

***INSTITUTE OF ECONOMIC RESEARCH***

***Slovak Academy of Sciences***

***Economic Development of Slovakia  
in 2017 and Outlook up to 2019***

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***Bratislava 2018***

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The work supported by VEGA Grant Agency in the frame of the projects VEGA no. 2/0070/15.

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Bratislava 2018

**e-ISBN 978-80-7144-289-9**

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## **INTRODUCTION**

Since 1993, the Institute of Economics SAS has been preparing its views on the economic development of Slovakia on a yearly basis. Although the European Economic Commission of the United Nations was originally the initiator of the issuing of these publications, it has gradually become an internal need and tradition of our workplace. In our regular assessments of the economic development of Slovakia, we try to point out the phenomena that have been characteristic for the latest period. However, we try to see the most recent development in the context of longer-term. We point to the tendencies that last, but mainly we are looking for those that are changing.

The economic debate in Slovakia has recently focused on the topics of labour shortages (which is major change after years of lack of labour positions) and the subject of pressure on wage growth. These and related topics could not be missed in this year's publication. However, other not less interesting topics are covered as well despite their lower public exposure: rebound in the price level, expansion of household consumption, change in income structure, or further consolidation of public finances.

The publication is focused on the evaluation of economic level and performance, economic policy, development of labour market, as well as on measures affecting the economic environment. It starts with an overview of the economy, followed by a series of closer looks at particular areas. At the end of publication, we return to the synthetic view and try to indicate possible development in upcoming years.

## 1. OVERALL ECONOMIC DEVELOPMENT

The first chapter intends to provide an overview of economic development – a “view from above.” We focus on the main trends of macroeconomic development. We try to identify which developments have the long-lasting tendencies and what are somewhat new moments. The following chapters take a closer look at partial problems.

The focus of this chapter is mainly on the area of macroeconomic performance, convergence, and stability of the Slovak economy. In the process of evaluation, we also focus on the characteristics related to the sustainability and the socio-economic dimensions (generation of income, investments, emission intensity and others).

### 1.1. Catching-up the Most Advanced

The progress in catching up on the most advanced is correctly understood as one of the criteria for a successful economic policy of “catching-up countries.” In this case, the data from recent years deserve special attention. When compared to the past, it is much harder to state whether there is a continuation or discontinuation of so-called “real convergence” (see Figure 1.1 and 1.2).

The pace of the Slovak economy catching-up process to the most advanced economies (represented by the former EU-15) has slowed. The regular process of catching-up should look like a situation when less developed economy achieves a higher GDP growth rate along with the higher rate of price level growth<sup>1</sup> compared to the more advanced economy. Such a case was typical also for Slovakia up to the year 2013. Subsequently, the decline in the price level disrupted the logic of these relations in Slovakia:

- Real GDP growth was higher in Slovakia than in the group of most advanced economies. It would not be a problem (although it is worth to state that difference between the growth rate of the Slovak economy and the EU-15 has shrunk compared to the “pre-crisis”

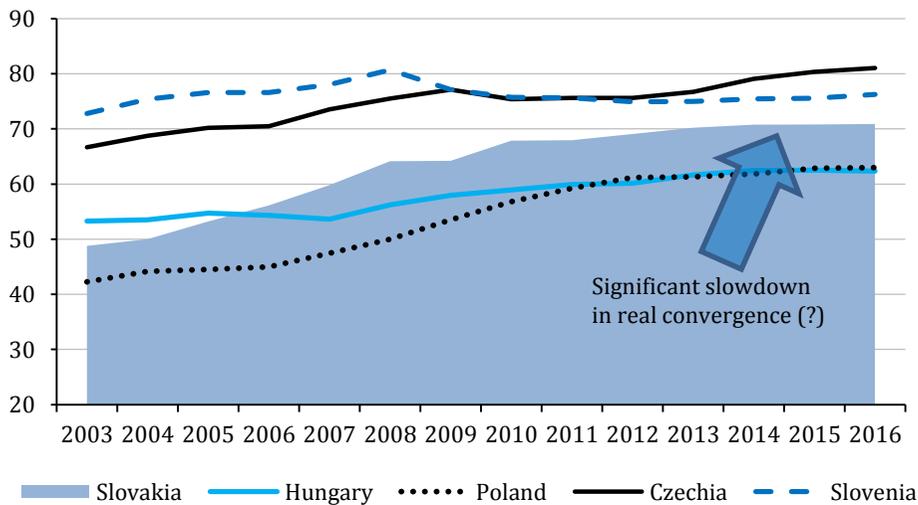
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<sup>1</sup>This means that the inflation channel is also used for catching up process. A stronger, converging economy ceases to be „cheap“. This explains the so-called Balassa – Samuelson effect.

period). Despite the shrinkage, the gap between the real GDP growth of Slovakia and the EU-15 has maintained the size of approximately 1.5 percentage point in favour of Slovakia in the last years (clearly visible in Figure 1.2 as a relatively stable broad corridor between real GDP growth curves).

- The problem was, however, that the price level declined for several years in Slovakia (2014 – 2016). Declining prices (in a simplified way) have reduced the value of GDP. Real GDP volumes have developed favourably; however, the nominal GDP expanded less favourably. Moreover, we need to consider the inaccuracies and imperfection implied when comparing the GDP per capita in Purchasing Parity Standard (PPS)<sup>2</sup> or Purchasing Power Parity (PPP). It only highlights the already mentioned problems with the price level.<sup>3</sup>

**Figure 1.1**  
**Real Convergence Development**  
(GDP per capita level in PPS, EU-15 = 100)



*Note:* Data for 2017 was not available at the time of text compilation.

*Source:* Own calculations based on Eurostat database.

<sup>2</sup> Values expressed in Purchasing Power Parity take into account differences in the price levels among countries. We apply the comparison with the EU-15 due to its composition of most economic advanced EU countries. The parameters of this group are not affected by the performance of less developed economies that have joined the EU in 2004.

<sup>3</sup> See Habrman (2018) for more on the role of imperfections in calculating Purchasing Power Parity.

The interruption in convergence to the most advanced countries was temporary due to a decline in the price level and shortcomings of PPP. Nowadays, we may state that the deflationary period has already been overcome and the Slovak economy will return to the aforementioned “regular” catching-up development of its more advanced partners – already visible in Figure 1.2 in data for 2017. Moreover, it is very likely that this will reflect in GDP per capita data in PPP (data not available yet). All the prerequisites for the continuation of real convergence are present.

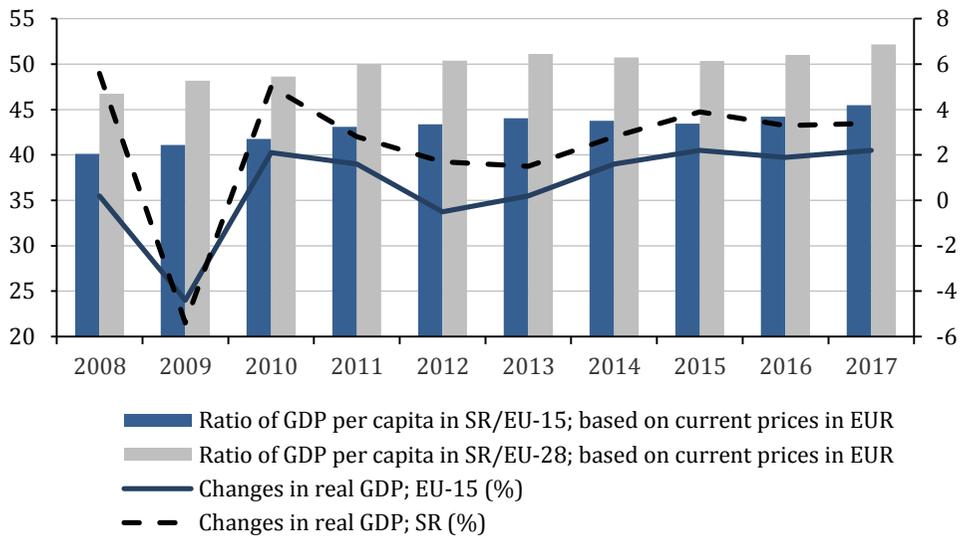
While the real convergence more or less continued in outward view on the economy (the Slovak economy has been approaching the performance of the most advanced despite the temporary slowdown in 2014-2016 period), the economic divergence prevailed within the economy. Differences in the economic level of the regions were slightly increasing (Figure 1.3). Lagging of regions behind the economic level of the most advanced region has been highlighted. Therefore, it may raise the question of ineffectiveness of the cohesion policy. However, it is relative: we believe that without the resources allocated by the cohesion policy, the differences would seem to be even more pronounced. The factors determining the differentiation of performance of the Slovak regions are so bold that the cohesion policy with the financial implementation of European funds was able to, at most, mitigate the growth of the differences, but have failed to reduce them.

A remarkable aspect of the Slovak economy growth is the decline in the rate of inputs appreciation: the value-added ratio has decreased. The low value added (calculated as a share of gross value added on gross output) is a long-term problem of the Slovak economy.<sup>4</sup> In the recent period, the value added ratio has decreased even further in Slovakia, while other V4 countries have experienced its growth. It means that despite the numerous declarations in a wide range of economic policy documents, the structure of the economy has not headed towards activities with a higher rate of input appreciation (hence towards a high value-added ratio).

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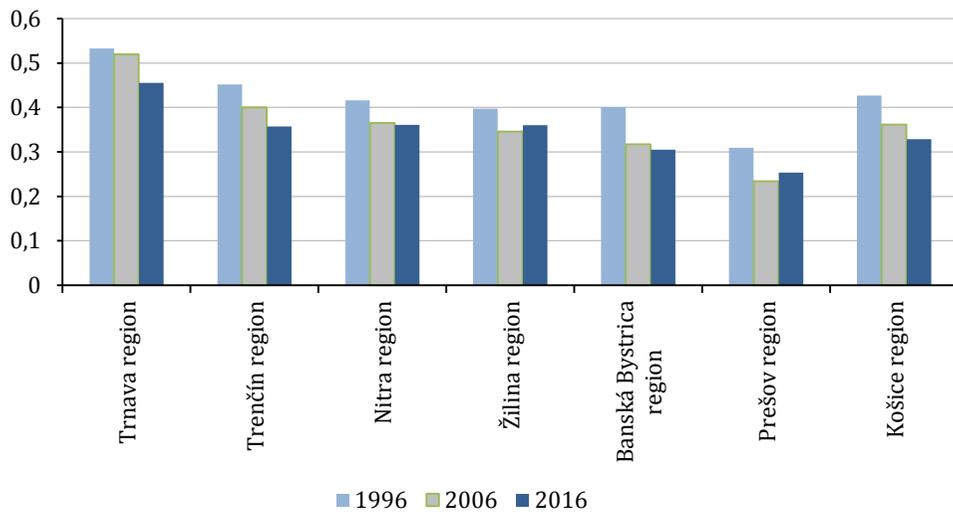
<sup>4</sup> It is a sort of indicator of the technical efficiency, it shows how much income (meaning value added) is generated by producing one production unit (simplified revenues). The value of production includes a large share of intermediate consumption and a small share of generated income (value added) in Slovakia. When you generate 100 EUR worth of production, the inputs amount to an average of 62 EUR and generated income (value added) to 38 EUR (based on the average data for 2015-2016).

**Figure 1.2**  
**Changes in Real GDP and Comparison of GDP per capita**  
 (GDP per capita level in € at current prices, EU-15 = 100)



Source: Own calculations based on Eurostat database.

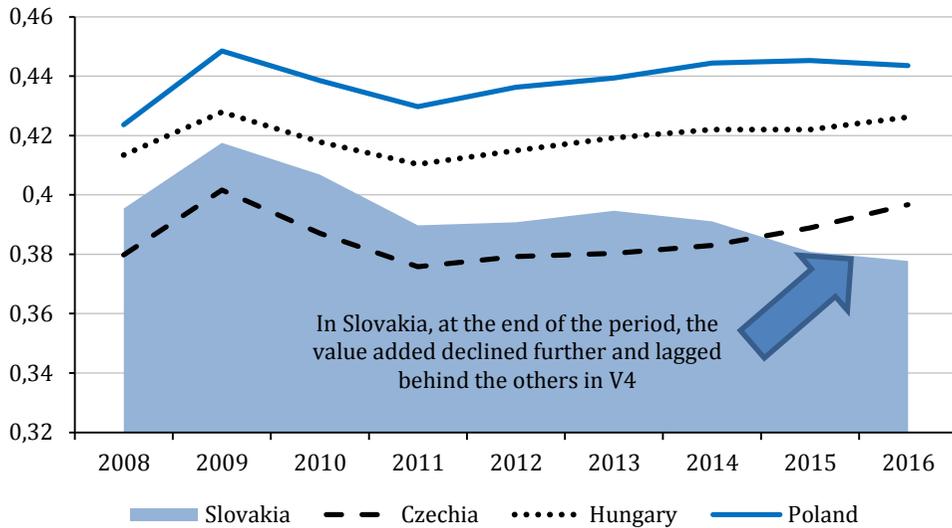
**Figure 1.3**  
**Regional Differences in Economic Level**  
 (GDP per capita in EUR at current prices, level of economically most advanced region = 1)



Note: Ratios to the level of the Bratislava region (a region with the highest economic level in all three periods).

Source: Own calculations based on SO SR database.

**Figure 1.4**  
**Value Added Ratio**  
 (share of gross value added on the gross output)



Source: Own calculations based on Eurostat database.

The overview of GDP use reveals the growing importance of household consumption. Final consumption of households (FCH) development over the last five years is a typical example of a continuous acceleration (Table 1.1 shows a gradual increase in the values of all three parameters of household consumption since 2013). In 2017, the expansion in household consumption accelerated even further: The year-on-year growth in consumption doubled (in 2017, an increase of 2.2 billion EUR is more than double the increase of 1.0 billion EUR in 2016). This phenomenon may be “matched” with similar continuous growth in wage quota over the same period (details below). If wage quota increases (share of wages in value added), there comes a so-called wage-driven growth in demand. Subsequently, a common accompanying phenomenon is a natural growth in household consumption (or growth of FCH share in total demand).<sup>5</sup> Table 1.1 along with Figure 1.5 and 1.6

<sup>5</sup> For more on the topic of link between wage quota and changes in the demand structure see Zeman (2018).

offer a corresponding image of the FCH expansion driven by wage quota increase.

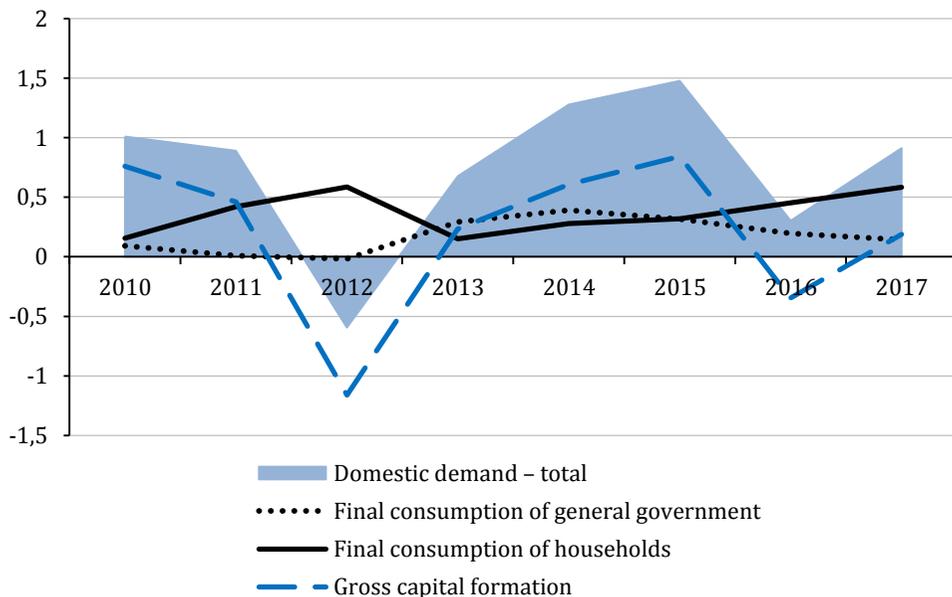
**Table 1.1**  
**Parameters of Final Consumption of Households Development**

	2013	2014	2015	2016	2017
Y-o-y growth of FCH (EUR million, current prices)	220.6	533.6	893.6	1,019.5	2,229.6
Share of FCH growth in total GDP growth (in %, based on current prices)	15.0	27.8	31.8	45.2	58.2
Y-o-y change of FCH (in %, based on constant prices)	-0.8	1.4	2.2	2.7	3.6

*Note:* FCH - Final Consumption of Households.

*Source:* Own calculations based on Eurostat database.

**Figure 1.5**  
**The share of Domestic Demand Components on GDP Growth**  
(share of gross value added on the gross production)



*Note:* Domestic demand is an aggregate variable. It includes other variables aforementioned. Shares of domestic demand components on GDP growth are calculated from data at current prices.

*Source:* Own calculations based on Eurostat database.

The already mentioned wage quota growth is a remarkable phenomenon in recent years. In the past, the low level (and long-term decreasing) wage quota has been characteristic for the Slovak economy. It represents the extent to which the output of the economy (created gross value added or GDP) is transferred into the compensation of employees.

Mainly between 2001 and 2008, the steady growth of the economy was accompanied by a decline in the wage quota. The Slovak economy has created a revenue structure that differs from the usual functional income structure in more advanced economies. Thus, with a significantly lower share of wages in value added (and a higher share of operating surpluses and mixed-income – simplified profits). We acknowledge that the deviation of the income structure to the detriment of employees' compensations in former transition economies is a legitimate accompanying phenomenon of some processes which took place in these countries. This deviation was an accompanying phenomenon of structural change (toward more capital-intensive activities) and one of the competitiveness factors. Therefore, we assume that overcoming of this phase (characterized by "hunger for capital" as a result of long-term undercapitalization, rapid economic restructuring, and rapid technological change) leads to a retreat of factors leading to lower wage quota.

As the outcome of this situation, the functional structure of Slovak income has developed into an unprecedented manner. However, it raises the question about the influence of factors that have allowed such development. We assume that the primary role driver is a rapid decrease in unemployment and higher scarcity of the workforce. The secondary-role drivers might be the structural changes in economic activity, as well as a structural change in employment.<sup>6</sup>

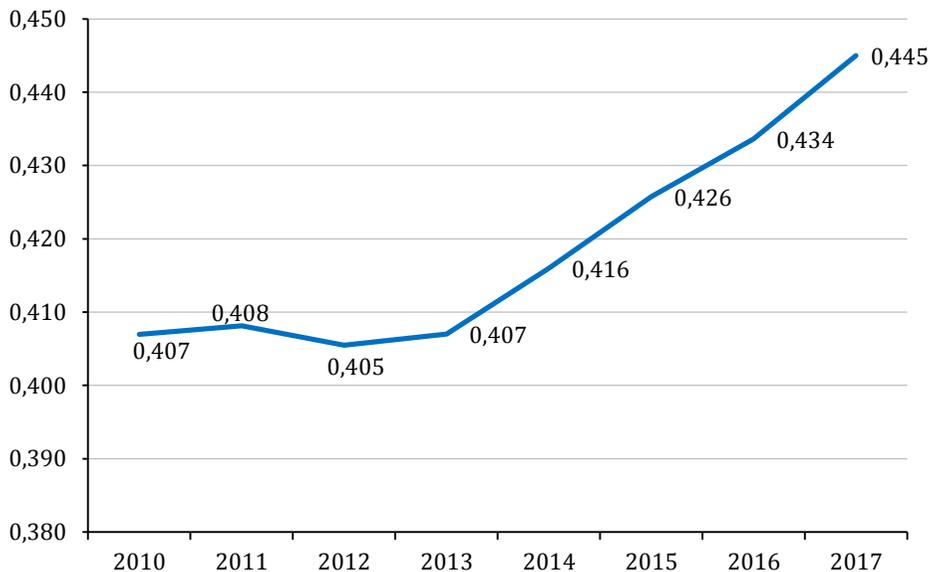
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<sup>6</sup> For example, the structure of newly formed jobs has changed. For an earlier period (especially after 2010), it was characteristic that part of the employees was shifted to self-employment contracts (the boom of entrepreneurship – often involuntary). That reduced the wage quota, as compensation of employees were replaced by the entrepreneurial income. In recent years, such structural change does not take place, rather the opposite of that. In the structure of total employment, the category "number of employees" increases the most – and that influence positively the level of wage quota. However, we may identify more of such structural shifts (see e.g. Morvay, 2016).

Since wages (more precisely compensation of employees) and profits (more precisely operating surplus) are essential components of value added, it is clear from the wage quota growth that there were more wages created than profits. See Figure 1.7 to see more details on the proportion of this distribution (in Figure 1.7, the ratio of operating surpluses growth to wages growth was above level 1). Subsequently, there was a very significant change: the increase in wages was significantly stronger. The growth of profits was only a quarter or a third of the volume of wages growth. In 2017, we can see signs of improvement in profit formation: its growth is double the volume in a previous year. That is one of the new moments: the growth of profits and wages are less differentiated; the profit formation has improved.

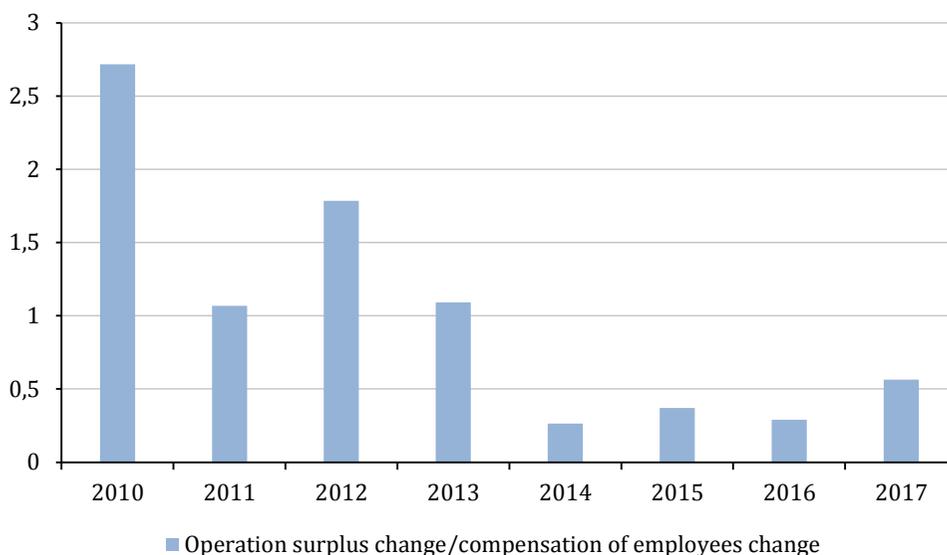
Figure 1.6

**Wage Quota - Share of Compensation of Employees on Gross Value Added**



Source: Own calculations based on Eurostat database.

**Figure 1.7**  
**The ratio of Y-o-y Growth in Operating Surpluses and Compensation of Employees**



*Note:* Value 1 is achieved when the growth of both variables is the same. Values above 1 represent higher growth of operating surpluses than compensation of employees. Values below 1 represent higher growth of compensation of employees than operating surpluses.

*Source:* Own calculations based on Eurostat database.

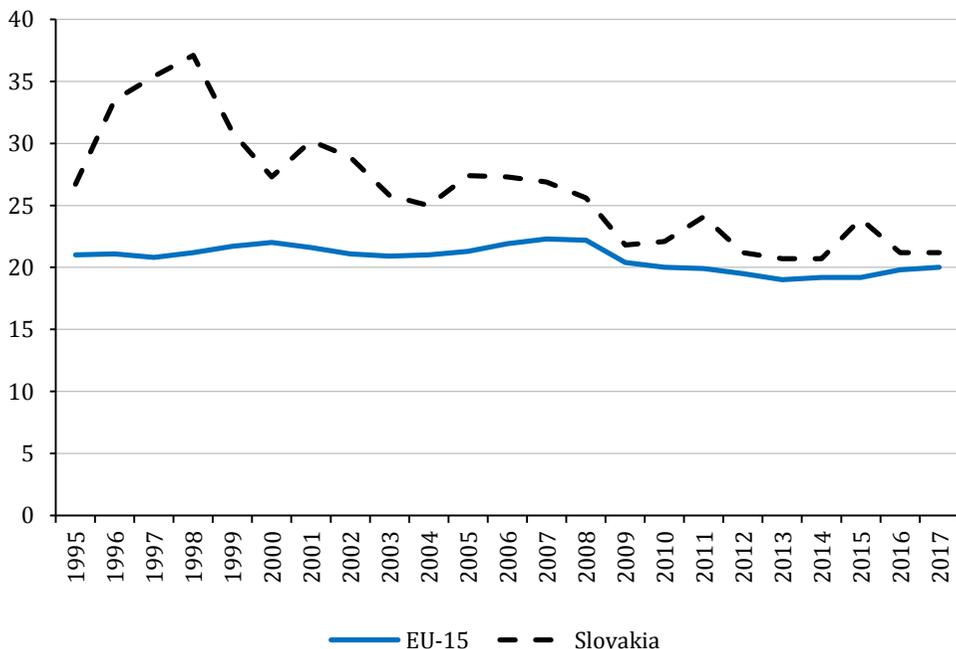
Following the sharp fluctuations in 2015 and 2016, the development of fixed investments (gross fixed capital formation) seems to stabilize. Gross fixed capital formation is generally a volatile variable. However, the fluctuations in 2015 and 2016 were not natural. In 2015, the volume of investments increased tremendously, being “inflated” by the last chance to use euro-funds (at the end of the programming period). Therefore, the volume of investments experienced a significant one-off increase in 2015. In the following year 2016, the volumes of investments were relatively lower, so the y-o-y decrease was almost inevitable. Such “unnatural” fluctuation (an increase in 2015 followed by a decrease in 2016) has ceased and returned to more natural, politically less influenced investment growth in 2017.

In Slovakia, the rate of investment (the share of gross fixed capital formation in GDP at current prices, Figure 1.8) is still above the EU-15

level. The indicator represents what part of society income is used for investment activity. Higher investment rates in a less performing economy are necessary for the catching-up of most advanced economies. The rate of investment in the Slovak economy is long-term higher than the EU-15 average, even higher in each particular year. At the same time, however, the gap between the investment rate in Slovakia and the EU-15 is gradually decreasing over time (probably related to the gradual equalization of capital to labour ratio). To reach the level of more advanced economies, it is desirable to maintain the investment rate in Slovakia at higher levels than in the other group of countries. That increases the volume of capital per unit of labour which is one of the real convergence prerequisites.

