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Economic Development of Slovakia in 2016 and Outlook up to 2018

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Bratislava 2017

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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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e-ISBN: 978-80-7144-278-3

CONTENTS

INTRODUCTION

In our regular annual assessments of the economic development of Slovakia, we try to point out specific events, which happened recently in the country. However, the aim is to evaluate these phenomena in the context of long-term development. We highlight long-lasting trends, but mostly focus on those, which are changing.

The signs of multi-year deflation interruption, the year-on-year fall in investments, the unexpectedly favorable development of labour market, or the questioning of "debt brake mechanism" – these are some of the features characteristic for 2016. Thus, we pay attention to them in the publication. In the background of such phenomena are some longer-term trends: e.g. the economic growth around 3 % rate, persisting non-standard expansionary monetary policy or lasting relatively robust real wage growth.

The analysis of Slovak economic development by Institute of Economic Research, SAS is regularly published since 1993. It evaluates the macroeconomic trends, economic performance level, internal and external balance, economic policy, labour and financial markets development as well as measures that have changed the economic environment. In comparison to the previous year's publication, this one enriches with a look at developments in the economic sectors or with developments in the financial sector. A series of partial analyses leads to an assessment of the possible future development in short-term outlook. The purpose of this outlook is not to provide the detailed quantification of economic parameters, but rather to provide scenarios of the most likely development and possible risks in the near future.

1. OVERALL ECONOMIC DEVELOPMENT

The chapter provides an overview of the economic development – a "view from above." Following chapters provide a closer look at partial problems. The first part of chapter pays attention to the Slovak economy position compared to the most advanced economies. We focus on the catch-up process of economic performance, on the convergence of price levels, wage levels or consumption levels. Subsequently, we focus on the economic growth and macroeconomic stability in recent period. We investigate a series of questions:

- How has the Slovak economy progressed with the catch-up process to the advanced countries in Europe in recent years?
- If the Slovak economy gets closer to more advanced countries, is it visible also in other socio-economic aspects? What was the convergence pace of price, wage, or consumption level?
- What were the specifics and differences of the economic growth in comparison to previous trends?
- Has the economic growth been accompanied by an acceptable level of stability, desirable development of social parameters, and ecological intensity parameters?

1.1. Catching-up the Most Advanced

The progress in catching up of the most advanced is correctly understood as one of the criteria for a successful economic policy of "catching-up countries." However, it is not just about getting to the same performance level. The catching-up of most advanced (so-called "real convergence" expressed as a convergence in the level of GDP per capita) should not be a self-proclaimed process. It is rather expected that catching up of performance will be accompanied with convergence in other socio-economic parameters that determine the living standards of the population.

In some cases, we need to work with data sets ending in 2015 (we are limited by their availability at the time of this text preparation).

Table 1.1 provides a combined view of absolute GDP per capita in Purchasing Power Standard (PPS)[1] and change in this parameter over the past two decades. "Catching-up countries" achieve lower levels of performance (compared to the EU-15), but high growth rates. That is the pattern of economic growth and real convergence: greater opportunities for strong economic growth are in countries with lower performance level. The top performing economy achieves further improvement much harder. Among the Central and Eastern European (CEE) countries, the Czech Republic and Slovenia were closest to the EU-15 performance level. Slovakia ranked third (with a performance level above 71 % of the EU-15 level in 2015). However, the achieved growth over two decades (1995 – 2015) was significantly higher in Slovakia than in the Czech Republic or Slovenia. GDP per capita level of Slovakia in PPS increased 3.1 times from its starting level in 1995.

Table 1.1
Catching-up of Most Advanced Economies Performance

	Relative Economic Performance (GDP per capita in PPS, ratio to the EU-15, in %, 2015)	Performance Change in Long-term (GDP per capita in PPS, 2015 level / 1995 level)
Bulgaria	43.5	2.72
Czechia	80.5	2.19
Estonia	69.0	4.08
Croatia	53.3	-
Latvia	59.4	4.04
Lithuania	69.0	4.32
Hungary	62.9	2.56
Poland	63.3	3.05
Romania	52.7	3.59
Slovenia	76.4	2.10
Slovakia	71.2	3.05

Source: Own calculations based on Eurostat database.

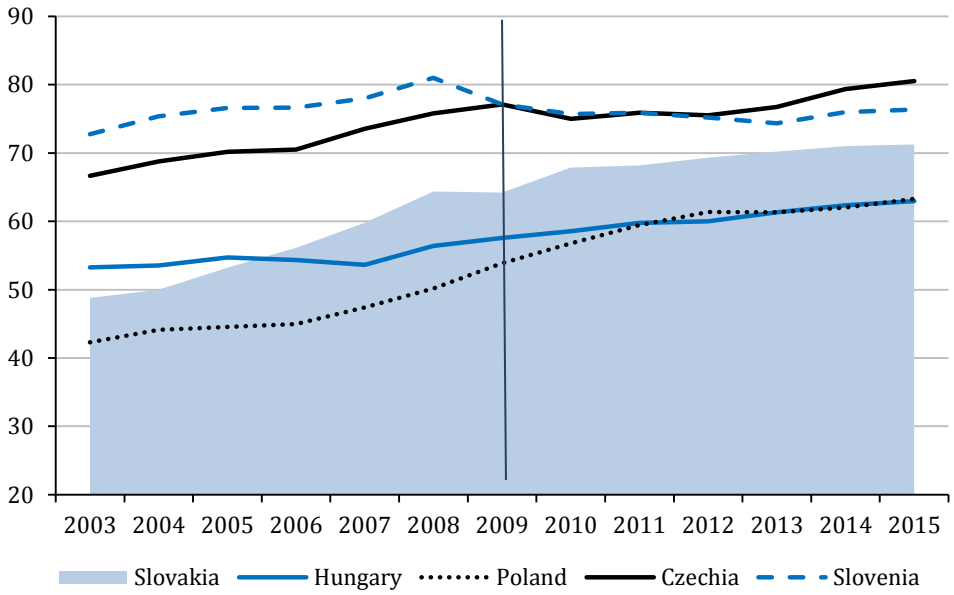
Another view of real convergence is in Figure 1.1 showing the catching-up process to the EU-15 performance with the same period

[1] Values expressed in purchasing power standard take into account differences in price levels among the 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 EU in 2004 and later.

prior and after the economic recession (2009). It allows us to easily figure out whether the pace of real convergence is different after the crisis or not. In case of Slovakia, we may conclude that the pace of real convergence slowed down in 2013 – 2015. The difference between the growth rate of the Slovak economy and the EU significantly diminished.

In the following, we focus on the consistency of real and price convergence. The change in the price level is expressed by PLI (Price Level Index published by Eurostat) with the EU-15 price level = 100, and price levels of other countries expressed as a ratio to the EU-15 level. The Slovak price level reached about 65 % of the EU-15 price level in 2015. However, it used to be at higher levels several years ago.

F i g u r e 1.1
Real Convergence Prior and After Crisis
(GDP per capita level in PPS, the EU-15 = 100)



Note: The vertical line marks the point of the recession in 2009.

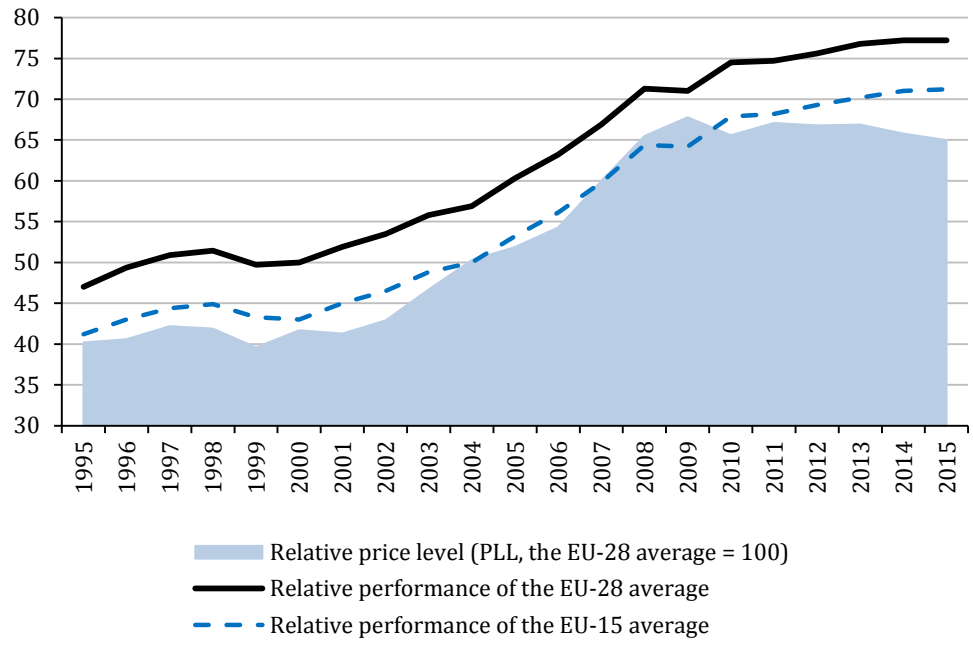
Source: Own calculations based on Eurostat database.

The curves trajectory in Figure 1.2 shows the similar development of real and price convergence until the appearance of the pan-European

recession in 2009. The subsequent disinflation (and later deflation) has distorted the price convergence process. After 2012, the paralysis of price convergence is characteristic for the whole group of five CEE countries (Figure 1.3). However, it is expected that the process will resume, once the deflationary trends overcome (we expect the 2016 year to be the last one with deflation in Slovakia – see other parts of the publication).

