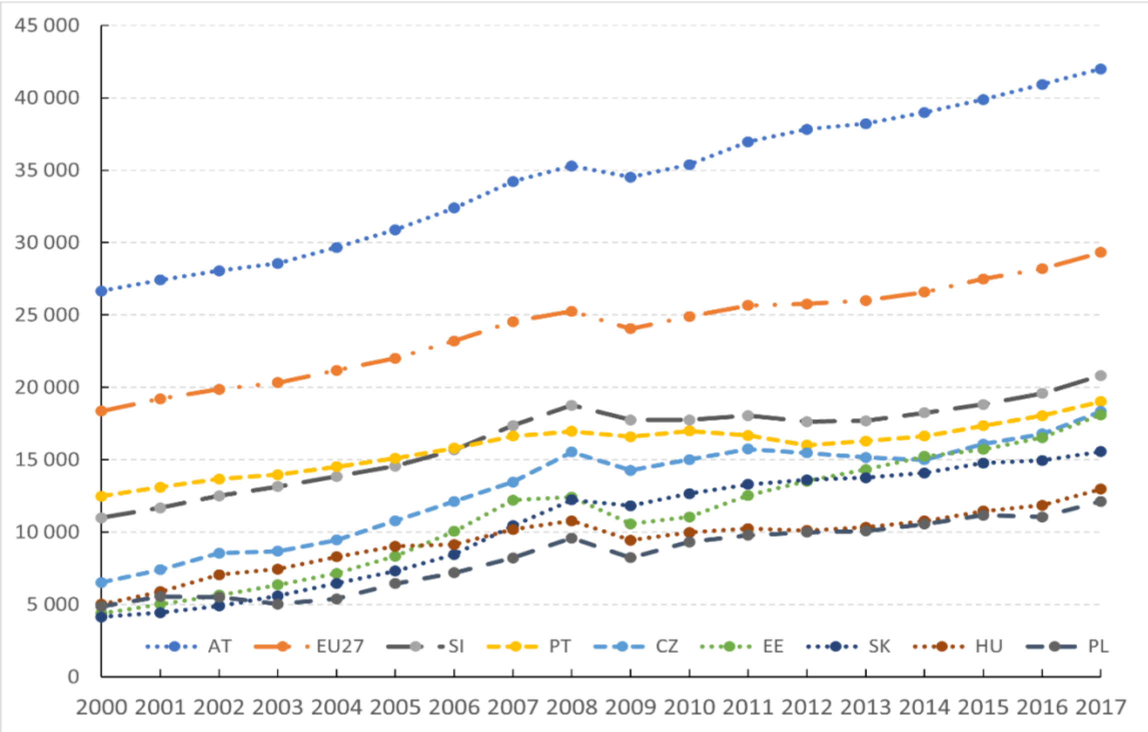
Table 5: GDP per capita in the CE4 countries and the EU27 total (euro), 2000 and 2017

	2000	2017	change by 2017	growth (%)
EU27	18 370	29 320	10 950	59.6
Czechia	6 530	18 330	11 800	280.7
Slovakia	4 150	15 570	11 420	375.2
Hungary	5 020	12 980	7 960	258.6
Poland	4 880	12 120	7 240	248.4

Source: Eurostat and own calculation

Figure 3 presents annual data for the entire period and covers four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. These data show a large – and still widening – gap between Austria and the CE4 countries. Slovenia overtook Portugal in 2007 and become No. 2 in this larger group (not counting the EU27 total). Portugal thus slipped to No. 3 from No. 2 in 2000. Estonia was only ahead of Slovakia in 2000 but overtook both Hungary (in 2006) and Poland (already in 2002), and thus became No. 5 in the group.

Figure 3: GDP per capita in the CE4 countries, four selected other EU members, and the EU27 total (euro), 2000–2017



Source: own compilation based on Eurostat data
Notes: There were breaks in the series: in Slovenia (2008) and Poland (2009).

The 2008–2009 global financial and economic crisis has impacted these eight countries in a rather diverse way. In Austria, Portugal, and Slovakia the GDP per capita exceeded its 2008 level in 2010. In Austria and Slovakia, it stood higher in every single year up to 2017. In both countries there was a strictly monotonous growth since 2011. In Portugal it dropped below the 2008 level in 2011 and exceeded it again only in 2015. In Czechia, Estonia, and Poland it took two years to surpass the 2008 level. Then it dropped below that level for the three consecutive years in Czechia, while the Estonian GDP grew every single year in 2012–2017. Poland showed almost the same patter: in 2í16 it had a minor contraction. The GDP was below its 2008 level for six years in Hungary and Slovenia. (Table 6)

It would be beyond the scope of this background table to establish and analyse the reasons behind this observed diversity.

Table 6: GDP per capita in the CE4 countries, four selected other EU members and the EU27 total (euro), 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	35,300	34,530	**35,390**	36,970	37,820	38,210	38,990	39,890	40,920	42,000
EU27	25,260	24,050	**24,900**	25,660	25,770	26,010	26,580	27,500	28,190	29,320
Slovenia	18,760	17,760	17,750	18,050	17,630	17,700	18,250	**18,830**	19,590	20,820
Portugal	16,960	16,600	**16,990**	16,680	16,010	16,300	16,640	17,350	18,060	19,020
Czechia	15,540	14,260	15,020	**15,740**	15,470	15,170	15,000	16,080	16,790	18,330
Estonia	12,420	10,580	11,060	**12,540**	13,520	14,320	15,240	15,710	16,530	18,120
Slovakia	12,230	11,830	**12,660**	13,300	13,620	13,760	14,090	14,780	14,960	15,570
Hungary	10,790	9,440	9,980	10,240	10,110	10,330	10,770	**11,460**	11,850	12,980
Poland	9,600	8,240	9,320	**9,790**	10,000	10,090	10,560	11,180	11,050	12,120

Source: Eurostat
Notes: Numbers in bold indicate GDP figures exceeding the 2008 level for the first time. Numbers in red indicate GDP figures below the2008 level.

2.4 GDP per capita: the difference between two measures used in comparative statistics

The previous sub-sections have shown somewhat different pictures on the CE4 countries' economic performance, using three measures: (i) GDP per capita relative to the EU27 performance, measured in million euros; (ii) GDP per capita relative to the EU27 performance, measured in million purchasing power standards; and (iii) GDP per capita measured in euro at current prices. This sub-section pulls together two of these measures by country, that is, it presents the difference across the pictures obtained by using the first two of these three measures, as opposed to comparing countries a single time series at a time.

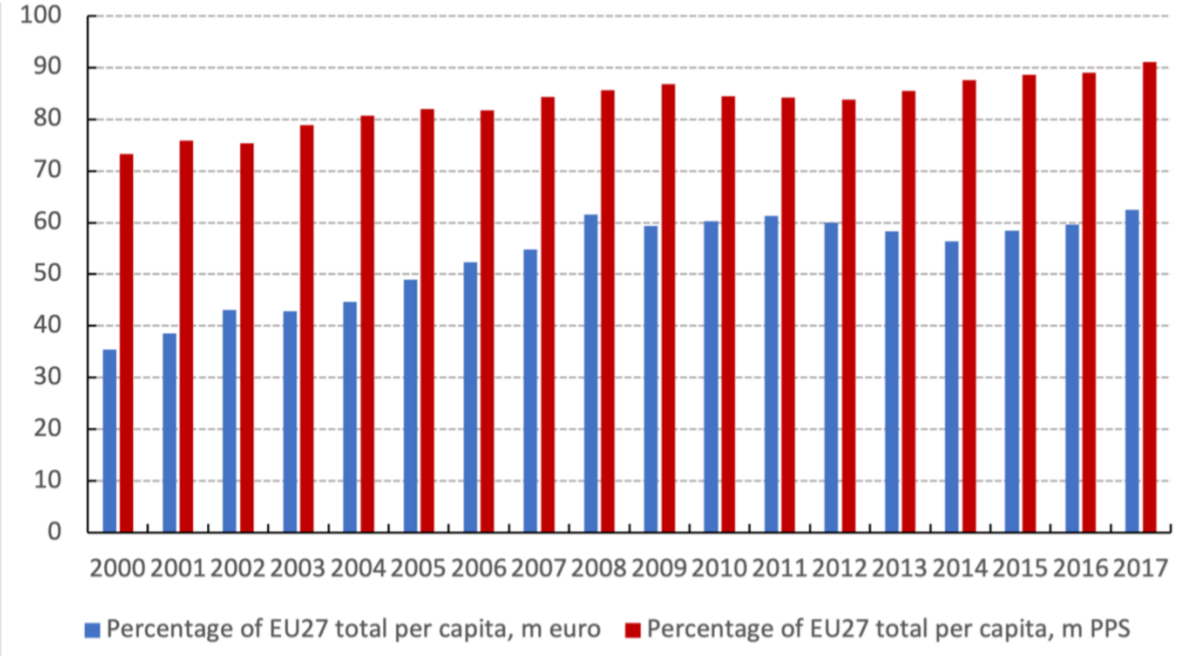
Data clearly indicate that analysts, decision-makers, journalists, and other opinion leaders need to be careful, that is, they need to consider more than one indicator. From a different angle, there is a room for being 'selective', getting dangerously close to becoming manipulative.

2.4.1 Czechia

As already mentioned, Czechia had the best economic performance among the CE4 countries already in 2000 but started from a rather low level compared to the EU27 total figure when GDP per capita is measured in million euros, that is, 35.5% of the EU27 total. The Czech GDP per capita exceeded 60% of the EU27 total first in 2008 (61.5%), then dropped below 60% in 2009, as well as 2013–2016 and reached its highest value (62.5%) in the observed period in 2017. Compared to its 2000 level, it is an increase of 27 percentage point.

Taking the other measure, the Czech GDP relative to the EU27 total performance, measured in millions of PPS, was more than two times higher in 2000: 73.5%. Using this measure, it grew by 1.2 percentages in 2009 (as opposed to the drop that year shown by the previously mentioned measure). Then it remained below that level for the four consecutive years and grew monotonously in 2014–2017, reaching 91.0% of the EU27 total. That is an improvement of 17.7 percentage points compared to its 2000 level, i.e., a smaller increase compared to the one recorded when using the previous measure. (Figure 4)

Figure 4: The Czech GDP per capita relative to E27 performance, measured in m euros and m PPS (per cent), 2000–2017



Source: own compilation based on Eurostat data

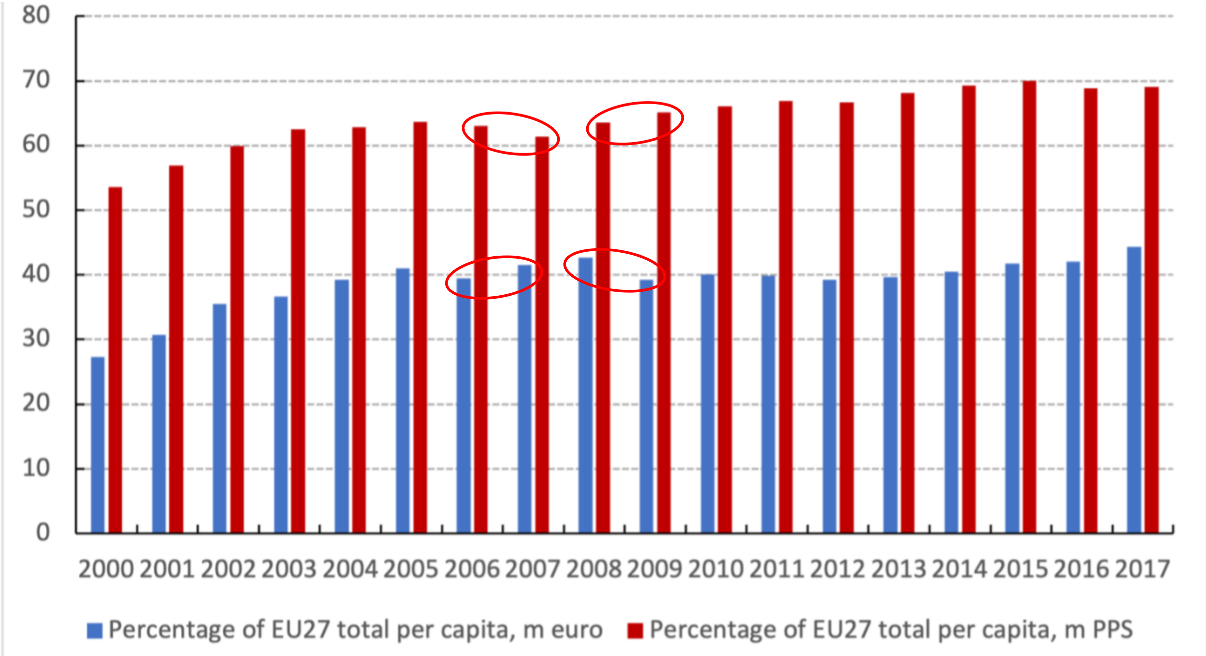
2.4.2 Hungary

As already mentioned, Hungary was lagging behind Czechia in 2000, started from a mere 27.3% of the EU27 total figure when GDP per capita is measured in million euros. The Hungarian GDP per capita exceeded 40% of the EU27 total for the first time in 2007 (41.5%), continued to grow in 2008, dropped below 40% in 2009 and 2011–2013 and reached its highest value (44.3%) in the observed period in 2017. Compared to its 2000 level, it is an increase of 17 percentage point, 10 points less than the Czech improvement, moreover, from a lower level than the Czech one.