Figure 1.8

**Development of Investment Rate** (Share of Gross Fixed Capital Formation in GDP; in %)



Source: Own calculations based on Eurostat database.

**Table 1.2**  
**Investment Dynamics** (gross fixed capital formation)

	2013	2014	2015	2016	2017
Y-o-y growth of GFCF (EUR million, current prices)	-71.5	397.8	3,118.0	-1,693.8	821.8
Share of GFCF growth in total GDP growth (in %, based on current prices)	-4.9	20.7	111.0	-75.0	21.5
Y-o-y change of GFCF (in %, based on constant prices)	-0.9	3.0	19.8	-8.3	3.2

*Note:* GFCF – Gross Fixed Capital Formation.

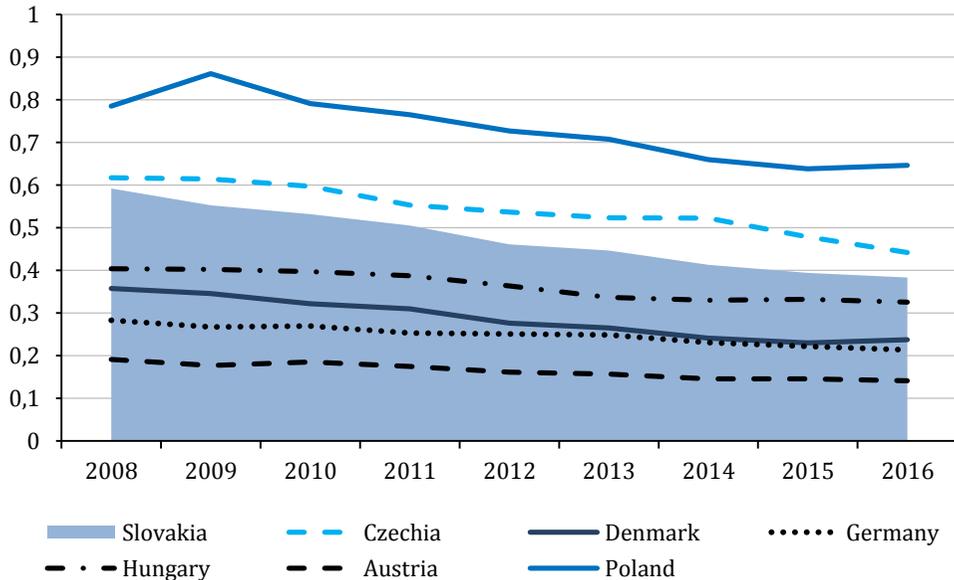
*Source:* Own calculations based on Eurostat database.

One of the signs in sustainability and prosperity of economic development is the decline in the environmental intensity of economic activities. The ecological intensity is illustrated here by a simple indicator: the ratio of selected types of emissions volumes to the volume of created GDP (more precisely, it is the emission intensity of GDP formation). It allows us to find out how many tones of emissions is emitted into the environment when producing thousand EUR of GDP. It is not a sophisticated method for a comprehensive assessment of the environmental burden or sustainability. Anyway, however, it is enough to make a fair evaluation. We select carbon dioxide due to the data availability and latest update (smaller reporting delay than in other emissions), as well as due to the overall match of CO<sub>2</sub> emissions development with total emissions development. We may conclude that there is an ongoing favorable trend development. The number of emissions per unit of GDP created has steadily declined in Slovakia. However, the emission intensity is still almost three times higher in Slovakia compared to, e.g. Austria (Figure 1.9) or doubled compared to other more advanced economies.

We have already concluded that there was a relatively stable growth in the economy driven by the expansion of household consumption, coupled with better profit generation and increasing wage quota. The growth was also accompanied by stabilization of investments formation or decreasing emission intensity. On the other hand, no change in

regional differences occurred along with an ongoing low (and in recent years even lower) rate of value added.

**Figure 1.9**  
**Carbon Dioxide Emissions per Unit of GDP** (Tons of Exhales per 1 thousand EUR of GDP Created)



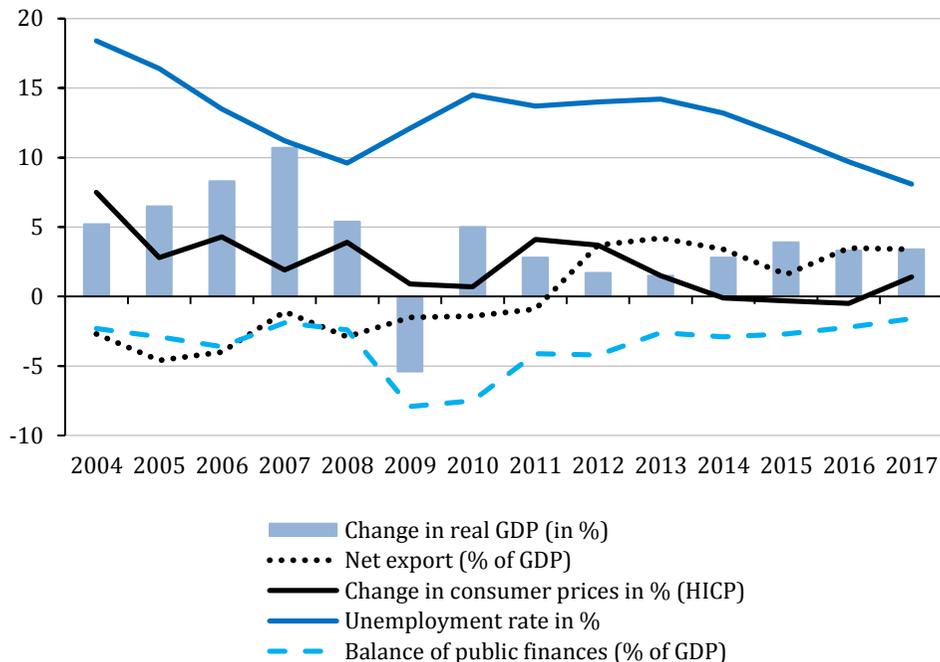
*Source:* Own calculations based on Eurostat database (air emissions accounts).

To evaluate the macroeconomic balance, we have selected only a few basic parameters (see Figure 1.10) with much more detailed evaluations of listed parameters in the following chapters. Both deficits (which complicated the economic development of Slovakia in the past) have ceased: the deficit of general government has gradually moderated in recent years (while the goal of the balanced public budget remains unachieved), the deficit of foreign trade (measured by net export) turned into surpluses.

For several years, the labour market parameters have improved. The unemployment rate fell to a historical minimum of 8.1% in 2017 (based on Labour Force Survey). In the last four years, the employment growth has been so strong that mass unemployment has transformed into the labour shortage. Between 2013 and 2017, approximately 201 thousand

additional working people started to work. That is a significant quantitative change for such a relatively small labour market as it is in Slovakia. Now, the limited availability of suitable workforce could already be a barrier to faster growth in some sectors.

**Figure 1.10**  
**Development of Main Macroeconomic Balance Parameters**  
**in the Slovak Economy**



*Source:* Own calculations based on Eurostat and MF SR database.

We may conclude that the overall favourable macroeconomic balance development has been maintained. The retreat of the general government deficit, the slight surplus in foreign trade, the further decline in the unemployment rate to the present historical minimum and the moderate inflation “roughly” represent a positive image of macroeconomic balance development. It is one of the indicators of the sustainable economic growth.

At the end of this chapter, we return to the question from the introduction (“What developments have the long-lasting tendencies and

what are somewhat new moments?). The following summary may be stated:

The trend of a relatively stable economic growth (with a dynamism above 3%) has been maintained. An acceptable level of macroeconomic balance (without instability in public finances or foreign trade relations) have continued. The positive trends have been present in the labour market developments as well.

The significant change is the end of deflation (at least for the moment), the cease of investment shocks or improvement in profit generation (operating surplus). Therefore, the overview seemed to be rather favourable. Some risks or potential threats are mentioned in the outlook chapter for upcoming years at the end of this publication.

Table 1.3

**Summary of Long-lasting Trends and New Moments in Development of the Slovak economy**

<i>Long-lasting Trends</i>	<i>New Moments</i>
Real GDP growth around 3%.	Inflation after the deflationary period.
Expansion of household consumption (a longer-lasting phenomenon that has been even more highlighted).	Stabilization of fixed investments development after the sharp fluctuation.
Employment growth and a fall in unemployment (to the extent that the labour shortages have become a limiting factor for development).	More favourable development of profits (operating surplus).
Macroeconomic stability preservation (acceptable level of balance: deficit in public finances and external balance).	
Wage quota growth.	

## **2. ECONOMIC DEVELOPMENT BY INDUSTRIES**

Macroeconomic development reflects the operation of the various industries and its links among them. Therefore, we focus on changes in value added and employment by industries in this section. We examine their contributions to the overall growth of value added and employment.

In addition, this year, we pay particular attention to changes in the wage quota and the development of productivity in the construction industry in Slovakia. We have already pointed out the change in wage quota development at the macro level after 2012 in the previous year's publications. This topic is also addressed in the previous chapter. In this chapter, we provide a more detailed view of which industries are the main drivers of changes in its development.

The Construction industry is one of the essential industries in every economy and its links with the domestic economy are bold. One of the links is demand for intermediate products or services of construction; another link could be the supply of products to other business entities, households, and public administration. Several studies have pointed out that the growth of productivity in the Construction industry in many advanced economies lagged far behind the productivity growth in the Manufacturing and the rest of the economy, slowing the overall productivity growth. In a separate sub-chapter, we examine its development in Slovakia.

### ***Value added and employment by industries***

In 2017, the value added increased by 3.1% maintaining the growth rate of the previous year in Slovakia. A moderate slowdown in growth was observed in comparison to revised value-added data. According to them, in 2016, the growth in value added was at the value of 3.5% instead of 3.1% published in original data from March 2017.

Before we evaluate the Slovak economy development in 2017, we believe it is important to point out that data revisions by industries often change the image of their actual development. Not only at a detailed

disaggregated level, but also in a relatively aggregated view of 10 industries. While the revision of the value added was corrected only by 0.4 pp. in an upward direction, the data have changed quite significantly in some industries. According to revised data, the growth of the Agriculture was not 12.1% but only 5.5%. In 2016, the value added in the Trade, Transport and Accommodation industry experienced even a drop (-5.7%) instead of initially reported growth. Other differences can be seen in comparison in the first two columns in Table 2.1. Although these deviations should deserve more attention and individual evaluation, we are only mentioning them here to exercise caution when creating economic policy conclusions.

**Table 2.1**  
**The Growth Rates of Value Added in Individual Industries (2016 – 2017)**

	2016*	2016 revised	2017
<i>Total</i>	3.1	3.5	3.1
Agriculture	12.1	5.5	-1.3
Industry	6.6	8.8	3.2
Manufacturing	7.8	10.9	3.4
Construction	-0.2	-1.3	0.7
Trade, transport and accommodation	1.6	-5.7	5.0
Information and communication technologies	3.8	3.7	3.9
Financial and insurance activities	-4.3	-3.8	7.7
Real estate activities	2.5	5.2	3.5
Professional activities	1.1	13.6	3.6
Public administration activities	2.5	10.5	1.7
Other service activities	0.9	-12.5	0.2

\* Data from March 2017.

*Notes:* *Agriculture:* agriculture, forestry, fisheries. *Industry:* includes manufacturing and energy. *Trade, transport and accommodation:* wholesale, retail, repair of motor vehicles and motorcycles; transportation, storage, accommodation and food service activities. *Professional activities:* professional, scientific, technical activities; administrative activities. *Public administration activities:* public administration, defence, compulsory social security; education; health, social assistance. *Other service activities:* art, entertainment, and recreation; other activities.

*Source:* Eurostat (2018b); authors calculations.

Compared to 2016, one of the most significant changes in industrial development was the fact that the manufacturing was not that much of significant driver of economic growth as it used to be. Although it grew faster than the average of value added across the economy (3.4% vs 3.1% on the national average), its growth was 2 – 3 times slower than in the previous year. In 2017, the growth in the Construction industry recovered with a slight increase in value added (0.7%). Similarly, the value added of the Financial and Insurance activities increased significantly again. The decline in 2016 was rather an exception than some new trendsetter. From the service industries, the Public Administration activities and Other service activities have grown relatively slowly. However, as compared to the original data from the previous year, these industries might be the ones where significant shifts in the revision of data may later occur.

Table 2.2

**The contribution of Individual Industries to Value Added Growth (in pp.) and as Share on Total Growth (in %)**

	2015	2016	2017	2015	2016	2017
	Contribution in pp			Share on total growth		
<i>Total</i>	3.5	3.5	3.1	100.0	100.0	100.0
Agriculture	-0.6	0.2	0.0	-17.1	5.9	-1.5
Industry	2.0	2.3	0.9	58.1	66.1	27.6
Manufacturing	2.5	2.4	0.8	70.2	67.9	24.6
Construction	0.2	-0.1	0.1	6.3	-3.0	1.8
Trade, transport and accommodation	0.4	-1.2	1.0	12.4	-35.5	32.3
Information and communication technologies	0.2	0.2	0.2	4.5	4.4	5.2
Financial and insurance activities	0.2	-0.2	0.3	5.7	-4.4	8.9
Real estate activities	0.1	0.3	0.2	2.5	9.3	7.3
Professional activities	0.6	1.1	0.3	17.3	31.3	10.3
Public administration activities	0.1	1.4	0.2	2.3	39.7	8.0
Other service activities	0.3	-0.5	0.0	8.1	-13.9	0.2

Source: Eurostat (2018b); authors calculations.

In the Agriculture, the value added decreased by 1.3% in 2017. The downward revision of 2016 data has already suggested such a development.

Over the last five years, this has been the second year with a decline in value added in the Agriculture, which experienced extraordinary growth in 2013 and 2014. The high growth in agriculture value added in these years was not sustainable and was rather the result of the favourable development of cyclical factors.

The slowdown in the growth of the Manufacturing led to the situation where, in 2016, the two-thirds of total value added growth were the outcome of manufacturing. However, in 2017, only one-quarter of value-added growth comes from this industry. The other three-quarters of growth are the outcome of service industries (especially of the Trade, Transport, and Accommodation industry – contribution 1 pp. to total growth). Remaining service industries contributed to the growth of value added by approximately one-third, the most notable of which is the Professional activities and the Financial and Insurance activities.

Table 2.3

**Changes in Employment by Industries** (number of workers)

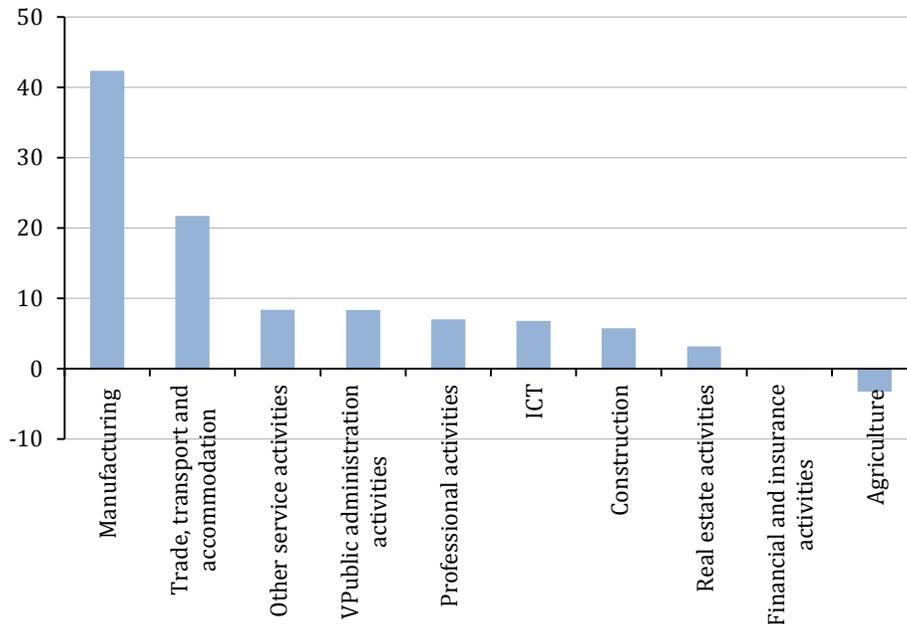
	Annual growth rates in %			Absolute change 2017 – 2016	Share in overall employment
	2015	2016	2017	2017	2017
<i>Total</i>	2.0	2.4	2.2	51,210	100
Agriculture	1.3	-1.1	-2.3	-1,670	3.0
Industry	2.0	3.3	3.9	21,630	24.3
of which: Manufacturing	2.4	3.7	4.3	21,680	22.4
Construction	-0.6	1.8	1.8	2,940	7.1
Trade, transp. accomod.	0.8	0.7	1.8	11,110	26.3
Information and commun. a.	2.8	5.4	5.4	3,480	2.9
Financial and insurance a.	4.0	1.4	0.0	-20	2.0
Real estate activities	1.0	12.1	6.4	1,620	1.1
Professional activities	8.6	5.4	1.5	3,600	10.3
Public administration a.	1.3	1.2	0.9	4,260	20.0
Other service activities	1.5	7.4	6.4	4,290	3.0

Source: Eurostat (2018a); authors calculations.

In 2017, the overall employment growth was a little lower than in 2016. The Agriculture experienced also fall in employment by 1670 jobs.

On the contrary, in the Manufacturing one, the employment growth has outperformed the year 2016 with 4.3% growth and more than 21 thousand new jobs created in this industry. Despite the slowdown in the value-added growth of the Manufacturing, we may observe that the industry is in good shape. Furthermore, the accelerating employment growth suggests that positive development may be expected in the upcoming period. A significant increase in employment was recorded in the Trade, Transport, and Accommodation industry. In 2017, more than 26% of workers worked in this industry in Slovakia.

**Figure 2.1**  
**Shares in Total Employment Change in 2017, in %**



*Source:* Eurostat (2018a); authors calculations.

In 2017, more than 40% of new jobs were created in the Manufacturing. As mentioned above, the employment has grown significantly in the Trade, Transport and Accommodation industry. The sector's contribution to the overall employment growth was more than 20%. Even though the ICT industry is a relatively small industry in the Slovak economy, in 2017, it created almost 3.5 thousand additional jobs

and contributed to the growth of employment with a similar size as many large industries did.

### ***Which Industries Have Contributed to the Wage Quota Change?***

The first chapter analyses the development of the wage quota at the macro level in Slovakia. The conclusions of the analysis confirm the trend change in its development from 2013. It has already been pointed out in the Economic Development of Slovakia in 2016 (Morvay et al., 2017). Therefore, in this sub-chapter, we look more closely at the topic of which industries have contributed most significantly to the change in the trend.

**Table 2.4**  
**Wage Quota in Slovakia by Industries, years 2012 and 2017**

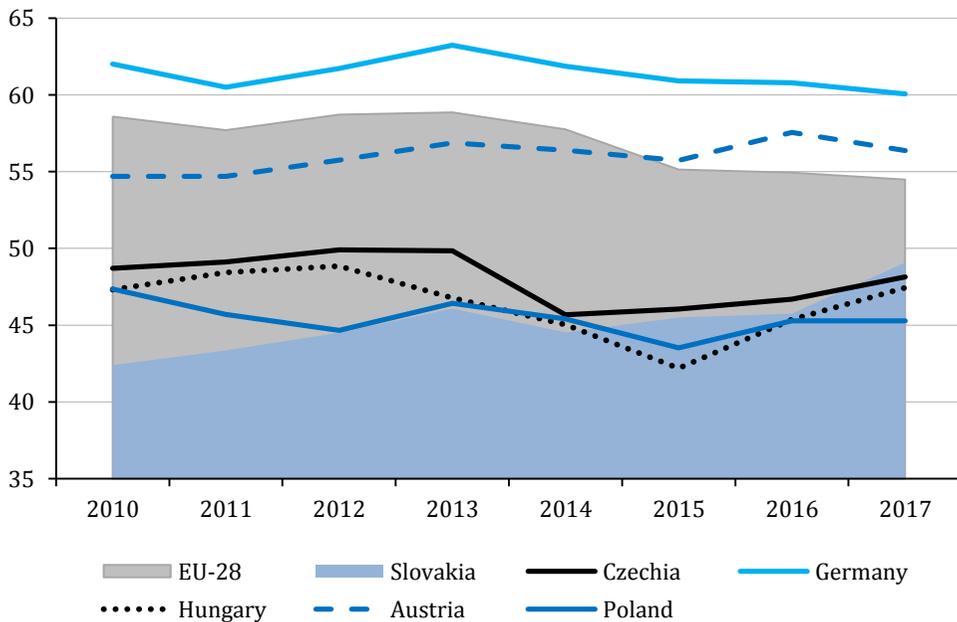
	2012	2017	Change in pp.	Weighted contribution to the total change
<i>Total</i>	40.5	44.5	3.9	100.0
Industry	40.4	46.0	5.5	32.2
of which: Manufacturing	44.5	49.1	4.6	23.1
Trade, transport and accommodation	46.0	49.7	3.6	19.1
Public administrative activities	69.2	72.1	3.0	15.4
ICT	35.9	47.0	11.1	10.2
Construction	22.9	25.3	2.4	2.6
Other service activities	21.9	27.8	5.9	2.4
Financial and insurance activities	33.7	36.4	2.7	2.0
Real estate activities	7.1	7.3	0.2	0.1
Agriculture	24.7	23.5	-1.2	-0.6
Professional activities	47.0	43.5	-3.5	-6.5

*Source:* Eurostat (2018b); authors calculations.

While in 2012, the wage quota was only 40.5% in Slovakia; it grew to 44.5% in 2017 (almost 4 pp.). Compared to advanced countries, it is still at a relatively low level. The change since 2013 represents a positive trend shift due to the almost continuously decreasing trend before this year. Within industries, the most significant change in the wage quota

has taken place in the ICT industry. In 2012, the quota was just below the national average in this industry (35.9%). In 2017, the quota recorded 47% (well above the average) with a change of more than 11 pp in the ICT industry. That substantially contributed to the total change in the wage quota in Slovakia. The Industry was the most significant contributor to the total wage quota change. It increased by 5.5 pp. and in total, the Industry contributed to a wage quota change of around one-third. The wage quota also grew within the Industry – in the Manufacturing, although not so fast as in total. However, the wage quota growth by 4.6 pp. was higher than in any other service sector (except for the Other Service activities). The decline in the wage quota occurred only in the Agriculture and the Professional Service industries.

**Figure 2.2**  
**Development of Wage Quota in Slovak Manufacturing;**  
**in International Comparison, years 2010 - 2017**



Source: Eurostat (2018b); authors calculations.

Figure 2.2 shows the development of the wage quota in the Manufacturing in Slovakia, as compared to developments in the EU-28

and other selected countries. Several interesting facts may be taken from this figure. In the manufacturing, the growth of the wage quota was by no means self-evident during this period. In the EU-28 as a whole, it declined. The wage gap in comparison with the EU-28 average has significantly decreased. While in 2010 it represented 16 pp., it was only 5.4 pp in 2017. However, Slovakia continues to lag behind the wage quota of the most advanced European countries, e.g., Germany (60%) or Austria (56.4%). While at the national level, the wage quota started to grow in 2013, in the Manufacturing it began to grow significantly earlier in 2011. Compared with other V4 countries, there have also been relatively significant changes in development. While in 2010, the wage quota of the Manufacturing was the lowest in Slovakia (42.4% compared to 47.3 – 48.7% in other V4 countries), it recorded the highest value in 2017.

The changed situation in the labour market was the primary driver of the wage quota growth in the Manufacturing, as well as in the other industries of the national economy. After a long period of a significant excess of labour supply over demand, the concerns are now raised by many employers in various industries regarding the labour shortages in the selected occupations. Thus, besides the higher employment level, the relatively higher wage growth contributed to the higher wage quota. In the near future, we do not expect a significant shift in this trend. Adaptation to the new labour market situation with investments in the capital will take some time. The response to the increased demand for production in short-term may be covered by increasing employment or by hours worked. However, the recruitment of new workers will continue to exert pressure on wage growth. In the long-run, the demand for labour may be substituted by demand for capital, especially in connection with a stronger emphasis on the implementation of the Industry 4.0 concept. However, its effects on the wage quota vary. Relatively lower demand for labour will reduce it, on the other hand, the creation of well-paid job will increase it. Therefore, we do not want to predict the development of wage quotas in the medium or long-term. The development will depend on the application of selected policies,

but mainly on the attitude of companies to the introduction of new technologies into the production.

### ***The growth of Productivity in Construction Industry***

The Construction industry is undoubtedly one of the key industries in the European Union (Gloser et al., 2017), as well as in Slovakia. It represents a significant source of employment and environment for the activity of small and medium-sized enterprises. Also, it generates a considerable demand for intermediates, while providing services to other industries and final consumers. About 7% of all workers work in the Construction industry in Slovakia. A majority of the EU-28 countries have a similar share of workers involved in construction.

Slow growth in the construction productivity in recent decades is increasingly perceived as a problem in developed countries. In this sub-chapter, we examine how the construction productivity develops in comparison with the Manufacturing and the entire national economy of Slovakia. It seems the Slovak construction does not yet suffer from the problems that have affected Western economies. However, if we want to avoid them in the medium-term, we should consider the use of such economic policy instruments, which are already proposed for an increase in productivity growth in other countries.