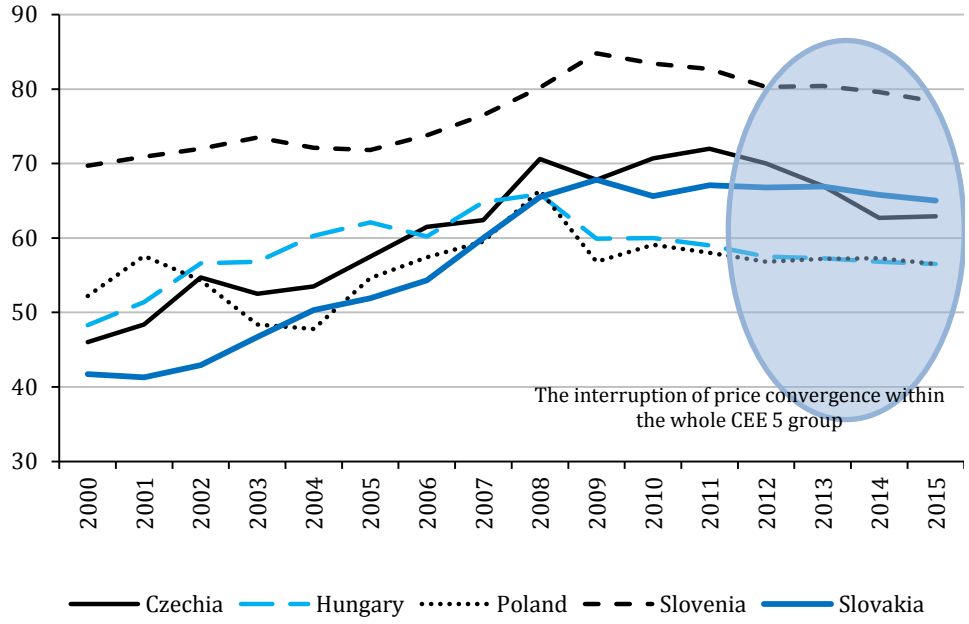
The price levels of consumer and capital goods developed considerably differently (Table 1.2). The relative price level (compared to the EU-15) for capital goods was higher than for individual consumption goods in each of the CEE countries. However, we need to say that capital goods are relatively expensive in the Slovak economy (only Estonia has higher price level within the CEE group). Therefore, it may have a diminishing impact on investment activity in Slovakia.

Figure 1.2
Real and Price Convergence



Source: Own calculations based on Eurostat database.

Figure 1.3
Development of Price Convergence
(Price Level Index, the EU-15 level = 100)



Source: Eurostat Database.

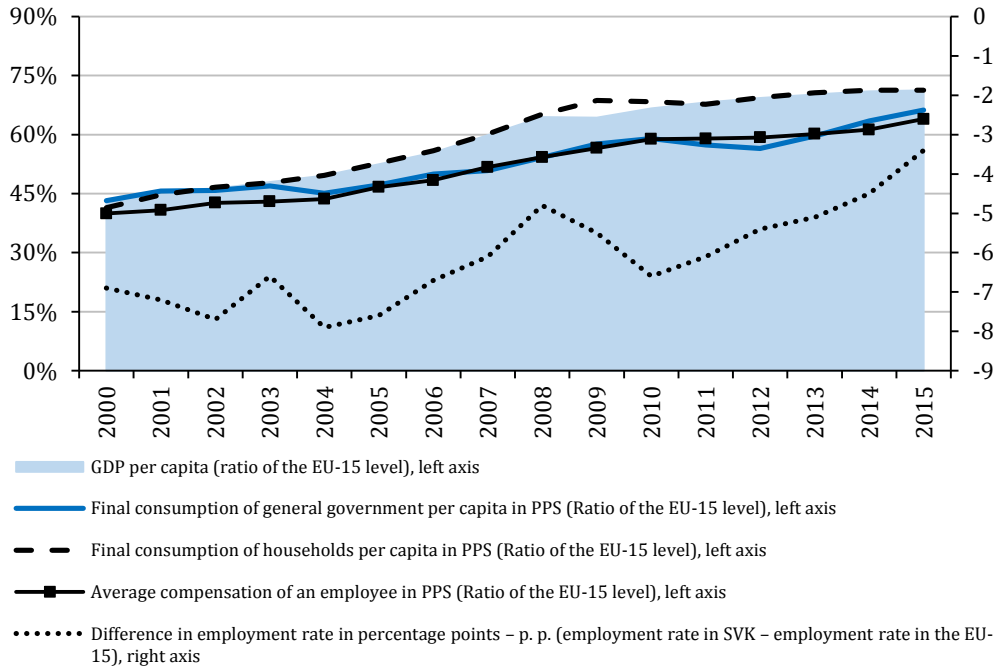
Table 1.2
Price Level Catching-up Process to the Most Advanced Economies

	Price Level of Individual Consumption Goods (the EU-15 = 100)		Price Level of Capital Goods (the EU-15 = 100)	
	2000	2015	2000	2015
Bulgaria	29.6	39.3	41.8	62.1
Czechia	40.5	53.9	56.7	72.9
Estonia	46.8	63.9	76.7	79.8
Croatia	54.4	57.5	-	62.8
Latvia	47.6	59.8	70.8	74.9
Lithuania	42.9	52.4	70.7	72.5
Hungary	41.8	48.9	67.2	65.0
Poland	47.6	47.8	62.7	72.0
Romania	33.0	42.9	47.7	59.6
Slovenia	65.3	73.1	67.4	76.1
Slovakia	35.5	57.3	59.6	76.8

Source: Eurostat Database.

There is a large number of indicators that could be used for the demonstration of social parameters level (i.e. social convergence). For this purpose, we utilize (1) the average compensation of employee[2], (2) the households' consumption per capita, (3) the consumption of general government per capita, and (4) the employment rate. Of course, there are plenty of other indicators, which we do not utilize. We cannot assume that change in one (or more) of these "social" parameters have to automatically replicate the pace of real convergence. The Figure 1.4 focuses on parameters of real and social convergence in Slovakia – each parameter is expressed as a ratio to the EU-15 level. The GDP per capita level grew from 40.6 % of the EU-15 level in 1995 to 71.3 % of the EU-15 in 2015. That is the evidence of large real convergence, which was already mentioned. The average compensation of employee increased from 40 % of the EU-15 level in 2000 to 64 % in 2015.

Figure 1.4
Real and Social Convergence



Source: Own calculations based on Eurostat database.

[2] The compensation of employees is the volume of gross wages and social contributions paid. This volume is divided by the number of employees. The number of employees is based on national accounts methodology.

Thus, the wage convergence was a bit slower than the real one, but not at a dramatic rate. However, the scissors between real and wage convergence were more pronounced in some periods (e.g. the difference between them was around 10 p.p. in 2011 and 2013.). While the households' consumption kept pace with the real convergence rate, the government consumption lagged behind. It is clearly related to the limitation of the state's role in the economy. The Slovak employment-related lag has significantly diminished during the 2014 – 2015 period (the difference of employment rates reached the historical minimum in 2015 and was expected to decrease further in 2016).

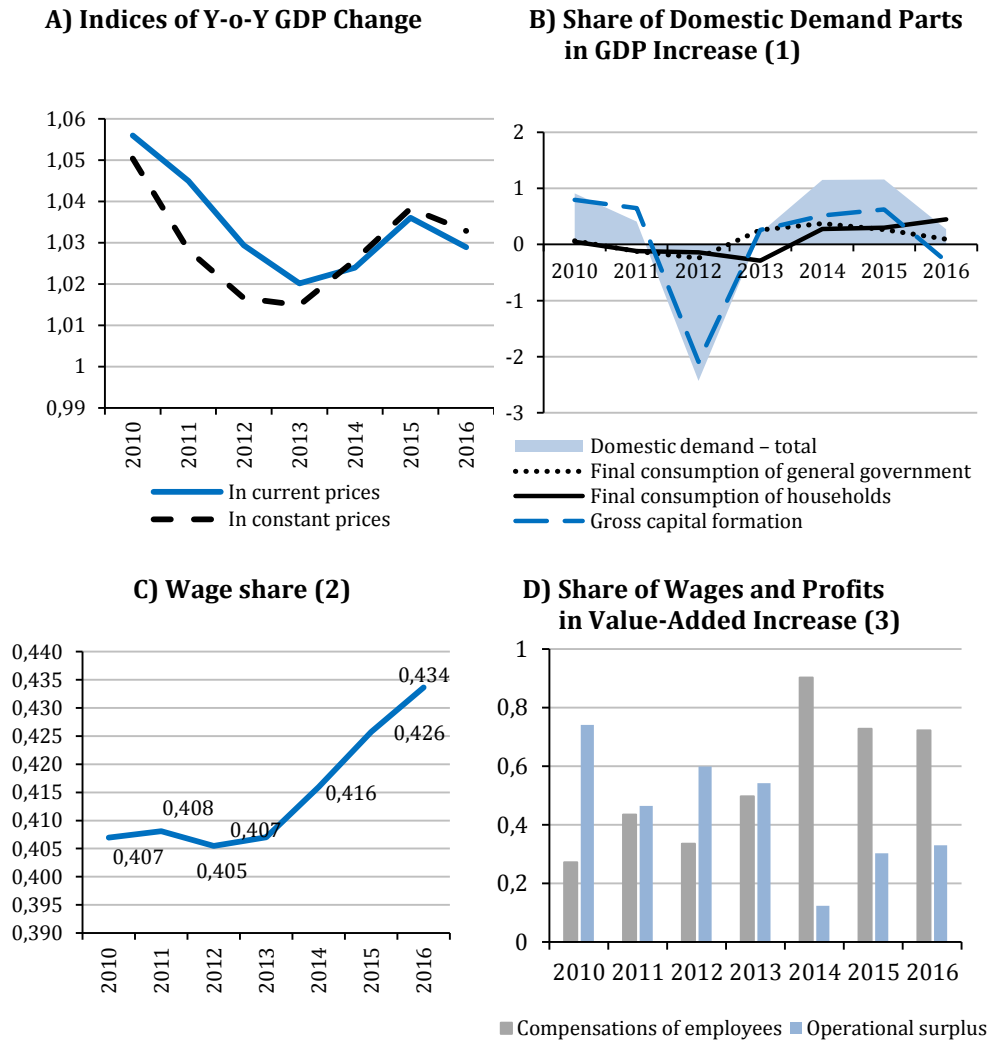
1.2. Economic Growth and Macro-stability