Taking the other measure, the Hungarian GDP relative to the EU27 total performance, measured in millions of PPS, was almost two times higher in 2000: 53.6%. Using this measure, it had a monotonous growth up to 2005, contracted in 2007, grew again in 2008–2011 (as opposed to the drop in 2009 shown by the previously mentioned measure). Then it dropped by just 0.2 points in 2012, increased again for three years, reaching its highest value (70%) in the observed period in 2015, suffered a minor loss in 2016 and picked up growth in 2017, standing at 69.1% of the EU27 total. That is an improvement of 15.5 percentage points compared to its 2000 level, i.e., a smaller increase compared to the one recorded when using the previous measure. It is also behind the Czech improvement by 2.2 points, again from a lower level of development in 2000 (and throughout the observed period). (Figure 5)

Although it is not a dramatic difference, it is worth highlighting that the first measure (m euros) indicated contraction in 2007 and growth in 2009, it is the other way around when using the second measure (m PPS).

Figure 5: The Hungarian GDP per capita relative to E27 performance, measured in m euros and m PPS (per cent), 2000–2017



Source: own compilation based on Eurostat data

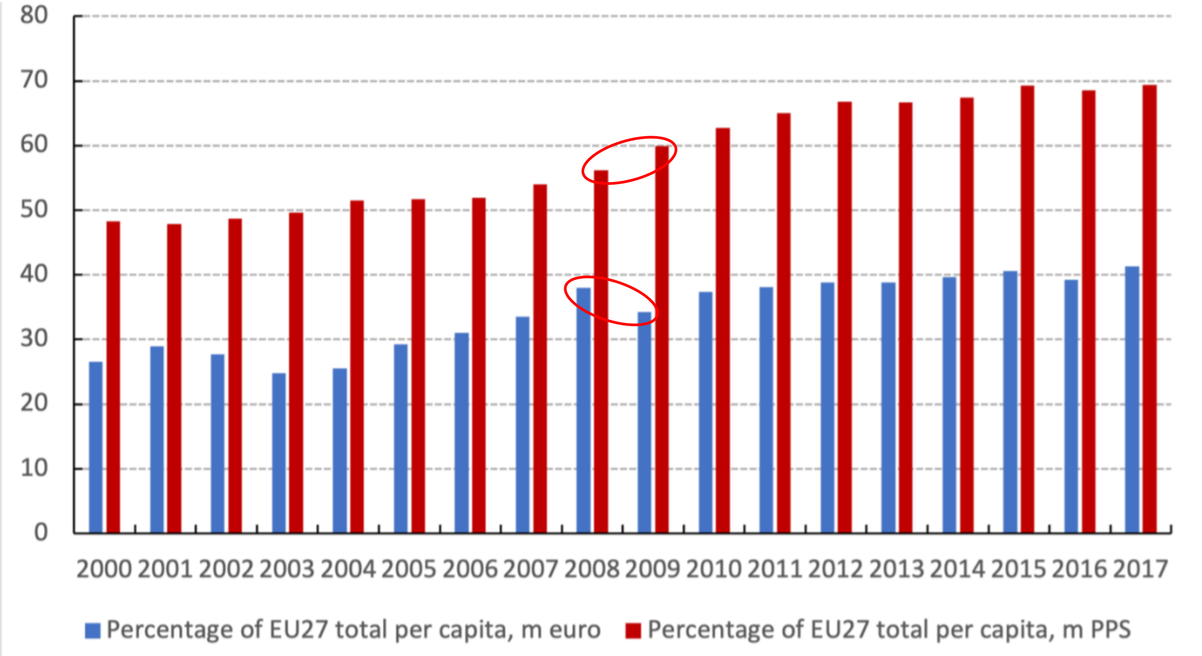
2.4.3 Poland

As already mentioned, Poland took the third place in the CE4 group in 2000, lagging slightly behind Hungary, started from a mere 26.6% of the EU27 total figure, when GDP per capita is measured in million euros. The Polish GDP per capita reached 38% of the EU27 total for the first time in 2008, contracted in 2009, just exceeded 38% in 2011, continued to grow in the remaining years, except 2016 and reached its highest value (41.3%) in the observed period in 2017. Compared to its 2000 level, it is an increase of 14.7 percentage point, 12.3 points less than the Czech improvement, moreover, from a lower level than the Czech one.

Taking the other measure, the Polish GDP relative to the EU27 total performance, measured in millions of PPS, was 81.5% higher in 2000: 48.3 %. Using this measure, it was growing almost in every single year in the observed period. The exceptions were 2001 (-0.4 percentage point), 2013 (a mere 0.1 percentage point loss), and 2016 (contraction by 0.7 percentage point). It reached its highest value, i.e., 69.4% of the EU27 total, in 2017 in the observed period. (Figure 6) That is an improvement of 21.5 percentage points compared to its 2000 level, i.e., a significantly higher increase compared to the one recorded when using the previous measure. It also higher than the Czech improvement by 3.4 points. With that figure, Poland overtook Hungary in 2017, climbing to No. 3, using this measure (from No. 4 in 2000).

Just as in the case of Hungary, the two measures point to different directions in 2009: the first one (m euros) indicated contraction in that year, while the other one (m PPS) recorded growth. In both cases the change is nonnegligible.

Figure 6: The Polish GDP per capita relative to E27 performance, measured in m euros and m PPS (per cent), 2000–2017



Source: own compilation based on Eurostat data

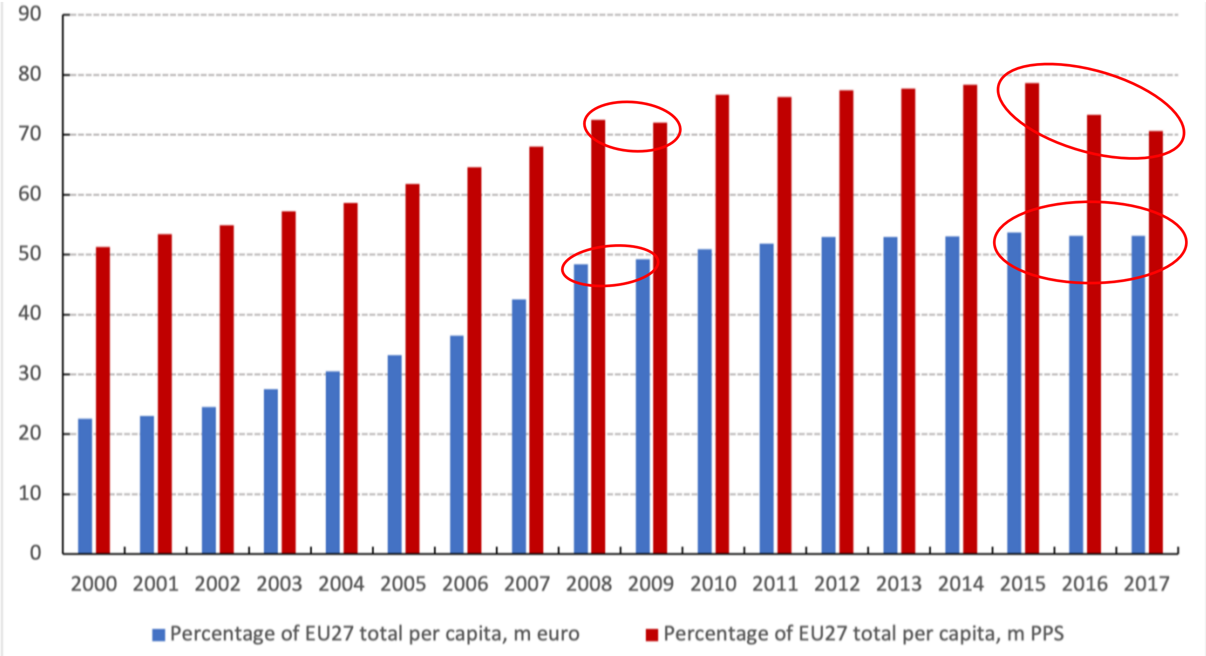
2.4.4 Slovakia

Slovakia was the laggard in the CE4 group in 2000, 4 percentage point below the low Polish figure: it started from a mere 22.6% of the EU27 total figure, when GDP per capita is measured in million euros. The Slovak GDP per capita exceeded 40% of the EU27 total for the first time in 2007 (42.5%), continued to grow even in 2009 and 2010, reaching 50.9% in the latter year and then 52.9% in 2012. Then it practically stagnated in the following two years, showed a modest growth in 2015 and finally dropped to its previous level in 2016–2017. Hence, it reached its highest value (53.7%) in the observed period in 2015. Compared to its 2000 level, it increased by 30.5 percentage points, despite the small contraction in 2016 and keeping that level in 2017. Hence, from the lowest level is 2000, Slovakia reached the highest improvement, 3.5 points ahead of the Czech corresponding figure. Given this performance, Slovakia jumped ahead No. 2 in the CE4 group in 2017 (from being No. 4 in 2000), overtaking not only Poland but Hungary as well.

Taking the other measure, the Slovak GDP relative to the EU27 total performance, measured in millions of PPS, was more than two times higher in 2000: 51.3 % (vs 22.6%). Using this measure, it was growing almost in every single year up to 2015, when it reached its highest value, i.e., 78.6% of the EU27 total in the observed period. The exceptions were 2009 (-0.5 percentage point) and 2011 (a 0.4 percentage point loss). The significant plunge in 2016 (5.3 percentage point) and further contraction in 2017 (2.7 percentage points) broke this trend. (Figure 7) That is still an improvement of 19.3 percentage points compared to its 2000 level. That is a significantly smaller increase compared to the one recorded when using the previous measure (30.5 points). It also higher than the Czech improvement by 1.6 points. Given its growth performance, Slovakia overtook Hungary already in 2006, climbing to No. 2, and kept her position for the remaining years in the observed period, using this measure (from No. 3 in 2000). While there was a minor contraction in 2016 in both Hungary and Poland, the extent of a Slovak dive in 2016 is noteworthy. It is even more so that 2017 also saw a notable contraction.

Just as in the case of Hungary, the two measures point to different directions in 2009: the first one (m euros) indicated a modest growth in that year, while the other one (m PPS) recorded contraction. In both cases the change is minor, though. More striking is the difference between the performance indicated for 2015–2017 by these two measures. The first one (m euros) points to a minor decline, while the other one (m PPS) reveals a significant and continued contraction.

Figure 7: The Slovak GDP per capita relative to E27 performance, measured in m euros and m PPS (per cent), 2000–2017



Source: own compilation based on Eurostat data

2.5 Annual growth rate

Taking the annual growth rate as a yardstick, the CE4 countries apparently followed a very similar trendline in 2000–2017 with some minor ‘deviations’. For example, Slovakia had grown at an ever-increasing rate since 2001 up to 2007, while the other three countries lost some momentum in that year. The Czech growth further slowed down in the following year but Poland started gathering pace. The Hungarian growth was ‘oscillating’ in 2002–2004 then slowed down until 2007, showed insignificant improvement in 2008, before a dramatic plummeting of the GDP in 2009. Czechia and Slovakia suffered the same level of contraction, while the Polish economy maintained a modest growth (1.9%) even during the worst year of the global financial and economic crisis, thanks to its significantly larger domestic market, compared to the other three CE4 countries. Slovakia recorded the highest growth rate in the group in 2010. Since 2010 the growth rate was again oscillating up to 2017, in this period in all the four countries. (Figure 8)

Figure 8: Annual growth rate in the CE4 countries (%), 2000–2017

Source: Eurostat

Figure 9 broadens the perspective by presenting data for the EU27 total, as well as a further four countries, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. In this group Estonia recorded the best growth performance before the 2008–2009 global financial and economic crisis and then the deepest plunge in 2009 (14.5% contraction). Just in two years Estonia had again the highest growth rate and kept that position for another two years, although at a lower level. In 2017 it had a highest growth rate, although below the pre-2006 rates. Austria, to a largest due to its high GDP, was among the countries with the lowest growth rates in this group for the entire period. It was second from the bottom in 2000 and became the laggard in 2017. In 2009, however, performed better – suffered a smaller contraction – than five countries in this group and the EU27 figure was also worse. Portugal shared a relatively low growth rate in 2000 and dived both in 2003 and 2012, besides 2009. In 2017 was fourth from the bottom. Slovenia was in the middle of this group until 2007, had a second worst dive in 2009, then climbed to No. 4 in 2017, behind Estonia, Poland, and Czechia.

Figure 9: Annual growth rate in the CE4 countries, four selected other EU members, and the EU27 total (%), 2000–2017

Source: Eurostat

3 RANKING OF CE4 COUNTRIES BY FOUR MEASURES OF GDP

This section first presents both the annual and the overall – or: aggregate – ranking of the CE4 countries by the four measures used the characterise their economic performance in section 2. Then a 'summary' ranking is also calculated, pulling together the rankings by the four measures.