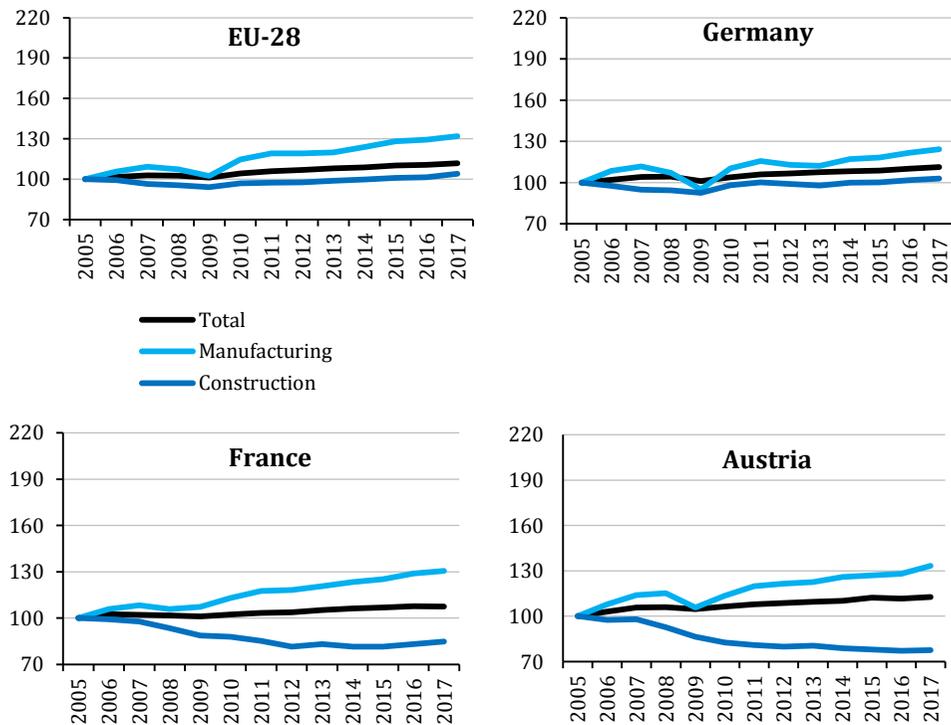
After a period of economic crisis in 2008-2009, several industries suffered from low productivity growth. One of the reasons was the high uncertainty of the prospects for further development. Construction is an industry that was affected by this uncertainty for decades. It is a high volatility industry. Companies respond to it, among other things, by a particular change in demand for labour to compensate for cyclical fluctuations. Thus, the phases of the recession are less costly. Companies that invest heavily in the capital are threatened by the fact that in the period of recession their fixed costs are high and hence get into the problems. However, lower investment in capital and new technologies lead to lower productivity growth, which subsequently hampers total productivity growth at the national level.

The growth of hourly labour productivity in the Construction industry in the EU-28 lags significantly behind not only the growth in labour productivity in the Manufacturing but even the average growth of the whole economy. In the EU-28, between 2005 and 2017, the labour productivity in the Manufacturing grew eight times faster and three times faster on the national average than in the Construction industry.

Similar differences in the growth of labour productivity may be observed in Germany. In France or Austria, even hourly labour productivity in the Construction industry has fallen in recent decades. A similar situation is also in other advanced economies (e.g., Italy), as well as economies outside the European Union, such as Japan or the USA. In the USA, it has even fallen by half since the 1960s (Economist, 2017).

Figure 2.3

**Growth in Hourly Labour Productivity Index for the EU-28 and Selected European Countries, 2005 = 100, constant prices of 2005**

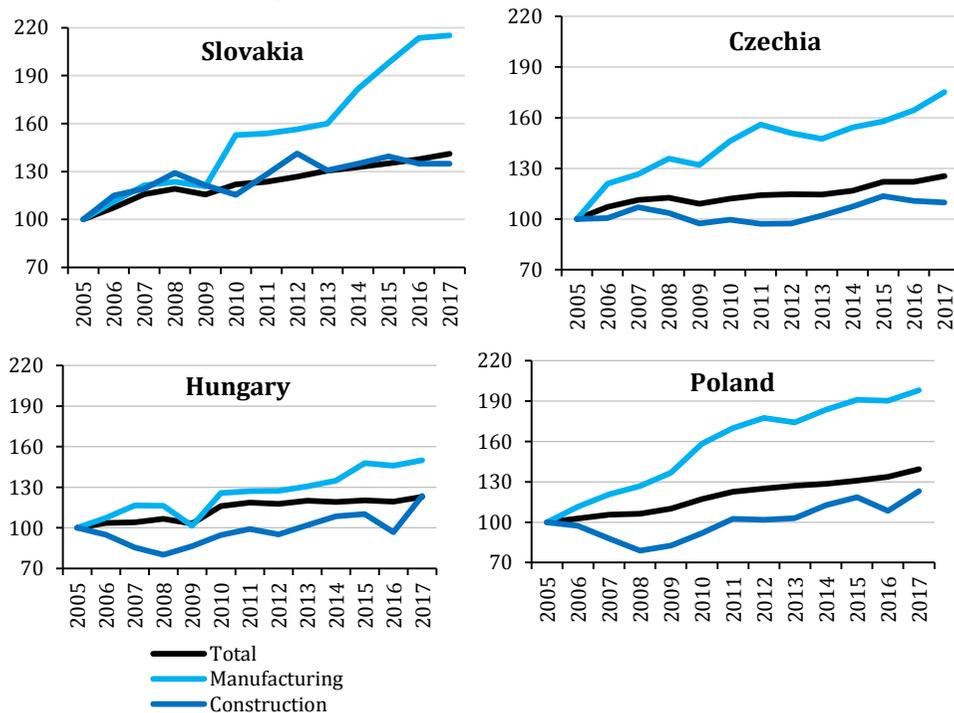


Source: Eurostat (2018a, 2018b); authors calculations.

Analysis of developments in the V4 countries reveals some interesting facts. Because these economies are converging to the most advanced economies, the average productivity growth of the economy, construction and, in particular, the Manufacturing is considerably higher than the EU-28 average. The Construction industry achieves higher average productivity growth along with stronger fluctuations of its development in these countries. The economic crisis, except Czechia, has led to a significant decline in the productivity of construction in these countries. They had to catch up the loss for the next 2 – 3 years. It applies especially to Hungary and Poland. Even in these countries, the labour productivity in the Construction industry has grown significantly slower than in the manufacturing. In Czechia, Poland, and Hungary (except Hungary for 2017) the labour productivity in construction increased at a slower pace than the average for the whole economy. We observe similar developments in these countries as in the most developed economies.

Figure 2.4

**Growth in Hourly Labour Productivity Index for V4 Countries, 2005 = 100, constant prices of 2005**



Source: Eurostat (2018a, 2018b); authors calculations.

Slovakia is an exception in this respect. Even though the labour productivity growth in the Construction industry has experienced higher fluctuations than the national level, but on average it develops with a similar growth rate. It lags considerably behind the labour productivity growth in the manufacturing. However, that is because Slovakia belongs to the best in Europe in this field. In 2017, the labour productivity in construction developed at a slower pace than the average of the whole economy. It may be just a part of its cyclical development. However, developments in other countries suggest that without policies aiming at increasing labour productivity in this industry, the growth lags behind the average and suffers from the cyclical fluctuations.

The mitigation of cyclical fluctuation in the Construction industry could be provided by government expenditures on construction projects and improvement of their medium-term planning. In the US and Europe, the public sector accounts for 20-30% of all construction expenditures and, unlike fragmented private sector customers, it can contribute to its higher stability.

\* \* \* \*

Compared to 2016, the growth of the value added in the Manufacturing was not so dominant in 2017. However, the value added in manufacturing continued to grow above the average, and the industry even experienced an increase in the employment. It indicates the continuation of positive development in the manufacturing and related services.

The growth in the ICT industry, the Other Service activities, and the Industry has significantly contributed to the change in wage quota since 2013. In the Manufacturing, the wage quota got substantially closer to the EU-28 average, and it exceeded the wage quota of other V4 countries in 2017. In particular, the high employment rate in recent years accompanied by a relative shortage of workers in certain professions and, building pressure on wage growth were the primary drivers of wage quota development.

The labour productivity growth in the Construction industry significantly lags behind the one in the manufacturing. Compared to the average growth of labour productivity, Slovakia is still somewhat the exception when its growth in construction is, on average, copying the growth of the whole economy. In developed economies, but also in other V4 countries, the labour productivity growth lags behind the rest of the economy. In Slovakia, the government policies should more contribute to the stabilisation of cyclical developments in the industry as well as its productivity in the medium-term over the upcoming years.

### 3. QUALITATIVE FACTORS OF ECONOMIC DEVELOPMENT

The gradual exhaustion of price and cost factors of the Slovak competitiveness as well as the long-term development of the labour market caused by demographic trends draw attention to the assessment of qualitative factors of economic development. Effective domestic research and development (R&D), innovative capacity of the economy, and the use of information and communication technologies (ICT) are the prerequisites of higher evaluation of labour, sustainable economic growth and creation of new jobs.

#### *R&D and Innovative Development in Slovakia*

Table 3.1 shows the development of selected input indicators (expenditures on R&D and R&D employees) and output indicators (patent applications) of Slovak R&D system in 2011 – 2016.<sup>7</sup> The development of a primary indicator of innovation development and R&D – the intensity of gross R&D expenditures – experienced decrease (compared to 2015) and fell to 0.79% of GDP. Thus, the intensity of gross expenditures on R&D reached a five-year minimum, and after four years of moderate growth decreased and diverged from the medium-term goal of 1.2% of GDP.<sup>8</sup> Such development may be attributed to the impact of the EU funds implementation playing a crucial role in R&D public capital expenditures. The year 2015 was the last year of the 2007 – 2013/+2 programming period in Slovakia. It was associated with the dramatic pace of financial implementation and culmination of the EU resources (Operational Program Research and Development and Operational Program Competitiveness and Economic Growth). The following implementation of the Operational Program Research and Innovation in the first years of 2014 – 2020 programming period does not have the required dynamics, which also reflected in the decrease in R&D

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<sup>7</sup> Some indicators published in this chapter are 2 years lagged.

<sup>8</sup> The EU2020 Strategy is to achieve a 1.2% of GDP in R&D expenditures by 2020 for Slovakia, with two-thirds of the expenditures funded by business sector and one-third by public expenditures.

expenditures in 2016. The structure of R&D expenditures regarding sectoral determination (Table 3.1) has experienced some interesting changes. In addition to the decline in the public sector share (government and higher education), the share of the business sector grew to 0.4% of GDP, the highest value since 2002. In 2016, the business sector had the highest share of national R&D resources. This relative value was driven, on the one hand, by the growth business R & D spending and, on the other hand, by the sharp fall in foreign resources dominated by EU funds. The source of the growth in business expenditures was the own resources (state aid and foreign resources for enterprises even dropped in 2016). We may attribute a small impact on business R&D expenditure growth to the new support instrument – deduction of R&D expenditure (costs) from the tax base – so-called “super-deduction”. “For the taxation period 2016, the deduction of R&D expenditures was applied by a total of 110 subjects” (Ministry of Education, Science, Research and Sport of the Slovak Republic, 2017), the total amount of deductions was EUR 13.3 mil.

A significant change in the structure of R&D expenditure is documented in Figure 3.1. It shows the contribution to the growth of R&D expenditure. The total expenditures have declined by 31% in 2016 (right axis), with foreign resources having the significant change impact (left axis). The impact (growth) of other sources of funding has practically not changed compared to the previous year.

The poor lasting commercialisation of R&D outcomes is the primary limiting factor among the prerequisites of innovation performance in the long-term. The patent activity measured by the number of domestic patent applications decreased to 228 in 2016 (compared to 2015). It also reflected in patent productivity decrease reaching 7.3 domestic patents per 1,000 R&D workers. In 2016, the number of EPO applications per 1,000 R&D workers increased to 2.8 despite a mild increase in the number of R&D workers.

The decline in R&D expenditures has been reflected in the regional distribution in various scales. Although there was a positive y-o-y growth rate in the Trenčín Region and the Prešov Region, both regions are

steadily developing at a very low level of R&D expenditures. The decline above the national average (-31%) was recorded in the Trnava Region, the Nitra Region, the Žilina Region, and the Košice Region. By looking at the last two years, it turns out that the shortage of financial resources from the EU funds deepens the regional differences in R&D in Slovakia.

**Table 3.1**  
**Selected Indicators of Research and Development, 2011 – 2016**

	2011	2012	2013	2014	2015	2016
<b>Funding of R&amp;D:</b>						
Gross domestic expenditures on R&D (% GDP)	0.67	0.81	0.83	0.89	1.18	0.79
Divided by sector of performance (% GDP):						
Government sector	0.18	0.20	0.17	0.25	0.33	0.17
Business sector	0.25	0.34	0.38	0.33	0.33	0.40
Higher education sector	0.23	0.28	0.27	0.31	0.52	0.22
Divided by source of funds (% GDP):						
Government sector	49.7	41.6	40.2	41.4	31.9	41.0
Higher education sector	33.9	37.7	38.9	32.2	25.1	46.2
Business sector	2.2	2.1	2.9	2.7	3.6	2.1
Abroad	14.2	18.6	18.0	23.7	39.4	10.7
R&D personnel <sup>1</sup>	28,596	28,880	27,823	28,825	28,752	29,671 <sup>3</sup>
<b>Outputs of R&amp;D:</b>						
Domestic patent applications <sup>2</sup>	223	168	184	211	228	218
Number of patent applications <sup>2</sup> per 1,000 R&D employees	7.8	5.8	6.6	7.3	7.9	7.3
Number of EPO applications	85	52	51	80	61	83
Number of EPO applications per 1,000 R&D employees	3	1.8	1.8	2.8	2.1	2.8

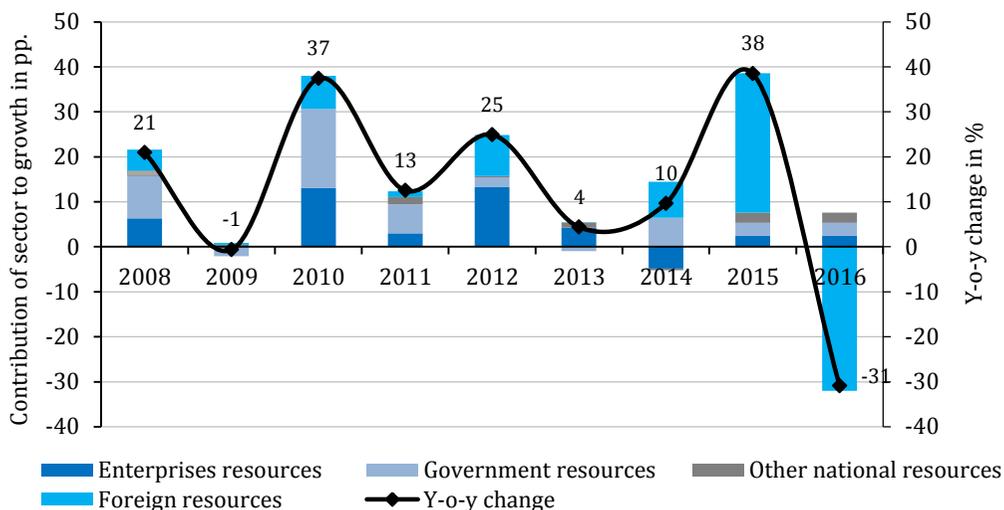
<sup>1</sup> Head Count by 31<sup>st</sup> December.

<sup>2</sup> Domestic patent applications filed at the Industrial Property Office of the Slovak Republic.

<sup>3</sup> Data based on old methodology.

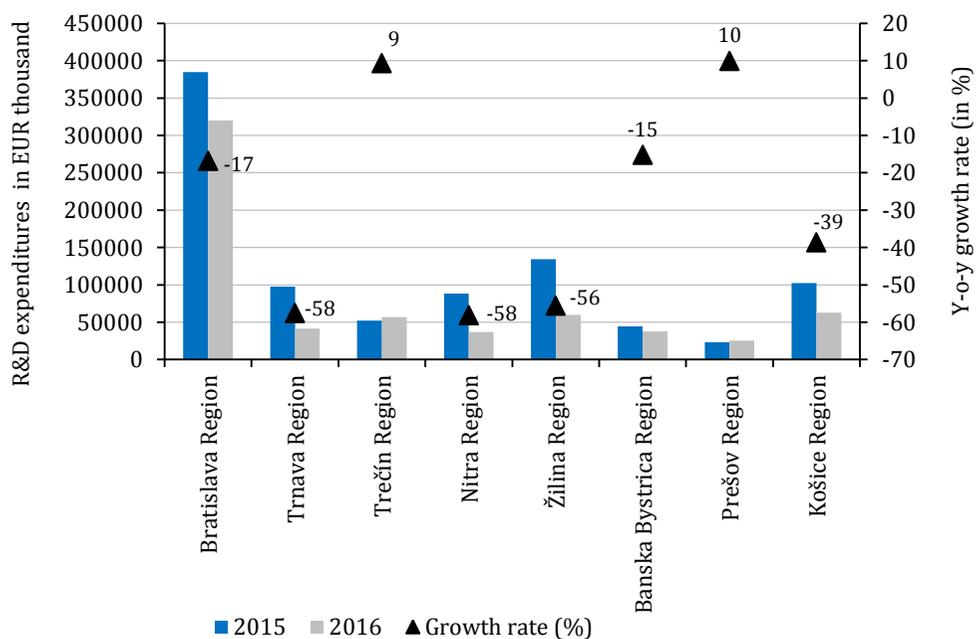
Source: IPO SR (2017); SO SR (2017); EPO (2018).

**Figure 3.1**  
**Year-on-year Change in Gross Expenditures on R&D (%) and Contribution of Sectors to the Growth (pp.), 2008 – 2016**



Source: Own compilation based on Eurostat database (2017); SO SR (2017).

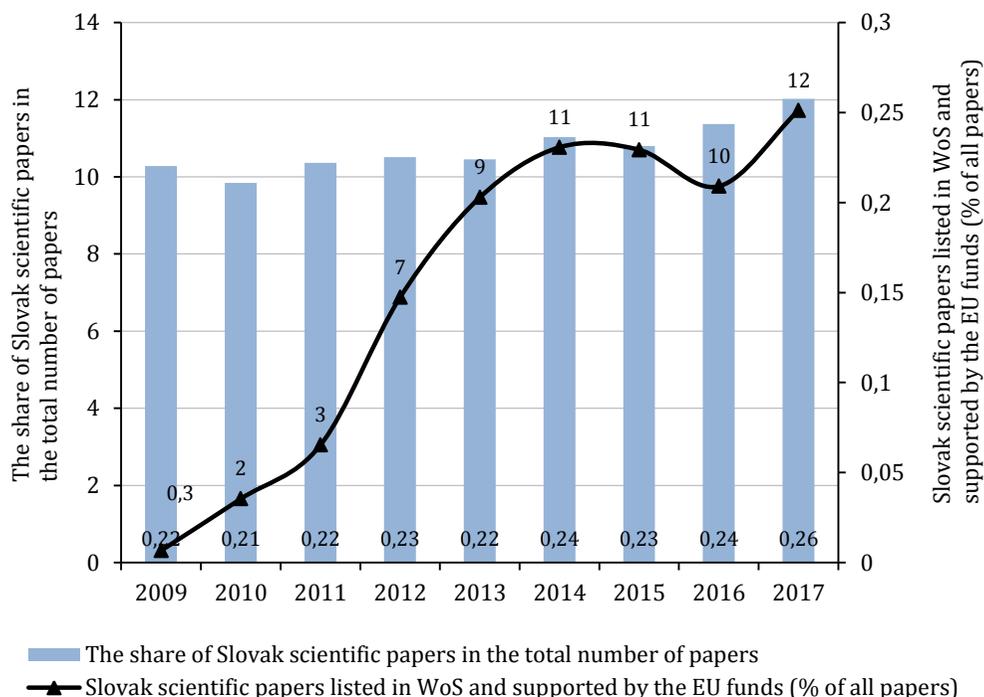
**Figure 3.2**  
**Regional Distribution of Gross R&D Expenditures in 2015 and 2016 (%)**



Source: SO SR (2017).

The number of scientific publication is frequently used as a quantitative indicator of R&D performance. Figure 3.3 displays the share of scientific papers supported by the EU funded projects (Operational Program Research and Development and Operational Program Education). Based on the aggregation of the results of the Web of Science (WoS) general citation database, we quantified a relative amount of Slovak scientific papers at 0.28% of the total worldwide published papers (right axis in Figure 3.3) in 2017. The moderately increasing trend over the period from 2009 to 2017 is considered positive. The left axis of Figure 3.3 shows what percentage of Slovak scientific papers in WoS was supported by the EU resources. It may be assumed that the effect of the 2007 to 2013 /+2 programming period will be present even after the year 2017 and therefore, the share of papers will grow.

Figure 3.3  
Slovak Scientific Papers 2009 – 2017 (% of all papers) \*



*Methodological note:* Scientific papers listed in the WoS Core Collection, in which at least one co-author has a Slovak affiliation.

*Source:* Own compilation based on WoS.

In 2017, several economic policy measures were adopted within the framework of science and technology policy and R&D support. They should affect the functioning of the national science and research system (both the public and the corporate sector, particularly in the area of funding). Two measures concern the business sector: the deduction of expenses (costs) on R&D from the tax base increased to 100% and an amendment to the patent law was adopted. By adoption of new Act on Public Research Institutions, the Slovak Academy of Sciences should be transformed in 2018. The Act introduces a new type of legal form (on edge between a public institution and a non-profit organisation). *The Implementation Plan of the Strategy for Research and Innovation for Intelligent Specialization of the Slovak Republic* sets priorities for research and innovation policy for the upcoming period (it is a part of ex-ante conditionalities for Operational Program Research and Innovation). The essence of the document is an identification of selected sectors of the Slovak economy, which should be promoted preferentially. In this sense, it defines the following domains of national specialisation: Automobiles for the 21<sup>st</sup> Century, Industry for the 21<sup>st</sup> Century, Digital Slovakia and Creative Industry, Population Health and Health Technologies, Healthy Food and the Environment (MERDSSR, 2017).

If we want to evaluate the overall innovation level based on one index in Slovakia, we may utilise the Summarized Innovation Index (SII), which synthesises 27 indicators. For 2016, the Slovak economy ranked 21<sup>st</sup> among the mild innovators in the EU. It improved its position by one place compared to the previous year. Compared to the EU-28 average, the Slovak economy has a relative competitive advantage in the area of human resources, in which achieves the above average values only in the number of doctoral studies graduates per 1,000 people (2.25% of the population from 25 to 34 years; 9<sup>th</sup> rank in the EU-28. In the rest of the innovation development factors, Slovakia is above average only in the field of employment in fast-growing enterprises in innovative sectors (7.37% of employment, 3<sup>rd</sup> rank in the EU-28). Another one of the few positive aspects of innovation developments in Slovakia, measured by the SII, is the export of high and medium-high technological intensity of

production (66.5% of total exports, 3<sup>rd</sup> rank in the EU-28) and the sale of new products to the market or to the firms (19% of corporate revenue, 2<sup>nd</sup> rank in the EU-28). On the other hand, there are a large number of factors indicated by the SII, which are a barrier to innovation, and which practically does not change since the entry into the EU. We mention here only the greatest ones: lifelong learning (27% of the EU-28), venture capital investments (13% of the EU-28), PCT patent applications (12% of the EU-28).

It is a paradox for Slovakia (but also for other CEE economies) that it achieves good results in those SII indicators that assess the impact of innovation, despite the below average values of innovative “input factors”. The explanation is that the positive benefits of some SII indicators are the results of an inflow of FDI that SII does not evaluate.

### ***Digitization of the Slovak Economy and Society***

Part of the global technological change currently popularised as the fourth industrial revolution is the digitization of the economy. The penetration of ICT and the readiness of states to digitise the economies in the sectors of enterprise, household and public sector can be documented by the *Digital Agenda Scoreboard* (Table 3.2). The Slovak business sector as well as households achieve in many indicators values above average or share an upward trend compared to the EU average.

Above-average results are achieved by small and medium enterprises, particularly in e-Business turnover (120% of the EU average) in Slovakia. Similarly, this is also the case for SMEs that have a sophisticated website (124% of the EU average). One of the prerequisites for the digitization of the economy is connectivity. Regarding internet penetration (fixed or mobile), the position of the Slovak economy within the EU is not favourable. However, the y-o-y growth of mobile internet penetration might be perceived positively.

The options for ICT usage in society have enormous potential. Implementation of ICT in the public sector is a priority of transnational

and national policies as it generates some positive effects across the public sector as well as in the relationship among the state and the enterprise and household sectors. In the case of Slovakia, the digitization of eGovernment services is still the weakest part of the whole process.

**Table 3.2**  
**Selected Indicators of ICT Penetration into Slovak economy**

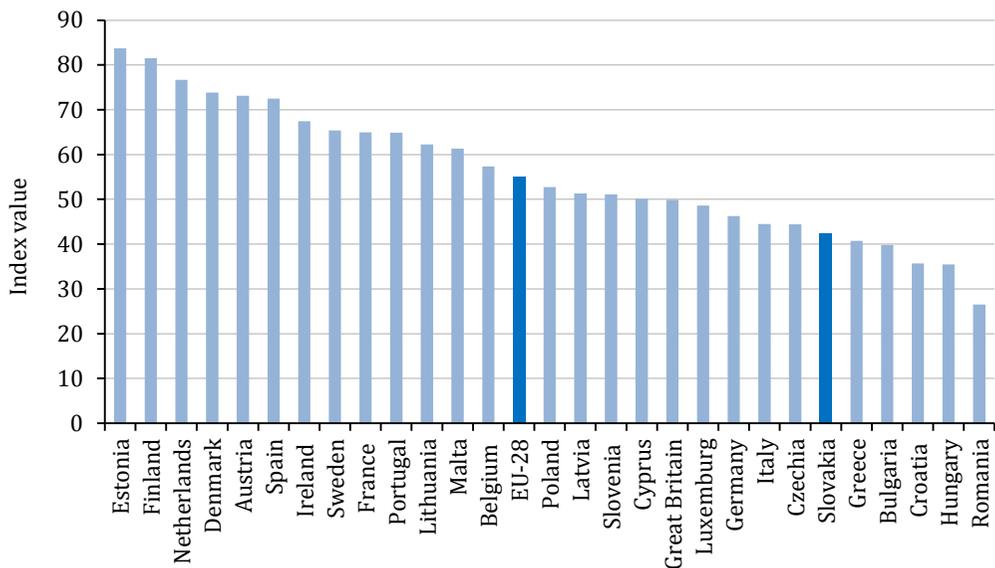
	2015	2016	2017	EU in 2017	SVK Rank in EU	SK/EU (%)
Households with access to the Internet at home - All households (in % of households)	79	81	81	87	19.	93
Individuals who have never used the internet - All individuals (in % of individuals)	16	15	14	13	15.	108
Use of mobile phones to access the Internet - All individuals (in % of individuals)	30	36	42	53	23.	79
Mobile broadband take-up (penetration rate) - Total (in Subscriptions per 100 people)	68	79	84	90	18.	93
Fixed broadband take-up (penetration rate) - Total (in Subscriptions per 100 people)	24	25	26	34	25.	76
Enterprises with a fixed broadband connection - All enterprises (in % of enterprises)	21	22	29	38	24.	76
Online banking - All individuals (in % of internet users (last 3 months))	48	56	63	61	15.	103
Enterprises selling online - SMEs (10-249 persons employed) (in % of enterprises)	12	11	15	17	19.	88
Turnover from eCommerce - SMEs (10-249 persons employed) (in % of turnover)	11	11	12	10	7.	120
Ordering goods or services online - All individuals (in % of internet users (last year))	61	68	70	68	9.	103
Enterprises having a website with some sophisticated functionalities - SMEs (10-249 persons employed) (in % of enterprises)	73	72	72	58	8.	124
Persons employed using computers at work - All enterprises (in % of total employment)	39	41	42	51	20.	82
Enterprises employing ICT specialists - SMEs (10-249 persons employed) (in % of enterprises)	17	18	17	18	20.	94
Enterprises reporting hard-to-fill vacancies for ICT specialist - All enterprises (in % of enterprises which recruited/tried to recruit ICT specialist)	46	51	51	48	15.	106

Source: EC (2018b).