The quantitative change of economic growth in 2016 (its moderate slowdown to 3.3 % in constant prices from 3.8 % in 2015) is probably its least interesting feature. However, there are other characteristics and accompanying phenomena being more interesting, such as:

- The economic growth rate was higher expressed in constant prices (cons.p.) than at current prices (curr.p.) (Figure 1.5A). It is an accompanying phenomenon of deflation.
- In 2014 and 2015, the domestic demand played a particularly important role for the GDP growth retention. In 2016, the growth was driven also by external demand again (i.e. by net export of Slovakia). Thus, the role of domestic demand as the main driver of economic growth was limited (Figure 1.5B). It is mainly related to the drop of investment activity (elaborated in the following text).
- A historically high wage share was reached. The share of employees' compensations in gross value added (wage share) exceeded 43 %, representing an extremely high value for the Slovak economy. The low wage share was a controversial characteristic of the Slovak economy for a long time. However, it is significantly rising from 2014 onwards (Figure 1.5C). That is related to more favorable labor market developments. Between 2014 and 2016, the compensation of employees clearly outweighed the operational surpluses (simply

called profits) in the structure of gross value-added change (Figure 1.5D). Such composition is a fundamental change in the structure of the Slovak economy income structure.

Figure 1.5
Selected Characteristics of Economic Growth in the Slovak Economy

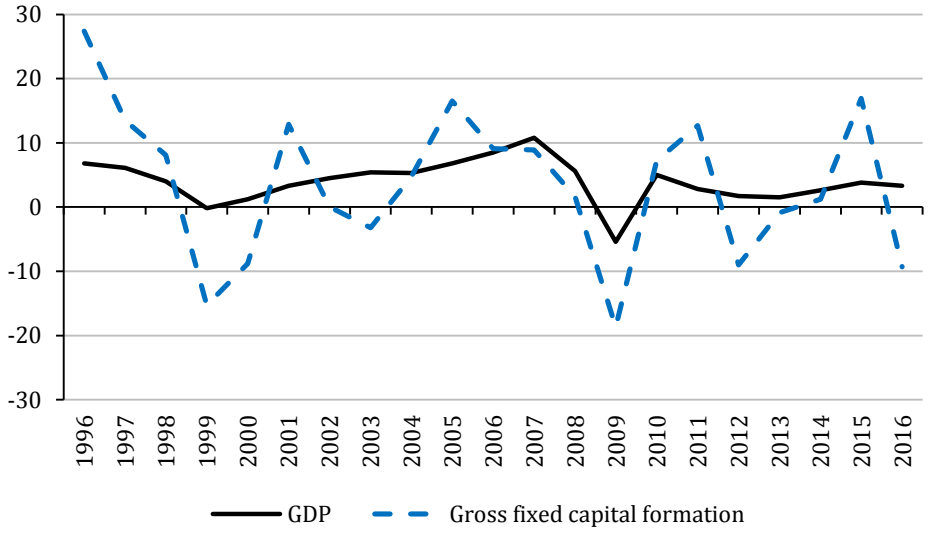


Notes: (1) Domestic demand is an aggregate variable consisting of other noted parameters. The shares of domestic demand parts in overall GDP change are calculated in the current prices. (2) The wage quota is understood as the share of compensations of employees in the gross added value. Calculated in the current prices. (3) It is the share of compensation of employees and operational surpluses in y-o-y change of gross added value in current prices.

Source: Own calculations based on Eurostat database.

The noticeable phenomenon was a sharp drop in volume of investments in 2016. The gross capital formation (i.e. investment activity) is a very volatile and unstable variable. It develops in significant fluctuations when the expectations are changed and may fall sharply at the onset of a recession. However, in 2016, the sharp decrease in investments had a different nature. In 2015, the volume of investments increased tremendously and was "inflated" by the last chance to obtain financial resources from the EU funds (due to the end of previous programming period). Therefore, the volume of investments experienced one-off increase in 2015. It is natural that the volume of investments was relatively lower in the following year and the decrease was recorded in y-o-y change (Figure 1.6).

Figure 1.6
Fluctuations in the Investment Activity; Y-o-Y Changes in GDP and Gross Fixed Capital Formation (in %; data in constant prices)

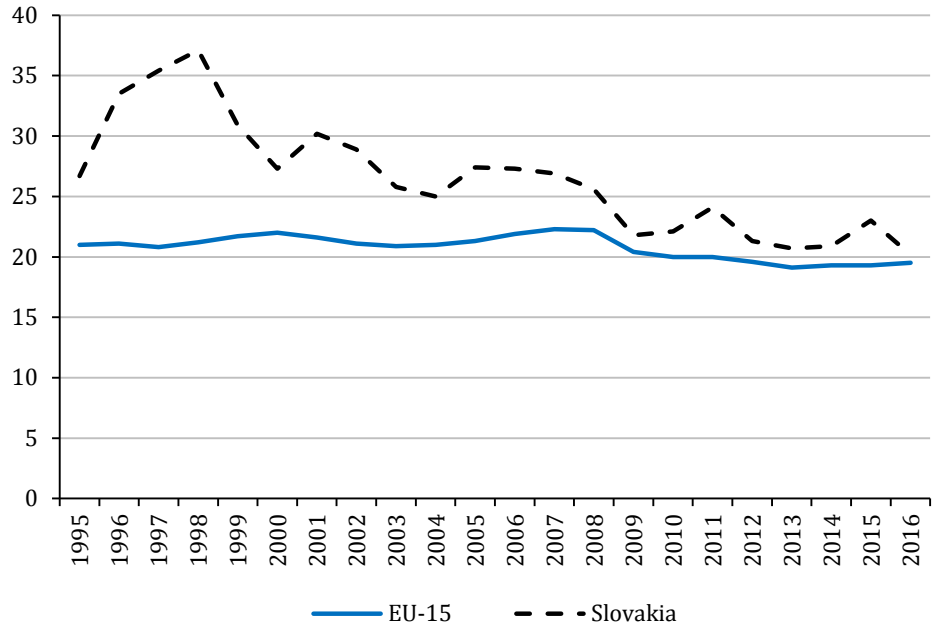


Source: Own calculations based on Eurostat database.

In order to assess the severity of fluctuations in the investment activity, we utilize so-called "investment rate" (the share of gross fixed capital formation – GFCF to GDP in current prices; Figure 1.7). The indicator displays what proportion of total income is society assigning to investment activities. A higher investment rate in less performing

economy is necessary for the catching-up process of the most performing ones. The investment rate in Slovakia is in long-term higher than in the EU-15 average. However, at the same time, the difference between investment rates in Slovakia and the EU-15 is gradually decreasing over time (which seems to relate to the gradual equalization in capital per labor ratio).

Figure 1.7
Development of the Investment Rate
(Share of Gross Fixed Capital Formation in GDP; in %)



Source: Own calculations based on Eurostat database.

When compared to the previous development, a significant difference is found in the labor productivity growth. The pre-crisis development of the economy, compared to the most recent one, features one of the striking differences – a different development in the labor productivity (Table 1.3).

- The growth of the economy was driven by very strong increase in the productivity along with a relatively weak (in terms of GDP growth) employment growth between 2005 and 2007.

- On the contrary, in the period 2014 – 2016 the economic growth was associated with weak productivity growth along with relatively strong employment growth. We have already dealt with this fact in last year publication (Morvay et al., 2016). The link between the economic growth and employment seems to be different from what it used to be in the past. This means that even relatively low economic growth leads to a significant increase in employment. That used to be unimaginable in the past. Therefore, if the economic growth is linked to a stronger employment growth, it must be logically accompanied with a weaker increase in labor productivity in short-term.

The decline in labor productivity growth pace may be perceived as a threat for competitiveness of the economy (in this respect see IFP 2016 or IMF, 2016). However, we assume that such development in Slovakia does not need to be a reason for worries yet; after the period of Slovak leadership in productivity growth among the OECD member states the new period came, in which the nature of growth was focused also towards more labor intensive activities. A growth model based almost unilaterally on productivity shifts with only small additional employment change could not sustain for unlimited time. However, it does not exclude the option that such period (with expansion of productivity at the expense of employment growth) will occur again – especially once the other major multinational companies will establish their plants in future. Nonetheless, the alternation of these periods is not surprising.