3.1 Ranking by GDP per capita relative to EU27 performance, measured in million euros

Czechia kept her 'pole position' throughout the observed period as having the highest GDP per capita relative to EU27 performance, measured in million euros. Slovakia started as the laggard in 2000 but became No. 2 as early as 2007 and has kept that rank for the remaining years, and thus she achieved a 'silver medal' for the observed period as well. Hungary ranked No. 2 in the first seven years and then slipped to No. 3 for the remaining years. Hence, her overall position was No. 3 as well. Poland began from the third place in 2000, was able to keep it for the following two years but then fell to No. 4 for the rest of the observed period. Hence her overall position was No. 4 as well.

Interestingly, there has been no change in the ranking of the CE4 countries since 2007, and thus their ranking in 2017 was the same as their overall ranking for the observed period. (Tables 7–8)

Table 7: Ranking of the CE4 countries by GDP per capita, percentage of EU27 total per capita (based on million euro), 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czechia	1	1	1	1	1	1	1	1	1	1
Slovakia	4	4	4	3	3	3	3	2	2	2
Hungary	2	2	2	2	2	2	2	3	3	3
Poland	3	3	3	4	4	4	4	4	4	4

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017
'Climbing up' is highlighted by green, slipping by red.

Table 8: Ranking of the CE4 countries by GDP per capita, percentage of EU27 total per capita (based on million euro), 2010–2017

	2010	2011	2012	2013	2014	2015	2016	2017	Sum	Overall ranking
Czechia	1	1	1	1	1	1	1	1	18	**1**
Slovakia	2	2	2	2	2	2	2	2	46	**2**
Hungary	3	3	3	3	3	3	3	3	47	**3**
Poland	4	4	4	4	4	4	4	4	69	**4**

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017

3.2 Ranking by GDP per capita relative to EU27 performance, measured in million PPS

Czechia was the lead country throughout the observed period by this measure as well, that is, as having the highest GDP per capita relative to EU27 performance, measured in million PPS. Slovakia was ranked No. 3 in 2000 but became No. 2 already in 2006 and has kept that rank for the remaining years, and thus she achieved a 'silver medal' for the observed period as well.

Just as by the previous yardstick, Hungary ranked No. 2 in 2000 and stayed at that position for another five years. She dropped to No. 3 in 2006–2011, fell further to No.4 in 2012, 2014, and 2017, respectively. Despite its poorest performance in these three years, her overall position was No. 3 as well. Poland began from the fourth place in 2000 and was able to climb to No 3 only in those years when Hungary had her worst performance, that is, in 2012, 2014, and 2017, respectively. Hence her overall position was No. 4, despite its better rank in 2017.

This measure showed 'stability' in the CE4 countries' ranking in the first six years, then in 2006–2011 and 2015–2016. As Czechia held to her No 1 position throughout the entire observed period and Slovakia kept her No. 2 rank since 2006, the changes were due to the 'swaps' between Hungary and Poland in 2012, 2014, and 2017, respectively. Also for this reason, in this case the CE4 countries' ranking in 2017 was not identical to their overall ranking for the observed period. (Tables 9–10)

Table 9: Ranking of the CE4 countries by GDP per capita, percentage of EU27 total per capita (based on million PPS), 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czechia	1	1	1	1	1	1	1	1	1	1
Slovakia	3	3	3	3	3	3	2	2	2	2
Poland	4	4	4	4	4	4	4	4	4	4
Hungary	2	2	2	2	2	2	3	3	3	3

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017
'Climbing up' is highlighted by green, slipping by red.

Table 10: Ranking of the CE4 countries by GDP per capita, percentage of EU27 total per capita (based on million PPS), 2010–2017

	2010	2011	2012	2013	2014	2015	2016	2017	Sum	Overall ranking
Czechia	1	1	1	1	1	1	1	1	**18**	**1**
Slovakia	2	2	2	2	2	2	2	2	**42**	**2**
Poland	4	4	3	4	3	4	4	3	**69**	**4**
Hungary	3	3	4	3	4	3	3	4	**51**	**3**

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017
'Climbing up' is highlighted by green, slipping by red.

3.3 Ranking by GDP per capita, measured in euro at current prices

Czechia was the best performer throughout the observed period also by this third measure: she produced the highest GDP per capita, measured in euro at current prices. Slovakia was the laggard in 2000, climbed first to No. 3 in 2003 and then No. 2 in 2007. She has kept that rank for the remaining years, and thus she achieved a 'silver medal' for her aggregate performance as well, although by a small margin (with her 46 points vs Hungary's 47 points). Just as by the previous two yardsticks, Hungary started from No. 2 in 2000 and stayed at that position for another six years. She dropped to No. 3 in 2007 and stayed in that position for all the remaining years of the observed period. Hence, her overall position was No. 3 as well. Poland began from the third place in 2000 and became the laggard in 2003. Then she stayed in that position for the rest of the observed period.

This measure showed ‘stability’ in the CE4 countries’ ranking in the first three years, then in 2004–2006. Finally, the last ten years did not see any change. Czechia held to her No 1 position throughout the entire observed period. The first break was caused by a swap between Slovakia and Poland, while the second one by a change of positions between Slovakia and Hungary in 2007. As that was the last change, the CE4 countries’ ranking in 2017 was identical to their overall ranking for the observed period. (Tables 11–12)

Table 11: Ranking of the CE4 countries by GDP per capita (euro at current prices), 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czechia	1	1	1	1	1	1	1	1	1	1
Slovakia	4	4	4	3	3	3	3	2	2	2
Hungary	2	2	2	2	2	2	2	3	3	3
Poland	3	3	3	4	4	4	4	4	4	4

Source: own calculation based on Eurostat data
Notes: Countries are listed in the order of their ranking in 2017.
‘Climbing up’ is highlighted by green, slipping by red.

Table 12: Ranking of the CE4 countries by GDP per capita (euro at current prices), 2010–2017

	2010	2011	2012	2013	2014	2015	2016	2017	Sum	Overall ranking
Czechia	1	1	1	1	1	1	1	1	**18**	**1**
Slovakia	2	2	2	2	2	2	2	2	**46**	**2**
Hungary	3	3	3	3	3	3	3	3	**47**	**3**
Poland	4	4	4	4	4	4	4	4	**69**	**4**

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017

3.4 Ranking by the annual growth rate of GDP

Slovakia was the laggard in the first year of the observed period by this measure: she had the lowest GDP growth rate. Then jumped to No. 2 in the following year and kept that position for three years to climb No. 1, shared with Hungary. For four consecutive years Slovakia kept the lead position on her own. The global financial and economic crisis hit Slovakia and she plunged to No. 3 in 2009 but regained the pole position already in 2010. Then her economic growth slowed down, and thus her ranking by growth rate was oscillating between No. 2 and No. 3 in 2011–2015. As the other three CE4 countries picked up growth somewhat faster in 2016 and even with a higher pace in 2017 (Figure 8), Slovakia closed the period at her starting position, that is, No. 4. Yet, her overall ranking was No 1. (with 39 points, just ahead of Poland’s 40 points). Poland started as No. 2, dived to No. 4 already in 2001, reached No. 3 in 2002 and kept position up to 2006, with the exception of 2005. Then she improved her ranking, oscillating between No. 2 and No. 1 in 2007–2017, except for 2015, when it dropped to No. 3. Just as in the case of Slovakia, the starting position and the overall ranking was the same for Poland as well, that is, No. 2. As these countries had a lowest level of GDP in the early years of the observed period, it does not come as a surprise that they achieved a higher growth rate than Czechia and Hungary. Hungary ranked No. 1 in 2000 and stayed at that position for another four years. She dropped to No. 3 in 2005 and further fell to No. 4 in 2006–2010. She gained one position in 2011–2012, then climbed to No. 1 in 2013–2014 and plunged suddenly to No.4 in 2015. Her performance improved in 2016, achieving No. 2 and closed at being No.

3 in 2017. That was her overall ranking as well for the observed period. Czechia began from the third place in 2000, dropped to No. 4 in 2002 and 2004, then climbed to No. 2 in 2005 and was oscillating between No. 2 and No. 3 in 2005–2010. She dropped to No. 4 for 2011–2013, reached No. 3 in 2014, climbed No. 1 in 2015. Then it fell to No. 3 in 2016 and gained one position in 2017. Her overall position was No. 4, despite its better rank in 2017.

This measure showed practically no 'stability' in the CE4 countries' ranking. The only exceptions were in 2007–2008 and 2011–2012 when the order of the countries remained the same. The 'pattern' is that there is no patter: all countries changed their positions in quite a number of years and all countries had all the four positions in different years. (Tables 13–14)

Table 13: Ranking of CE4 countries by the annual growth rate of their GDP, 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Poland	2	4	3	3	3	4	3	2	2	1
Czechia	3	3	4	3	4	2	2	3	3	2
Hungary	1	1	1	1	1	3	4	4	4	4
Slovakia	4	2	2	2	1	1	1	1	1	3

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017

Table 14: Ranking of CE4 countries by the annual growth rate of their GDP, 2010–2017

	2010	2011	2012	2013	2014	2015	2016	2017	Sum	Overall ranking
Poland	2	1	1	2	2	3	1	1	**40**	**2**
Czechia	3	4	4	4	3	1	3	2	**53**	**4**
Hungary	4	3	3	1	1	4	2	3	**45**	**3**
Slovakia	1	2	2	3	3	2	4	4	**39**	**1**

Source: own calculation based on Eurostat data
Note: countries are listed in the order of their ranking in 2017

4 Productivity in the CE4 countries

Taking the level of real labour productivity in 2010 as 100, the top CE4 performer is Slovakia with an improvement by 49.2 percentage points between 2000–2017. Poland is a close second with 48.5 percentage points. Czechia and Hungary recorded smaller improvements, that is, 40.4, and 32.3 percentage points, respectively. (Table 15)

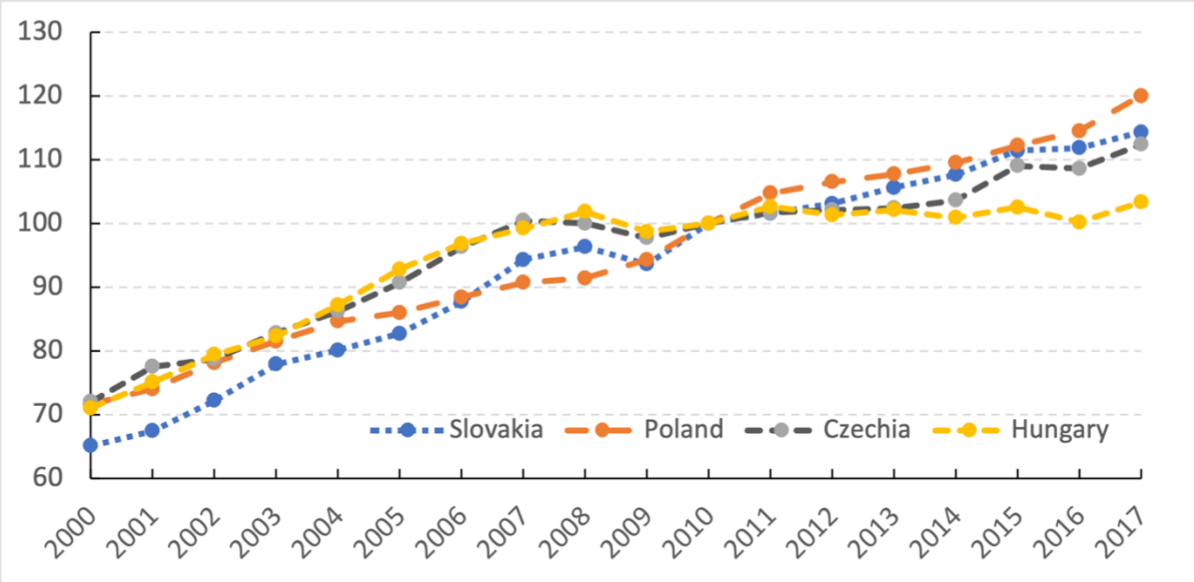
Table 15: Real labour productivity per hour worked in the CE4 countries, 2000 and 2017 (2010 = 100)

	2000	2017	change by 2017
Slovakia	65.1	114.3	49.2
Poland	71.6	120.0	48.5
Czechia	72.0	112.4	40.4
Hungary	71.0	103.3	32.3

Source: Eurostat data and own calculation
Countries are ranked by their productivity improvement

It should be noted, though, that Czechia was ranked 1 among the CE4 countries in 2000 with 72.0%, while Slovakia was at 65.1% of her 2010 level in 2000. Poland ranked No. 2 in 2000 (71.6%) and became No. 1 in 2017 by reaching 120.0%. (Figure 10Figure 1)