In Slovakia, digitization has been a normative part (and priority, however, only in a declarative manner) of economic policy for several years.<sup>9</sup> The European Commission uses the Digital Economy and Society Index (DESI) to assess its level. The index evaluates five dimensions: Connectivity, Human Capital, Use of Internet Services, Integration of Digital Technology and Digital Public Services.

Figure 3.4 shows the index of public service digitization in the EU countries. According to 2017 report, Slovakia is still considered to be a country with underdeveloped digitization, although it has improved by four ranks compared to 2016. The Scoreboard of the European Commission's Digital Agenda provides some more detailed e-Government indicators for assessing the development of Slovak digitization in public services. Compared to the previous year, all the e-Government elements by which the index is formed have improved (Figure 3.5).

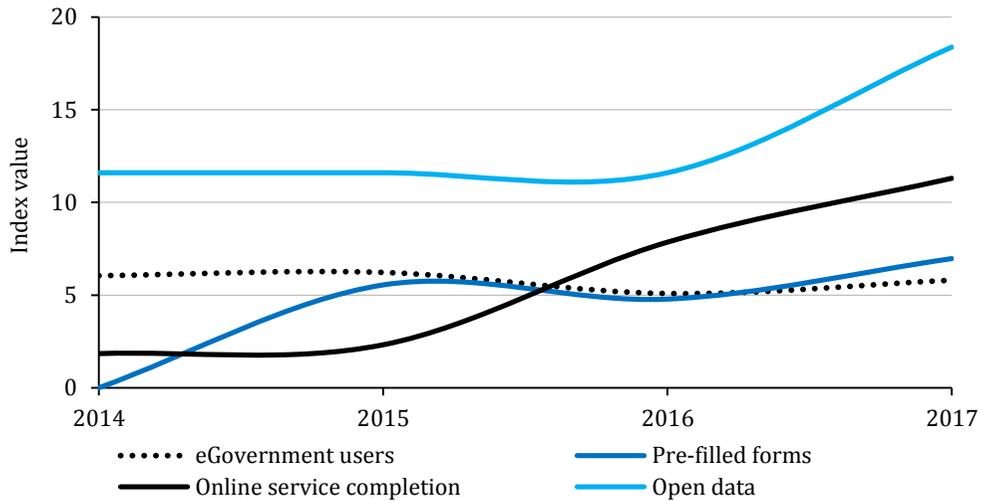
**Figure 3.4**  
**Public Services Digitization Index**



Source: Own compilation based on EC (2018b).

<sup>9</sup> In programming period 2007 – 2013, the e-Government was realized through separate OP Informatization of the Society. In current programming period 2014 – 2020, the digitization of the public sector continues especially within the framework of the OP Integrated Infrastructure.

Figure 3.5  
**Digital Public Services Dimensions in Slovakia 2014 - 2017**



Source: Own compilation based on EC (2018b).

\* \* \* \*

In the overview of the last two years R&D development, we observe a relatively interesting situation. After the year 2015, which was extraordinary in many aspects (absolute and relative volume of R&D expenditures as well as an approach to the long-term target/commitment in the area of R&D support), the significant decline occurred in R&D expenditures. This development may be attributed to the implementation of the EU resources. As part of our rough prognosis, we may say that the developments in funding between 2016 and 2020 (+2?) will duplicate the developments between 2007 and 2015. We expect the culmination of funding sources at the end of the programming period. In other areas of innovation, we did not observe any significant change in 2016. Positive aspects of the innovation impacts (export or sales of innovated products), as well as the gradual increase of corporate expenditures, share on R&D can be attributed to the impact of foreign-controlled enterprises in Slovakia. A similar picture is observed if we consider the digitization of the economy aspect – the progress of the corporate sector and the lagging public sector. The progress on the digitization of public services, despite a y-o-y improvement, is far from reaching the results that should be achieved given the amount of invested funds.

## **4. DEVELOPMENT OF EMPLOYMENT AND WAGES**

The favourable development of labour market parameters observed in recent years also continued in 2017. The ongoing employment growth (1.5%) was accompanied by a fall in the number of unemployed persons (by 15.8%) and by a drop in unemployment rate to the historical minimum (8.1%). Other phenomena were an increase in the number of vacancies (industrial sectors reported a higher number of jobs by one-third compared to 2016) or a further acceleration in the average wage growth (growth rate of 4.6% also secured the growth of real wage).

As a result of favourable development, the pressure on public finances has eased in terms of the volume of unemployment benefits paid along with higher tax revenues. From the broader macroeconomic perspective, higher employment level along with rising wages allowed final consumption of households to remain driving force for economic growth.

### **4.1 Number of employed persons keeps increasing**

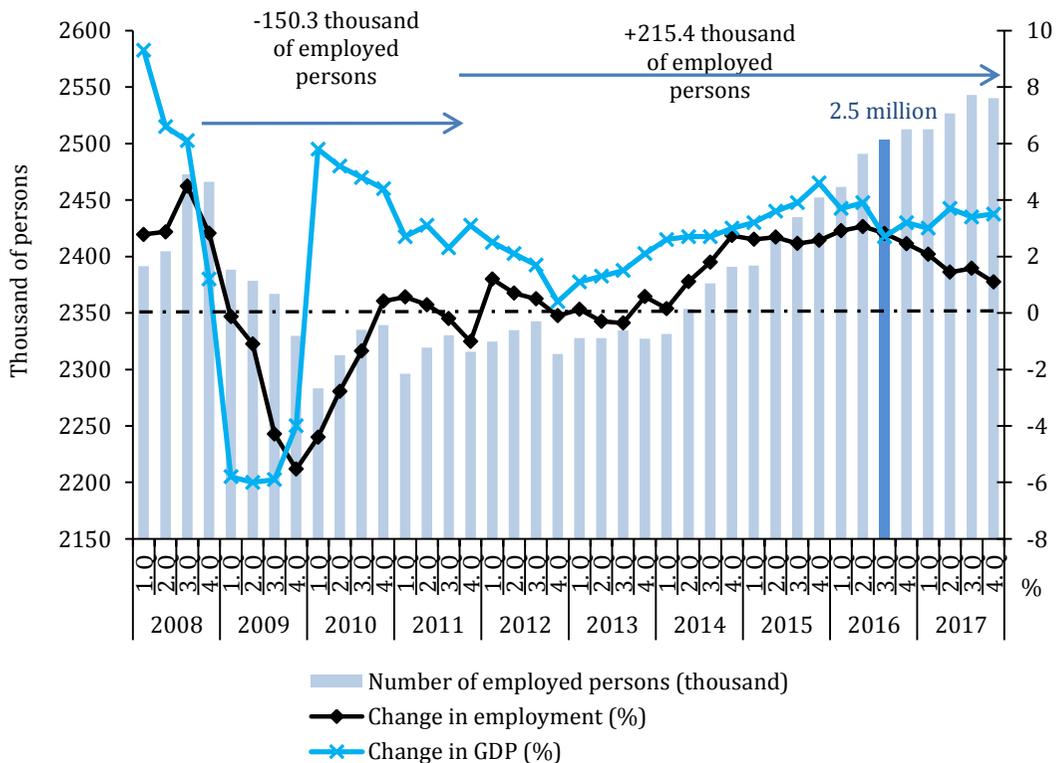
While five years ago (when evaluating 20 years of Slovak independence) we had to state that due to two downswings in the employment development (after 1998 and 2008) the employment rate got to an identical level as it was at the beginning of Slovak independence (below the 60% threshold), nowadays, thanks to the positive trend in recent years, the additional gain in overall employment level is more than 6 pp. The employment rate of 66.2% (15-64 years, average value of 2017) is even app. 4 pp. higher than the highest one recorded in Slovakia (2008). The most substantial gains in employment have occurred in the last three years.

The employment (number of employed persons under the Labour Force Survey – LFS) is increasing for the sixth year in a row in Slovakia. However, the growth rate slowed down in 2017; we still deal with the three most successful years since the crisis, but while in the years 2015 and 2016 the number of employed persons grew at 2.6% and 2.8%, in 2017, the growth slowed to 1.5%. It represents a y-o-y increase of 38.6

thousand people. However, in each year of last two years before 2017 – more than 60 thousand persons have joined the Slovak labour market. Still, we can conclude that the previous three years (2015 – 2017) have contributed the most to the fact that over the six years of continuous employment growth, 215.4 thousand employed have joined the Slovak labour market (see Figure 4.1). Due to this growth, the annual value of employment historically exceeded 2.5 million employed persons (2.53 million) for the first time in Slovakia. (In fact, this threshold was already exceeded in the third quarter of 2016 (see Figure 4.1), but the annual average did not achieve this level at the time).

Figure 4.1

**Quarterly GDP and Employment Developments** (number of employed persons in thousand, change in employment and change in GDP in %)



*Note:* Quarterly GDP data at constant prices calculated by chain-linked volumes with the reference year 2010, Employment based on LFS,

*Source:* Based on SO SR database (SO SR, 2017a).

Even though the historical maxima of the previous year were overwritten by the total number of employed persons in Slovakia in 2017 (2016 was the first year in which employment exceeded the pre-crisis level of 2008), let us not be mistaken: in terms of employed persons growth dynamics (i.e., the dynamics of total employment growth according to LFS), it is not the most successful period, neither if we take into account the previous two more successful years. The primacy, in regards of employment growth pace, is held (so far) by the years just prior the last crisis (growth rate of employment in 2006 was 3.8%, in 2008 3.2%). Therefore, although we admire the above-mentioned six-year increase of more than 215 thousand employed persons, we cannot consider it as something unprecedented. The Slovak labour market has already been able to absorb a similar inflow of employed persons, even in just a three-year scope (during the three pre-crisis years, 2006 – 2008, the employment increased by 217.6 thousand persons).

The dynamics of employment growth has only returned to the pre-crisis patterns. The new about this situation is that it is happening with record high numbers of employed persons and the ongoing irreversible labour-ageing process (even with the decline of potential workers in some productive age cohorts). Indeed, this is the situation when neither the strongest pressure on the economic activity growth can prevent the labour market from being unable to provide enough labour force in certain professions or sectors.

The overview of the economically active population reveals a few interesting moments. In the previous year of this publication, we demonstrated that the growing demand for labour along with improving conditions has prompted the growth of economic activity over the last three years – the change in the number of economically active people in each age group was adjusted by the demographic factor. However, the average annual value for 2017 indicated that the number of economically active persons has stagnated: after five years of growth, the number experienced a small decline. This corresponds also to a slight decrease in the rate of economic activity (from 60.1% to 59.9%) and to the fact that the number of inactive persons older than 15 years has risen slightly (the

amount of inactive has decreased significantly in the previous two years, despite the long-term trend of staying in education longer). The upcoming years may show whether the transfer of additional labour from inactive persons has reached its limits. The age decomposition could reveal more on this topic, with a particular focus on the youngest productive years (i.e., whether a stronger interest in education was the primary driver of the slight increase in a number of inactive persons).

If we roughly adjust the overview of activity by subtracting the main age categories responding to economic inactivity (i.e., students and retirees) and we look at the development of the population in the standard productive age (in our case 25 – 64), we find out that even in this group of age-defined economically productive people, the number count decreases for the third year in a row. (In the past, we have seen a decline, after 2010 significant one, in the productive population defined by the SO SR by the age of 15-64 – in this case, the decrease in the child population has already deepened the negative result.) Such development suggests that regardless of the growing number of young people remaining in tertiary education or hopes of a gradual increase in retirement age, the labour force becomes scarcer.

The signals of tight labour market reveal also another, ratio-based indicator: the share of employed persons in the economically active population rose to 92.3% during 2017. For comparison, it was 85.9% in the first quarter of 2012 (i.e. at the beginning of the period of almost continuous employment recovery). This share grew significantly until 2015, it exceeded the 90% threshold in 2016 and further in 2017, the percentage of employed persons in economically active population continued to grow (and the growth continued to 92.9% in the first quarter of 2018). Therefore, employed persons highly dominated over those who were actively seeking work in the structure of the economically active population.

It would be premature to assess whether the gradual slowdown in the rate of employment growth observed during 2017 and the re-opening of the gap between GDP and employment growth (both trends visible in Figure 4.1) indicate the cooling down of the labour market. In this

context, we have to take into account a lag of employment behind the output development (in this respect, we should consider the GDP growth slowdown in changing of 2015/2016), but also a higher comparative base of 2016 (when a real medium-term labour market needs were exaggerated by the uptake of structural funds implementation and creation of job positions related to the uptake). The development in the first few months of 2018 suggests rather a recovery of higher employment growth in some industrial sectors.

Another indicator of unmet demand for labour is the increase in the number of vacancies. They grew in y-o-y by only 5.3%; however, almost a quarter of total reported vacancies (over 21 thousand in total) were in the industry, i.e., in the sector employing more than 27% of employed in Slovakia. Especially the manufacturing sectors have reported about 33% increase of vacancies compared to the previous year. Also, the second largest sector - trade (regarding employment volume structured by economic activity) reported an increase of a quarter (y-o-y) in the number of vacancies. Accommodation and food services also needed to occupy about a third of vacancies more than in 2016.

On the contrary, the number of vacancies declined by half in administrative services, real estate, and financial and insurance activities. It indicates a precise identification of sectors where the demand for labour has been the most urgent. The lack of labour is well documented not only by the number of employers' statements or by introduction of various employee financial and non-financial referral bonuses. The signs of struggle for employees may also be found in migration statistics.

A large proportion of our labour force works abroad. Also in 2017, 150,000 people were working abroad (category of so-called short-term workers abroad; i.e., commuting or working abroad less than one year). Most of them worked in the neighbouring countries: Austria and Czechia; more than a third (60,000) of short-term abroad workers come from Eastern Slovakia. The most significant number of these working migrants is employed abroad in the construction, health, and social care sectors and the industrial sectors. The y-o-y comparison by regions is

also interesting; except the Bratislava, Trnava and Nitra Region, all other regions of Slovakia experienced a decrease in the number of short-term workers working abroad. In total, the drop amounted to 10 thousand. Most of the workers stopped to commute to work abroad in those regions where the unemployment rate was historically the highest. Conversely, an increase in job commuting was recorded in regions where it is not such a problem to find a job in the domestic labour market. It suggests that the greater share of short-term work-related migration is motivated by the opportunity to find more lucrative job abroad and a less frequent reason for work migration are the unfavourable conditions in the domestic region.

### ***Neighbours from the EU come to work in Slovakia, as well as people from the third-countries***

In the last three years, the immigration to Slovakia has significantly increased (7 thousand and more persons per year). In 2017, Slovakia had the highest positive migration balance with the United Kingdom and Northern Ireland, Ukraine and Czechia (in the previous two years, Romania and Hungary were in the second and third position; SO SR data based on reporting of stays).

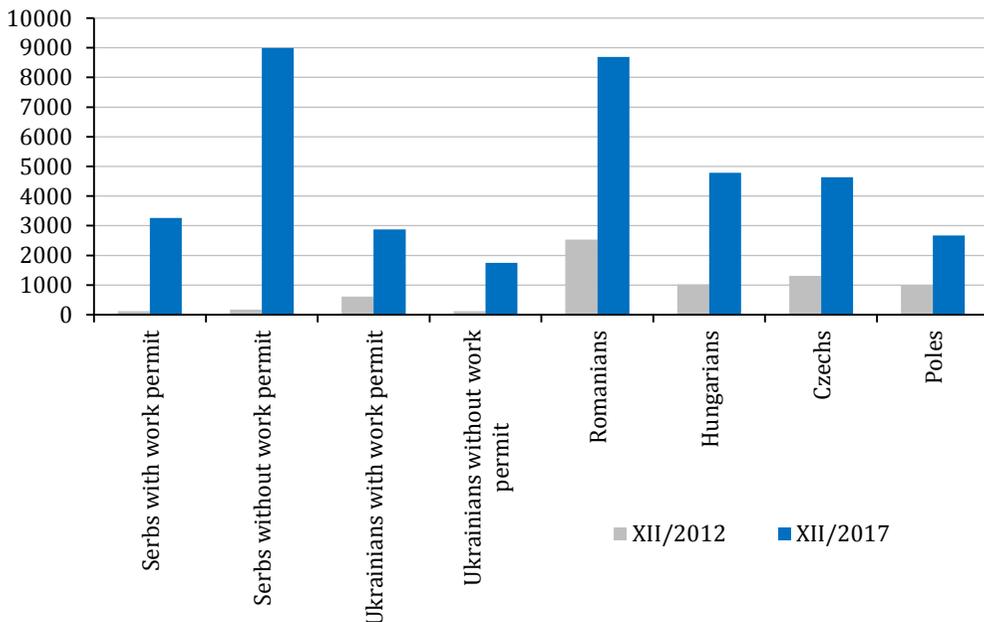
Data on labour migration is collected by the Central Office for Labour, Social Affairs, and Family; according to the Central Office, most foreign workers (besides the EU citizens) come to work in Slovakia from Serbia and Ukraine (at the end of 2017, almost 3,300 Serbs and almost three thousand Ukrainians with a work permit of a total of 9,000 non-EU citizens with work permit working in our country). Lower number of non-EU workers came from Vietnam and Korea. Additional 13,000 third-country workers work in Slovakia without a work permit (workers with so-called information card; of which most, nine thousand, are Serbs and less than two thousand Ukrainians). Most foreign workers employed on the basis of an information card were registered in the construction sector. Among the EU nationals working in Slovakia, the largest group represent Romanians (8,700 worked in Slovakia in December 2017), followed by workers from neighbouring countries (less than five

thousand Hungarians and Czechs, slightly fewer Poles). From more remote countries, it was mainly Bulgarians, Italians and Croatians.

It is necessary to emphasise that the number of non-EU workers has almost tripled since the end of 2012. For comparison, in December 2012 there were 3,300 third-country workers with a work permit, of which only 115 were Serbs. Today, only Serbs with work permit represent the group of nearly 3,300. Moreover, the number of EU nationals working in our country has grown nearly four times (by more than 20 thousand, to 27.7 thousand workers from the EU countries). The number of foreign workers from third-countries without work permit has grown almost 14 times in Slovakia. Thus, while at the end of 2012, in total 11.5 thousand foreigners worked legally in Slovakia, by the end of 2017, it was almost 50 thousand (the most frequently represented foreigners according to nationality, working in Slovakia, are displayed in Figure 4.2).

Figure 4.2

**Most Frequently Represented Foreigners Employed in Slovakia**  
(December 2012 and 2017)



*Note:* Serbs and Ukrainians, as the largest groups of employed foreigners from non-EU countries, are also divided into workers with and without a work permit (without work permit = authorised to work on the basis of an information card).

*Source:* Based on the monthly statistics of COLSAF.

The inflow of foreign labour is very significant in recent years. It also confirms the reported shortages of employees in some sectors. The scope of this problem is illustrated by a recent survey conducted by the Business Alliance of Slovakia in cooperation with INEKO in April 2018 (BAS, 2018). Up to half of the 115 employers who participated in the survey claimed they had felt a significant shortage of labour. Another 35% rather think that there is a shortage of labour. The employers cope with the labour shortages by increasing efficiency (68% of companies), but half of the responders have already resorted to look for some employees abroad (most of them directly, only about a third of them through agencies). Up to 38% of employers stated they had to reject contracts for staff shortages, about a fifth, attempted to recruit people from disadvantaged groups, long-term unemployed, Roma, parents on parental leave and others. The view of the motives of employing foreigners is also interesting, in fact, it is not exclusively about (undoubtedly serious) shortage of domestic workforce. In almost 40% of employers, the primary motivation was that the local market did not offer enough workers, but 30% did so because domestic workers requested wages that did not match their abilities. Another part of employers said that the Slovaks did not have the required qualification or that they did not have sufficient working ethics.

Indeed, more than half of employers are convinced that foreigners are more flexible, 40% think they are willing to work more than Slovakian workers. Almost 60% of employers are satisfied with the employed foreigners, but they complained that demanding and expensive administrative process (related to the work permit and stay permit from the foreign police) complicates recruitment. It supports the image shown in Figure 4.2 indicating that still larger proportion of third-country workers are those employed without a work permit (no need of work permit if they work on basis of an information card).

In the context of the labour shortage, the COLSAF promised to publish a list of deficient professions by the end of June 2018 (we can already say that this is especially the case for operators and machine assemblers – there are about 5 thousand third-country employees and 9 thousand

employees from the EU). The second most occupied profession by the third-country nationals is the specialist, in the case of EU nationals it is auxiliary and unskilled workers, craftsmen professions are in a tight hook. So both, qualified and also unqualified positions are demanded. In the case of 150 deficient professions (to be published by COLSAF in June 2018), there should be an accelerated process of obtaining the relevant permits implemented (shortened by 20 days).

Despite an increased growth of foreigners working in our country, still more Slovaks leave to work abroad than foreigners come the other way. However, the number of Slovaks returning home have risen in the last two years. An interesting analysis of the phenomenon was made by the Institute for Financial Policy (Rizman – Sacherová, 2018). The authors monitored the number of returns and arrivals to Slovakia based on the health insurance data. These data have also clearly confirmed an increase in the number of incoming foreigners: in 2017, the number of EU citizens increased y-o-y by more than 60%, the number of third-country citizens grew by 50% compared to 2016. While in 2016, every third person coming to Slovakia was a foreigner, in 2017 it was almost every other one. The international comparison confirms that despite such development, in terms of immigration, we are still a closed country. The share of foreigners living in Slovakia is still four times lower than the OECD average. Data on arrivals broken down by country of origin also revealed that between years 2010 and 2015, approximately 28,000 Slovaks returned to Slovakia each year. In 2016, it was more than 32,000; in 2017, more than 30 thousand returned. While foreigners were coming mostly for work and headed to the regions where there is plenty of available jobs (two-thirds of them stayed in the Bratislava, Nitra or Trnava Region), the return of Slovaks is driven also by other reasons, and they head also for less developed regions. They return to the districts where they lived before, and most of them stay there for at least 5 to 10 years. The fact that their return is more permanent is reflected in the reasons for the return. Besides better conditions in the labour market, there are also links to the native country, a close link with the Slovak society, or a more suitable work-life balance. However, there is

another finding, which is surprising: the regression analysis of IFP did not find any statistically significant differences in the wages of incoming foreigners and returning Slovaks. It is in contrast with general belief as well as with the results of the BAS survey mentioned above.

The need to attract foreign workers to the regions of Western Slovakia is argued by the low mobility of the domestic workforce. Many Slovaks, who eventually decide to move for work, choose better-paid positions abroad. There is a significant shortage of labour, especially in Trnava. Also, the Nitra region and the surrounding area experience an increased labour market tensions due to the recruitment of employees into the new Jaguar Land Rover plant. However, Slovakia seems to remain a net exporter of labour for some time.

### ***Structural Characteristics of Employment and Workforce***

The positive development is also reflected in the fact that both, the number of employees and the entrepreneurs - individuals increased in the labour market. The number of employees was growing faster; the y-o-y growth amounted to 1.8%. The number of entrepreneurs grew slower, due to minimal increase in the number of self-employed (they creates a substantial part of entrepreneurs). The exception was the ICT sector, where the number of self-employed increased most significantly. The number of business enterprises increases as well, by 4.1% (state-owned enterprises declined, so the increase was driven by private enterprises as well as by an increasing number of branches of foreign enterprises, whose number grew y-o-y by almost 30%).

Most employees work in large enterprises with 1,000 or more employees, and these employees are also earning the highest wage on average. However, the most considerable positive change in employment (on y-o-y basis) was registered by medium-sized enterprises with 250 – 499 employees (8.5%) and small enterprises with 19 or less employees (4.3%). That is a positive sign in terms of employment creation. It is also positive that wage growth has occurred in all sizes of enterprises, including small enterprises, even in real terms.

The labour force is not only more and more scarce but continues to grow older and increases its qualification. It is not a new phenomenon, the change in the age and education structure of the labour force has been going on for several years. Also in 2017, the number of employed aged 55 – 59 increased most intensively. On the contrary, the number of young employed aged 25 – 34 decreased most significantly, by 2.5% y-o-y. Regarding education, we have the three most numerous groups of employed: people with full secondary vocational education with a school leaving examination, people with secondary vocational education without a school leaving education, and third (with a narrow difference) are the people with the university degree. While in the first two groups the number of employed dropped (in both about 2%), university graduates increase by 6.6% y-o-y.