Table 1.3
The Role of Productivity and Employment Changes in Economic Growth

	2005 – 2007 Average	2014 – 2016 Average
Change in GDP, constant prices, %	8.7	3.2
Change in Employment Based on National Accounts Methodology, %	1.9	1.9
Change in Labour Productivity (Index of GDP Change/Index of Employment Change)	6.6	1.3

Source: Own calculations based on Eurostat database.

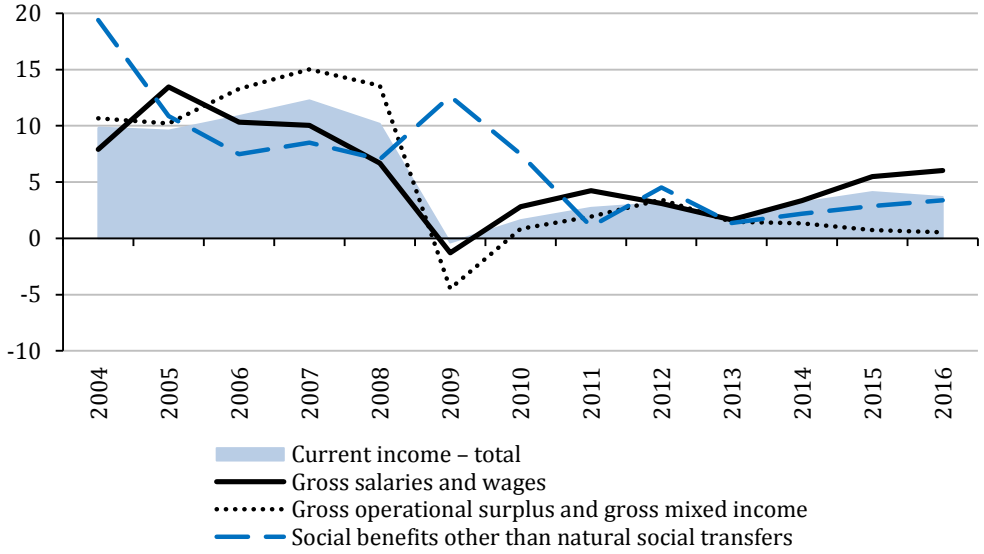
When evaluating "the quality of growth", we focus on the three of its accompanying phenomena; households' income development, the change in environmental intensity and some features of macroeconomic balances (stability). We expect a healthy economic growth to be coupled with a favorable development in these areas: it should generate more income for the households' sector, it should be environmentally friendly and linked to an acceptable level of macroeconomic (im-) balance.

The current income of households' sector was very positively influenced by compensation of employees. The households' income from business activities (income of entrepreneurs, so-called mixed income) stagnated. Therefore, the growth in total current income could not be as high as the growth of compensation of employees was (Figure 1.8). In the earlier period (prior to 2009), the income of entrepreneurs was often the strongest component of household income growth. This was apparently related to the structural change in employment – the share of entrepreneurs grew at the expense of employees share.[3] Later, following the changes in Tax and Social Contributions Acts, as well as, in Labor Code has resulted in stop of this kind of structural change. In recent years, wages (more precisely, the compensations of employees) have been strongly growing component in households' income. The tendency as such leads to the fact that the so-called functional income structure in Slovakia becomes to be similar to the income structure in the most advanced economies (higher wage share and lower share of profits in total income). Thus, the growth of the economy is transferred to the income of households' sector, while the most significant income growth was recorded in that segment of households' sector, which has income in form of wages.

The ecological intensity is illustrated by a simple indicator: the selected types of emissions are compared to the volume of created GDP. The results show how many tons of emissions are exhaled into the environment per one million EUR of generated GDP. We are aware that such approach is not sufficiently sophisticated methodology for a comprehensive assessment of environmental burden or sustainability. However, we believe, it is sufficient to observe the favorable development tendency; a decrease in amount of exhales per unit of GDP.

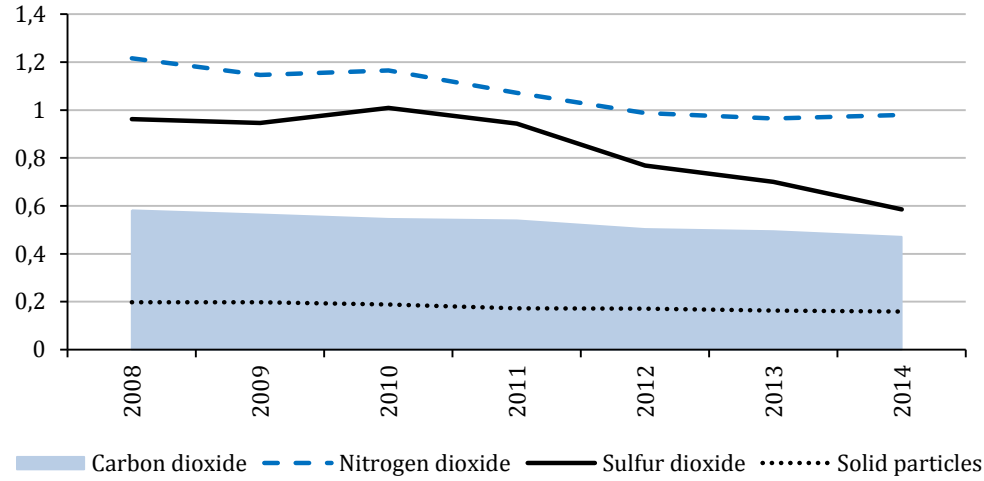
[3] The structural change was caused by an effort to avoid taxes and social contributions paid, labor law provisions, or intention for more flexible labor relations.

Figure 1.8
The Development of Income Categories for Household Sector
(Y-o-Y Changes in %, current prices)



Note: The current income is an aggregate variable consisting of other noted parameters.
Source: Own calculations based on SO SR database.

Figure 1.9
Ecological Intensity: Volume of Emissions per Unit of GDP (tons of selected emissions per one million EUR of GDP generated)

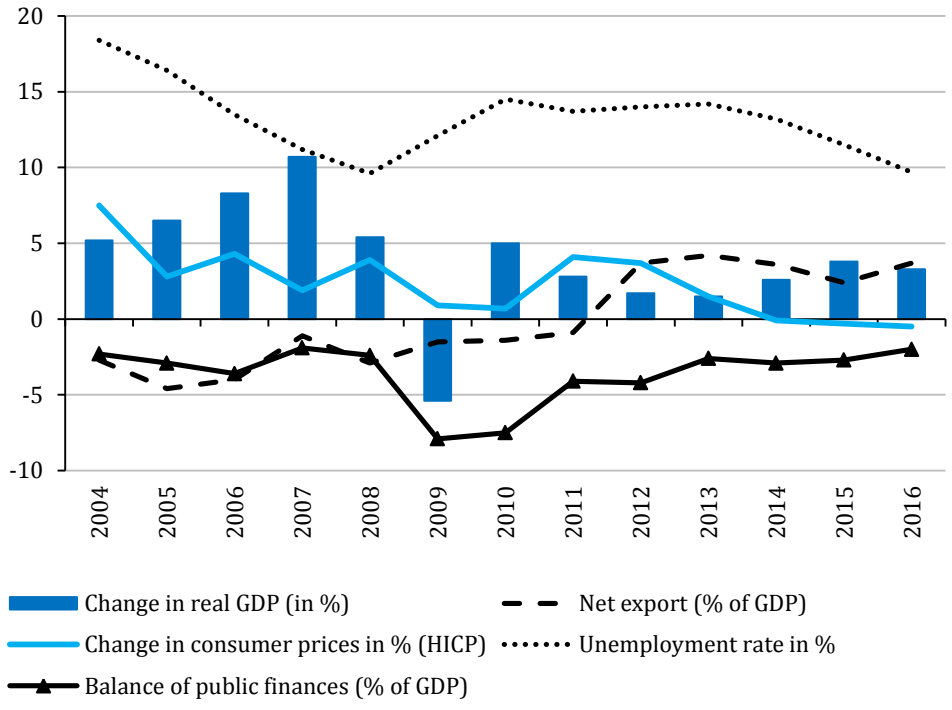


Notes: Carbon dioxide in thousand tons per EUR mill. of GDP, Nitrogen oxides in tons per EUR mill. of GDP, Sulfur dioxide in tons of SO2 equivalents per EUR mill. of GDP, Solid particles in tons per EUR mill. of GDP.

Source: Own calculations based on SO SR database.

The economic growth was accompanied by a relatively satisfying macroeconomic stability (balance) in 2016. That is one of the signs of sustainable economic growth. The 9.7 % unemployment rate has hit the historical 2008 minimums. The fact that labor market parameters have improved dramatically even with relatively moderate economic growth is probably the most notable feature of socioeconomic development over the last three years. The general government deficit moderated again (reaching 2 % of GDP) and export of goods and services exceeded the import (Figure 1.10). However, in 2016, the price level declined for the third consecutive year and the deflation was even more significant than years before. So far, we may here state that the macroeconomic balance situation remained generally favorable. A much more detailed assessment of the macroeconomic stability signs mentioned above is provided in following chapters.

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



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

* * * *

If we come back to the questions mentioned in the introduction of this chapter, we may note following:

The real convergence (catching-up to the most advanced) has slowed in recent years as the pace of Slovak economic growth is no longer so far ahead of the average EU pace. The price convergence has stalled along with the emergence of deflation. We admit that some parameters of social convergence have lagged behind the real convergence, but not in a dramatical way.