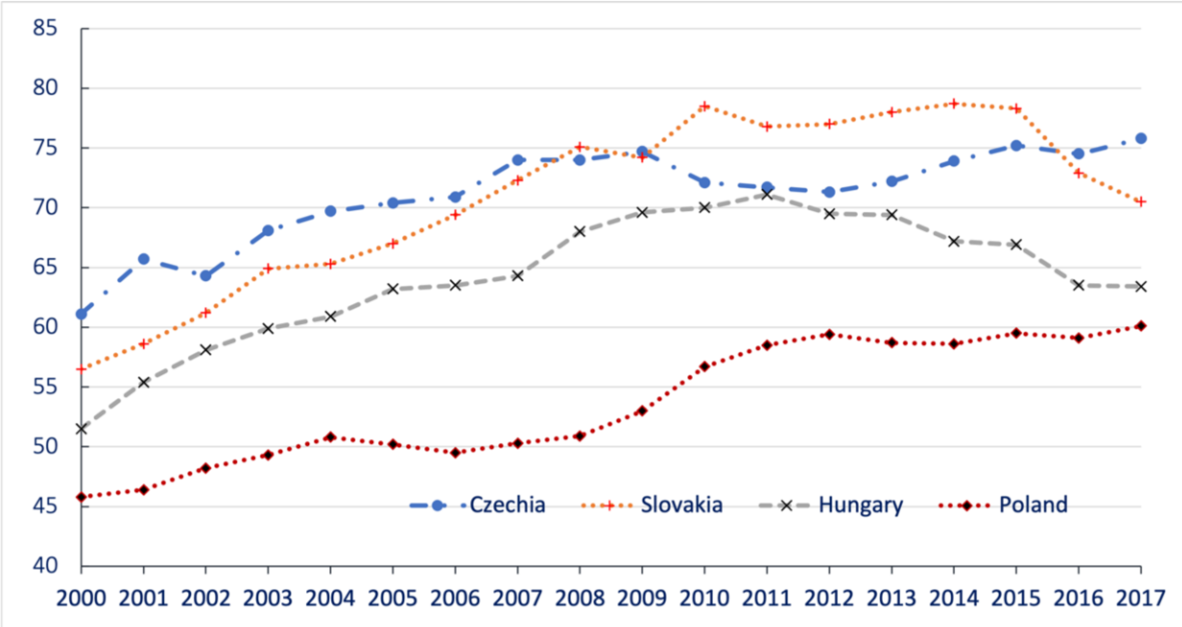
Figure 10: Real labour productivity per hour worked in the CE4 countries, 2000–2017 (2010 = 100)



Source: Eurostat data
Countries are listed by their ranking in productivity improvement

As for nominal labour productivity, expressed as a percentage of the EU total, these figures are lower than CE4 counties' real labour productivity, by the nature of this measure. Czechia had the highest level in 2000 (61.1%) and kept that position up to 2007, then regained it in 2009 and 2016–2017, reaching 75.8% in the last year of the observed period. Slovakia was ranked No. 2 in 2000 (56.5%), followed by Hungary (51.5%) and Poland (45.8%). The order was the same in 2017: Slovakia (70.5%), Hungary (63.4%), and Poland (60.1%). Yet, Slovakia took the lead in 2008 and 2010–2015. (Figure 11)

**Figure 11: Nominal labour productivity per hour worked in the CE4 countries, 2000–2017
(EU = 100)**



Source: Eurostat data
Countries are listed by their level of productivity in 2017

Compared to their performance in 2000, Czechia added 14.7 percentage points by 2017, while Slovakia gained 14.0 percentage points. Hungary and Poland were markedly below Czechia and Slovakia in 2017 (63.5% and 60.1%, respectively). Poland improved her performance by 14.3 percentage points, whereas Hungary by 11.9 percentage points, that is, achieving the smallest progress of the CE4 countries.

Table 16: Nominal labour productivity per hour worked in the CE4 countries, 2000 and 2017 (EU = 100)

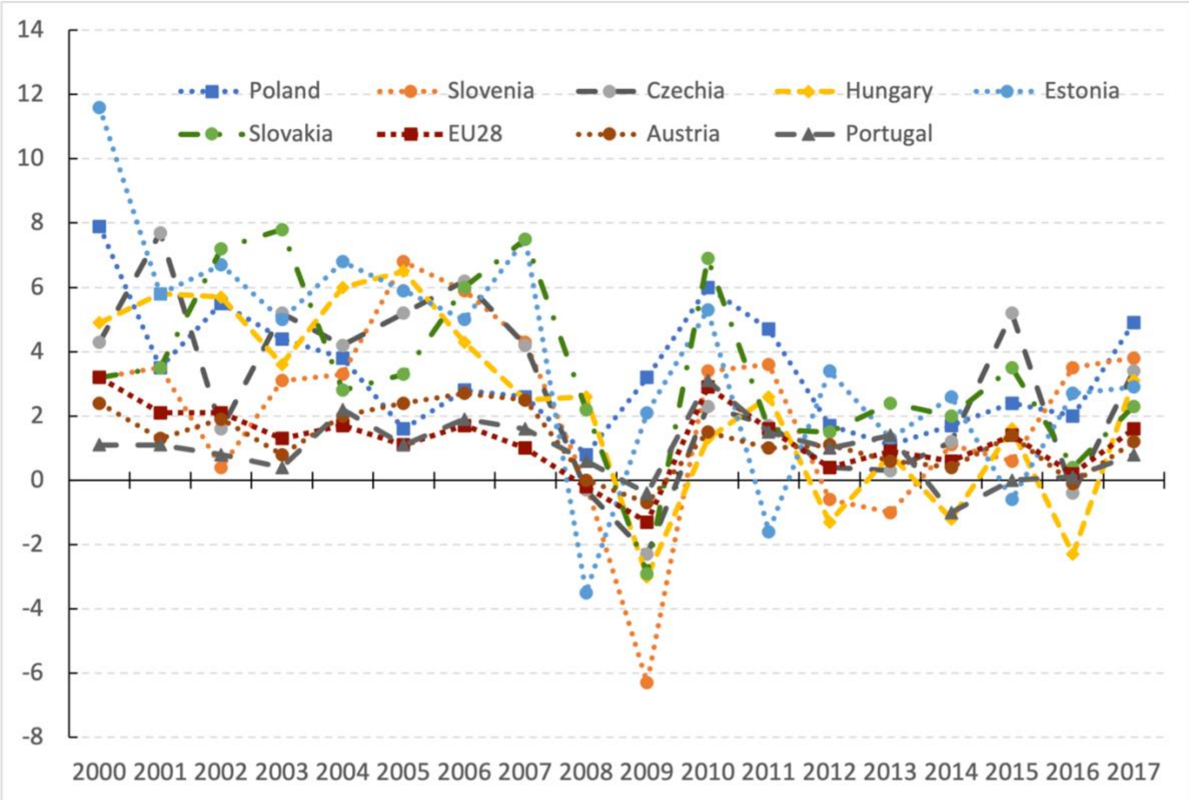
	2000	2017	change by 2017
Czechia	61.1	75.8	14.7
Poland	45.8	60.1	14.3
Slovakia	56.5	70.5	14.0
Hungary	51.5	63.5	11.9

Source: Eurostat data and own calculation
Countries are ranked by their productivity improvement

Figure 12 presents data on annual change in productivity for the entire period and covers the EU total, as well as four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. Annual change in labour productivity shows a great volatility most countries, an especially marked one in Estonia (in the range of -3.5–11.6%), with a considerable slowing down after 2011. Naturally, the EU28 total shows the narrowest range, that is, -1.3–2.9%. This range is also relatively narrow in Austria (-0.7–2.7%) and Portugal (-1.0–3.1%), and 6 percentage points in Poland (0.8–6.8%). It is around 10–13 percentage points in the other countries: Czechia (-2.3–7.7%), Hungary (-3.0–6.5%), Slovakia (-2.9–7.8%), and Slovenia (-6.3–6.8%).

The 2008–2009 global financial and economic crisis hit hard all these countries. Even after that crisis productivity decreased in several years in five countries, notably in Estonia (2011 and 2015), Hungary (2012, 2014, 2016), Czechia (2016), Portugal (2014), Slovenia (2012 and 2013).

Figure 12: Real labour productivity per hour worked in the CE4 countries, four selected other EU members, and the EU28 total, 2000–2017, annual change (%)



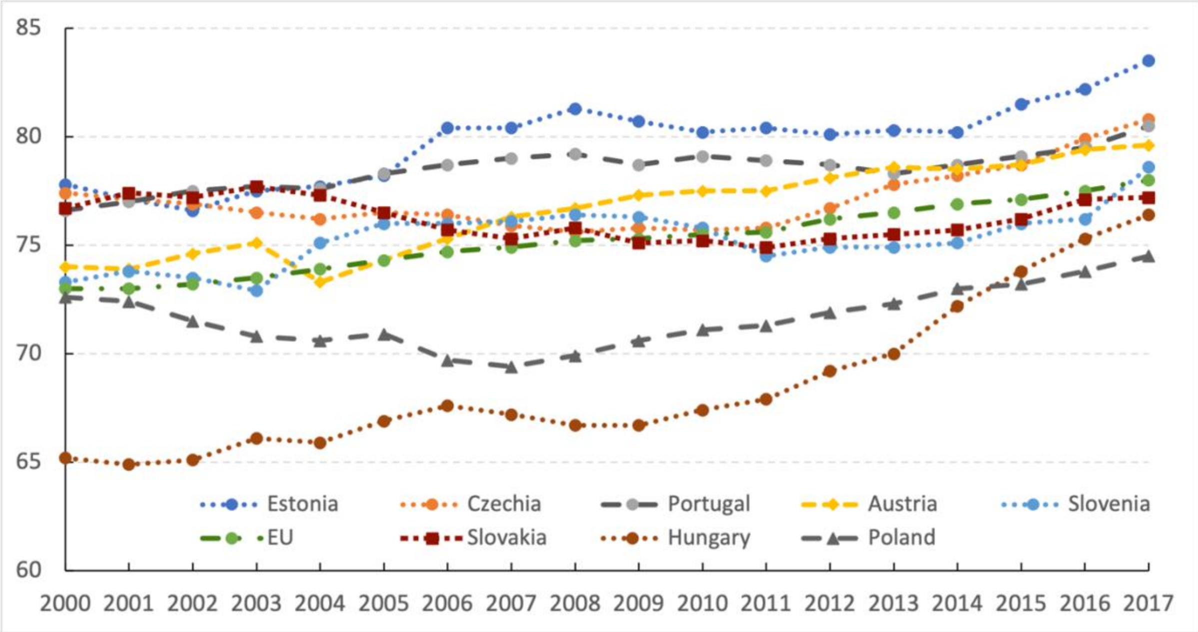
Source: Eurostat data
Countries are listed by their performance in 2017

5 Employment and unemployment rates in the CE4 and other selected countries

5.1 Employment rates in the CE4 and other selected countries

Figure 13 presents data on employment and activity rate for the entire period and covers the EU total, as well as four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary. Estonia had the highest employment rate in this group of countries in 2000 (77.8%) and kept that position throughout the observed period, with the exception of 2002. Most countries were able to keep or increase the rate of employment year by year for most of the observed period. In contrast, employment contracted in 7 years in Slovakia, although always to a rather limited extent. Poland had minor losses in 4 years, in the early years of the observed period.

Figure 13: Employment and activity rate of people aged 20–64 year in the CE4 countries, four selected other EU members, and the EU28 total, 2000–2017 (percentage of total population)



Source: Eurostat data
Countries are listed by their employment and activity rate in 2017

The Hungarian government radically reduced the duration the period, in which unemployed people were entitled to receive unemployment benefit, as well as the amount to be disbursed after 2010. In essence, it has replaced unemployment benefit with the so-called public works scheme, following its heavily promoted new slogans: "there is no free lunch", "Hungary builds a work-based society", and "those who want to work, can find a job". As a result, the employment and activity rate has increased by far the largest extent by 2017, that is, by 11.2 percentage points. The next best performers – Estonia, Austria, and Slovenia – managed to increase their employment and activity rate by 5.3–5.7 percentage points. Poland and Slovakia were the weakest performers in this respect with a 1.9 percentage points and 0.5 percentage point increase, respectively. (Table 17Table 2)

Table 17: Employment and activity rate of people aged 20–64 year in the CE4 countries, four selected other EU members, and the EU28 total, 2000 and 2017 (percentage of total population)

	2000	2017	change by 2017
Hungary	65.2	76.4	11.2
Estonia	77.8	83.5	5.7
Austria	74.0	79.6	5.6
Slovenia	73.3	78.6	5.3
EU	73.0	78.0	5.0
Portugal	76.6	80.5	3.9
Czechia	77.4	80.8	3.4
Poland	72.6	74.5	1.9
Slovakia	76.7	77.2	0.5