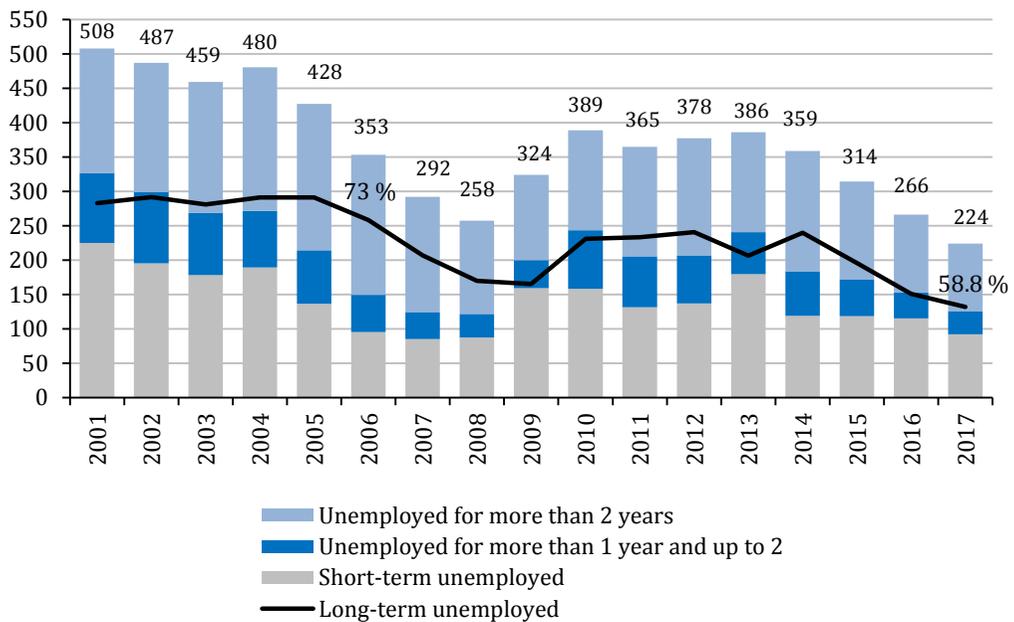
## **4.2. Low Unemployment Rewrites Records**

The number of unemployed has been declining steadily since the last quarter of 2013. From this moment until the end of 2017 (i.e. over the previous four years), the group of unemployed shrank by 45%. The rate of decline in the number of unemployed accelerated already in the second half of 2016, and the rate continued to be similar also in 2017 (more than 15% drop in the number of unemployed in each quarter). As a result, the number of unemployed decreased by 42 thousand y-o-y and the average number of unemployed dropped to 224 thousand in 2017. For the first time, the number of unemployed fell below the historically lowest level recorded in 2008 (there was 33.5 thousand unemployed less than in the most successful year of 2008, see also Figure 4.3).

Unlike in 2016, when unemployment dropped almost exclusively in the group of long-term unemployed, in 2017, the short-term unemployment decreased in greater extent (the SO SR estimated in LFS that the number of long-term unemployed decreased by 19 thousand, but the amount of short-term unemployed decreased even further by 23 thousand). As a result, the share of long-term unemployment in total increased. That is already a standard phenomenon in the periods of

favourable labour market development (except in 2016, when development signalled that a higher proportion of unemployed got employed from the long-term unemployment group). (The contribution of the individual categories of unemployed by the duration of unemployment to the drop in total unemployment in recent years is shown in Figure 4.3).

**Figure 4.3**  
**Unemployed Persons in Terms of Unemployment Duration** (Comparison of Short-term and Long-term Unemployment Development)



*Note:* The figures above the columns indicate the total number of unemployed. The highest percentage of long-term unemployment in total unemployment (2006) and its current share in total unemployment (2017) is indicated in percentage terms.

*Source:* Based on the SO SR statistics (Slovstat and SO SR 2018a).

The unemployment rate is also attacking historical minima. In 2017, the rate dropped y-o-y by 1.6 pp. to 8.1% (LFS), which is 1.5 pp. lower than the historically lowest unemployment rate recorded in 2008. The highest unemployment rate is traditionally in the youngest age categories, (only) persons under 35 years share above-average rates of

unemployment (the younger the age group under 35, the higher the unemployment rate).

The unemployment rate recorded by the COLSAF is also breaking the records. The registered unemployment rate declined each month in 2017 and reached 5.94% in December (compared to 8.76% in 2016). The number of available job seekers decreased by 76,000 to around 162,000 (December), which represents a y-o-y decrease of up to 32% (this time, the influence of registration process in labour offices did not affect the outcomes, the number of all job seekers also decreased by almost 30%). The good news is that even the number of job seekers under 25 decreased (by 35%) and the number of long-term unemployed decreased even faster (up to 37%). Changes in the long-term unemployment have also reflected in shortening the average length of registration at labour offices: by the end of 2017, more than half of all job seekers (56%) had been registered for less than a year. The highest unemployment rate was in the Rimavská Sobota District (18.5%), followed by Rožňava, Kežmarok and Revúca Districts, where it ranged around 15-16%. On the contrary, the significantly low unemployment rate was reported by the Labour Offices in Trnava, Galanta, Hlohovec, Piešťany and Trenčín. In these districts, the unemployment rate reached 2-2.5%, which corresponds to the localities reporting the most significant labour shortages.

The positive development also reflected in the volume of unemployment benefits paid. Although the average amount of the benefit rose from 367 EUR in 2016 to 392 EUR, the number of its recipients decreased by about 4,000 y-o-y. The total amount of money paid for benefits reduced by 3.8 million EUR (to 167.7 million EUR).

### **4.3. Average Wage Growth Accelerated**

Not only the favourable economic development, but also the tension between labour demand and labour supply, or administrative measures, pushed for nominal wage growth. On average, the nominal monthly wage in the economy rose from 912 EUR to 954 EUR in 2017. That represents

an increase in the nominal wage of 4.6%. After 2008, it is the highest growth rate. However, in the pre-crisis period we witnessed also twice as high values. The dynamics of nominal wage growth was sufficient to keep the real wage in positive trend: in real terms, the average wage grew at 3.3%.

The Bratislava Region with average wage of 1200 EUR remains the only region where the wage exceeds the national average. It is followed by Trenčín and Trnava Region (950 EUR and 900 EUR). In the Trenčín Region, the average wage growth achieved extraordinary 8.2%. On the contrary, the Prešov Region with the lowest average wage (734 EUR) experienced in y-o-y (together with Bratislava Region) the smallest increase in average wage growth. The average wage in lagging regions does not converge to the national average quickly enough. Even from a long-term perspective, the regional disparities regarding employment and wages are increasing.

\* \* \* \*

The 20-64 year employment rate grew to 71.1% in 2017 in Slovakia, which brings Slovakia significantly closer to its national 2020 target (72%, the EU-wide target was set at 75%). The unemployment rate continues to decline in the first few months of 2018. In the May 2018, a total of 19 districts reported the registered unemployment rate below three per cent. Labour shortage is not the only current trend in labour market development. Labour force ages, it is increasing its qualification, and the number of persons in the most productive age decreases. In addition to the labour shortage, which intensified in recent years to the extent that it even dampens production in some sectors, the persisting regional disparities remain a threat in the future.

## **5. EUROPEAN CENTRAL BANK MONETARY POLICY AND THE EURO AREA DEVELOPMENT FROM POINT OF VIEW OF SLOVAK**

In 2017, the monetary policy of the European Central Bank (ECB) continued in the trend, which was set in a previous year. At the beginning of the year, base interest rates achieved value of 0.00% for the main refinancing operations, 0.25% for the marginal lending facility and -0.40% for the deposit facility and remained unchanged over the next twelve months. Unlike the Federal Reserve System of the United States (FED), which started to raise base interest rates by the end of 2015, the ECB still conducts monetary policy through changes of the net assets purchases (especially government bonds) within the quantitative easing program (QE).<sup>10</sup> ECB has been using this instrument since March 2015 and recent changes suggest tightening of the Euro area monetary policy. In 2016, the ECB purchased 80 billion EUR of assets monthly, but beginning April 2017 this volume was reduced to 60 billion EUR. The ECB announced that purchases of 60 billion EUR would continue at least until the end of 2017, but did not define the end date for the expansion of its balance sheet. Instead, the end of purchases is conditional on stable inflationary development consistent with the inflation target defined as below, but close to two per cent.

In October 2017, the ECB announced further reductions in purchases. From January 2018, the ECB purchases monthly assets worth just 30 billion EUR. The ECB also committed to these purchases at least until September 2018. However, the end of the purchases is again conditioned by a sustainable return of inflation to the level of the inflation target.

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<sup>10</sup> Particularly, it is the *Public Sector Purchase Programme* (PSPP), which has been in operation since March 2015. The ECB uses this program to purchase nominal and indexed government bonds and bonds issued by other public institutions through the national central banks. In addition, the ECB is currently implementing three other programs: ABSPP – the *Asset-Backed Securities Purchase Programme*, which has been in operation since November 2014 to support lending activity; CSPP – *Corporate Sector Purchase Programme* launched by the ECB in June 2016 with the intention of supporting the transmission mechanism between asset purchases and financing conditions in the real economy, and CBPP3 – *Covered Bond Purchase Programme 3* in which covered bonds are purchased with a similar intention. The CBPP1, CBPP2, and SMP (*Securities Markets Programme*) are already terminated. As of April 2018, 82% of the assets purchased in the quantitative easing programs have been purchased through the PSPP program (Source: ECB).

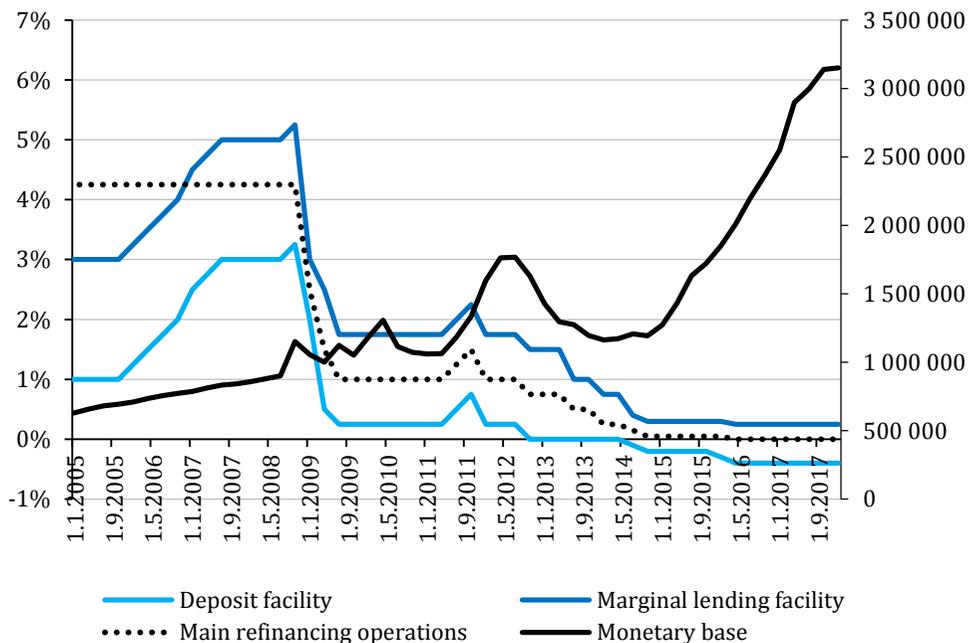
The October ECB statement contained another critical information on the development of monetary policy. The ECB has committed to reinvesting the returns on assets it holds in its portfolio during the *extended period of time*. This signals that the Euro area will continue to work with a central bank with an extremely inflated balance sheet over the next few years. Therefore, the ECB will be lagging behind the FED not only in increasing interest rates but also in the reduction of the monetary base. The FED has already started with the exit from the QE as early as October 2017 when the plans from June were implemented. The FED cut down monthly reinvestments by 6 billion USD (with the intention to increase the reduction to 30 billion USD) in order to reduce its balance sheet. The fact that the central banks of the Euro area and the United States are not in the same phase of monetary policy implementation has implications for the EUR/USD exchange rate development. At the beginning of 2017, the European currency reached its post-crisis minimum. The euro was traded for less than 1.10 USD. However, the gradual tightening of monetary policy led to an appreciation of the euro to around 1.20 USD. There is the potential that the depreciation of the euro will allow Europe to grow somewhat faster through the export channel. However, this may be countered by the escalation of trade relations between two largest economies of the world initiated by the introduction of import duties on steel and aluminium by the United States.

The moderate tightening of monetary policy is the result of various factors in the Euro area. A key factor is an improvement of macroeconomic indicators in the economies using the Euro currency. According to the European Commission's AMECO database, in 2018, the Euro area economy reaches the GDP level above potential product for the first time after ten years. The economic activity should outperform the long-term sustainable level by 0.3% (in 2009, when the debt crisis broke out in the Euro area, the Euro area GDP fell to the level of 3.5% below the potential product, while in 2016 and 2017, the recession gap gradually declined to 1.8% and 0.4% respectively). The performance of the economy above its potential is shared by all countries using the euro

except Greece, Denmark and France. However, the output gap is at a relatively low level in Denmark and France; the GDP is only 0.5% and 0.2% below the potential product. The persistent problem is the Greek economy, for which AMECO estimates the output gap of -5.0%. The recovery from the recent crisis is characterised by the fact that the recovery has not been associated with an increase in inflation. However, in 2017, it rose and reached 1.5%, which is about 1 pp. higher than in previous years. Surveys conducted by the ECB indicate that markets consider this growth to be sustainable. Inflation expectations at the one-, two-, and five-year horizons reached values 1.6%, 1.7%, and 1.9% at the end of 2017. The fact that economic agents expect inflation at exactly 1.9% in the long-term view (five-year horizon) indicates that there is confidence of markets in the ECB's ability to achieve declared inflation target.

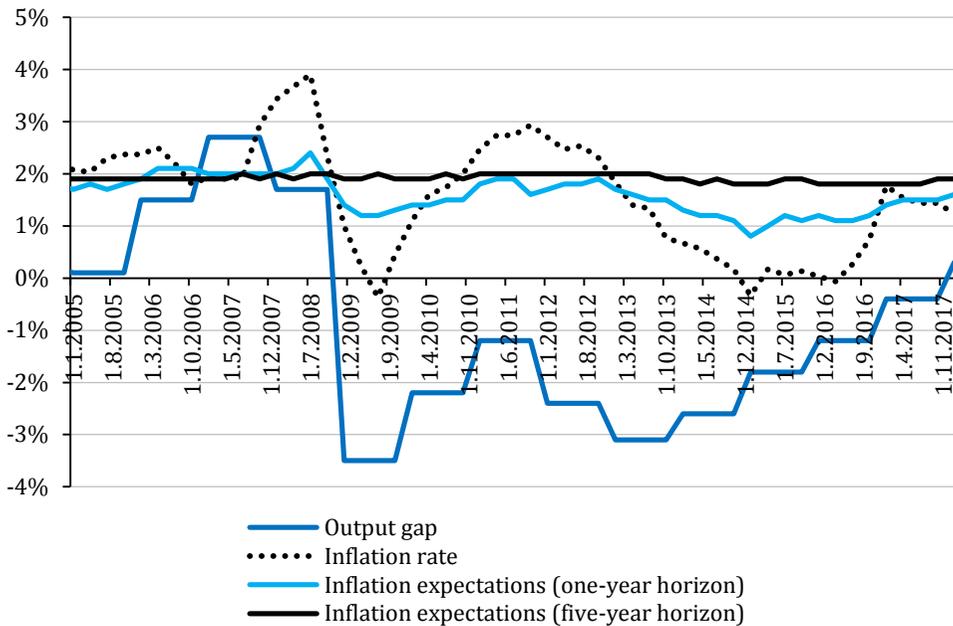
Figure 5.1

**Key Interest Rates of the European Central Bank (right axis)  
and Monetary Base of the Euro Area (left axis)**



Source: ECB (2017).

**Figure 5.2**  
**The Euro Area Output Gap (current structure, annual frequency),**  
**Real and Expected Inflation**



Source: ECB, Eurostat, AMECO.

In addition to these reasons, the decision to reduce net purchases was influenced by the fact that the ECB is trying to implement changes in volume purchases gradually. An important factor is that experience with the use of quantitative easing is relatively limited. Therefore, the market reactions to monetary policy adjustments cannot be reliably predicted. Thus, gradual changes of monetary policy enable the central bank to “learn”, i.e. to gather information on potential market reactions and formulate superior non-standard monetary policy measures in the future (Praet, 2018).

One of the concerns expressed by the ECB is that despite a slow rise in inflation so far, it is possible that recovery will lead to an intense pressure on price increases. In this case, the central bank would have to respond with a sharp restriction requiring not only to reduce net purchases but also to begin the sale of assets currently held by the central bank. Such a sharp measure could negatively affect the market

stability, and fears of such restriction by themselves would increase the financial uncertainty.

Mersch (2018) also states that the reason for net purchases decrease is that as each month part of the bonds in the ECB's portfolio is due, the reinvestments are added every month to the ECB's net purchases. The central bank then uses these resources to purchase additional securities on the secondary market in an amount equal to previously sold bonds in order to prevent the portfolio from shrinking. The larger the central bank's balance sheet, the greater is the total volume of purchases on the financial market, even though the volume of net purchases is constant. Therefore, the central bank is more and more critical actor in the financial markets. Moreover, by the fact that the ECB took a large number of assets into its balance sheet in the QE program, the volume of securities traded freely declined in the market. Due to this reason, even smaller amounts of net purchases are sufficient to implement monetary policy.

We also believe that it would be helpful to describe the reasons why the ECB keeps interest rates unchanged despite the fact that the extent of the QE is reduced.

It should be emphasised that low-interest rates are mainly the result of a set of global trends which have been described before the outbreak of the financial crisis (Bernanke, 2005). During the pre-crisis period, following factors were cited as the most important ones: a significant amount of savings available in the Asian markets, the effort to reallocate some of the investments from the Asian markets to the more liquid Western markets, and the ageing of the population. The fall of the returns on risk-free assets was also influenced by a significant reduction in safe assets volume as the outcome of the US mortgage crisis and the Euro area debt crisis. This mechanism is described for example by Rogoff (2015), while the Barclays Gilt Study 2011<sup>11</sup> estimates that the volume of secure assets in the global economy has fallen by 9 trillion USD with the outbreak of the financial crisis. During the last decade, the decline in the

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<sup>11</sup> Available at: <<http://topforeignstocks.com/2012/05/06/download-barclays-equity-gilt-study-2011/>>.

rate of productivity growth caused by so-called maturing of the IT sector (Bughin et al., 2018) is considered the essential factor. All of these factors contribute to the fact that the natural real interest rate<sup>12</sup> reaches lower values.

For this reason, central banks all over the world are forced to target lower rates of short-term interest rates. It has negative implications for the future monetary policy, as, after the return to regular monetary policy (i.e. after increasing the interest rates from the near-zero values), the room for interest rate cuts will be even smaller than in the past. It leads many economists to the conclusion that it is desirable to increase the inflation targets from the standard 2% declared for example by central banks of the United States, Canada, Japan and Sweden (several other central banks target an average of 2%, e.g. Czechia). The recommendation to increase the inflation target has already appeared for example in Blanchard et al. (2010). The topic has been recently open in the United States. On the other hand, the Bank of Canada reassesses the inflation target every five years.

Also, let us point out that maintaining interest rates at values close to zero is also the result of the ECB's previous commitments in the form of so-called *forward guidance*. This non-standard monetary policy instrument represents the commitment of the central bank to keep interest rates at a low level longer than is required by current inflation development. The aim is to increase the inflation expectations and to reduce the long-term interest rates (for more on forward guidance efficiency see for example Cœuré, 2013). In the past, the ECB repeatedly declared in the statements on monetary policy that interest rates would remain at a low level over "*extended period of time*". Therefore, it is understandable that despite increasing inflationary pressures in the Euro area, the ECB does not intend to raise rates.

The monetary policy of the ECB affects the Slovak economy through three channels: (1) by stabilizing aggregate demand throughout the Euro area, it is creating a stable foreign demand for the Slovak economy, a key

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<sup>12</sup> The natural rate of interest is the value of the interest rate that balances the investments and the savings. It is determined by the amount and potential return on investments opportunities and the household willingness to save.

condition for economic stability in the case of small open economy; (2) lower short-term interest rates in the Euro area compared to the United States are a source of pressure for a weaker euro increasing the competitiveness of both Slovak exporters and other export-oriented companies in the Euro area for which are Slovak producers subcontractors; (3) low interest rates create favorable conditions for financing companies, households and the state.

The impact of cheaper financing on the growth of demand for loans is evident from the *Survey on Supply and Demand on Lending Market* carried out every six months by the National Bank of Slovakia. At the end of 2017, the banks reported an increase in demand from enterprises (the net share of the banking market preferring this answer is 23.5%<sup>13</sup>), as well as households. Households raise demand for mortgages (36.5% of the banking market) and consumer and other loans (42.7% of the market). According to banks, the growth in demand is expected to continue also in the first half of 2018.

In the case of enterprises, the main reasons for the growth of demand have operating nature (banks reported the need to fund inventories, operating capital, and debt refinancing as the main factors). Regarding households, the general level of interest rates is a crucial factor. Approximately 40% of the banking market states that interest rates are a significant determinant of the growth in demand for loans. The survey suggests that low-interest rates lead to a situation where loans are demanded by increasingly risky clients. Therefore, in the case of households, loan terms have been significantly tightened. Banks state the reason is exactly the creditworthiness of clients and the lower willingness of banks to accept the risk. The result is a decrease in the value of loans with respect to the collateral value and growth of profit margins in both risky and regular loans. In contrast, the conditions for loans provision for firms did not change significantly during 2017.

Regarding the challenges of monetary policy in the near future, in addition to the necessary but so far unplanned exit from the QE (the

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<sup>13</sup> It is the difference in the number of responses confirming the increase in demand and the number of responses indicating a decrease in demand. The bank's responses are weighted, the volumes of loans are used as weights.

Deutsche Bank Report 2017 identified the risk of mismanaged standardization of balance sheet of large central banks as the greatest risk to financial stability, Reid et al., 2017), the key to the Euro area economy development will be further integration. On the one hand, it means further deepening of the interconnections in financial markets, which are still relatively fragmented. This is reflected in a relatively small number of banks operating on the European level, in a small number of cross-border mergers and acquisitions in the banking sector, and not only low but also decreasing volume of cross-border loans provision. The ECB's report (ECB, 2017) states that integration in this area has stalled in the previous period, as indicated by the differences in interest rates among countries, as well as the volume of cross-border activity in the financial markets. In the context of deepening integration, the ECB supports the European Commission's proposal to establish a mechanism for joint deposit protection at the European level and further harmonisation of the regulatory framework for securitisation and insolvency rules. These measures would help to complete the banking union and would help stimulate the initiative of building a capital market union.

The second aspect of continuous integration is building of a fiscal union. Fuest and Peichl (2012) indicate five potential pillars of the fiscal union, with option that fiscal union does not have to include each of them: (1) common rules, policy coordination and supervision; (2) a crisis resolution mechanism; (3) joint guarantee for government debt; (4) fiscal equalisation and other mechanisms for transfers between countries and (5) a larger EU budget and the introduction of a European taxes.

The European Union already contains some elements that respond to the above pillars. The Stability and Growth Pact and its reform correspond to the first pillar. The European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM) can be included in the second pillar. Also, the joint guarantee for bonds issued by the EFSF-ESM by the Euro area countries is the third pillar. Regarding the fourth pillar, the possibility of fiscal transfers is still insufficient in the Euro area and the EU. Potential solutions include the introduction of unemployment

insurance at the level of monetary union, aiming exclusively at the stabilisation function in the monetary union on the principle of the automatic stabiliser (Bénassy-Quéré – Ragot, 2015). Another option is the introduction of so-called “*rainy-day fund*”, which would collect the contributions from the Member States and provide them with funds in the event of a significant negative shock (Enderlein et al., 2012). The highest stage of the fiscal union would mean a substantial increase in the budget of the European Union and the introduction of a single European tax. Currently, it may be expected that the deepening of fiscal integration will be based on strengthening of the first three pillars.

\* \* \* \*

In 2017, monetary policy developments in the Eurozone can be summarised as an attempt to progressively move towards to a standard monetary policy combined with the building of institutions necessary for the functioning of the common currency. The standardisation of the ECB's policy is reflected in the gradual decline in purchases of securities in the quantitative easing program, even though an inflation is not high. The reason is a need to adjust the central bank policy gradually, as well as the high absolute volume of trades due to the increased monetary base. Given the ongoing pressures on the decrease in natural interest rates (mainly due to declining productivity growth rates), it is not possible to expect interest rates to rise to the pre-crisis rates in the near future. Building of the institutions is particularly evident through efforts to integrate financial markets more closely and gradually ensure the functioning of individual pillars of the fiscal union.

## 6. PRICE DEVELOPMENT

The year 2017 experienced a breakthrough in price development. After a period of three-year mild deflation, the trend of price developments returned to positive values. The prices continued in established trend from the second half of 2016 and reached the ECB target value of close to 2% at the end of 2017. However, the overall annual average was slightly below this target at 1.3%.

### Growth after Three Years

After an unprecedented three-year drop in the price level, it returned in y-o-y to positive values in 2017. However, the dynamics of different categories of price development varied.

Among the main factors influencing the development of the price level were the following:

- *Food price developments* – food prices have become the highest growing category among all categories of consumer price measurement. In particular, two supply shocks of essential food items (butter and eggs), as well as the rising prices of fruit and vegetables contributed to such development. In total, the food price category grew by 4% y-o-y, which is along with the Transportation category the highest increase from the entire consumer basket. As an example, we analyse the development of butter prices in the second half of this chapter.
- *The on-going decline in prices of regulated industries* – for the fourth year in a row, the prices in regulated industries have declined. The pace of their decline was even faster than in the previous year reaching -1.9%. Thus, the price level of regulated industries was lower by 5.5% compared to 2013.
- *Fuel price increase* – although fuel prices developed relatively volatile during the year (monthly increases alternated with one-off drops), the average price of Natural 95 grew by 6.4% compared to 2016. The average price of Diesel increased even further by 9%. It represents an important contribution to the growth of prices of other goods. Such

price change may partially explain the high price growth in the Transport category.

- *On-going growth of real estate prices* – the ECB's loose monetary policy has caused a higher availability of mortgage loans than in the previous years. It has led to a sharp increase in demand for real estate which responded by strong growth in prices. The highest increase was in the price of flats (8.8%), the houses lagged behind with growth of 2.7%, although they grew still at a higher rate than in 2016.

Similarly, the neighbouring economies have experienced a significant positive rise in price levels in 2017. In the case of Czechia and Hungary, it was even above the target level of 2%. However, the target achievement is considered in medium-term, so small deviations upward do not raise any concerns. It may be assumed that countries, which have not yet adopted the Euro have responded to positive economic growth more flexible than the Euro area.

The look at the production side of the economy reveals that industrial sectors have (after several years of decline) again recorded a positive price growth. Industrial production prices for the domestic market rose by an average of almost 2% (1.9%). Therefore, they outperformed even average consumer price growth (1.3%). Prices of industrial products for export grew even by 1 pp. faster than the products for the domestic market (2.9%). It seems that the economic boom across the EU has also reflected in the growth of demand for Slovak industrial production. However, the three most important export industries (automotive, mechanical and electronics) recorded only a marginal increase in their product prices (or complete stagnation).

Prices of constructions works were one of the items that contributed significantly to the renewal of inflationary environment. On average, they accounted for up to 3% increase. The on-going trend of real estate prices growth did not have to be driven only by the increase in demand, but also by cost items. Similarly, construction materials prices grew by up to 3.5% after several years of decline, confirming the previous claim for a rise in real estate prices.