The economic growth continued and was accompanied by a significant improvement in labor market parameters. The trend from the previous years continued. The contiguous phenomenon of economic growth was the slowdown in labor productivity growth. The growth was accompanied by a sharp drop in fixed investments – that is the unique feature of 2016. Such a significant decline in the investment activity is rather characteristic for recession and not for growth periods. However, this phenomenon can be explained by fluctuations in the financial implementation of the EU funds (exceptionally high volumes in 2015 and their subsequent fall in the following year). It is necessary to resume the growth of investments without the aid of the EU funds. That could be a serious challenge especially for the public sector.

The economic growth had features of satisfying macroeconomic stability, declining environmental intensity and adequate income growth in the household sector. Therefore, it was not associated with any unsustainable tendencies.

2. ECONOMIC DEVELOPMENT BY SECTORS

The chapter pays attention to the development of the Slovak economy at individual industrial level. Such a view allows us to understand better the aggregate change in employment and gross domestic product described in other parts of the publication.

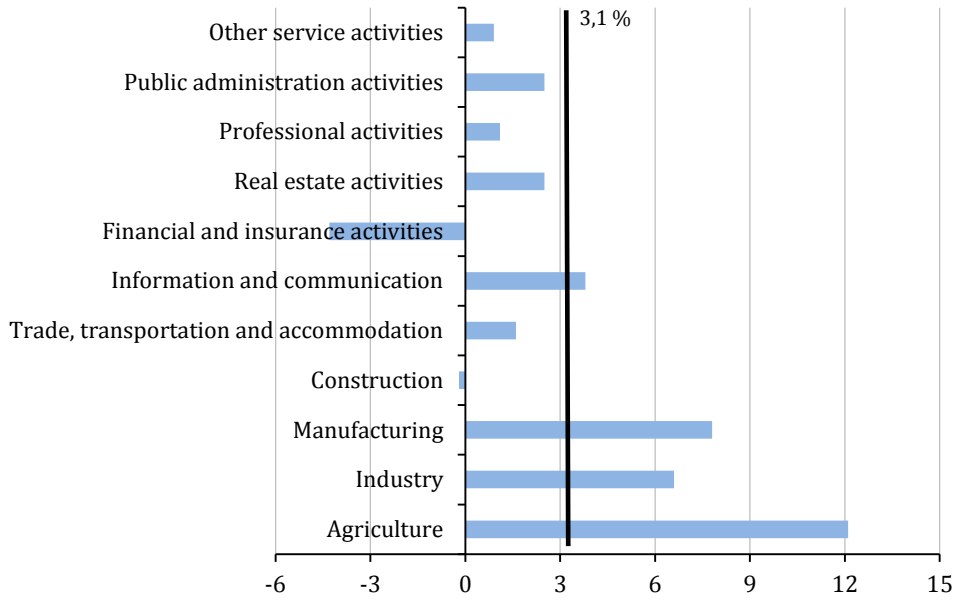
We investigate a series of following questions:

- Which industries contributed to the growth of value added? How has the development of value added growth changed in individual industries in last three years?
- Why have some service industries grown relatively steadily in the last three years, and why was the development in other service industries quite volatile? How does the development of services depend on the development of manufacturing industry?
- What has contributed to the stronger link between the growth of GDP and changes in employment? How does it relate to the changes in labour productivity per worker and hourly labour productivity?
- What are the consequences of different price developments in the manufacturing and service sectors?

Which Industries Contributed to Value Added Growth?

A value added is the most important part of GDP, which is (unlike GDP) measured also at the industrial level. The difference between these two indicators lies in the fact that GDP is complemented by the addition of taxes on products minus subsidies on products. Similarly to the decrease of pace in growth of GDP (from 3.8% in 2015 to 3.3 % in 2016), also the value-added growth slowed down in the Slovak economy (a decrease from 3.5% to 3.1 %). Figure 2.1 shows industries, which have contributed to the growth of value added above the average and which, on the contrary, have hampered it.

Figure 2.1
The Growth Rates of Value Added in Individual Sectors (2016)

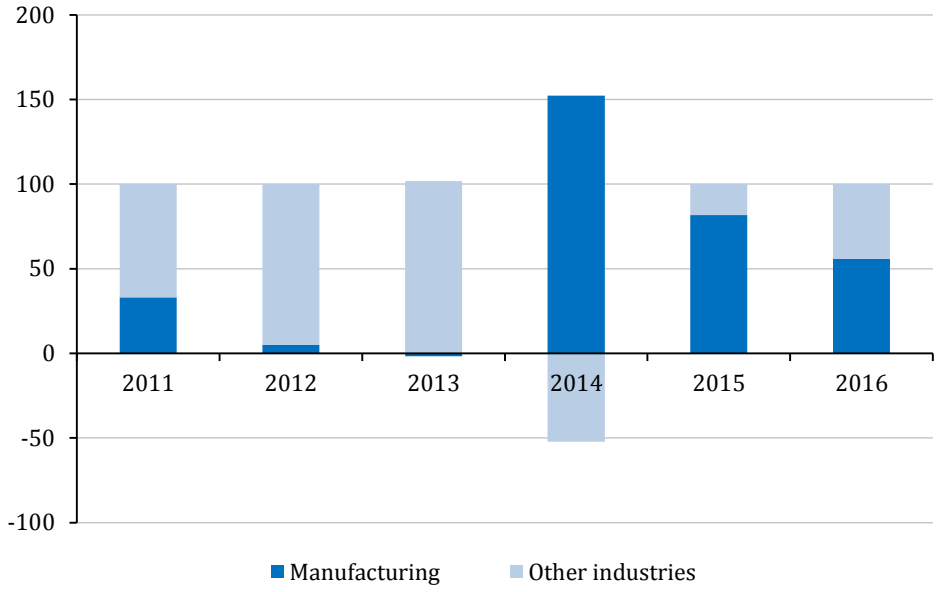


Notes: ***Agriculture****:* agriculture, forestry, fisheries. ***Industry****:* includes manufacturing and energy. ***Trade, transport and accommodation****:* wholesale, retail, repair of motor vehicles and motorcycles; transportation, storage, accommodation and food service activities. ***Professional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

Source: Eurostat (2017b); author's calculations.

In 2016, the highest increase in value added was recorded in agriculture (12.1%) compared to previous year. The significant contribution to increase in value added growth was provided by the growth of industry sector, particularly by the manufacturing industry (6.6%). Besides these industries, the above-average growth has occurred only in the information and communication sector. All service sectors recorded lower value-added growth compared to the manufacturing industry. The value added in construction was marginally lower in 2016, than it was in 2015. After relatively low contributions to value added growth of manufacturing industry during years 2011 – 2013, it started again to dominate in the growth of value added since 2014.

Figure 2.2
Contribution of Manufacturing and Other Industries to Value Added Growth (in %)



Source: Eurostat (2017b); author's calculations.

The overall effect of the value-added growth depends not only on the growth rate of individual industries, but also on their share in the total created value added. The changes in the growth rate of large sectors have a significant volatile effect on value added growth, while the relatively high volatility in the development of small sectors does not robustly affect the value-added development. Therefore, Table 2.1 provides the calculation of individual sectors contribution to the growth in p.p. The growth rates of sectors, as well as their weight on the total value added are taken into account.

In 2016, the contribution of industry to the total growth of value added was 1.78 p.p., mainly due to the growth of value added in manufacturing. Although, the share of agriculture in the total value added in the Slovak economy is rather low (4 %), the significant growth in the value added of this sector resulted in a contribution to the overall growth by 14.2 % or 0.45 p.p.

Table 2.1
Contribution of Individual Sectors to Value Added Growth (in p.p.) **and as a Share in Overall Growth** (%)

	2014	2015	2016	2014	2015	2016
	Contribution in p.p.			Share in overall growth		
Total	*2.2*	*3.5*	*3.1*	*100*	*100*	*100*
Agriculture	0.68	-0.59	0.45	31.6	-17.0	14.2
Industry	3.44	2.47	1.78	159.1	70.7	56.7
Manufacturing	3.29	2.85	1.76	152.2	81.7	55.8
Construction	-0.03	0.16	-0.02	-1.4	4.6	-0.5
Trade, transportation and accommodation	0.84	0.71	0.35	39.0	20.3	11.1
Information and communication	-0.34	0.06	0.15	-15.7	1.6	4.8
Financial and insurance activities	0.40	0.49	-0.18	18.7	14.0	-5.9
Real estate activities	-2.38	-0.03	0.16	-110.2	-0.8	5.2
Professional activities	0.27	0.02	0.08	12.3	0.7	2.7
Public administration activities	-0.83	-0.03	0.33	-38.3	-0.8	10.6
Other service activities	0.11	0.23	0.03	5.0	6.7	1.1

Source: Eurostat (2017b); author's calculations.

After the period of decline in 2014 and 2015, the public administration activities also contributed to the growth of value added by 0.33 p.p. Their contribution was comparable to the value added by trade, transportation, and accommodation. On the contrary, the financial and insurance activities contributed to the growth negatively (-0.18 p.p.) The decline followed after this industry grew by more than 10 % per year in 2014 and 2015. Therefore, it seems that the growth in this sector was not sustainable and recorded decline is the consequence of sector inflation from previous period. The construction sector belongs to the group of sectors with relatively high volatility in value added growth (year-on-year). After the positive contribution to the growth of construction in 2015, the 2016 year's contribution was slightly negative. However, the value added created in the construction sector was still higher than in 2013 and at the similar level as in 2010.