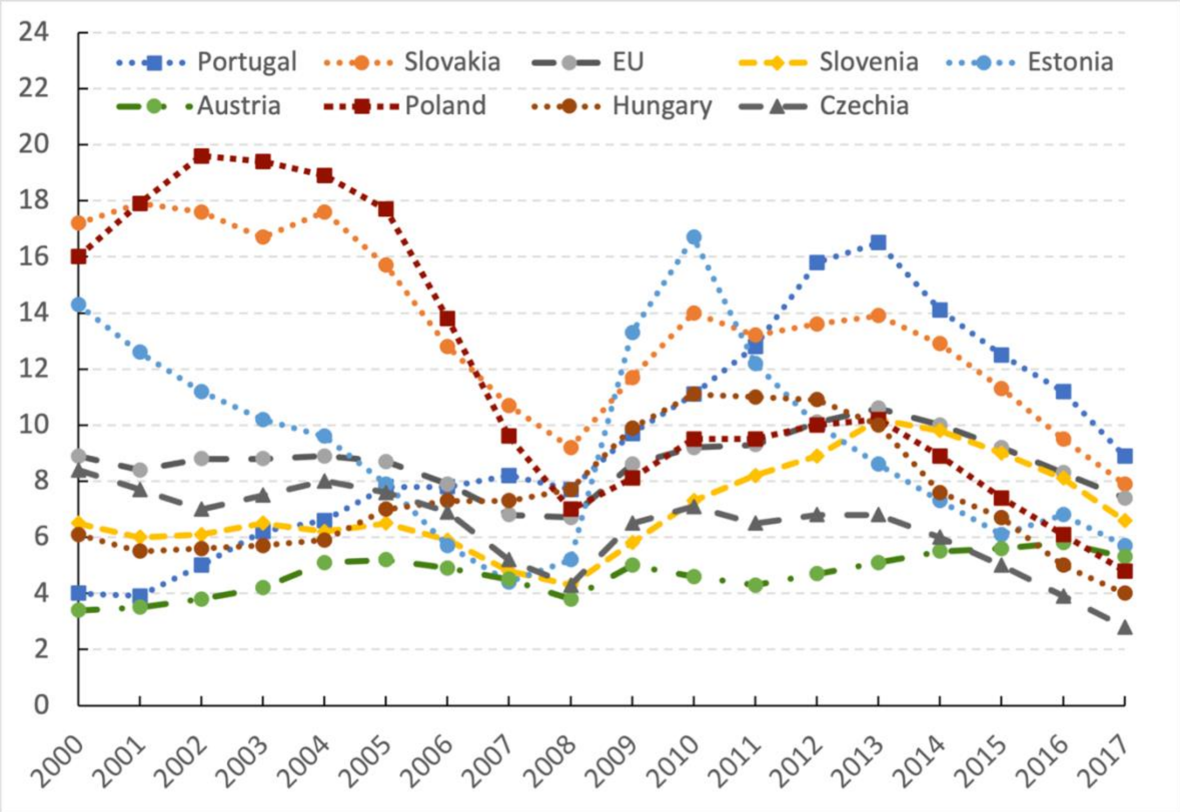
Source: Eurostat data and own calculation
Countries are ranked by the increase in their employment and activity rate in 2017

5.2 Unemployment rates in the CE4 and other selected countries

Figure 14 presents data on unemployment rate for the entire period and covers the EU total, as well as four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary.

Portugal had the second lowest unemployment rate in this group of countries in 2000 (4.0%) but the highest one in 2017 (8.9%). Her performance was oscillating in the range of 3.9–16.5%, that is, in the second widest range in this group pf countries. The highest rates were recorded in 2012–2014. Slovakia had the highest unemployment rate in this group of countries in 2000 (17.2%) and the second highest one in 2017 (7.9%). Her performance was oscillating in the range of 7.9–17.9%, that is, in the fourth widest range in this group pf countries. The highest rates were recorded in 2000–2005. The EU total was the fourth highest figure in 2000 (8.9%) and the third highest one in 2017 (7.4%). Thus, six countries in this group had a lower rate of unemployment than the EU total. The EU total figure was oscillating in the range of 6.7–10.6%, that is, in the second narrowest range. The highest rates were recorded in 2012–2014, just as in Portugal. Slovenia had the fourth lowest unemployment rate in 2000 (6.5%) and the fourth highest one in 2017 (6.6%). Her performance was oscillating in the range of 4.3–10.2%, that is, in the fourth narrowest range in this group pf countries. The highest rates were recorded in 2011–2016. Estonia had the third highest unemployment rate in this group of countries in 2000 (14.3%) and the fifth highest one in 2017 (5.7%). Her performance was oscillating in the range of 4.4–16.7%, that is, in the third widest range in this group pf countries. The highest rates were recorded in 2000 and then in 2009–2011. Austria had the lowest unemployment rate in this group of countries in 2000 (3.4%) and the fourth lowest one in 2017 (5.3%). Her performance was oscillating in the range of 3.4–5.8%, that is, in the 'thinnest' range in this group pf countries. The highest rates were recorded in 2004–2006 and 20132017. Poland had the second highest unemployment rate in this group of countries in 2000 (16.0%) but the third lowest one in 2017 (4.8%). Her performance was oscillating in the range of 4.8–19.6%, that is, in the widest range in this group pf countries. The highest rates were recorded in 2000–2005. Hungary had the third lowest unemployment rate in this group of countries in 2000 (6.1%) and the second lowest one in 2017 (4.0%). Her performance was oscillating in the range of 4.0–11.1%, that is, in the fifth widest range in this group pf countries. The highest rates were recorded in 2009–2013. Czechia had the fifth highest unemployment rate in this group of countries in 2000 (8.4%) but the lowest one in 2017 (2.8%). Her performance was oscillating in the range of 2.8–8.0%, that is, in the third narrowest range in this group pf countries. The highest rates were recorded in 2000–2006.

Figure 14: Unemployment rate of people aged 20–64 year in the CE4 countries, four selected other EU members, and the EU28 total, 2000–2017 (percentage of population in the labour force)



Source: Eurostat data
Countries are listed by their unemployment rate in 2017

Poland, Slovakia, and Estonia managed to reduce their unemployment rates to the largest extent by 2017, that is, by 11.2, 9.3, and 8.6 percentage points, respectively. No wonder, these countries also had the highest unemployment rates in 2000. Czechia, at a significantly lower – but a still relatively high level – reduced her unemployment rate by 5.6 percentage points. As already mentioned, the Hungarian government radically reduced the duration the period, in which unemployed people were entitled to receive unemployment benefit, as well as the amount to be disbursed after 2010. In essence, it has replaced unemployment benefit with the so-called public works scheme, following its heavily promoted new slogans: "there is no free lunch", "Hungary builds a work-based society", and "those who want to work, can find a job". As a result, the unemployment rate dropped by 2.1 percentage points, which is a surprisingly small improvement compared to the Czech performance. The EU total figure also declined, almost to the same extent as the Hungarian one, that is, by 1.5 percentage points. Unemployment was practically at the same level in Slovenia in 2000 and 2017. It increased in Austria, the top performer in 2000, by 1.9 points, Portugal, the No. 2 performer in 2000, by 4.9 points (Table 18)

Table 18: Unemployment rate of people aged 20–64 year in the CE4 countries, four selected other EU members, and the EU28 total, 2000 and 2017 (percentage of population in the labour force)

	2000	2017	change by 2017
Poland	16.0	4.8	-11.2
Slovakia	17.2	7.9	-9.3
Estonia	14.3	5.7	-8.6
Czechia	8.4	2.8	-5.6
Hungary	6.1	4.0	-2.1
EU	8.9	7.4	-1.5
Slovenia	6.5	6.6	0.1
Austria	3.4	5.3	1.9
Portugal	4.0	8.9	4.9

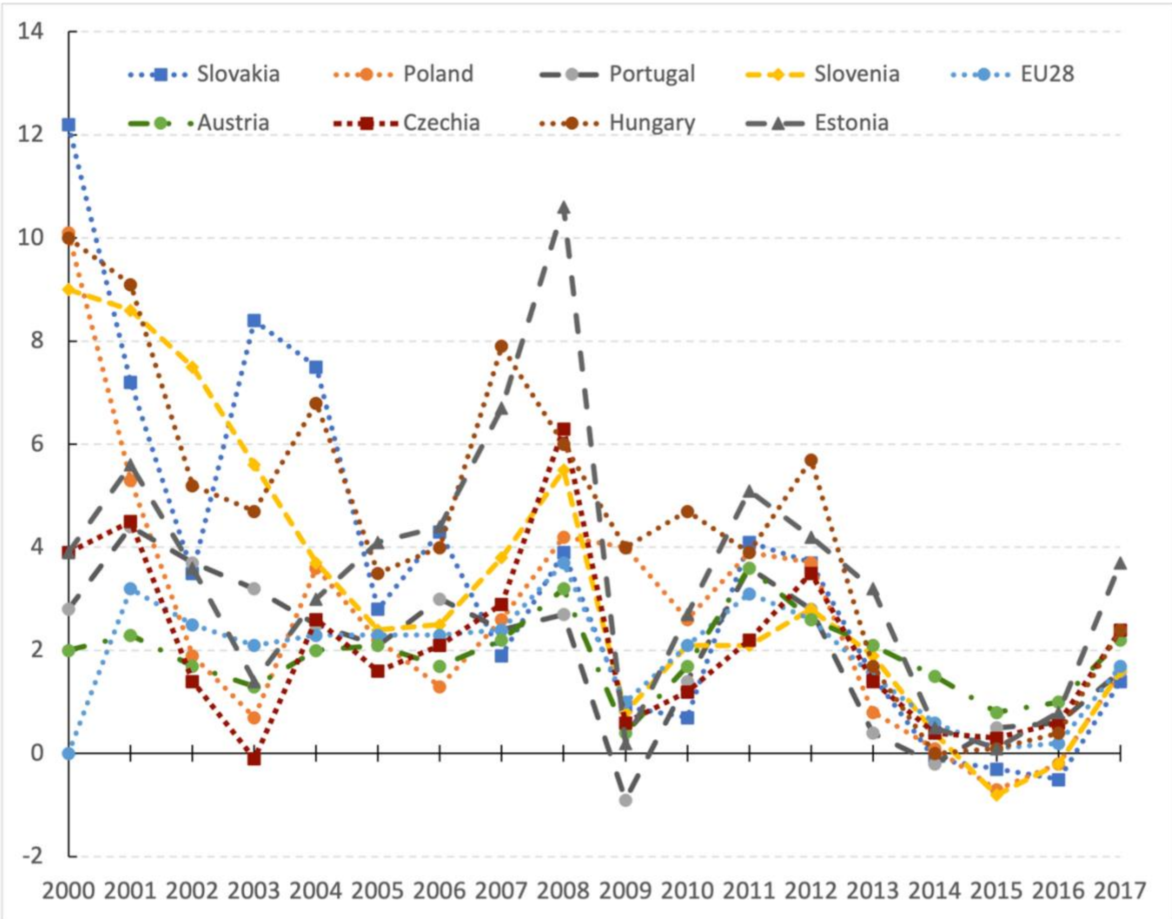
Source: Eurostat data and own calculation
Countries are ranked by the decrease in their unemployment rate in 2017

6 INFLATION IN THE CE4 AND OTHER SELECTED COUNTRIES

Figure 15 presents data on consumer price index (annual change in per cent) for the entire period and covers the EU total, as well as four more countries to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary.

Estonia ranked No. 4–5 in terms of rate of inflation in this group of countries in 2000 (3.9%) but had the highest one in 2017 (3.7%), although the 2017 figure was lower than the 2000 one. Her performance was oscillating in the range of 0.1–10.6%, that is, in the third widest range in this group pf countries. The highest rate was recorded in 2008. Hungary had the second highest rate of inflation in this group of countries both in 2000 (10.0%) and in 2017 (2.4%). Her performance was oscillating in the range of 0.0–10.0%, that is, in the third widest range in this group pf countries. The highest rates were recorded in 2000–2001. Czechia ranked No. 4–5 in terms of rate of inflation in 2000 (3.9%) and No. 2–3 the in 2017 (2.4%). Her performance was oscillating in the range of -0.1–6.3%, that is, in the fourth narrowest range. The highest rates were recorded in 2000–2001 and 2008. Austria had the lowest rate of inflation in 2000 (2.0%) and the fourth highest one in 2017 (2.2%). Her performance was oscillating in the range of 0.4.–3.6%, that is, in the narrowest range in this group pf countries. The highest rates were recorded in 2008 and 2011. The EU28 total was the second lowest figure in this group of countries in 2001 (3.2%) and the fifth highest one in 2017 (1.7%). Thus, four countries in this group had a lower rate of inflation than the EU total in that year. The EU28 figure was oscillating in the range of 0.1–3.7%, that is, in the second narrowest range. The highest rates were recorded in 2001, 2008, and 2011 and then in 2009–2011. Slovenia had the fourth highest inflation in this group of countries in 2000 (9.0%) and second lowest one in 2017 (1.6%), together with Poland and Portugal. Her performance was oscillating in the range of -0.8.–9.0%, that is, in the fifth widest range in this group pf countries. The highest rates were recorded in 2000–2003. Poland had the fourth highest unemployment rate in this group of countries in 2000 (10.1%) but the second lowest one in 2017 (1.6%), as already mentioned. Her performance was oscillating in the range of -0.7–10.1%, that is, in the third widest range in this group pf countries. The highest rate was recorded in 2000. Portugal had the second lowest inflation rate in this group of countries both in 2000 (2.8%) and in 2017 (1.6%). Her performance was oscillating in the range of -0.9–4.4%, that is, in the third narrowest range in this group pf countries. The highest rates were recorded in 2001–2002, 2006, and 2011. Slovakia had the highest unemployment rate in this group of countries in 2000 (10.2%) but the lowest one in 2017 (1.4%). Her performance was oscillating in the range of -0.5–12.2%, that is, in the widest range in this group pf countries. The highest rates were recorded in 2000 and 2004.