Agricultural products prices returned to positive growth after three years of decline in prices (straight to become the fastest growing category among all producers in the economy – the supply side). However, this increase is not as fundamental as it might seem at first glance. The price level of agricultural products is not even the same as it was in 2014. In particular, the price drops over the past three years are relevant to this situation (mainly due to the export embargo on food to Russia caused surpluses on European markets and build pressure for prices drop).

**Table 6.1**  
**Overview of the Main Price Indexes in Slovakia (in %)**

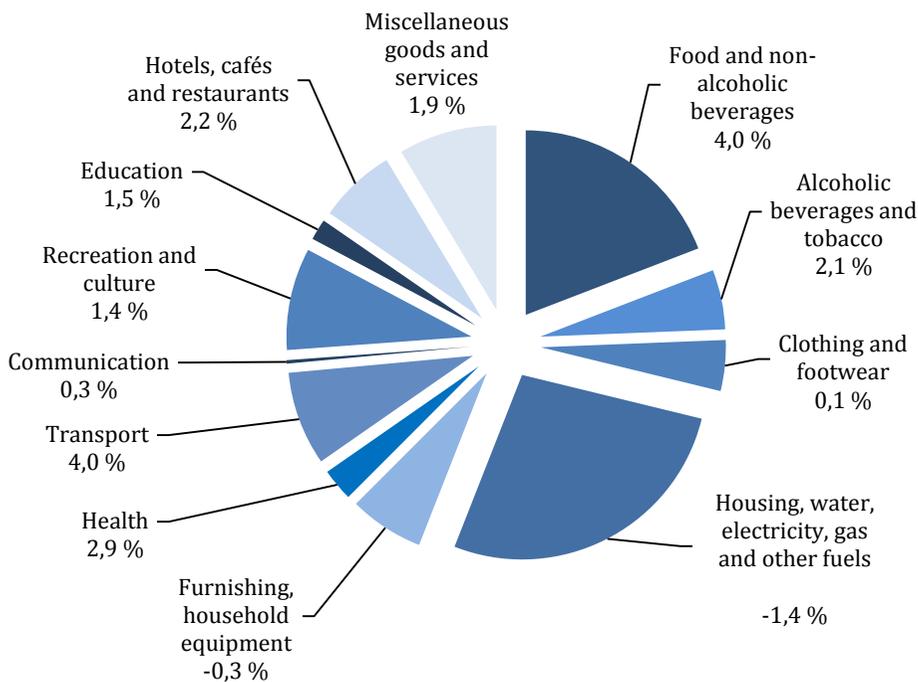
	2014	2015	2016	2017
<b>Inflation rate (HICP):</b>				
Euro area	0.4	0.0	0.2	1.5
Slovakia	-0.1	-0.3	-0.5	1.4
Czech Republic	0.4	0.3	0.6	2.4
Hungary	0.0	0.1	0.4	2.4
Poland	0.1	-0.7	-0.2	1.6
<b>Industrial prices:</b>				
Industrial producers prices – domestic	-3.6	-4.2	-4.3	1.9
of which: Manufacturing	-1.8	-3.2	-3.5	2.6
Industrial producers prices – total	-3.5	-2.9	-4.1	2.5
Industrial producers prices – export	-3.3	-2.2	-3.8	2.9
Construction work prices	1.3	1.8	1.2	3.0
Construction material prices	-2.7	-0.8	-0.4	3.5
Agriculture products price	-7.8	-2.2	-5.3	4.7
<b>Deflators:</b>				
GDP deflator	-0.2	-0.2	-0.4	1.3
Government consumption deflator Private	0.3	0.7	1.3	3.3
Consumption deflator	-0.1	-0.1	-0.3	1.5
Fixed investments deflator	-0.4	0.0	-0.8	1.2
Export deflator of goods and services	-3.3	-1.4	-1.5	2.4
Import deflator of goods and services	-3.4	-1.1	-1.1	2.8
Terms of trade	0.0	-0.2	-0.4	-0.4

*Source:* Eurostat database (2018); MF SR (February 2018); SO SR (2018).

In the field of deflators, the government consumption deflator was once again at levels exceeding twice as much as any other GDP component level. Therefore, the prices of goods and services purchased

by the state grew much faster than goods consumed by the private sector. It is also worth mentioning the return of other GDP components deflators back to positive values. Therefore, the return of inflationary environment may be confirmed in all spheres of the economy. Similarly, the prices in Slovak foreign trade recorded an increase. However, the rise in import prices outpaced the rate of export prices growth leading to deterioration in terms of trade position. As a result, for the same amount of exports, fewer amounts of imports may be obtained. Therefore, after three years, the factor of imported inflation is again gaining importance as a contributor to the inflationary environment.

**Figure 6.1**  
**Year-on-year Change of the Price Level in CPI Categories**  
 (size of categories are based on their weights in the CPI)



Source: SO SR (2018).

In the next part of the chapter, we will go into more detail in the category that attributed the most significant price increase in 2017. Food products grew unexpectedly quickly after years of price stagnation.

Especially the prices of butter (and later eggs) were a subject for public discussions. Therefore, we want to contribute to this discussion and prove on the case of butter that the factors behind the price increase do not always have to share a purely economic background.

## **“Butter Run”**

The title of this subchapter is an attempt to express a situation that economists are more aware of in the fields of monetary policy and financial institutions crisis. So-called “bank run” is a situation where depositors lose confidence in the availability of their deposits and massively (and at once) withdraw their deposits. Such behaviour consequently leads to the bank bankruptcy. However, the same action would partly explain the price development of such conventional food product as the butter is. It experienced a record price increase in the second half of 2017.

Still, the development of commodity prices is a highly volatile category where the whole range of different factors is affecting its price. Seasonal availability, weather and other economic factors are important for price determination. Therefore, there are several possible ways how to explain why the butter deviated from the regular development and experienced record high prices.

### ***Butter as a topic of discussions***

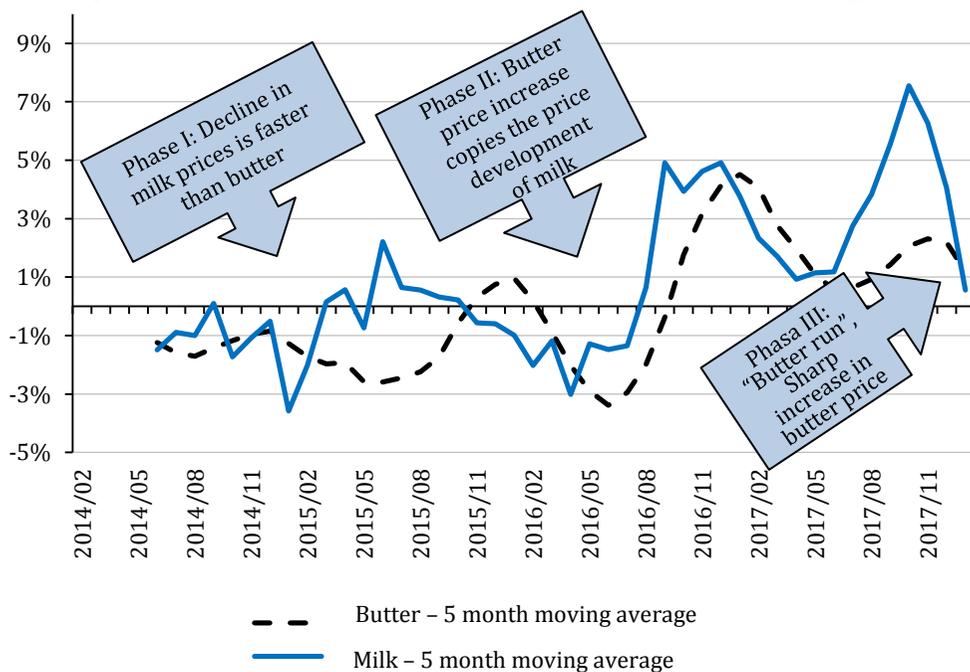
The butter itself is considered to be an essential food product. It is not just used for direct consumption in households, but also as the complementary product for the production of other food products. Therefore, a price increase of butter is also considered in the increase of different food product prices. The change in its price has a significant social impact on the whole population, and its development is perceived very sensitively.

Already in the summer of 2017, the topic of rising butter prices began to resonate in the society with estimates of price culmination in the pre-Christmas period. Several arguments were provided on the subject of what contributed to the creation of such a situation. The argument was

the rising prices of milk to blame as a primary ingredient for butter production. Others were discussing increased milk export (Valachy, 2018). Also, the closing gap between the price of butter and dairy products was brought to attention (meaning the other dairy products prices were growing faster in the past). Less attention was paid to the internal trade of the EU (less import of butter from the other Member States). All of these factors may be relatively easily verified.

Figure 6.2

**Development of Market Prices of Milk and Butter in EUR/100 kg**



Source: EU Milk Market Observatory; Own calculation and compilation.

### ***Price of milk as a cause***

The first factor about the increased price of milk as a primary ingredient for butter production can be dismissed based on the observation of Figure 6.2. In this figure, we can see that the relationship between milk and butter prices is described in three phases. The first phase (1/2014 – 6/2016) is the period of decline in the prices of both

products, but with a slightly faster decline in milk prices (the average decline is 1.9% for butter and 2.5% for milk). The second phase (7/2016 – 5/2017) is characteristic for growth in milk prices at approximately the same level as butter prices (with a small lag). The final phase (6/2017 – 11/2017) is known for withdrawal from mutual development and a sharp rise in butter prices.

In comparison, the growth rate of butter price was at the rate of 83% per year in the last phase, while the rate of milk price growth was 26%. If such growth rates would be maintained throughout the year, the price of butter would almost double, while the price of milk would increase “only” by a quarter. The rise in milk prices cannot explain the increase in butter prices alone.

Another factor was the increased export of butter outside the EU, which means (with limited options for production expansion within the EU) the price of butter will increase due to its scarcity. However, according to the latest data on butter exports, the exports were lower than in 2015 and 2016 (17% less than in 2016) (CLAC.it, 2018). Even this factor does not help to explain the butter price developments, although, a lower export volume does not necessarily mean a more significant quantity of butter available on the domestic market.

The third factor we have been dealing with is to verify whether the price gap between the price of butter and other dairy products started to close. To prove this statement, the average growth rate of prices for selected products needs to be compared.

**Table 6.2**  
**Average Annual Growth in Prices of Selected Dairy Products 2012 – 2017**

Product	The average annual growth rate
Fruit yoghurt	-0,8 %
Whole milk	0,3 %
Eidam cheese	0,2 %
Curd	1,4 %
Fresh butter	1,0 %

Source: SO SR

Table 6.2 provides the compelling evidence that the correction of relative prices between dairy products and butter was not the case. The butter grew at an annual average of 1%, while other products were very close to stagnation and in the case of yoghurt even declined.

### ***The decline in import within the EU***

One of the crucial factors that may explain (at least partly) the development of butter prices is the low level of imports from the other Member States. Even though Slovak butter production grew by more than 4% compared to 2016, the import of edible fats dropped<sup>14</sup> by more than 21%. However, even in terms of unit elasticity, this would not mean price increase at the same level. It is only a one-off drop in import, not a drop in the total amount of butter production (domestic butter production increased – see Box 1). However, as the data show – the butter is very far from such level of elasticity. The price of butter rose by 67% in the third phase. It even appears that due to a mix of circumstances (the period before the Christmas holidays) the “bandwagon effect”<sup>15</sup> occurred in conjunction with the aforementioned “bank run” effect.

### ***Price growth was driven by consumer behaviour***

The effect of import drop, which would otherwise lead to a higher increase in prices (but undoubtedly not as significant as it was in reality) has multiplied by two other effects. The first was so-called “bank run” due to consumers doubts about the availability of good in the shops before Christmas. That has led to an increase in demand, supplies outage, and of course to even faster price increases. At the same time, the availability of butter in stores decreased. Another effect multiplied the previous one; the bandwagon effect motivated consumers to buy butter just because other consumers were buying it as well. It resulted in an

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<sup>14</sup> Preliminary data up to October 2017 (SO SR).

<sup>15</sup> Bandwagon effect is described in consumer behavior theory as a phenomenon when people buy a product mainly because other consumers buy it too.

unprecedented increase in price, which was created mainly by consumers behaviour. The nature of these effects was only temporary which is proved by the butter price development after its culmination in November 2017. It started to decline in December gradually and is expected to reach the level of the previous year this summer.

## Box 6.1

### Objective Change of Butter Price

Known data:

- Butter consumption per capita is 3,9 kg in 2016.
- Total domestic butter production is 8 970 tons in 2016.
- We assume that there will be a 21% drop in butter imports in 2017.
- Butter production grew by 4.2% in 2017 in Slovakia.
- We do not know the proportion of export to domestic butter production.
  - We estimate three scenarios where exports account for 25%, 50% and 75% of domestic production.

From the number of population in 2016 we estimate the total butter consumption in 2016 was 21 997 tons. Thus, imports represent 58% of total butter consumption. In scenario no.1 (export of 25% of domestic production), imports would represent up to 68%, scenario no.2 (export 50%) represents import of 79% of consumption, in scenario no.3 (export of 75%) the import would represent up to 89% of consumed butter in Slovakia.

If there was a 21% drop in the import of butter in 2017, the quantity of butter imported fell to 11 431 tons in the first scenario; to 13 203 tons in the second scenario and to 14 974 tons in the third scenario.

The decrease in the total consumed butter (domestic production – export + import) in 2017 thus represents a decrease of about 13% in the first scenario, about 15.7% in the second scenario and about 18.3% in the third scenario. These values represent an “objective” price increase for situation where one percentage increase would lead to a decrease in demand by a one percentage. Therefore, if there was a drop in supply for butter by e.g. 18.3%, an objective increase of price would be the increase with same percentage change.

However, in reality the price of butter grew by 67%, which is necessary to attribute to other (rather) behavioral factors. It is also possible that their size was larger than the impact of objective factors on price change.

*Source:* CLAL.it, (2018); SO SR (2018).

### ***Will inflation continue to grow?***

The period of post-crisis deflation appears to have successfully ended, and the inflation rate will remain positive in the upcoming years. In 2017, a surprising phenomenon was particularly the rise in food price category growing significantly faster than other categories in the consumption basket.

The forecasted development in the area of inflation refers to a relatively stable development at a pre-set medium-term target of 2%. It is also confirmed by the first data from 2018 when the rate of food products growth reversed and slowly declines.

Although, the return of the inflationary environment will increasingly push the executors of the European monetary policy to return to the standard measures (QE exit) and gradually start to increase the primary interest rate. However, it will be necessary to correctly estimate the proper time to raise interest rates, as the ECB's early signal of restrictive monetary policy might stop the prices recovery. If the ECB comes to such an act in 2018, its implementation will have to be very cautious.

\* \* \* \*

Developments in the price level in the following year should not negatively affect the positive signs of acceleration in the economic growth of the economy. All institutions dealing with macroeconomic forecasts agree that the inflationary environment should be stable in the upcoming years (even very close to the inflation target of just below 2%). Only an unexpected external shock could mean that economic forecasts will not be met. However, the likelihood of such a shock is relatively low, as well as the ability to predict a shock as such.

## 7. PUBLIC FINANCE

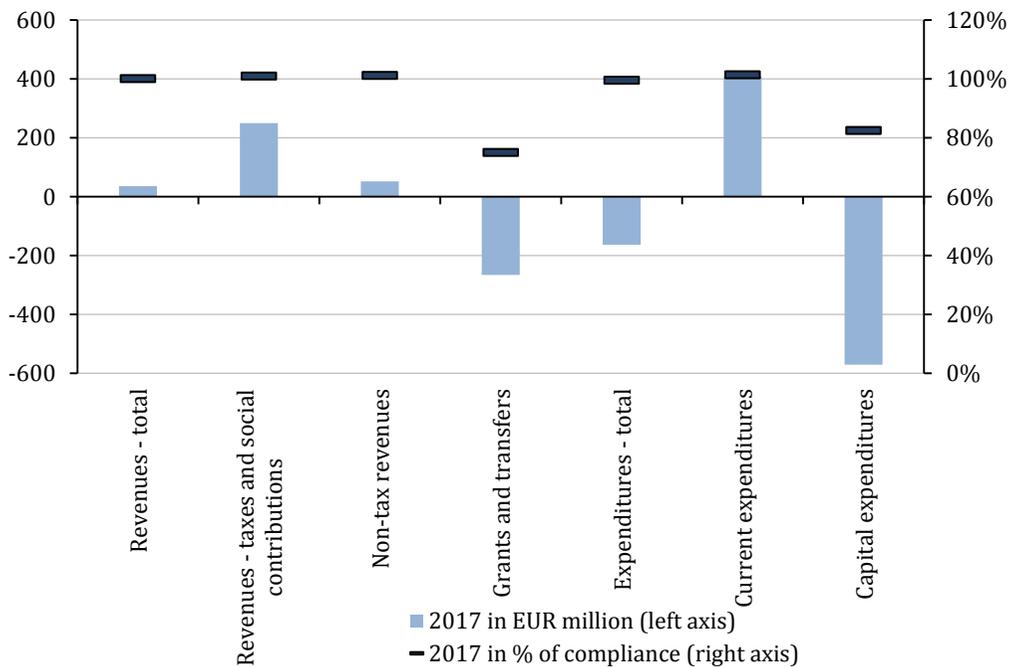
The year 2017 was characterised by a continuing economic expansion in the domestic and European economies, which was favourable to the results of public finance management. In 2017, Slovakia recorded the lowest general government budget deficit in its short modern history.

### Development of the General Government Budget Balance

The general government budget deficit reached 1.04% of GDP (884.4 million EUR) in 2017 and compared to the previous year was lower by 1.16 pp.

Revenues of the general government were higher by 36 million EUR (Table 7.1). Revenues from taxes and social contributions were higher than estimated in the approved budget by 249.9 million EUR due to employment growth by 51,000 jobs.

Figure 7.1  
Difference between Planned and Actual General Government Revenues and Expenditures in 2017 (in EUR million and %)



Source: MF SR (2018).

The yield from the income tax of individuals reflected in revenue growth of 74 million EUR and yield from the social and health contributions amounted to revenue growth of 249.9 million EUR. In more detailed structure, the yield from income tax of individuals was significantly influenced by a contribution from individuals performing the dependent activity, while the yield from income tax of entrepreneurs was lower by 4.5 million EUR compared to the planned values. Based on available data, the VAT yield was higher than expected by 198 million EUR due to improved tax collection of the growing consumptions of households.

Payments to the EU budget were lower than the expected by 38.8 million EUR. The total volume of corrections reached 26.1 million EUR, of which the systemic corrections reached 7.2 million EUR and individual corrections 18.9 million EUR.

Compared to the planned budget, the capital expenditures were lower by 571 million EUR, grants and transfers by 265 million EUR. A more detailed view of the management of general government entities is provided in Table 7.1.

The state funds, state trading companies, medical institutions, municipalities and their budgetary organisations and higher territorial units (HTU) contributed negatively to results of the general government budget. The reason for the deterioration of the municipalities and HTU was in particular higher capital expenditures than planned growing y-o-y by 37% for the municipalities and by 65% in the case of HTU. Increasing capital expenditures may be attributed to the higher investment activity of HTU aimed at reduction of existing investment debt as well as the to the ending political cycle and elections to the HTU bodies in 2017.

At the end of 2017, the public debt amounted to 43.2 billion EUR (50.9% of GDP) and was lower by 1 pp. than in 2016. An important factor contributing to lower debt of the general government was the positive development of the state budget management with a real deficit lower by 773 million EUR than planned.

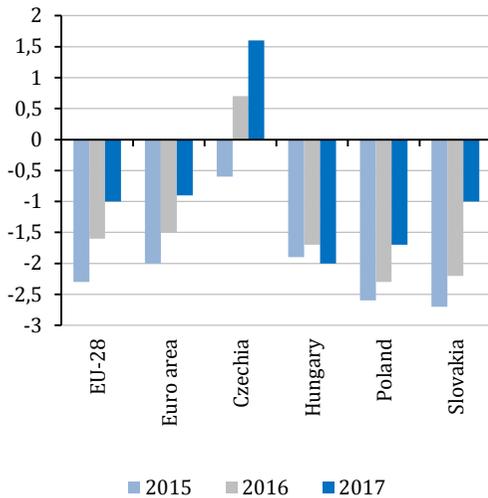
Compared to the EU average and the Euro area, the public deficit, as well as the gross public debt of Slovakia, is significantly lower. Compared to the V4 countries, Slovakia recorded the second lowest public deficit in 2017 and the third lowest gross public debt (see Figure 7.2 and 7.3).

**Table 7.1**  
**Management of General Government Entities in 2015 – 2017 in EUR million**

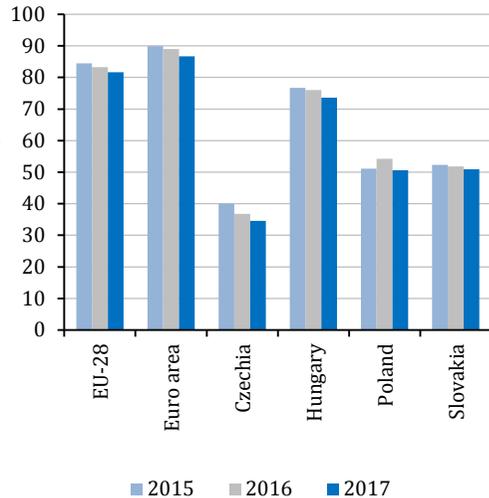
	2015 Actual	2016 Actual	2017 Actual	2017 Budget	2017 Difference
<b>Central Government</b>					
State budget	-1,487.8	-2,251.1	-1,299.2	-1,722.3	423.1
State contributory organisations	0.5	34.3	33.0	-14.1	47.1
State funds	232.8	188.3	192.0	255.6	-63.6
Eximbanka SR	-2.0	9.3	1.1	0.1	1.0
State trading companies	-755.2	79.0	-94.7	46.3	-141.0
Public universities	-3.3	47.3	21.4	0.2	21.2
Medical institutions of central government	-70.9	-74.6	-33.4	-1.5	-31.9
Other entities of central government	-15.8	-29.5	68.5	60.6	7.9
<b>Local Government</b>					
Municipalities and their budgetary organisations	64.6	348.3	-7.7	123.5	-131.2
Higher territorial units and their budgetary organisations	58.1	84.3	-15.7	109.9	-125.6
Municipalities contributory organisations	4.6	11.9	7.8	1.0	6.7
Higher territorial units contributory organisations	5.1	0.9	0.0	2.0	-2.0
Transport enterprises	-11.7	12.6	-4.6	3.4	-8.1
Medical institutions of local government	3.1	4.0	-1.9	0.3	-2.2
Other entities of local government	-2.6	-2.5	3.9	0.0	3.9
<b>Social Security Funds</b>					
Social Insurance Agency	-224.0	-180.4	84.9	36.9	48.0
Public health insurance	53.7	-72.7	160.3	14.6	145.7
General Government Deficit - total	-2,150.9	-1,790.7	-884.5	-1,083.0	199.0
% of GDP	-2.73	-2.21	-1.04	-1.29	0.25

Source: MF SR (2018).

**Figure 7.2**  
**General Government Deficit**  
**in % of GDP**



**Figure 7.3**  
**General Government Debt**  
**in % of GDP**



Source: Eurostat (2018).

## The State Budget Development in 2017

State budget revenues reached 14.0 billion EUR and were lower by 1.37 billion EUR compared to the approved budget. In the revenues structure, the income tax of individuals performing dependent activity amounted to 2.48 billion EUR. The revenues from the income tax of entrepreneurs and other self-employed activities represented 94.2 million EUR. The yield of personal income tax was higher by 67.8 million EUR, while the yield of income tax of entrepreneurs was lower by 12.5 million EUR. Compared to the approved budget, the collection of corporate income tax was lower by 539.6 million EUR.

The VAT collection was higher by 173.9 million EUR and reached 5.92 billion EUR. Other taxes on goods and services reached in the majority of categories the values approved in the budget draft. A significant decrease of 22.1% was recorded only in the case of excise (tobacco) tax, mainly due to the adopted tax changes.

The expenditures of the state budget were lower by 2.1 billion EUR compared to the approved budget. Current expenditures were lower by

962.7 million EUR, especially costs on goods and services were lower by 666 million EUR and current transfers by 340 million EUR. Capital expenditures were lower by 1.1 billion EUR, although, there is a presumption that under current budgetary rules, these funds may be transferred to the following years.

Even in 2017, there was a slight improvement in the effective tax rate of VAT reflecting in the higher collection of value-added tax. Apparently, the most significant contribution to VAT growth was the continuing economic expansion and the associated growing consumption of households.

**Table 7.2**  
**State Budget Development in 2014 – 2017 (EUR million)**

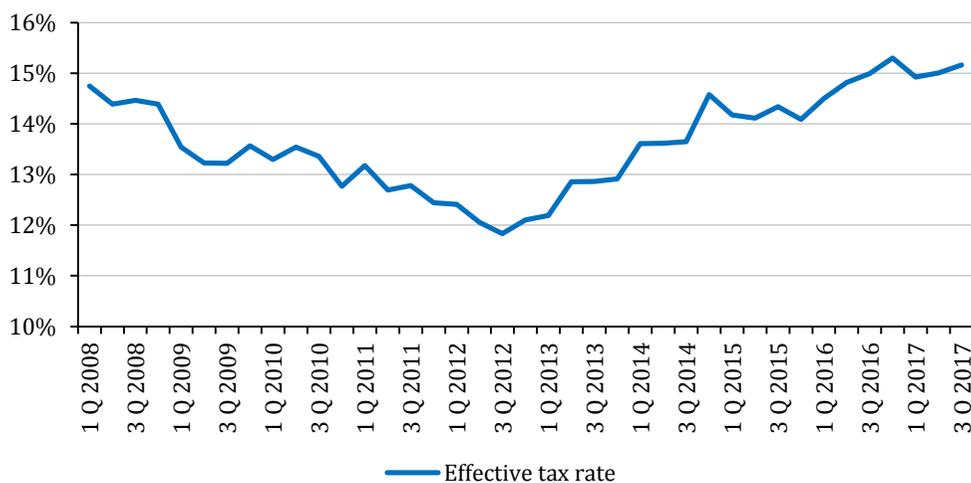
Indicator	2014	2015	2016	Planned 2017	Actual 2017	% of compliance 2017	Year-on- year change, %
Total revenues	12,496	16 233	14,275	15,390	14,014	91.1 %	-1.8 %
of which:							
1. Tax	9,293	10 612	11,068	11,530	11,152	96.7 %	0.8 %
of which:							
Tax on personal income	239	64	-8.5	5	7.0	129.6 %	-182.4 %
Corporate income tax	1,917	2,607	3,187	3,144	2,604	82.8 %	-18.3 %
Income tax coll. by deduction	175	162	179	190	179	93.9 %	-0.3 %
VAT	4,919	5,510	5,368	5,749	5,923	103.0 %	10.3 %
Excise taxes	2,009	2,096	2,170	2,255	2,253	99.9 %	3.8 %
2. Non-tax	1,637	1,274	1,217	1,162	1,395	120.1 %	14.6 %
3. Grants and transfers	1,566	4,346	1,989	2,699	1,467	54.4 %	-26.2 %
of which:							
Income from EU budget	1,257	4,280	1,939	2,656	1,423	53.6 %	-26.6 %
Total expenditures	15,420	18,166	15,256	17,383	15,234	87.6 %	-0.1 %
of which:							
Current expend.	13,441	13,507	13,353	14,644	13,682	93.4 %	2.5 %
Capital expend.	1,979	4,658	1,902	2,739	1,553	56.7 %	-18.4 %
Deficit/Surplus	-2,923	-1,932	-980	-1,993	-1,220	61.2 %	24.5 %

*Note:* Total revenues from the tax on personal income are higher, but given the fact that it is the revenue for the regional government, the values within the state budget are low.