Links between Manufacturing and Services

It is not possible to understand the development of the individual industries without taking into account existing links among them. Although some activities depend solely on the final demand development for their products (e.g. automotive production), most of the activities of individual sectors focus on production of goods and services targeted for further processing in other sectors (e.g. mining or job recruiting). In 2016, we can see the low contribution of most services to the growth of value added. The exception was the growth of value added in trade, transportation and accommodation and public administration activities. While the change in public administration activities seems to be a one-off (value added decreased in the sector in 2014 and 2015), the trade, transportation, and accommodation activities strongly relate to the performance of manufacturing industry.

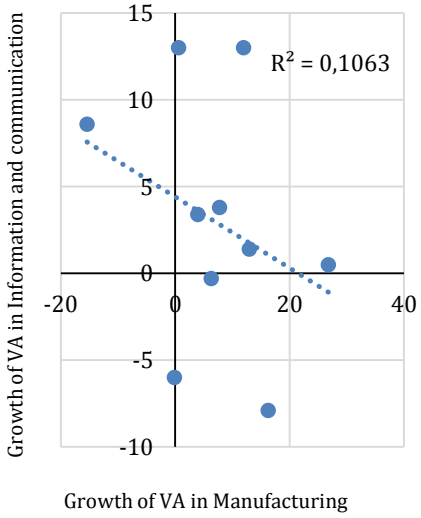
As the authors of the study on national effects of manufacturing industry (Luptáčik et al., 2016) stated, the manufacturing employs directly only close to 20% of Slovakian employees. However, the final demand for its products generates directly and indirectly about 35% of total employment. A large proportion of value added and employment generated in services indirectly depends on the development of manufacturing industry. In Slovakia, the dominant part of the growth in value added was driven by an increase in value added of manufacturing in last three years. This also led to the increase in value added in services linked to the manufacturing. The growth was more volatile in the other service sectors and dependent on other exogenous factors. It may be illustrated by different developments in the information and communication sector, as well as in the trade, transportation and accommodation sector from 2007 to 2016.

The link between the value added growth in the information and communication sector and manufacturing is very weak. On the contrary, the growth of value added in trade, transportation and accommodation is relatively strongly linked to the growth in manufacturing value added. A closer look at the individual industries included in the sector would possibly reveal more details which industries are heavily linked to the

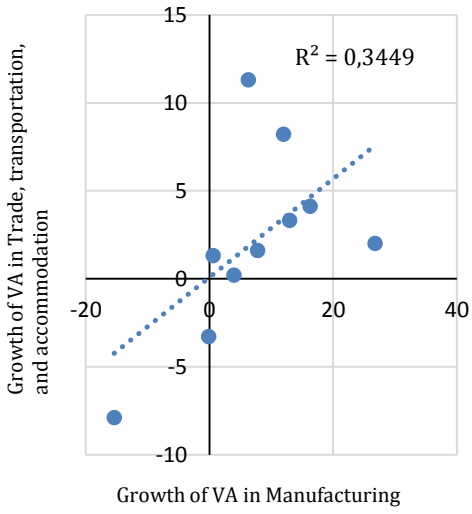
manufacturing. However, the main conclusion lies in the fact that if the robust growth in manufacturing industry will also continue in following years, we assume it will generate positive effects in value added growth of service sectors closely linked to it (wholesale, retail, transportation, storage, job recruitment and so on).

Figure 2.3
Links between the Growth of Value Added in Manufacturing and Selected Sectors

A) Information and communication



B) Trade, transportation, and accommodation



Source: Eurostat (2017b); author's calculations.

Sectoral Overview of Changes in Employment and Number of Hours Worked

In 2016, 65.6% of employees worked in the service sector. Within the service sector, most of employed were still working in the trade, transportation and accommodation and public administration activities. Compared to 2015, the employment increased by almost 31 thousand job positions in the service sector. The 22% of employed were working in the manufacturing industry. The employment increased by 3.8%

(18,810 workers) in this industry. The similar growth in Slovakia was experienced in manufacturing employment in 2011. The growth was later followed by a period of employment decline. New workers started to be again hired in manufacturing from 2014 onwards. The employment recovered also in the construction sector. After the two years decline, the employment in the sector increased by 3.3% (5,340 workers).

Table 2.2
Sectoral Changes in Employment (the number of workers)

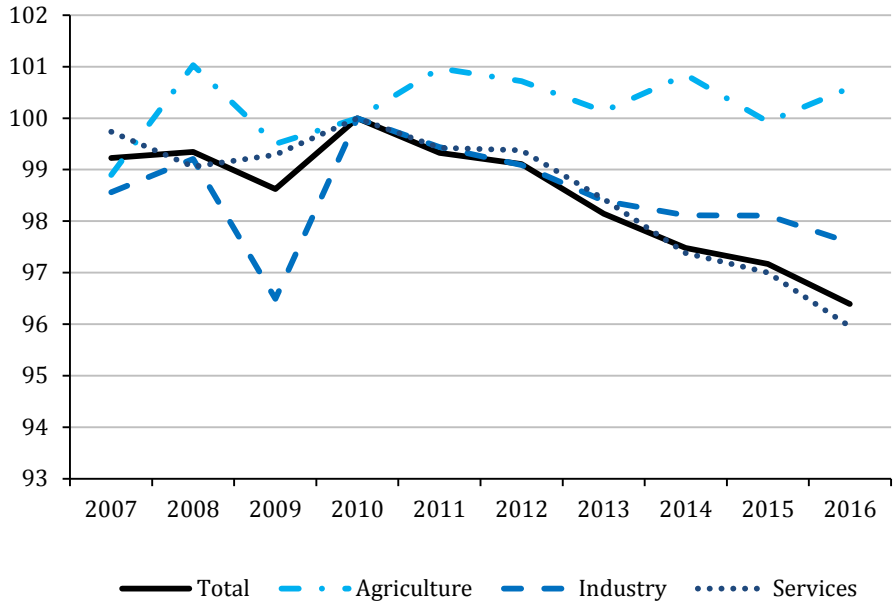
	Yearly growth rates in %			Absolute change 2016 – 2015	Share in overall employment
	2014	2015	2016	2016	2016
Total	*1.4*	*2.0*	*2.4*	*53,950*	*100*
Agriculture	-2.1	1.3	-1.3	-990	3.1
Industry	1.8	2.0	3.5	18,710	24
Manufacturing	2.0	2.4	3.8	18,810	22
Construction	-1.4	-0.6	3.3	5,340	7.3
Trade, transp.. accommod.	1.8	0.8	0.8	5,120	26.5
Information and commun.	3.9	2.8	4.3	2,640	2.7
Financial and insurance a.	3.7	4.0	1.7	780	2
Real estate activities	-2.4	1.0	17.6	3,980	1.1
Profesional activities	0.2	8.6	3.2	7,380	10.2
Public administration a.	2.0	1.3	1.8	8,140	20.3
Other service activities	3.8	1.5	4.5	2,840	2.8

Source: Eurostat (2017a); author's calculations.

A remarkable increase in employment with almost 4,000 job positions has occurred in real estate activities. Due to the size of employment in this sector, it is considered as a huge increase (17.6%), which related mainly to the recovery in the construction activity and the growth of real estate market.

As outlined in the first chapter, the link between the GDP and employment growth altered towards the employment growth in recent years (see commentary on Table 1.3). One of the factors affecting this change was the development of the number of hours worked per worker.

Figure 2.4
Development of Hours Worked per Worker (2007 – 2016)
2010 index = 100



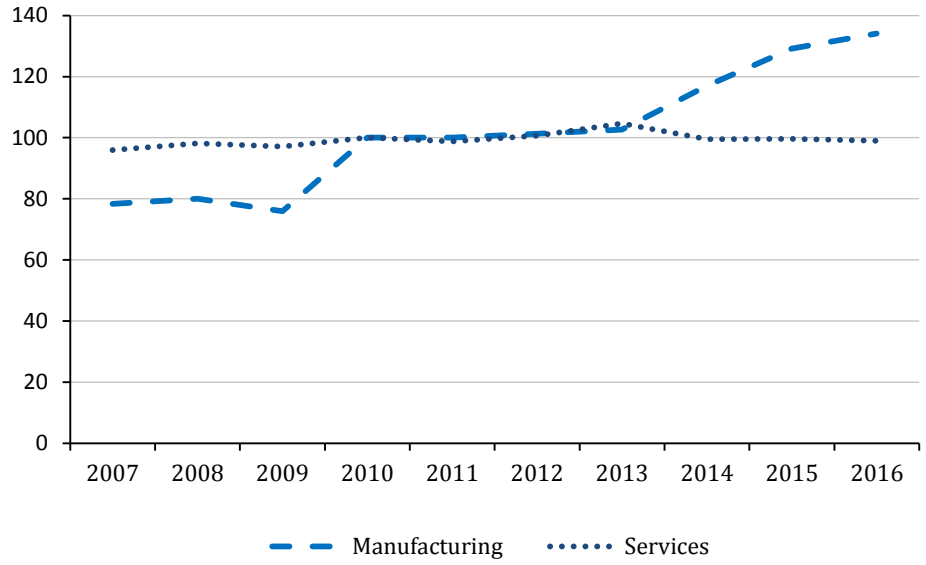
Source: Eurostat (2017a); author's calculations.