Figure 15: Consumer price index in the CE4 countries, four selected other EU members, and the EU28 total, 2000–2017, annual change (%)



Source: Eurostat data
Countries are listed by their consumer price index in 2017

Slovakia, Poland, Hungary, and Slovenia managed to reduce their inflation rates to the largest extent by 2017, that is, by 10.8, 8.5, 7.6, and 7.4 percentage points, respectively. No wonder, these countries also had the highest unemployment rates in 2000. The EU total figure also declined, to the same extent as the Czech one, that is, by 1.5 percentage points. Portugal reduced her inflation rate by 1.2 percentage points. The rate of inflation was practically at the same level in Slovenia and Austria in 2000 and 2017 (0.2 percentage point reduction and 0.2 percentage point increase. (Table 19)

Table 19: Consumer price index in the CE4 countries, four selected other EU members, and the EU28 total, 2000 and 2017, annual change (%)

	2000	2017	change by 2017	min	max	width
Slovakia	12.2	1.4	10.8	-0.5	12.2	12.7
Poland	10.1	1.6	8.5	-0.7	10.1	10.8
Hungary	10.0	2.4	7.6	0.	10.	10.0
Slovenia	9.0	1.6	7.4	-0.8	9.	9.8
EU28	3.2*	1.7	1.5	0.1	3.7	3.6
Czechia	3.9	2.4	1.5	-0.1	6.3	6.4
Portugal	2.8	1.6	1.2	-0.9	4.4	5.3
Estonia	3.9	3.7	0.2	0.1	10.6	10.5
Austria	2.0	2.2	-0.2	0.4	3.6	3.2

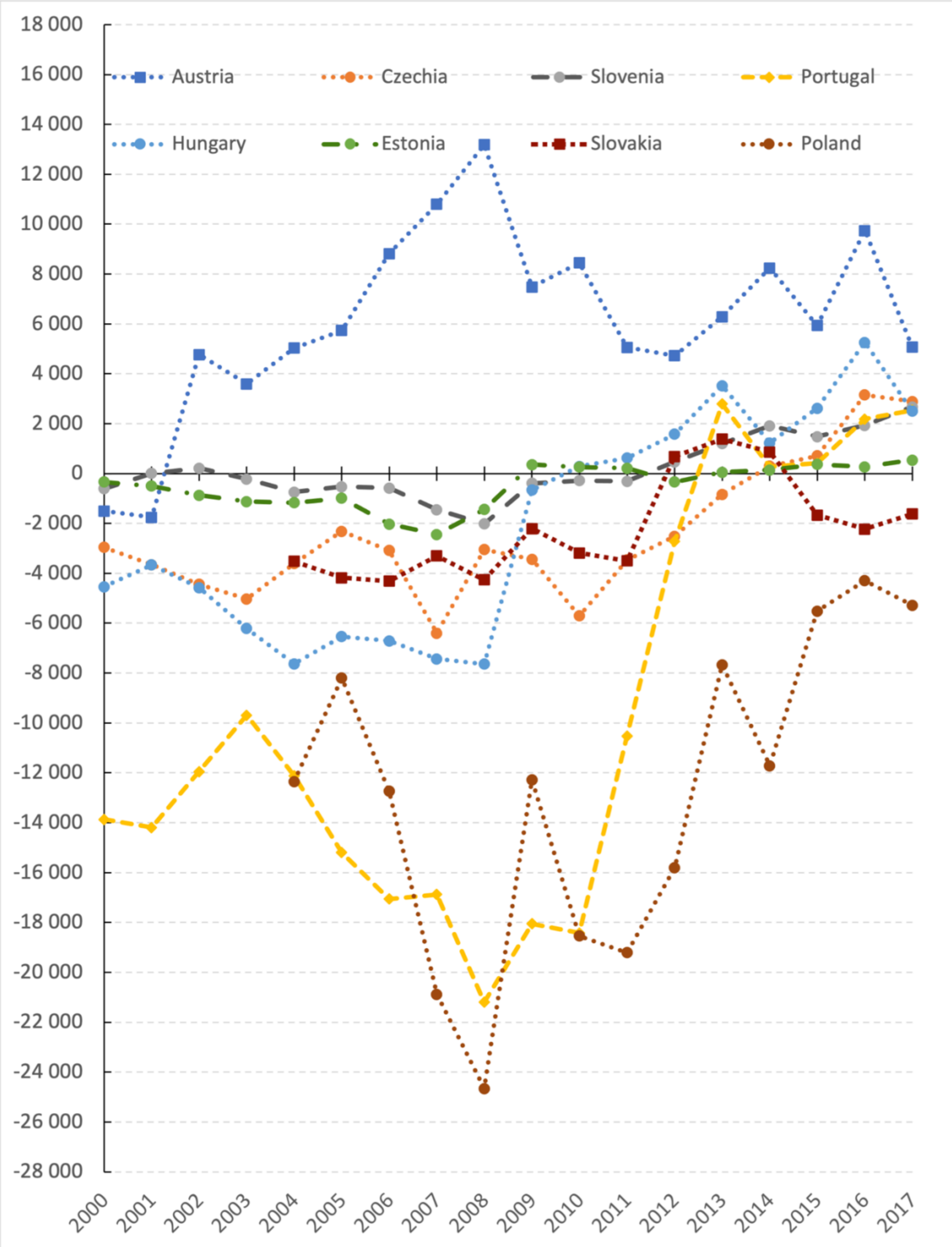
Source: Eurostat data and own calculation
Countries are ranked by the decrease in their consumer price index
* 2001 data

7 CURRENT ACCOUNT BALANCE IN THE CE4 AND OTHER SELECTED COUNTRIES

Figure 16 presents current account balance data for the entire period and covers four more countries beyond the CE4 to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary.

All countries, for which 2000 data are available, had a negative current account balance in 2000. The Austrian figure was -1.5 billion euros in that year, but since 2002 Austria had a positive current account balance and always the highest figure among the eight observed countries. The positive balance was oscillating in the range of 3.6–13.3 billion euros, closing the period at 5.1 billion euro in 2017. The Czech figure was 'in the red' until 2013, with a massive deficit of 6.4 billion euros in 2007. Then the positive balance was fluctuating between 0.3 billion and 3.2 billion euros, staying slightly below its record, that is, 2.9 billion euros in 2017. The Slovene figure was just slightly smaller compared to the Czech one in 2017, that is, 2.7 billion euros. It was oscillating between -0.2 billion and -2.0 billion euros in 2000 and 2003–2011, while 7 million and 2.7 billion euros in 2001–2002 and then in 2012–2017. Portugal had the highest deficit in 2000 among these eight countries with -13.9 billion euros, further diving to -21.2 billion euros in 2008. Her smallest deficit was recorded at -2.7 billion euros in 2012. Portugal had a positive current account balance only in 2013–2017, oscillating between 0.2 billion and 2.8 billion euros, closing at 2.5 billion euros in 2017. Hungary showed the second highest deficit in this group of countries in 2000 with -4.5 billion euros. It was in the red until 2009, with deficits ranging between -0.7 billion and -7.6 billion euros. 2010 showed a modest surplus of 0.3 billion euros, reaching the highest surplus in 2016 at 5.3 billion euros. That amount was halved in 2017: 2.5 billion euros, that is, the fifth highest one in this group of countries. Estonia had a deficit in her current account in 2000–2008, oscillating between -0.3 billion euros (recorded in 2000) and -2.5 billion euros (reached in 2007). Her lowest surplus was a mere 55 million euros in 2013, while the largest one, i.e., 540 million euros, was recorded in 2017. Data for Slovakia and Slovenia are only available since 2004. Slovakia had a deficit in 2004–2011 then also in 2015–2017, ranging between and -1.6 billion euros (reached in 2017) and –4.3 billion euros (recorded in 2008). Poland started with a massive deficit of -12.4 billion euros in 2004, plunged to -24.7 billion euros in 2008. She remained in the red in the entire observed period, recording the smallest deficit in 2016 at -4.3 billion euros, closing at -5.3 billion euros in 2017.

Figure 16: Current account balance in the CE4 countries and four selected other EU members, 2000–2017 (million euro)



Source: Eurostat data
Countries are listed by their current account balance in 2017

Portugal managed to reduce her current balance deficit to the largest extent by 2017, that is, by 16.4 billion euros, followed by Poland, Hungary, Austria, and Czechia to a similar extent, that is, by 7.1, 7.0, 6.6, and 5.9 billion euros respectively. Slovenia reached an improvement of 3.3 billion euros, Slovakia 1.9 billion euros, while the smallest, country, that is Estonia, 0.9 billion euros. Portugal had the widest range, in which her current balance account was fluctuating (24.0 billion euros), followed by Poland (20.4 billion euros), Austria (14.9 billion euros), Hungary (12.9 billion euros), Czechia (9.6 billion euros), Slovakia (5.7 billion euros), Slovenia (4.7 billion euros), and Estonia (3.0 billion euros). (Table 20)

Table 20: Current account balance in the CE4 countries and four selected other EU members, 2000 and 2017 (million euro)

	2000*	2017	change by 2017	min	max	width
Portugal	-13,864.0	2,537.0	16,401.0	-21,193.0	2,789.0	23,982.0
Poland	-12,351.7	-5,280.9	7,070.8	-24,658.7	-4,292.3	20,366.4
Hungary	-4,539.1	2,504.9	7,044.0	-7,640.2	5,257.3	12,897.5
Austria	-1,508.0	5,076.0	6,584.0	-1,756.0	13,190.0	14,946.0
Czechia	-2,960.8	2,891.5	5,852.3	-6,402.4	3,149.6	9,552.0
Slovenia	-610.0	2,674.2	3,284.2	-2,018.0	2,674.2	4,692.2
Slovakia	-3,518.6	-1,618.2	1,900.4	-4,312.1	1,378.9	5,691.0
Estonia	-333.9	539.5	873.4	-2,437.5	539.5	2,977.0

Source: Eurostat data and own calculation
Countries are ranked by the improvement in their current account balance
* 2004 data for Poland and Slovakia

Only two of these eight countries had a surplus when their cumulative current account is calculated for 2004–2017, that is, for the period for which data are available: Austria (104.6 billion euros) and Slovenia (3.4 billion euros). All the remaining six countries recorded a cumulated deficit: Estonia (6.2 billion euros), Hungary (19.0 billion euros), Czechia (27.4 billion euros), Slovakia (31.0 billion euros), Portugal (124.0 billion euros), and Poland (179.1 billion euros). (Table 21)

Table 21: Cumulative current account balance in the CE4 countries and four selected other EU members. 2004–2017 (million euro)

	cumulative current account balance
Austria	104,583.0
Slovenia	3,378.7
Estonia	-6,177.0
Hungary	-18,982.2
Czechia	-27,363.5
Slovakia	-31,036.7
Portugal	-123,964.0
Poland	-179,140.3

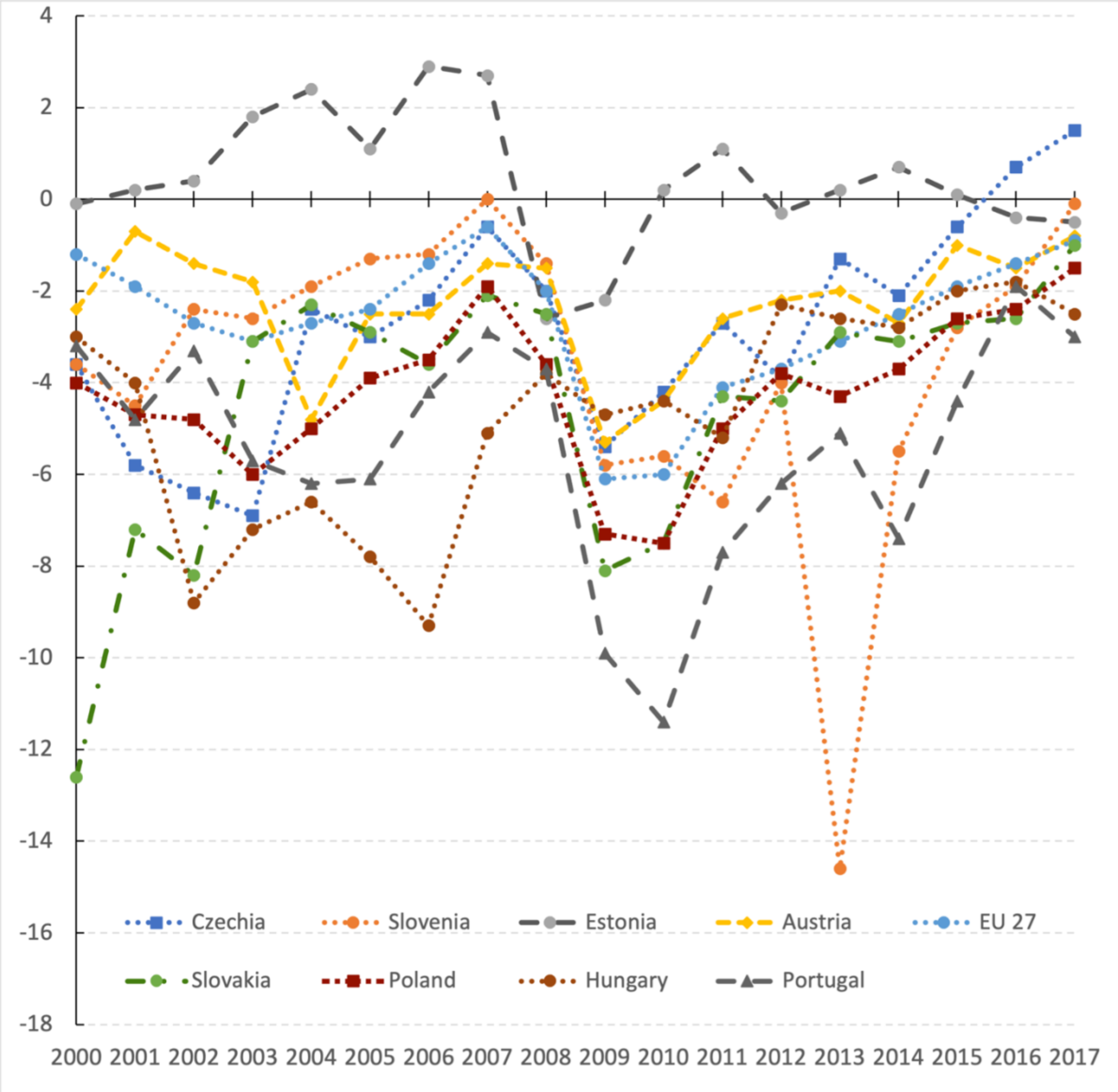
Source: Eurostat data and own calculation
Countries are ranked by the improvement in their current account balance
* 2004 data for Poland and Slovakia