*Source:* MF SR (2018); Author's calculations.

The trend of effective tax rate growth is on a right trajectory. However, there is still room for growth and higher collection of VAT (see Figure 7.4).

Figure 7.4  
Effective Tax Rate of VAT (1Q2008 – 3Q2017)



Source: IFP (2018).

The end of the 2007 – 2013 programming period and the persistent slow financial implementation in the current period 2014 – 2020 reflected in the revenues of the state budget. Revenues in this item were lower by 1.2 billion EUR compared to the plan and reached a total of 1.4 billion EUR. Compared to the plan, just over 50% of the planned amount for 2017 was implemented.

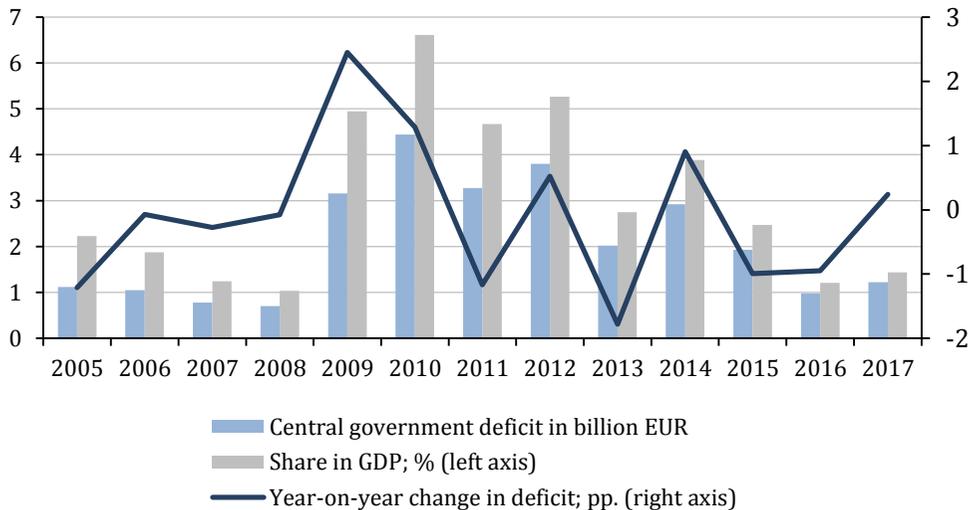
### The State Budget Deficit and Central Government Debt

In 2017, the state budget deficit recorded a y-o-y deterioration and reached 1.44% of GDP. The state budget ended up with a deficit of 1.22% of GDP representing a growth of 230 million EUR compared to previous year (see Figure 7.5) Compared to the approved budget, the gap was lower by 773.1 million EUR.

In 2017, the central government's debt rose again and recorded an increase of 560 million EUR. Its total value reached 41.2 billion EUR. Due

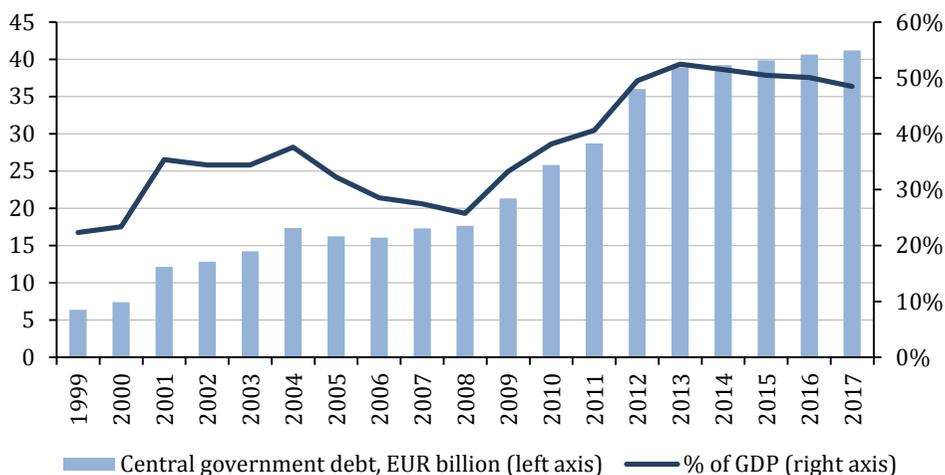
to the change in ESA 2010 methodology implemented in recent years and the persistence of higher GDP growth compared to the growth of central government debt, the share of debt in GDP is gradually decreasing. The central government debt reached 48.5% of GDP.

**Figure 7.5**  
**The State Budget Deficit in 2005 – 2017**



Source: MF SR (2016a), Authors' calculations.

**Figure 7.6**  
**Central Government Debt in 2007 – 2017**



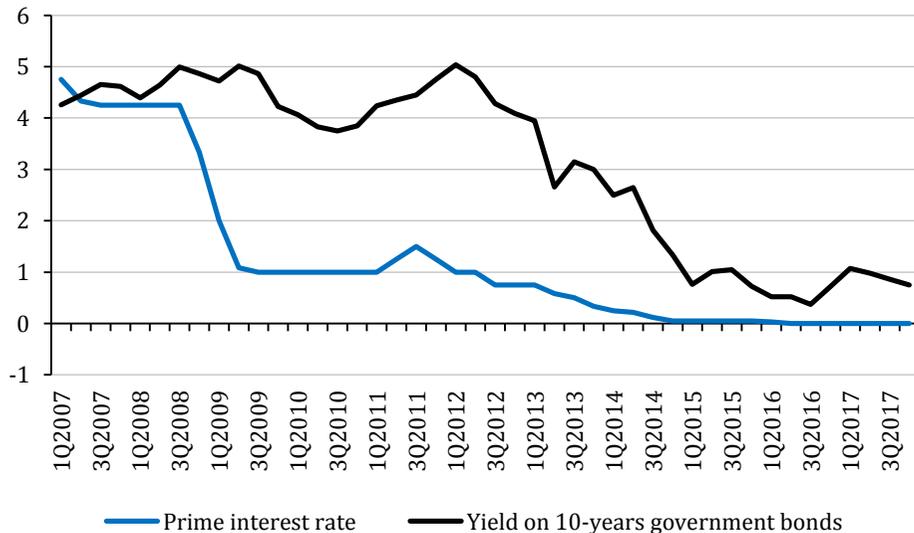
Source: MF SR (2017c); Authors' calculations.

The policy of quantitative easing of the ECB has been reflected in government bond yields in recent years. While in 2008 or 2012, the average yield was close to 5%, in the third quarter of 2016 it was at the historical low values of 0.37% (see Figure 7.7).

In 2017, the costs of financing the state debt (on a cash basis) were 1.1 billion EUR, and they were lower by 143 million EUR compared to the planned value. The ongoing QE programme will continue to have a positive impact on the interest rate, and it will also contribute to the saving of costs related to public debt as well by the end of 2018.

Figure 7.7

**Interest Rates on 10-years Slovak Government Bonds by their Maturity in 2007 – 2017 (%)**



Source: Macroeconomic Database NBS (2018).

## Financial Position of Slovakia vis-à-vis the European Union Budget

Since Slovakia's accession to the EU in 2004, we may observe a gradual increase in the net position vis-a-vis the EU budget (see Figure 7.8). In 2015, as a result of the ending programming period, the net position was 4.0% of GNI (3.09 billion EUR). In 2016, the net position reached 2.5% of GNI (1.98 billion EUR).

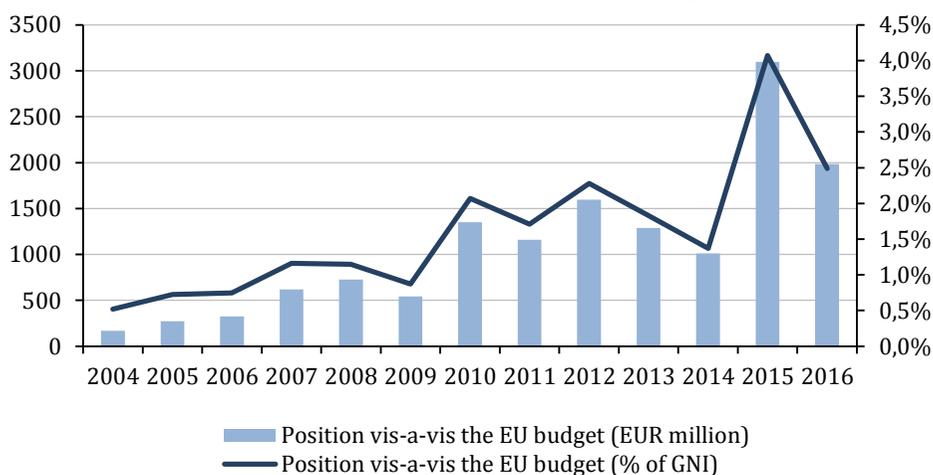
**Table 7.3**  
**Expenditures of EU budget in Slovakia in 2009 – 2016 (EUR million)**

	2009	2010	2011	2012	2013	2014	2015	2016
1. Sustainable growth	633.5	1,208	1,096.8	1,646	1,439.2	1,120	3,147.9	2,075
1.1 Competitiveness for growth and employment	48.7	11.8	40.9	70.4	58.4	69.2	61.6	85.5
1.2 Cohesion for growth and employment	548.8	1,096.1	1,056	1,575.7	1,380.8	1,051.7	3,086.3	1,989.6
1.2.1 Structural funds	385.9	633.7	917.6	1,212.9	812.1	1,026.3	3,053.6	1,904.2
1.2.2 Cohesion fund	198,8	462,4	138,2	362,7	568,7	507,2	1281,1	558,2
2. Preservation and management of natural resources	513	676.5	647.9	618	566	532	566.5	566.4
3. Citizenship, freedom, security and justice	8.5	8.7	29.2	12.6	11	5.6	9	10.7
4. EU as a global partner	26.6	0.3	0.5	0.5	0	0	0.5	0.1
5. Administration	10.8	11.5	10.7	9.7	9.9	10.2	10.9	10.6
6. Compensation	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1,192.4</b>	<b>1,905</b>	<b>1,785.1</b>	<b>2,286.8</b>	<b>2,026.1</b>	<b>1,668.8</b>	<b>3,734.8</b>	<b>2,662.8</b>

Notes: 2017 data were not available at the time of chapter publication.

Source: European Commission (2017).

**Figure 7.8**  
**Net Financial Position of the SR vis-à-vis the EU Budget, 2004 – 2015**



Notes: 2017 data were not available at the time of chapter publication.

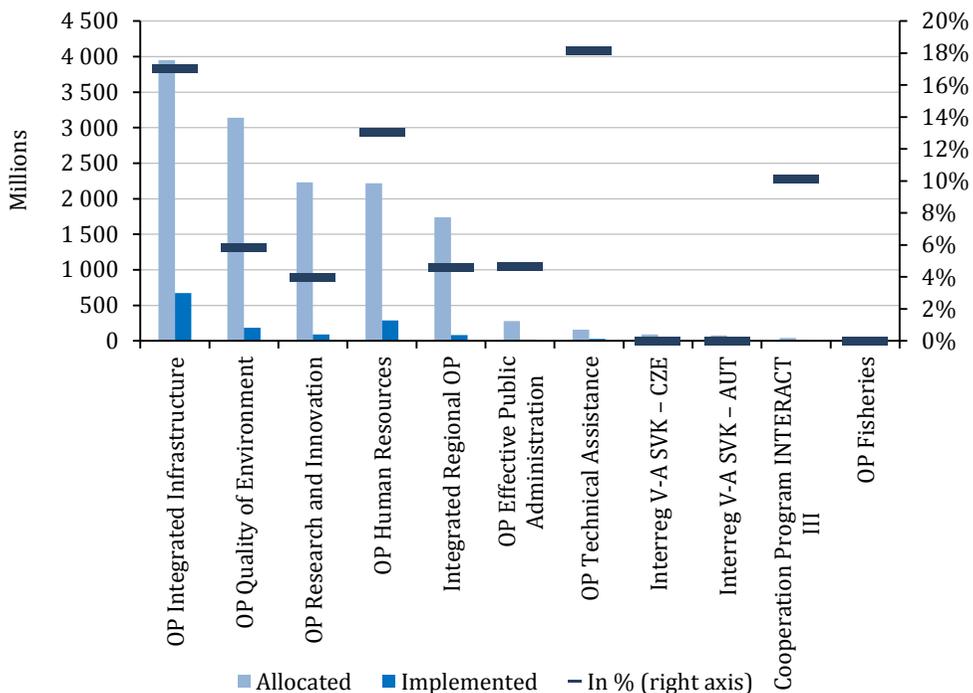
Source: European Commission (2017).

## EU Cohesion Policy Implementation in 2014 – 2020 Programming Period

At the end of 2017, the total level of financial implementation from EU budget reached 9.7% of the total allocation for the programming period 2014 – 2020. The financial implementation was relatively low even after four years since the beginning of the programming period.

In absolute terms, 1.3 billion EUR was implemented. The highest level of implementation was achieved in the OP Integrated Infrastructure (671 million EUR), the OP Human Resources (288 million EUR), and the OP Environmental Quality (182 million EUR). On the contrary, the lowest level of financial implementation was recorded in the OP Research and Innovation (88 million EUR), and the OP Effective Government (12.8 million).

Figure 7.9  
State of Financial Implementation of the Committed Resources in 2014 – 2020 by Operational Programs in % – 31st December 2017 (EU source)



Source: MF SR (2018c); Authors' calculations.

In relative terms, the OP Integrated Infrastructure (17%), the OP Human Resources (13%), and the OP Technical Assistance (18.2%) were the programs, which achieved the highest level of financial implementation in the 2014 – 2020 programming period at the end of 2017.

Interreg V-A Cooperation Program Slovakia – Czechia and Interreg V-A Cooperation Program Slovakia – Austria, along with the OP Fisheries did not implement any funds by the end of 2017. Thus, the situation from the previous programming period is reoccurring. It was characteristic for slow financial implementation and inadequate contracting of new projects in the early years of the programming period.

Furthermore, when comparing the previous programming period with the current one, we can conclude that the pace of financial implementation is slower in the current period. Therefore, it is clear that the most substantial amount of financial resources will be implemented at the end of the programming period between 2021 – 2023. On the one hand, it will mean increased co-financing requirements for the general government budget. On the other hand, it will contribute to the higher tax revenues.

Regarding the financial implementation at the end of the programming period, the critical moment will be the prevention of repeating the situation from the end of the last programming period in which the projects were approved, implemented and reimbursed at the latest possible date. It increases the risk of error, inefficiency and other undesirable events ultimately resulting in financial corrections and the funding of inefficient and unsustainable projects with questionable impacts.

In 2017, the financial corrections amounted to 26.1 million EUR as results of a reduction of the claim against the EU due to systemic corrections<sup>16</sup> of 7.2 million EUR and individual corrections<sup>17</sup> of 18.9

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<sup>16</sup> Systemic corrections are the results of a recurrent shortage identified in several projects. It is a consequence of a serious lack of effective management and control systems, including the lack of appropriate procedures.

<sup>17</sup> The individual correction is a detected deficiency (one-off error) associated with one operation or one project and it is independent from other errors or deficiencies in the management and control system.

million EUR. Significantly problematic were, in particular, projects related to electronisation of the judiciary.

\* \* \* \*

In the upcoming years, the government committed to continuing consolidation of the general government budget. However, the set goals may not be met for some reasons. The continuing economic expansion will continue to influence the revenue side of the general government budget positively. Risks include, in particular, the end of the political cycle and related legislative adjustments that can substantially affect the long-term sustainability of public finances. The healthcare sector remains problematic, which debt reached 774 million EUR by the end of 2018. Another risk is the financial management of self-governing regions and municipalities, as well as the state-owned enterprises. Another significant risk is the topic of transferred and not spent current and capital expenditures from previous years. In the context of budgetary rules, they may be transferred to the next fiscal year.

## **8. OVERVIEW OF SELECTED LEGISLATIVE AND ECONOMIC POLICY MEASURES IN 2017**

In the field of economic policy in the period 2017 – 2018, the crucial document is the National Reform Program of the Slovak Republic 2017 (MF SR, 2017), which defines the key challenges and priorities of the policies as well as specific measures for their fulfilment. As the most challenging topics, the document identifies an elementary school quality, a labour market and a quality of health care.

Priorities include the employment reduction, the long-term unemployment, building capacity of children's care facilities for kids up to three years, and the integration of people from marginalised Roma communities. Among priorities from the previous periods remain the effectiveness of tax collection and increased efficiency of public expenditures (through the *Value for Money project*), particularly in the area of regional and higher education, transportation and health care. The interest of the policies is also directed at improvement in the field of research, development and innovation, better functioning of public administration as well as improvement of the business environment.

In 2017, several economic policy documents of a strategic nature were adopted. The adoption of these documents was necessary for Slovakia's involvement in transnational structures. The government approved the document on *the Concept of the Implementation of the Agenda 2030 in the International Environment (Responsible Slovakia – Sustainable Development Beyond our Borders)*, in which Slovakia commits to the Global Agenda 2030. It is "the most comprehensive set of priorities for achieving sustainable development to date". It follows the Millennium Development Goals (MDGs) 2000 (Government of the SR, 2017). The Strategy defines the areas in which Slovakia wishes to contribute to the achievement of the sustainable development goals on a global scale.

Given the lagging behind of the Slovak economy in the development of transportation infrastructure at the EU level, this area is among the economic and political priorities. In this respect, there was approved an important document called *Strategic Development Plan of the Slovak Republic until 2030 – Phase II*. The financing of the transport sector from

the EU resources depends on this document. The strategy called *Update of the National Framework Strategy to Promote Social Inclusion and the Fight against Poverty* is a document that “systematises approaches to addressing poverty and social exclusion and develops them under a single framework, in line with the Europe 2020 goals (MOLSAF, 2017).

A list of the long-term strategic document approved in 2017 also includes *the Roadmap to the National Infrastructure Plan of the Slovak Republic for the years 2018 – 2030*. The document has the ambition to create the conditions “to stabilise the key government programs and projects and to ensure the necessary degree of continuity over several electoral periods” (DPMOISR, 2017). It should bring better predictability and stability to public decisions. A relatively specific document is *the Proposal of the Measures to Remove Barriers to the Sustainable Development of Automotive Industry in Slovakia*. It identifies two key industry barriers: “No. 1 – Urgent shortage of skilled labour concerning industry needs and No. 2 – Shortage of skilled labour concerning labour market needs to be generated by the education system.” (Government of the SR, 2017b). It also defines the measures that should aim at the removal of these barriers.

The government has adopted the *Proposal for Measures to Improve the Business Environment* (Government of the SR, 2017c); a package of 35 measures to improve the quality of entrepreneurship and reduce the bureaucratic burden on business. Individual measures concern the field of employment, public administration (electronic reporting of foreigners, the administrative burden in the construction sector), support of competitiveness, taxes (simplification of the tax base calculation and the question of limitations on tax deductibility of losses for SMEs) and business support (e.g. new Investment Assistance Act). The proposed measures are to be adopted between 2017 and 2019.

The strategic document *RIA – Better Regulation Strategy* is related to the improvement of policy making and legislation. It aims to “optimise the regulatory environment in Slovakia by improving ex-ante assessments quality of selected impacts of proposed regulations and

introduction of systemic ex-post evaluation of the effectiveness and efficiency of existing regulations” (Government of the SR, 2017d).

In 2017, some new acts (mostly governmental proposals) have been adopted that in relation to the national economy bring changes to the regulatory function of the state or modernise its institutional framework. A substantial part consists of the transposition of EU legislation into the Slovak conditions.

A significant amendment of the Act on Patents and Supplementary Protection Certificates (No. 242/2017 Coll.), so-called patent act, regulated the area of intellectual property protection in Slovakia. The amendment represents (alignment of the legislation of the most important industrial and legal institutes, such as the employment regimen, ownership and co-ownership, transfer of rights, licence agreement, rights enforcement, application and priority rights, litigation, decomposition and subsidiary application of Administrative Code (NRSR, 2017a), as well as the reduction of the administrative burden in the proceedings with Industrial Property Office of the Slovak Republic. Also, the new search services have been introduced.

By adopting the amendment to the Commercial Code (No. 264/2017 Coll.), the protection of the rights of company creditors involved in the merger has improved. The aim is to prevent speculative mergers of companies that are in financial trouble and try to avoid fulfilling their obligations in bankruptcy or liquidation. The amendment introduces so-called the Institute of the factual (shadow) statutory; meaning that an entrepreneur who formally substitutes for statutory someone else shares the same duties and responsibilities as this person formally deployed. Also, statutory duties are strengthened in the event of bankruptcy. The new rules are also introduced for business partners if “a partner does an act that damages the company and causes it to be bankrupt, this partner will be liable for damages” (www.epravo.sk, 2017). Moreover, the possibility of limited liability company establishment has been abolished for those who are recorded as tax debtors.

The amendment to the Act on Tax Administration (No. 267/2017 Coll.) introduces several substantial changes. The amendments concern

tax secrecy, the publication of new lists of taxable entities, the introduction of mandatory electronic communication for enterprises and self-employed. The new features include: the tax reliability index (assessment of the tax entity on the basis of its duties to the financial administration), the cheaper binding opinions of finance authority on the application of tax rules and the Comprehensive Protocols (“on interconnected transactions of taxable entities that have record of tax violation or tax evasion”) (Solíková, 2017).

The amendment to the Act on Banks (No. 279/2017 Coll.) created new conditions for the functioning of mortgage bonds, reduced the administration of state support to mortgages for young people, changed the powers of intervention for NBS and adjusted the area of consumer loans. The amendment to the Financial Intermediation and Financial Advice Act (No. 279/2017) has brought more strict regulation into financial intermediation. In particular, the introduction of stricter requirements on professional competence, the introduction of more detailed rules for the performance of financial intermediary or the special regulation of insurance-based investment products. The amendment represents more strict control of cross-selling as well as more detailed regulation of cross-border services and tightening of sanctions.

The amendment to the Act on Lease of Agricultural Land, Farm, and Forest Land (No. 291/2017 Coll.) simplifies and to a certain extent liberalises the ownership in the agriculture sector, as well as creates better conditions for doing business in the sector, especially for small and medium-sized enterprises.

After an extensive and controversial amendment on Waste Management Act in 2016, the Act was again amended in 2017 (No. 292/2017 Coll.) The current legislative change reduces the administrative burden for many small entrepreneurs. The previous legislation considered many entrepreneurs as “producers of packing and non-packing products just because they have sold their bags to the customer or printed and advertising flyer” (Seneši, 2017). It reflected in many registration and administrative duties.

The amendment to the Health Care Act repealed the so-called deductible item from social contributions (on health insurance). The measure adopted in 2015 should motivate employers to employ workers for low pay positions through a reduced health insurance base. The measure introduced in 2015 was abolished due to its negative impact on the income of health insurance companies as well as the favourable situation on the labour market.

The adoption of the General Data Protection Regulation<sup>18</sup> significantly changes the areas of personal data protection. Through the amendment to the Act on the Protection of Personal Data (No. 18/2018 Coll.<sup>19</sup>), people should have easier access to the personal data collected by enterprises. It introduces the so-called right to forget (erasing your data at any time and back to the past on demand). The amendment also tightens the process of personal data handling and introduces new obligations and rules for enterprises in the field of registration and processing of personal data.

The amendment to the Act on Public Procurement (No. 248/2017 Coll.) simplifies some aspects of public procurement. The new amendment increases the number of exceptions for under-threshold and low-value contracts. The Public Procurement Act will no longer have to be applied for contracts involving, e.g., the work of an expert, interpreter or translator, the works of fine arts and works of useful art, the production, publication and purchase of textbooks or workbooks, the service provision directly provided by a university and the purchaser of which is a public procurer (Laktišová, 2017). Another change is, e.g., the reintroduction of a one-envelope system for the under-threshold contracts, which should lead to shorter procurement times.

The amendment to the Income Tax Act (No. 344/2017 Coll.) introduces the new tax rules – “exit tax”. It concerns legal entities in the case of property transfer, business activity transfer or company headquarters transfer from the territory of the Slovak Republic abroad;

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<sup>18</sup> GDPR.

<sup>19</sup> The act was approved on December 19, 2017 and published in Collection of Laws on January 30, 2018. In our review, we mention it in year 2017.

the tax rate is 21%. Amendments to the Income Tax Act also apply to income taxation in relation to the commercial use of intangible assets (so-called patent box). Under this amendment, “it will exempt a portion of licensed earnings and revenue from the sale of products in which a patent or utility model is used” (Benko, 2017). The aim is to support the R&D. In addition, the more intensive support of R&D is expected from the increase of so-called “super deduction”. Enterprises that carry out R&D will be able to account for up to 100% of R&D expenditures instead of 25%. The amendment also regulates the taxation of the way to work and back for the transport provided by the employer; “according to the amendment, such non-monetary service provided by an employer in the form of transportation may be exempted only if the employees are involved in the co-financing of such transport. The amendment regulates the minimum amount of such co-financing” (Editorial Office of Touchit, 2017).