Until 2010, the number of hours worked was increasing with exception in fall of 2009 due to the crisis. After 2010, it has been continuously decreasing in both - industry and services. The highest decline in the number of hours worked per worker reflected in the service sector. However, the significant decline was also recorded in industry sector and in manufacturing industry within it. The agricultural sector remained only stable or relatively mildly increasing in the number of hours worked per worker during the whole period. Thus, the growth of labour productivity per hour worked was in that period higher than the growth of labour productivity per worker. With a decreasing number of hours worked by a single worker, it was necessary to employ more workers to produce the same volume of value added. Such development contributed to the establishment of a closer link between the value added formation and employment.

Value Added and Prices in Manufacturing and Services

The development of real value added per worker in manufacturing and services can be divided into the three phases, mainly due to the changes in the productivity growth of manufacturing workers. The service sector could be characterized by stagnation in the real productivity of workers within the analyzed period.

Figure 2.5
Cumulative Index of Value Added Growth per Worker (2007 – 2016)
2010 index = 100

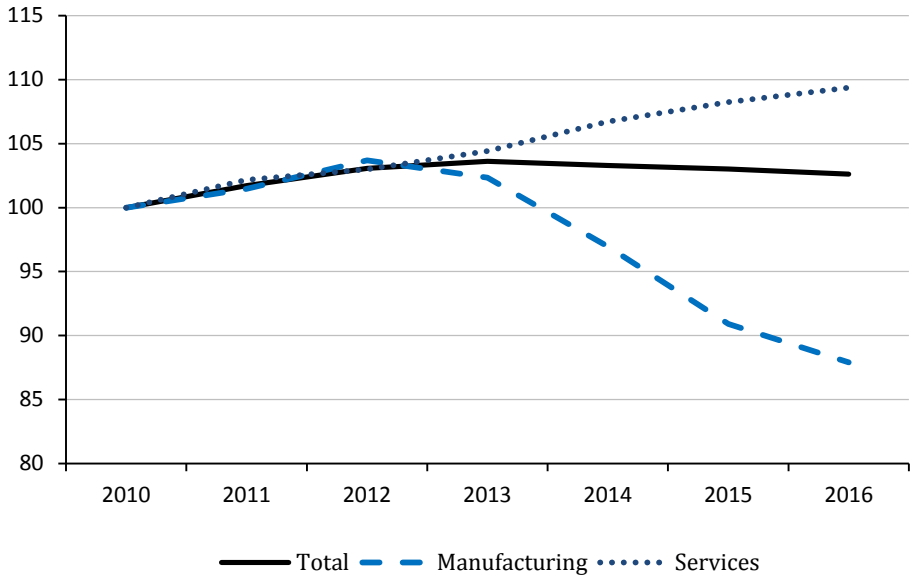


Source: Eurostat (2017a; b); author's calculations.

The development of real productivity is measured in constant prices of 2010, as a result of chain-linking changes in individual years. In the period 2007 – 2009, the real productivity per worker was higher in services, and then the sudden equalization occurred in 2010. During the next three years, the labour productivity grew slowly in both – manufacturing and services. In 2013, the value added created by one worker in service sector amounted to 28,393 €. The manufacturing achieved an almost identical level, 28,419 €. As of 2014, we may observe the recovery in the real productivity growth per worker in manufacturing.

This trend also continued in 2016. While the value added (const. p.) in service sector remained at a level lower than in 2013, it experienced growth to 37,094 € in manufacturing. Moreover, there was a change in price development of manufacturing and services products after 2013.

Figure 2.6
Price Index (implicit deflator)**, 2010 – 2016, 2010 = 100**



Source: Eurostat (2017b); authors calculations.

In the period 2010 – 2013, the prices of manufacturing and service sector products grew with a similar growth rate. Since 2014, the service prices started to grow at a higher rate and (on the contrary) the prices of manufacturing declined quite rapidly. The different development of manufacturing and service sector prices causes that productivity measured by the value added per worker at current prices differs significantly from productivity developments measured by the value added per worker at constant prices. The development in the product prices of manufacturing and service sector, which took place between 2010 and 2013, can be considered rather as an exception. In the long term, the decline in manufacturing product prices is taking place due to the higher labour productivity growth in manufacturing (compared to

service sector). In order to sustain the current high growth rate of labour productivity in the Slovak economy, it is important to prevent a significant reduction in the share of manufacturing industry in total value added. In addition, it is important to seek opportunities for an increase in services productivity. Firstly, due to the fact that a large proportion of the services is linked to the manufacturing industry, but also due to expected increase in trade of services in international trade. The labour productivity will be crucial for participation in a trade with services (as well as in the case of manufacturing products), and that will affect the competitiveness of companies operating in Slovakia.

* * * *

Similarly to previous years, the value added growth was driven by the growth in manufacturing. The growth of manufacturing was mostly benefiting on those services that are heavily linked to it (such as trade, transportation or storage). Other sectors have been influenced by other external factors. The employment growth in services was mainly due to higher employment in professional and public administration services. However, the overall growth of employment was also supported by the growth of workers in the manufacturing industry. The closer link between the GDP and employment growth benefited from the fact that labour productivity per hour worked, grew faster than labour productivity per worker in both – manufacturing and service sector. Since 2014, the prices in the manufacturing industry started to significantly decline along with increasing prices in the service sector in the same year. The ongoing spread of price developments between these two sectors will influence the growth of value added in the upcoming period. From the medium-term sustainability point of view, an increase in labour productivity of service sector will play an important role.

3. QUALITATIVE FACTORS OF ECONOMIC DEVELOPMENT

The gradual exhaustion of price and cost factors of the Slovak competitiveness draws attention to the assessment of qualitative factors of economic development. The efficient domestic research and development (R&D), innovative capacity of the economy, and the use of information and communication technologies (ICT) are prerequisites of higher evaluation of labour, economic growth and employment. The chapter deals with the development of R&D expenditures, the innovative development of business sphere, and some aspects of the phenomenon called the fourth industrial revolution in the context of the Slovak economy.

R&D Expenditures

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 in 2009 – 2015.[4] In 2015, the performance of main indicator of innovation development and R&D – the intensity of gross R&D expenditures – experienced a relatively large increase to 1.18% of GDP. Thus, the level of expenditures was close to a medium-term goal of 1.2% of GDP.[5] The foreign sources of funding have more than doubled (y-o-y) and became a major source of Slovak R&D expenditures (representing 0.46% of GDP). Regarding "sectoral expenditures", the role of public sector grew slightly – especially, for the first time, the universities became the sector where the highest share of R&D expenditures is allocated. The R&D expenditures amounted in this sector to 0.52% of GDP level, which is 110% of the EU-28 average. In 2015, the strong increase in gross R&D expenditures was considered very positive; the lag behind of the EU-28 average was reduced to 58%. The weak spot of the Slovak R&D is persisting low involvement of the

[4] Some indicators published in this chapter are 2 years lagged.

[5] The EU 2020 Strategy for Slovakia is to achieve a 1.2% of GDP in R&D expenditures by 2020, with two-thirds of the expenditures funded by business sector and one-third by public expenditures.

business sector in R&D funding. In this respect, for the second year in a row, the Slovak economy scored only 25% of the EU-28 average. Sustainability of public R&D funding is also a matter of concern in the upcoming years. We assume that in the first half of the programming period 2014 – 2020, the financial implementation of the Operational Program Research and Innovation will be incomparably lower than at the end of programming period 2007 – 2013/+2 in operational programs "Research and Development" a "Competitiveness and Economic Growth". We expect an absolute decrease in R&D expenditures (as well as in R&D intensity) after the year 2015.

Table 3.1

Selected Indicators of Research and Development, 2009 – 2015

	2010	2011	2012	2013	2014	2015
Funding of R&D:						
Gross R&D expenditure (% GDP)	0.62	0.67	0.81	0.83	0.89	1.18
Divided by sector of performance (% GDP):						
Government sector	0.19	0.18	0.20	0.17	0.25	0.33
Business enterprise sector	0.26	0.25	0.34	0.38	0.33	0.33
Higher education sector	0.17	0.23	0.28	0.27	0.31	0.52
Divided by source of funds (% GDP):						
Government sector	0.31	0.33	0.31	0.32	0.37	0.38
Higher education sector	0	0.01	0.01	0.02	0.02	0.04
Business enterprise sector	0.22	0.23	0.31	0.33	0.29	0.30
Abroad	0.09	0.1	0.15	0.15	0.21	0.46
R&D personnel[1]	28,128	28,596	28,880	27,823	28,825	28,752
Outputs of R&D:						
Domestic patent applications[2]	235	223	168	184	211	228
Number of patent applications[2] per 1,000 R&D employees	8.4	7.8	5.8	6.6	7.3	7.9
Number of EPO applications	53	85	52	51	80	61
Number of EPO applications per 1,000 R&D employees	1.9	3	1.8	1.8	2.8	2.1

[1] Head Count by 31st December.