8 General government deficit/ surplus in the CE4 and other selected countries

Figure 17 presents data for the entire period and covers four more countries beyond the CE4 to broaden the base for comparisons, namely (i) Austria, one of the richest EU member state, also located in Central Europe, with a largely similar size as Hungary; (ii) Slovenia, the richest former planned economy in Central Europe; (iii) Estonia, the best performer in many respects among the new EU members; and (iv) Portugal, one of the four 'old' cohesion countries, again with a similar size as Hungary.

In 2017, the last year of the observed period, only a single country's government budget had surplus, that is, Czechia with 1.5% of the GDP. Even the Czech budget had a deficit in all the other years, except 2016 (0.7%). The deficit varied between 6.9% and 0.6% in 2000–2015. Slovenia was very close to a balanced budget with 0.1% deficit in 2017. It was balanced in 2007 and had a deficit oscillating between 14.6% and 0.1% for 17 years. The deficit of 14.6% of the GDP, recorded in 2013, was the highest in this group of eight countries and the EU27 total. Estonia, in contrast, had a surplus for 12 years: in 2001–2007, 2010–2011, and 2013–2015. The surplus ranged between 0.2% and 2.9%, while the deficit varied between 2.6% and 0.1% in 2000, 2008–2009, 2012, and 2016–2017. The Austrian government budget closed with a deficit in the entire observed period, with 2.4% in 2000 and 0.9/ in 2017. The deficit was oscillating between 0.7% (recorded in 2001) and 5.3% (chronicled in 2009). The EU27 total was also 'in the red' in every single year in 2000–2017, starting at -1,2% in 2000 and closing at -0.9% in 2017. The latter figure was the lowest deficit, while the highest one (6.1% of GDP) was recorded in 2009. The Slovak budget opened the observed period with a deficit of 12.6% in 2000, the highest one for her in 2000–2017. It was also the highest deficit in this group of countries in 2000. It closed at -1.0%, the lowest for Slovakia in these 18 years. Poland had a second highest deficit compared to the other seven countries and the EU27 total in 2000 at 4.0% of the GDP. It closed at -1.5% in 2017, the lowest deficit for her in the observed period. The highest deficit for Poland was recorded at 7.5%, noted in 2010. Hungary opened the observed period with a deficit of 3.0% in 2000 and closed at -2.5% in 2017. As for many countries in this group, the government budget was 'in the red' in 2000–2017. The lowest deficit was recorded at 1.8% of the GDP in 2015, while the highest at 9.3% in 2006. The Portugal budget closed with a deficit of 3.2% in 2000 and that of 3.0% in 2017. The lowest deficit as recorded at 1.9% of the GDP in 2016, while the highest one at 11.4% in 2010. The latter figure was the third highest one in the entire period for this group of eight countries and the EU27 total.

Figure 17: General government deficit/ surplus in the CE4 countries, four selected other EU members, and the EU27 total, 2000–2017 (percentage of GDP)



Source: Eurostat data
Countries are listed by their general government deficit/ surplus in 2017

Slovakia managed to reduce her government deficit to the largest extent by 2017, that is, by 11.6 percentage points, and had second widest range, in which her government deficit was fluctuating (11.6 percentage points). Czechia reached an improvement of 5.1 percentage points. By her range of oscillation was ranked No. 3 the (8.4 percentage points). Slovenia reduced her government deficit by 3.5 percentage points and was ranked No. 1 by her range of oscillation (14.6 percentage points). Poland reached an improvement of 2.5 percentage points and had the fourth narrowest range, in which her government deficit was fluctuating (6.0 percentage points). Austria reduced her government deficit by 1.6 percentage points and had the narrowest range, in which her government deficit was fluctuating (4.6 percentage points). Hungary reached an improvement of 0.5 percentage points and was ranked No. 5 by her range of oscillation (7.5 percentage points). The figure for the EU27 total showed a decrease by 0.3 percentage points. This aggregate figure was fluctuating in the second narrowest range (5.5

percentage points). The Portugal government deficit was reduced by 0,2 percentage points and it was oscillating in the third widest range (9.5 percentage points). Estonia had the first performance in terms of improvement as her government budget deficit was slightly higher in 2017, compared to 2000 (by 0.4 percentage points, but in absolute terms it had the best performance (the lowest government deficit) in 2000 and the third lowest deficit in 2017. Her range of oscillation was the second narrowest (5.5 percentage points). (Table 22)

Table 22: General government deficit/ surplus in the CE4 countries, four selected other EU members, and the EU27 total, 2000 and 2017 (percentage of GDP)

	2000	2017	change by 2017	min	max	width
Slovakia	-12.6	-1.0	11.6	-12.6	-1.0	11.6
Czechia	-3.6	1.5	5.1	-6.9	1.5	8.4
Slovenia	-3.6	-0.1	3.5	-14.6	0.0	14.6
Poland	-4.0	-1.5	2.5	-7.5	-1.5	6.0
Austria	-2.4	-0.8	1.6	-5.3	-0.7	4.6
Hungary	-3.0	-2.5	0.5	-9.3	-1.8	7.5
EU 27	-1.2	-0.9	0.3	-6.1	-0.6	5.5
Portugal	-3.2	-3.0	0.2	-11.4	-1.9	9.5
Estonia	-0.1	-0.5	-0.4	-2.6	2.9	5.5

Source: Eurostat data and own calculation
Countries are ranked by the improvement in their general government deficit/ surplus

Only Estonia had a surplus when the cumulative general government deficit/ surplus current account is calculated for these eight countries for 2000–2017, that is, 0.8 billion euros. (104.6 billion euros) and. All the remaining seven countries recorded a cumulated deficit: Slovenia -22.3 billion euros, Slovakia -40.3 billion euros, Czechia -58.5 billion euros, Hungary -75.8 billion euros), Austria -117.7 billion euros, Portugal -162.0 billion euros, and Poland -231.3 billion euros. (Table 23)

Table 23: Cumulative government deficit in the CE4 countries and four selected other EU members. 2000–2017 (million euro)

	cumulative general government deficit/ surplus
Estonia	807.4
Slovenia	-22 303.1
Slovakia	-40 279.7
Czechia	-58 456.5
Hungary	-75 779.6
Austria	-117 693.0
Portugal	-161 961.2
Poland	-231 333.9

Source: Eurostat data and own calculation
Countries are ranked by the improvement in their current account balance
* 2004 data for Poland and Slovakia

9 SECTORAL COMPOSITION OF THE CE4 COUNTRIES' GDP

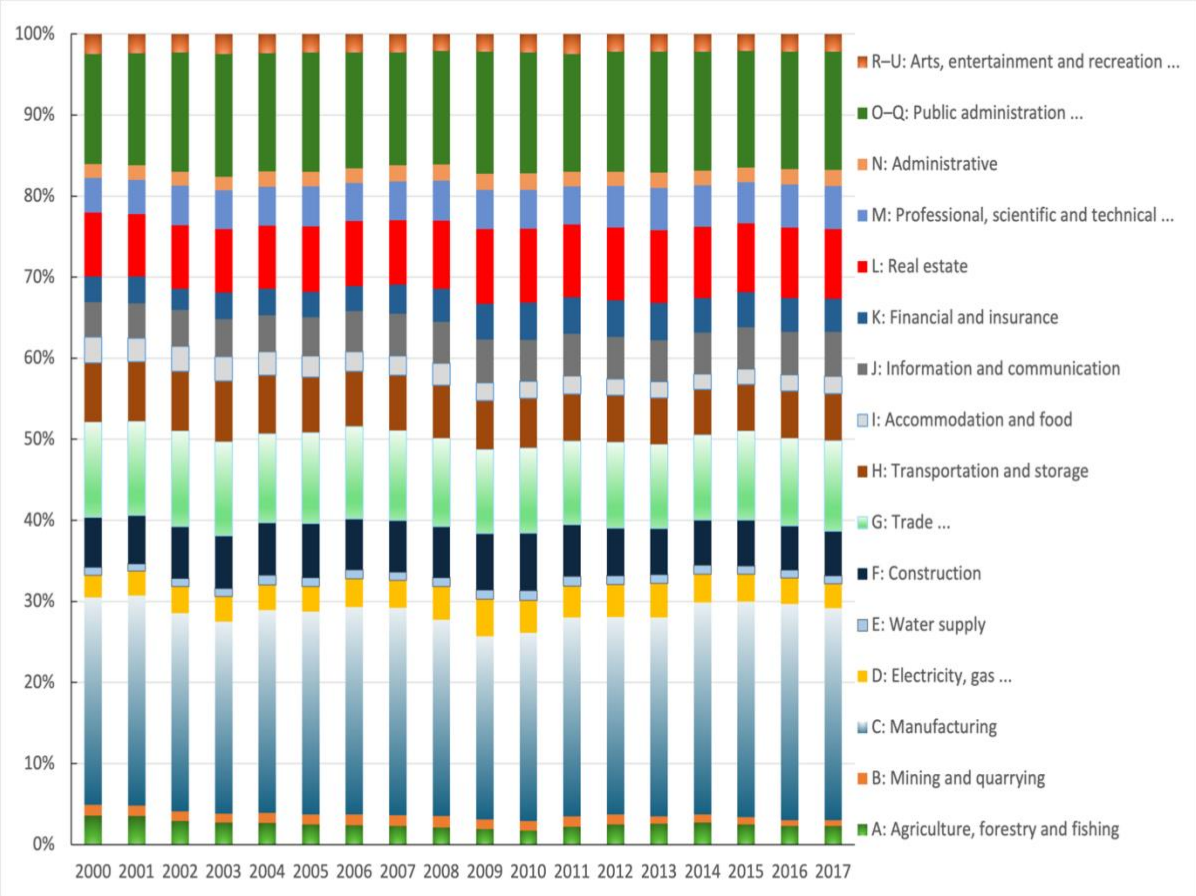
9.1 Czechia

This section presents the sectoral composition of the CE4 economies at one-digit level of NACE sectors. These sectors are as follows:

A: Agriculture, forestry and fishing
B: Mining and quarrying
C: Manufacturing
D: Electricity, gas, steam and air conditioning supply
E: Water supply; sewerage, waste management and remediation activities
F: Construction
G: Wholesale and retail trade; repair of motor vehicles and motorcycles
H: Transportation and storage
I: Accommodation and food service activities
J: Information and communication
K: Financial and insurance activities
L: Real estate activities
M: Professional, scientific and technical activities
N: Administrative and support service activities
O-Q: Public administration, defence, education, human health and social work activities
R-U: Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies

There was no major structural change in the composition of the Czech GDP in 2000–2017 at one-digit level of NACE. It worth noting that the share of agriculture, forestry and fishing dropped from 3.6% in 2000 to 2.3% in 2017. Surprisingly, the share of manufacturing dropped to 22.5% in 2009, from 25.7% in 2000. Its highest share was recorded at 26.7% in 2016. (Figure 18)

Figure 18: Sectoral composition of the Czech GDP, 2000–2017 (per cent)