The amendment to the Payment Services Act (No. 281/2017 Coll) reacts to the growth of electronic services and through the transposition of the Directive of the European Parliament, and the European Council introduces the conditions for creating a harmonised electronic payment market in Slovakia. The changes relate, e.g., to increase the security of Internet payments (through strong authentication by the payer and payment authorisation.) The act also transfers a greater burden on the payment service provider.

## **Regulatory Framework and Effective Public Administration as Factor of Competitiveness**

In relation to the business environment, the quality of the regulatory framework and effective public administration are one of the determining factors of national competitiveness. The impact of the institutional functioning of public administration on business may be assessed based on some indicators of the Global Competitiveness Report (GCR) (see Table 8.1). According to the latest Global Competitiveness Report 2017 – 2018, Slovakia has significant weaknesses in the area of

institutional quality – as one of the pillars of the national economic competitiveness. Although the rating is based on soft indicators (expert rating on the 7-step scale), it provides some information. The current international status is not favourable for Slovakia. Table 8.1 shows the ranking of Slovakia and the other V4 countries. According to the report, corruption, inefficient government bureaucracy, tax rates, tax regulations, and restrictive labour regulations (in this order) were the five most substantial barriers to doing business in 2017.

**Table 8.1**  
**Selected Factors of Institutional Pillar**  
(Country rank according to GCR 2017 – 2018)

	Slovakia		POL	HUN	CZE
	2016	2017	2017	2017	2017
Public trust in politicians	110.	109.	101.	105.	89.
Irregular payments and bribes	89.	79.	44.	59.	46.
Judicial independence	120.	119.	99.	101.	45.
Favouritism in decisions of government officials	136.	130.	85.	131.	95.
Wastefulness of government spending	118.	94.	73.	108.	81.
The burden of government regulation	131.	129.	112.	106.	119.
The efficiency of the legal framework in settling disputes	137.	131.	106.	93.	94.
Transparency of government policymaking	84.	87.	116.	125.	73.
Reliability of police services	101.	106.	89.	64.	52.

Source: WEF (2018), WEF (2017).

The scope of government regulation in relation to the business environment is also provided by some indicators in the World Bank Doing Business.

Some indicator in the World Bank *Doing Business (WB, 2017)* also provides the scope of government regulation in relation to the business environment. Table 8.2 shows a comparison of transaction costs incurred by enterprises in typical business situations.

The number of processes/actions, the number of days/years or the financial expenditures (according to the actual Doing Business data 2018) express the costs. In Slovakia, the most significant regulatory barrier seems to be the area of construction proceedings and acquisition

of construction permit (lasts up to 286 days). This value is 1.8 times higher in comparison to the OECD high-income countries average, even in case if the number of required procedures is lower. The long construction proceeding is a factor influencing the effectiveness of European Structural and Investment Funds implementation, as well as Foreign Direct Investments related to building physical infrastructure.

**Table 8.2**  
**Selected Indicators of Doing Business (2017)**

		SK 2016	SK 2017	OECD*	Pomer SK/OECD
Starting a Business	Procedure (number)	6.0	7.0	4.9	1.43
	Time (days)	11.5	12.5	8.5	1.47
	Cost (% of income per capita)	1.2	1.1	3.1	0.35
Dealing with Construction Permits	Procedure (number)	10	10	12.5	0.80
	Time (days)	286	286	154.6	1.85
	Cost (% of warehouse value)	0.1	0.1	1.6	0.06
Registering Property	Procedure (number)	3.0	3.0	4.6	0.65
	Time (days)	16.5	16.5	22.3	0.74
	Cost (% of property value)	0.0	0.0	4.2	0.00
	Quality of the land administration index (0 – 30)	26.5	26.5	22.7	1.17
Paying Taxes	Payments (number per year)	8.0	8.0	10.9	0.73
	Time (hours per year)	192.0	192.0	160.7	1.19
	Total tax rate (% of profit)	51.6	51.6	40.1	1.29
	Post-filing index**	89.9	87.17	83.05	1.05
Enforcing Contracts	Time (days)	705	775	577.8	1.34
	Cost (% of claim)	30.0	30.6	21.5	1.42
	Quality of judicial processes index (0 – 18)	10.5	11.5	11.5	1.00
Resolving Insolvency	Recovery rate	55.6	47.3	71.2	0.66
	Time (years)	4.0	4.0	1.7	2.35

*Notes:* \* –Average of high-income countries of OECD; V3 – Poland, Hungary, Czechia; \*\* – *post-filing index* includes the time to comply with VAT refund, as well as the time to complete a corporate income tax audit.

*Source:* World Bank (2018); World Bank (2017).

Regarding the number of procedures and time, the establishment of the company got slightly complicated. The adverse change is also the

extension of the enforcement period of contracts by more than 10%. Compared to the OECD high-income countries, the length of insolvency proceedings remains a critical factor. The period of how long the creditors need to wait to get their funds back through the courts is one of the longest in the EU.

\* \* \* \*

The second year of the right-left government of R. Fico was similar to that of two previous governments in the form of the regulatory function of the state and the institutional framework. The performance of public policies is heavily influenced by two factors: in the area of public capital expenditures by the dependence on the EU funds and the field of adopted acts by soft law-making (strategies, action plans) of the EU legislation transition. The EU consumer or environmental protection agenda (Personal Data Protection Act or the Payment Services Act) also implies an increased administrative burden on a relatively large part of the corporate sector. The harmonisation and the creation of the single market can also be seen in the case of an amendment to the Commercial Code or the introduction of the exit tax. The fourth amendment to the Public Procurement Act should bring a certain simplification of processes. In 2017, unfortunately, we did not see ambition to change the functioning of Slovakia's key sectors such as the education system, health care, public administration or the public R&D system for the future of Slovakia. The summer government crisis has practically meant stopping the reforming concept of Learning Slovakia and slowed down the implementation of the OP Research and Innovation. One of the few positive public sector benefits is the Value for Money project.

## 9. OUTLOOK FOR 2018 AND 2019

After partial analysis of selected areas of development, we return to a summary overview with the intention to comment on the potential development in the short term. During the first months of 2018, widely broadcasted forecasts were published with the prediction of accelerating economic growth and highlighted labour shortages over the upcoming period. The task for this chapter is to examine whether such expectations are most likely to occur and what factors may cause deviations from it.

We would like to note that our primary goal is not to provide a detailed quantitative forecast of a large number of macro-indicators.<sup>20</sup> The quantifications are secondary for us; we would like to sketch the trajectory of development and its likelihood: we try to identify the determinants of development (as well as positive and negative risks and challenges that may occur in the short and medium term).

At the beginning of the chapter, we return to our previous outlook and confront it with actual developments. Then we focus on factors that should influence development, outline the developing trends with intervals for the probable quantitative values of the decisive indicator and eventually address some of the challenges and risks.

### 9.1. Comparison of the Previous Forecast with Real Development

In the previous year, we predicted in the last issue of this publication the continuation of economic growth at a rate close to 3.5% (and slightly higher value in 2018), the definitive overcome of deflation, as well as expected further, although still slower employment growth (linked with further decline in unemployment rate). These expectations were almost fulfilled, while the parameters of real labour market developments were just outside the interval we considered to be the most likely one. The unemployment rate fell even more significantly than expected, and the

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<sup>20</sup> A significantly more detailed forecast (also for the medium-term horizon) elaborated at the Institute of Economics SAS represents the work of Radvanský a Lichner (2018). It includes a considerably broader range of indicators that we are dealing with.

slowdown in the y-o-y decline in the unemployment rate was postponed. However, it will undoubtedly occur soon.

**Table 9.1**  
**Comparison of Previous Forecast with Real Development**

Parameter		2015 (r)	2016 (r)	2017 (f)	2017(r)
Year-on-year change in real GDP	%	3.9	3.3	3.3 to 3.8	3.4
Year-on-year change in GDP, current prices	%	3.7	2.9	3.7 to 4.7	4.7
Year-on-year change of employed, LFSS (%)	%	2.6	2.8	1.7 to 2.3	1.5
The unemployment rate, LFS	%	11.5	9.7	8.3 to 8.8	8.1
Average annual change of inflation measured by consumers price index	%	-0.3	-0.5	0.9 to 1.4	1.3

*Source:* Real data (r) for 2015 - 2017 based on SO SR, forecast (f) based on Morvay et al. (2017).

## 9.2. Key Determinants of Future Development

If we want to answer our central question of this chapter (i.e. whether the acceleration in growth over the next two years along with an increase in labour shortages will occur), it is necessary to break down the factors determining the dynamics of both external and domestic demand. It will reveal the possibility of short-term changes in real GDP growth. We assume that growth trends, in the long run, are influenced by technology, quantity and quality of capital (physical, human, intellectual and others). However, in the short term outlook, the changes in the aggregate demand are more decisive.

We expect that there will be two factors decisive for external demand (therefore exports from Slovakia) in the horizon of our outlook:

Continuing recovery in the Euro area and the rise of new production in the automotive industry.

In the crucial external environment (i.e., in the Euro area and especially in Germany), the similar economic growth to 2017 should be maintained in 2018 – close to 2.5%. A slight slowdown should occur in the following year, but with values that are still favourable in these economies (values taken from the forecasts of selected institutions are shown in Table 9.2). In the Euro area, it is possible to talk about the ongoing recovery supported by favourable financing conditions (low-interest rates). It results in a relatively favourable situation for the development of external demand (therefore, exports from Slovakia). We also may add to this the earlier mentioned start of the production of the fourth large car producer – partly in the autumn of 2018 and entirely in 2019. In such a small and open economy, the start of production in one large plant has a very significant impact on the development of macroeconomic indicators (although this impact will not be as revolutionary as the start of other major car production facilities more than a decade ago was). We expect that after a temporary slowdown in 2017, the export may accelerate even further in 2018.

**Table 9.2**  
**Forecasted Changes in Real GDP in the Euro area and Germany**

	2017 real		2018 forecast	2019 forecast
<i><b>Euro area</b></i>				
Year-on-year change in real GDP; %	2.4	Gemeinschaftsdiagnose	2.3	2.0
		EC	2.3	2.0
		IMF	2.4	2.0
<i><b>Germany</b></i>				
Year-on-year change in real GDP; %	2.2	Gemeinschaftsdiagnose	2.2	2.1
		EC	2.3	2.1
		IMF	2.5	2.0

*Notes:* We have selected the forecasts of three different types of institutions. The “Gemeinschaftsdiagnose” project team brings together several German and Austrian research centres for this purpose; The European Commission is a representative of a transnational European institution, and the IMF is a representative of a global financial institution.

*Source:* Projektgruppe Gemeinschaftsdiagnose (2018), April 2018; EC (2018), May 2018; IMF (2018), April 2018.

It is relatively easy to identify a few factors influencing growth in domestic demand shortly:

- Further increase in household consumption (its acceleration is worth noting in recent years, further presented in the first chapter) should be based on favourable situation in the labour market (employment growth plus wage acceleration creates room for expansion of household consumption).
- Investment demand (expressed by gross fixed capital formation) is determined by the culmination of the current wave of residential construction (NBS, 2018), the investment process related to the new car manufacturer and the actual start of Bratislava bypass construction are important factors.
- The public sector may play a significant role in domestic demand support. The government has declared several intentions that may have a substantial impact on consumption and investment flows: The wage levels in the public sectors are expected to rise (culminating in 2019); IFP (2018) and NBS (2018) remind the re-launch of large-scale investments in infrastructure. Also, the increase in financial implementation of the EU funds is plausible as a result of the implementation of already contracted projects; The government's announced program of massive reconstruction and modernisation of hospitals should also increase the volume of investment. The unspecified positive impact on domestic consumer demand should also be provided by the government's "social package". Despite all mentioned, the deficits may be reduced (as the revenue side of public budgets should be strengthened through faster economic growth and favourable employment developments).

Therefore, it may be expected that in the short-term, the growth in the economy will be driven by favourable developments in both external and domestic demand.

### 9.3. Expected Trends

Following the statements above, a number of external and internal factors can lead to an acceleration in real GDP growth. IFP (2018) highlights the opening of the positive production gap, which should be further underlined in 2019. Based on this, mild demand-driven inflation may be deduced (we expect an inflation rate close to 2%, see Table 9.3).

The considerable attention is currently paid to the labour market. It is remarkable that it was and remains a somewhat neuralgic point of the economy. However, with different meaning now. In the past, there has been a shortage of jobs accompanied by mass unemployment. Currently, there is a shortage of usable labour.

Moreover, some of the positive and negative risks are associated with the labour market development. It is very likely that employment will still massively grow (expected values in Table 9.3) in the near future. However, it is questionable to what extent this growth will be covered by the import of labour from abroad.

Employers have found themselves in a new, unprecedented position: they have to compete for employees. Because they need their “wage cushion” (lower labour costs due to competitiveness), they often prefer the possibility of importing a foreign cheaper labour force instead of competing for a domestic worker (by offering a higher wage). Undoubtedly, however, the pressure on higher wages is growing. Political efforts to establish a higher minimum wage, changes in the Labour Code (a set of surcharges for work beyond standard working hours) as well as the aforementioned upward increases in wages in the public sector also contribute to this pressure.

In the first data release on sales for 2018 (for the first quarter of 2018, Figure 9.1), there is a sign of strong growth in construction and trade rather than in industry. Sure, these data still have a very limited reporting ability for development over the entire year. Therefore, one has to exercise caution with interpretation. However, these preliminary values for the beginning of 2018 support the expectation of growth in

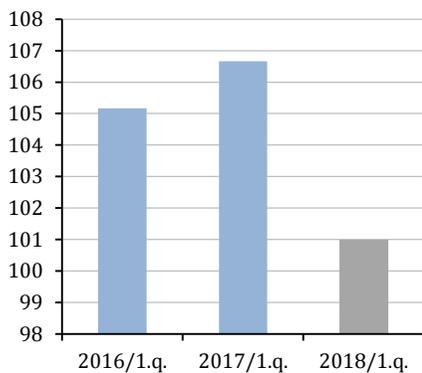
fixed investment (reflected in the growth of construction) as well as the increase in consumption (reflected in the growth of sales).

Looking at the forecasts of selected external and domestic institutions, there is a remarkable consensus: the acceleration of economic growth, acceleration in price growth and further reduction in the unemployment rate (to new historical minima) is consensually expected.

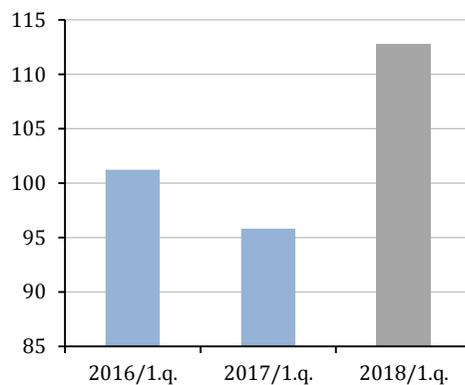
Figure 9.1

**Dynamics Indicators of Selected Branches** (year-on-year indexes, the same period of previous year = 100)

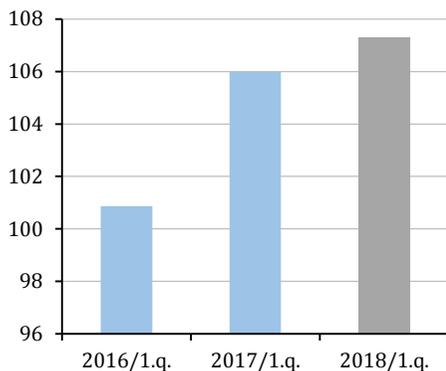
**A. Industrial sales**



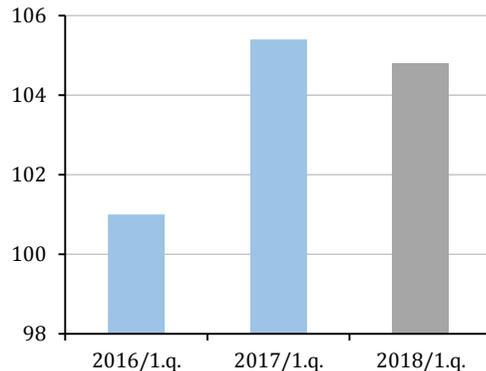
**B. Construction sales**



**C. Wholesale sales**



**D. Retail sales**



*Explanation:* Figure A is the index of revenues for own performances and goods in industry (sppy = 100, in constant prices); Figure B is the index of revenues for own performances and goods in construction (sppy = 100, in constant prices); Figures C and D are a year-on-year index of revenue from own performances and goods in wholesale and retail trade, excluding motor vehicle sales (sppy = 100), wholesale in current prices, retail in constant prices.

*Source:* SO SR.

**Table 9.3**  
**Forecast of Selected Macroeconomic Parameters Development**

Parameter		2016 (r)	2017 (r)	2018 (f)	2019(f)
Year-on-year change in real GDP	%	3.3	3.4	3.9 to 4.3	4.0 to 4.4
Year-on-year change in GDP, current prices	%	2.9	4.7	5.1 to 5.9	5.2 to 6.2
Year-on-year change of workers, LFS (%)	%	2.8	1.5	1.3 to 1.9	0.9 to 1.4
The unemployment rate, LFS	%	9.7	8.1	7.1 to 7.6	6.5 to 7.0
Average annual change in inflation measured by CPI	%	-0.5	1.3	1.8 to 2.4	1.8 to 2.4

Source: Real data (r) for 2016 - 2017 based on SO SR, forecast (f) based on authors.

**Table 9.4a**  
**Expected Changes in Real GDP in Slovakia by Forecasts of Various Institutions**

	2017 real		2018 forecast	2019 forecast
Year-on-year change in real GDP (%)	3.4	<i>External institutions</i>		
		EC	4.0	4.2
		IMF	4.0	4.2
		Gemeinschaftsdiagnose	3.5	3.4
		<i>Domestic institutions</i>		
		IFP	4.2	4.5
		NBS	4.2	4.7
		IER SAS (Radvanský et al.)	4.1	4.3

**Table 9.4b**  
**Expected Rate of Inflation in Slovakia by Forecasts of Various Institutions**

	2017 real		2018 forecast	2019 forecast
Average annual change in inflation measured by HICP (%)	1.4	<i>External institutions</i>		
		EC	2.4	2.1
		IMF	1.9	1.9
		Gemeinschaftsdiagnose	1.9	2.3
		<i>Domestic institutions</i>		
		IFP	2.0	2.0
		NBS	2.3	2.2
		IER SAS (Radvanský et al.)	2.0	2.1

**Table 9.4c**  
**Expected Unemployment Rate in Slovakia by Forecasts of Various Institutions**

	2017 real		2018 forecast	2019 forecast
Unemployment rate measured by LFS (%)	8.1	<i>External institutions</i>		
		EC	7.1	6.3
		IMF	7.5	7.4
		Gemeinschaftsdiagnose	7.2	6.8
		<i>Domestic institutions</i>		
		IFP	7.3	6.7
		NBS	7.2	6.6
		IER SAS (Radvanský et al.)	7.3	6.6

*Note:* The forecasts were not created at the same time. It should be taken into account in their comparison. For example, at the time of IFP forecast publication, some final data were not available for 2017, which could affect the forecast.

*Source:* EC (2018), May 2018; IMF (2018), April 2018; Projektgruppe Gemeinschaftsdiagnose (2018), April 2018; IFP (2018); forecast of the Committee for the Macroeconomic Forecasts, February 2018; NBS (2017), Mid-term forecast P1Q 2017; Radvanský - Lichner (2018), June 2018.

#### **9.4. View on Risks of Future Development: Is There a Definitive Loss of Wage Cushion?**

Positive or negative risks that may deviate economic development from the trends mentioned above may include the following:

- Geopolitical risks. From the Slovak economy point of view, they are completely exogenous and still present.

- Possible increase in protectionism in the global trade. Protective tendencies in the US economy could directly (through the USA – SVK trade relations) or indirectly (through the USA – the EU trade relations) limit the growth of exports from Slovakia.
- Change in the timing of the start of a new production plant in the automotive industry. This idea is based on the assumption of a partial start in autumn 2018 and full production in 2019. The activity of one large multinational corporation (in this case JLR – Jaguar Land Rover) has a noticeable impact on such a small economy.
- Labour market risks: 1) If the amount of available workforce would reach the limit and restrain the growth potential of the economy. A negative deviation would occur if the additional need for labour were not possible to fill with neither domestic or foreign workers. On the contrary, e.g., a higher inflow of workers (whether from local sources or foreign ones) would represent a positive deviation from the expected trend. 2) Possible stronger wage growth may be perceived as both positive and negative risks. Positive risk is associated with the fact that faster wage growth can lead to an acceleration in consumption growth – even without further household indebtedness increase. A negative risk may be related to a quicker loss of competitiveness for some of the producers (the part that is sensitive to wage costs increase). We will get to this phenomenon below. The positive risk would occur in this case sooner than the negative one.
- The loans over-saturation of the economy (mainly the household sector) would result in a slowdown of household consumption
- Effects of the second half of the election cycle. As it can be seen in the chapter on “Public Finances”, we can include the ending political cycle and related legislative adjustments among risks that can fundamentally affect the long-term sustainability of public finances (e.g., measures such as the “social package”).
- The unknown form of the future monetary policy in the Euro area (QE exit and how? This risk is mentioned in the chapter “ECB monetary policy...”)

The chapter “Qualitative factors of economic development) refers to the gradual exhaustion of price and cost factors of the Slovak competitiveness. Indeed, the risk of losing price and costs competitiveness (especially competitiveness through the low labour costs) has been resembling in various economic discussions and economic policy papers for a long time. However, currently, it is getting more serious. This phenomenon becomes more visible with the new urgent situation. An increased labour market tensions and higher workforce scarcity resulting in increased pressure on wage growth and its impact on wage competitiveness is currently a key topic of economic debates in Slovakia. We select this topic for a small analysis in the Box 1.

### Box 9.1

#### Slowing Catching-up of Productivity Leaders and Loss of “Wage Cushion”

We cannot exclude the possibility that the previous growth trajectory (based on the original competitiveness factors, especially low costs) will recover for some time. It is not completely exhausted. However, it is more clearly reaching its limits – visible in the labour productivity (Table 9.5). While in the period 2000 – 2010, the Slovak economy recorded sharp leaps to the productivity of most-advanced economies (from 20% or the EU15 level in 2000 to 48% in 2010), between 2010 and 2017, the convergence process experienced an increase of only one percentage point.

Table 9.5

#### Labour Productivity Ratio to the EU15 level (EU-15 level = 1)

	1995	2000	2005	2010	2017
EU15	1.00	1.00	1.00	1.00	1.00
Denmark	1.16	1.14	1.18	1.28	1.29
Austria	1.14	1.04	1.06	1.09	1.12
Finland	1.08	1.07	1.08	1.12	1.15
Germany	1.17	0.98	0.96	0.96	1.00
Czechia	0.20	0.26	0.36	0.48	0.49
Hungary	0.18	0.21	0.34	0.36	0.35
Poland		0.23	0.28	0.35	0.38
Slovenia	0.37	0.43	0.50	0.56	0.58
<b>Slovakia</b>	<b>0.16</b>	<b>0.20</b>	<b>0.30</b>	<b>0.48</b>	<b>0.49</b>

Source: Own calculations based on Eurostat database.

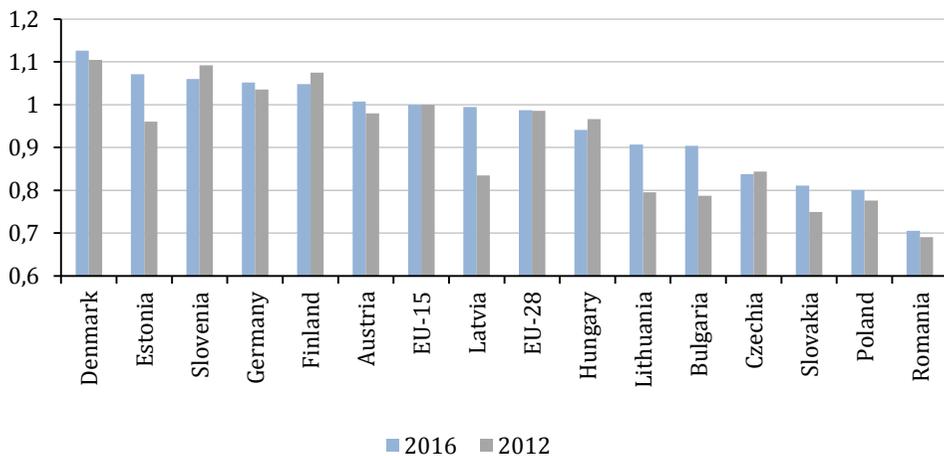
The labour productivity grew faster than labour costs in Slovakia meaning an improvement of competitive advantage in the form of decreasing unit labour costs (lower labour costs per unit of output). If we set the level of unit labour costs in the EU15 to one, the level was 0.81 in 2016 in Slovakia. In the creation of 100 EUR of value

added in the EU15, the labour costs (expressed here in term of compensations of employees) were 53.6 EUR, in Slovakia only 43.5 EUR (thus the ratio of the two values being 0.81). It means that the Slovak economy is still competitive against the EU15 through unit labour costs. It still has a relatively favourable ratio between productivity and labour costs. There is a so-called wage cushion that helps businesses to stay in Slovakia. There is only a very limited room for labour costs growth beyond productivity growth without losing a competitive advantage based on unit labour costs (Lábaj, 2018). However, it is evident that this competitive advantage of Slovakia significantly decreased in the medium-term (see Chart 9.2). Even in 2012, a unit labour costs in Slovakia reached just under 75% of the EU15 level, which is 6 pp. lower than in 2016. This problem is even more pronounced in the manufacturing sector (which is crucial for Slovak competitiveness). The Slovak manufacturing sector lost its advantage of low unit labour costs in V4 (Lábaj, 2018).

Due to the increase in employment; decrease in the unemployment rate, and the associated increase of workforce scarcity, the share of compensation of employees in value added increases since 2013 (prior 2013, the share was very low and decreasing in the long-term). It forces the competitive advantage to disappear. By losing the competitive advantage of low labour costs, it is not perspective to try to reduce them again. Rather, it is a starting point for promotion of such high labour productivity activities that consider even high labour costs as non-problematic.

Figure 9.2

**Unit Labour Costs** (EU-15 level = 100)



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Authors: Karol Morvay at al.

Published since 1993.

1<sup>st</sup> Issue

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