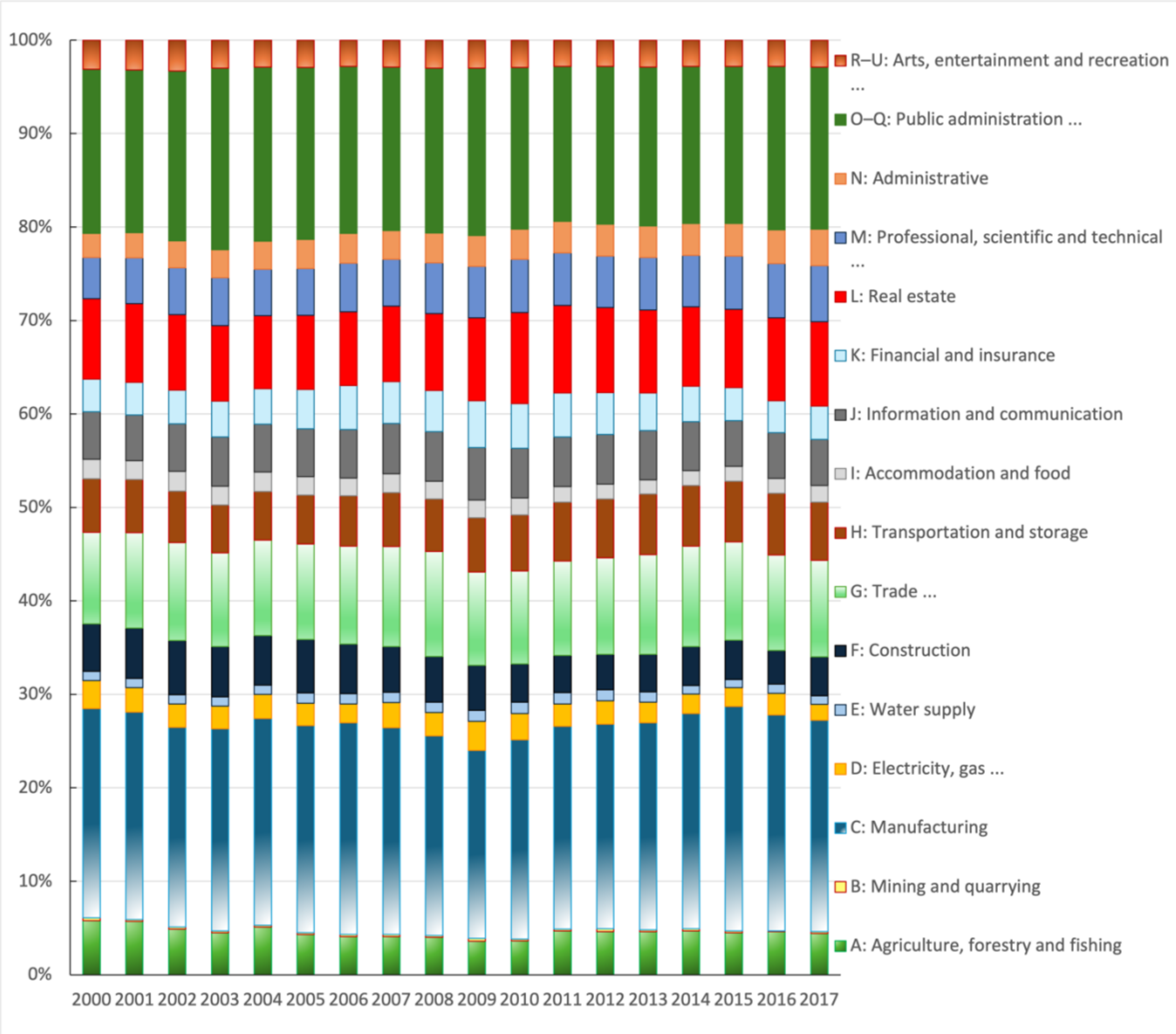


Source: Eurostat data

9.2 Hungary

There was no major structural change in the composition of the Hungarian GDP in 2000–2017 at one-digit level of NACE. It worth noting that the share of agriculture, forestry and fishing had been and remained higher than in Czechia, but this sector shrank in Hungary too. It dropped from 5.8% in 2000 to 4.4% in 2017. In contrast, the share of manufacturing is lower than in Czechia. It increased from 22.4% in 2000 to 22.8% in 2017. Its lowest share was recorded at 20.1% in 2009, while its highest share was achieved at 24.0% in 2016. (Figure 19)

Figure 19: Sectoral composition of the Hungarian GDP, 2000–2017 (per cent)

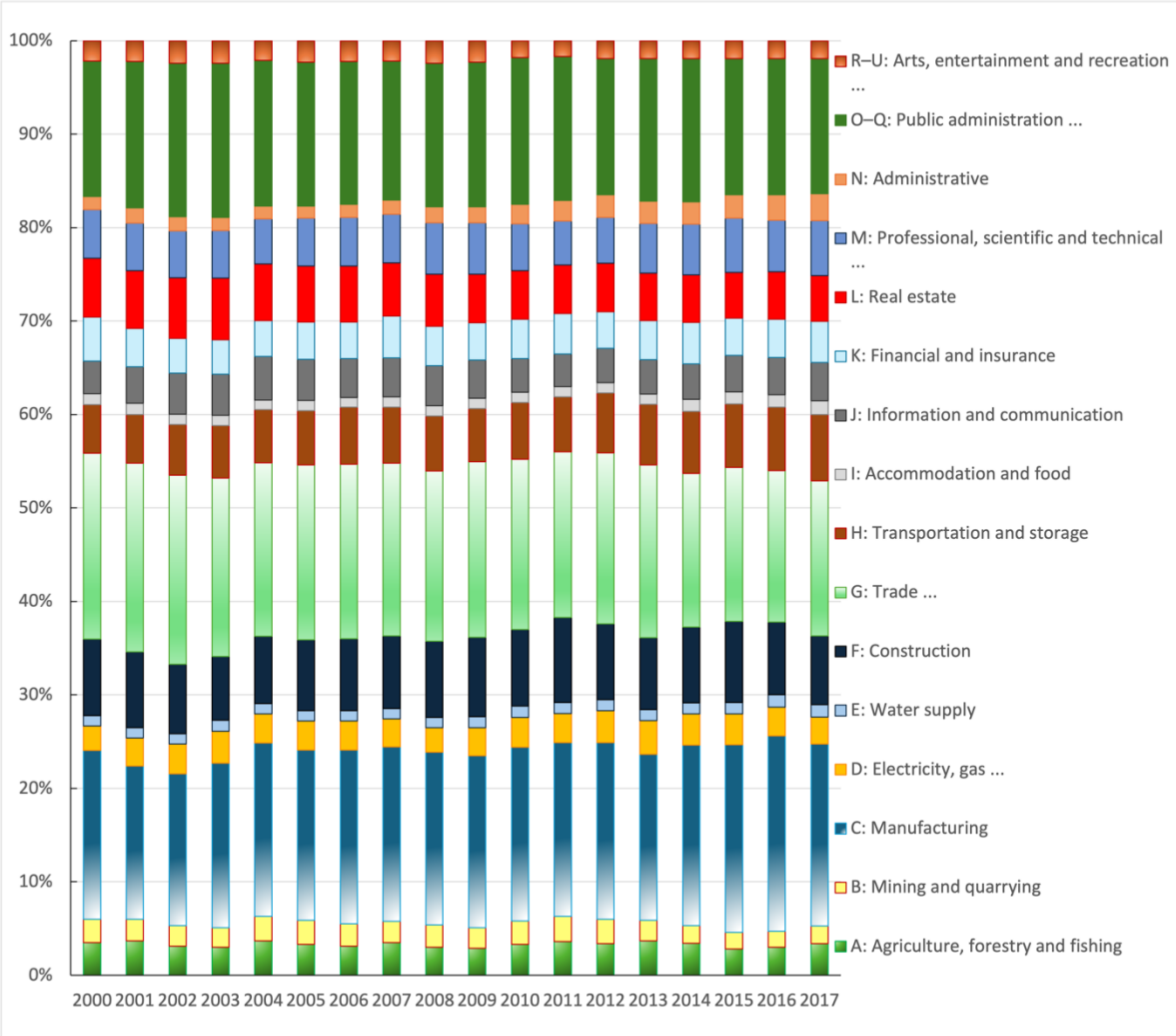


Source: Eurostat data

9.3 Poland

There was no major structural change in the composition of the Polish GDP in 2000–2017 at one-digit level of NACE. It worth noting that the share of agriculture, forestry and fishing had been lower than in Hungary in 2000. This sector, as opposed to Czechia and Hungary, did not shrink in Poland. Its share was 3.5% in 2000 and 3.4% in 2017. Its lowest share was recorded at 2.8% in 2015. The share of mining and quarrying is almost three times higher than in Czechia and nearly ten times higher compared to Hungary. Its share was 2.5% in 2000 and still 1.9% in 2017. The share of manufacturing is lower than in Czechia and Hungary. It increased from 18.1% in 2000 to 19.5% in 2017. Its lowest share was recorded at 16.2% in 2002, while its highest share was achieved at 20.9% in 2016. (Figure 20)

Figure 20: Sectoral composition of the Polish GDP, 2000–2017 (per cent)

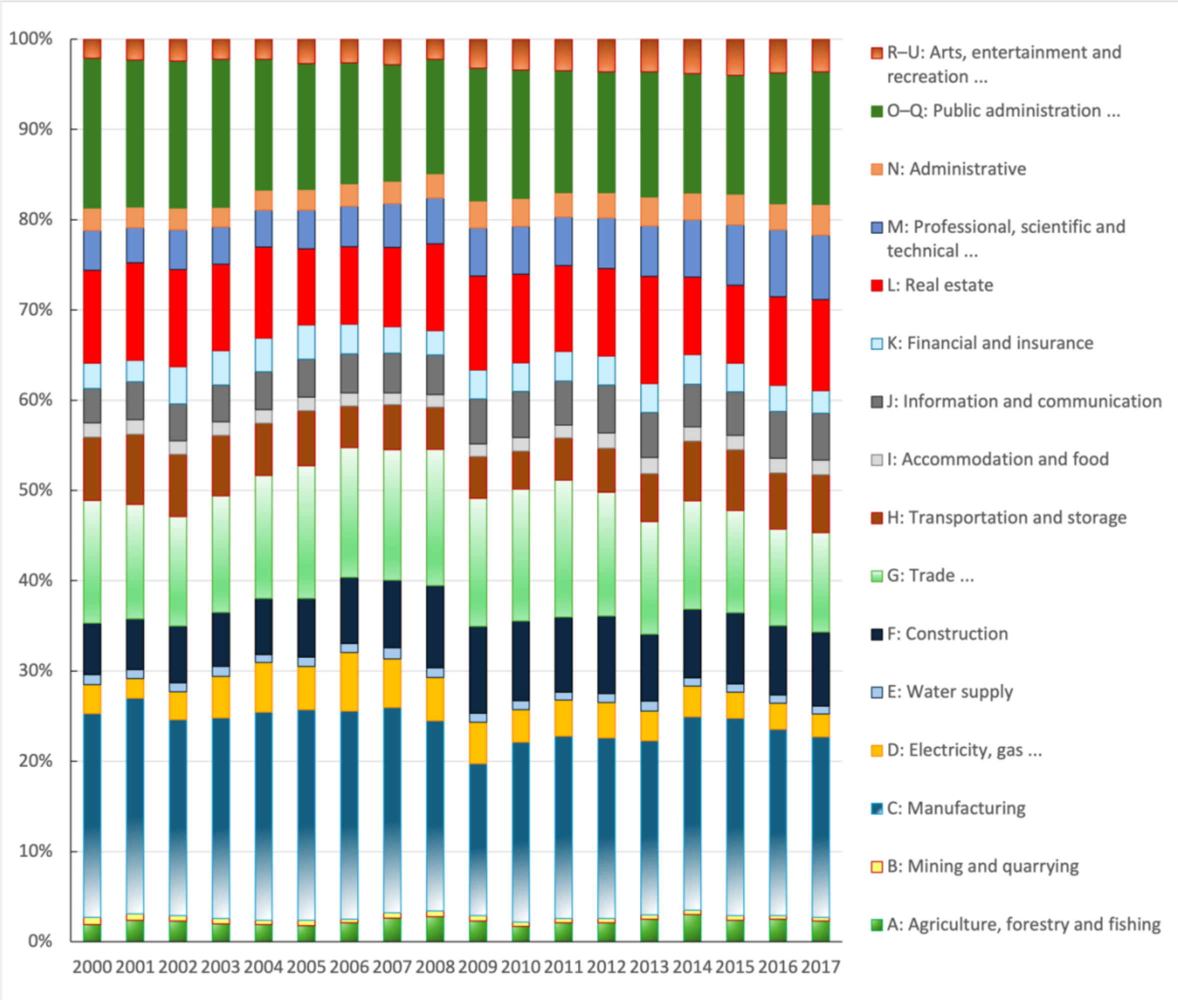


Source: Eurostat data

9.4 Slovakia

There was no major structural change in the composition of the Slovak GDP in 2000–2017 at one-digit level of NACE. The share of agriculture, forestry and fishing is the lowest in the CE4 economies. This sector, unlike in the other three countries, slightly increased its share, albeit a low level, as already noted. Its share was 1.9% in 2000 and 2.3% in 2017. Its lowest share was recorded at 1.7% on 2010, while the highest one at 3.0% in 2014. The share of mining and quarrying is low, but higher than in Hungary. The share of manufacturing is lower than in Czechia and Hungary and it oscillates in a wider range. It decreased from 22.6% in 2000 to 20.0% in 2017. Its lowest share was recorded at 16.8% in 2009, while its highest share was achieved at 23.9% in 2001. (Figure 21)

Figure 21: Sectoral composition of the Slovak GDP, 2000–2017 (per cent)



Source: Eurostat data