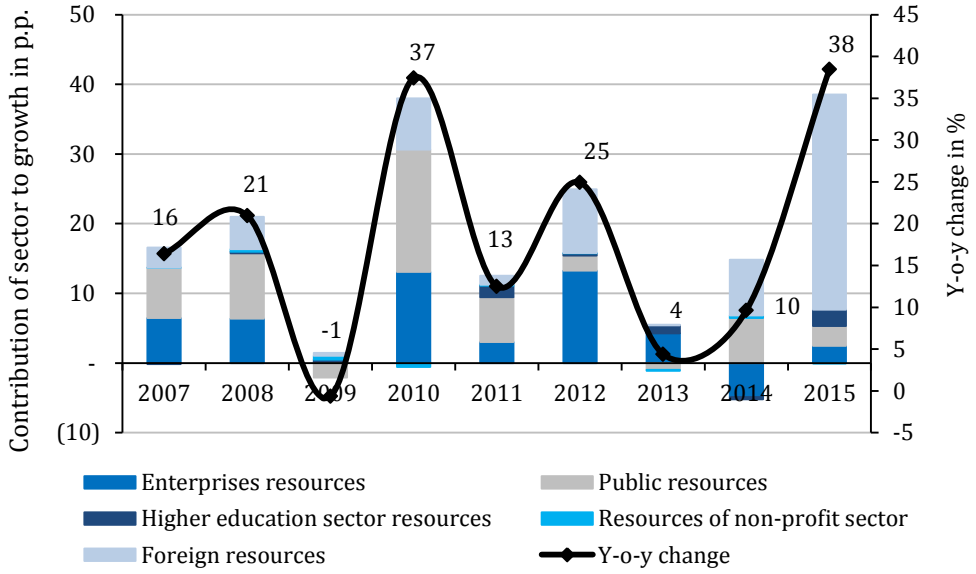
[2] Domestic patent applications filed at the Industrial Property Office of the Slovak Republic.

Source: IPO SR (2016); SO SR (2017); EPO (2017).

Although a more detailed disaggregation of foreign resources for 2015 is not yet available, we may assume (based on the previous development) that these are the European Commission funds. They were implemented through the National Strategic Reference Framework in the last year of programming period 2007 – 2015. Other sources of funding experienced stagnation, that also applies to enterprises funds, which share did not change significantly.

The contributions to the growth of R&D expenditures are shown in Figure 3.1. The expenditures grew (y-o-y) by 38% (right axis), while the major share in growth represented the foreign resources (left axis).

Figure 3.1
Year-on-year Change in Gross R&D Expenditures (%) **and Contribution of Sectors to the Growth** (p.p.) **during the Programming Period 2007 – 2015**

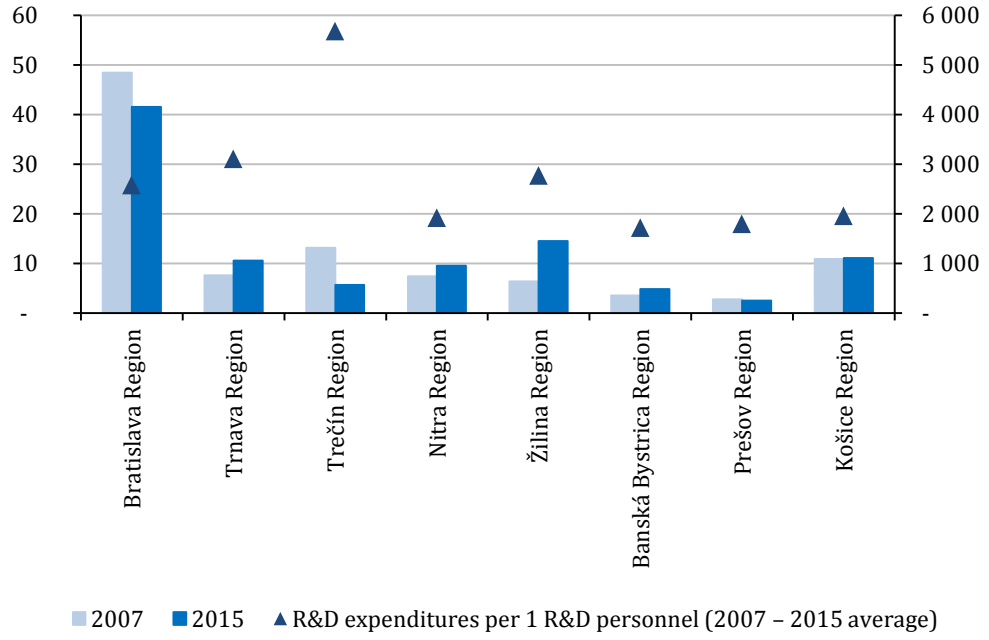


Source: Authors' compilation based on Eurostat database (2017).

R&D expenditures are concentrated mainly in the Bratislava Region, where 42% of total expenditures were allocated in 2015. The Žilina Region is second with the highest increase of R&D expenditures (compared to 2007). If we consider the R&D expenditures per one R&D personnel, the rank of regions is different (right axis of Figure 3.2). The indicator is highly dominated by the Trenčín Region (considering 2007 – 2015 average) with

EUR 5,679 per R&D personnel, although, it had the second lowest share of R&D expenditures in 2015. The position of the Banská Bystrica and the Prešov Region may be considered negatively due to low values achieved not just in absolute terms per R&D personnel in 2007 – 2015 period, but also with very low shares in total R&D expenditures in 2007 and 2015.

Figure 3.2
Regional Distribution of Gross R&D Expenditures in 2007 and 2015 (%)



Source: SO SR (2017).

The main limiting factor among the prerequisites of innovation performance is the long-term poor commercialization of R&D outcomes. The patent activity measured by the number of domestic patent applications slightly increased to 228 in 2015 (compared to 2014). That also reflected the increase in patent productivity reaching 7.9 domestic patents per 1,000 R&D personnel. The number of EPO applications per 1,000 R&D personnel decreased to 2.1 in 2015. The increase in R&D expenditures in 2015 could reflect the increased patent activity in the upcoming periods (especially in the public sector). One of the barriers of

patent activity in the business sector is an ongoing innovation model based on the import of ready-made technology (resulting in a low share of R&D expenditures).

Innovation Development in Slovakia

If we want to evaluate the innovation level in Slovakia based on only one index, we may utilise the Summary Innovation Index (EC, 2016) summarising 25 indicators. The Slovak economy ranked 22nd among the EU members and belongs to the group of moderate innovators. However, no positive change occurred compared to the previous year. In comparison to the EU-28 average, the Slovak economy possesses a relative competitive advantage only in the area of human resources. Slovakia achieves here above-average levels in some quantitative parameters like the number of new graduates of the doctoral study per 1,000 population (137% of the EU-28 average), or the share of 20 – 24 years old population with attained secondary education (110% of the EU-28 average). In the rest of the innovation performance determinants, Slovakia achieves above-average level only in non-R&D innovation expenditures (116% of the EU-28 average).

On the other hand, there is still many innovation performance factors, in which Slovakia is lagging behind. The largest barriers (with values below 25% of the EU-28 average) are: the number of non-EU doctoral students (10% of the EU-28 average); venture capital expenditures (13% of the EU-28 average); the cooperation of public academic sector with the business sector (24% of the EU-28 average; expressed by the number of co-publications, which indicates rather cooperation in research than cooperation in development) or the low level of patents. This results in a low revenue of economy from the sale of licenses abroad (5% of the EU-28 average).

The results of the Community Innovation Survey 2014 were published in 2016. An innovative model based on the purchase of ready-made technology (machines, equipment and software) persists in Slovakia. Other forms of innovation are promoted in lesser extent (compared to

more developed innovative EU countries), e.g. the in-house or external R&D[6] (Table 3.2). In a long-term perspective, the model changes only slightly in Slovakia. In 2006, the purchase of ready-made technology was used by 82% of innovating companies, and only 20% of companies were executing their continuous R&D.

Table 3.2
Companies Involved in Innovation Activities in 2014 (% of companies)

	Continuous in-house R&D	Occasional in-house R&D	Design (shape or form of goods and services)	Purchases of machines, equipment and software	Purchase of external knowledge	External R&D activities
EU-28 average	25	24	31	64	23	23
TOP3 average	33	36	32	57	33	31
V3 average	21	24	31	73	15	20
Slovakia	21	27	25	70	22	15

TOP3: Sweden, Finland, Denmark; V3: Hungary, Poland, Czechia.

Source: Author's compilation based on Eurostat database (2017).

Similarly, the forms of enterprises interactions within their vicinity in the process of innovation remain unchanged (based on current survey results; Table 3.3). The innovative Slovak enterprises cooperate primarily with market actors in the innovation system (enterprises within a business group; clients and customers in the private sector; suppliers of components, materials, equipment, or software). The advanced European innovative economies are characterised by a deeper cooperation between enterprises and institutional actors in the public sector (universities, clients, research institutions). These elements have been poorly represented in the enterprises interactions in Slovakia so far.

[6] In this chapter, when we refer to the companies with regard to the Community Innovation Survey, we always focus on companies which have demonstrated the product or process innovations and belong to so-called *Innovation core activities* (industries B, C, D, E, G46, H, J, K, M71 – 73).

T a b l e 3.3

Forms of Cooperation in Innovative Activities in 2014 (% of companies)

	Companies within a business group	Competitors or other business in the sector	Clients and customers in the private sector	Clients and customers in the public sector	Suppliers of components, materials, equipment, software	Universities or educational institutions	Government, public or private research institutions	Consultants or commercial laboratories
Slovakia	22.8	6.7	21.6	7.0	39.6	12.8	5.9	15.2
EU-28 average	14.5	8.6	15.7	7.0	23.5	12.4	8.2	12.8
V3 average	12.2	6.0	11.1	3.3	20.3	11.7	6.4	9.6
TOP3 average	18.5	13.7	23.8	12.0	27.8	17.9	12.4	19.4

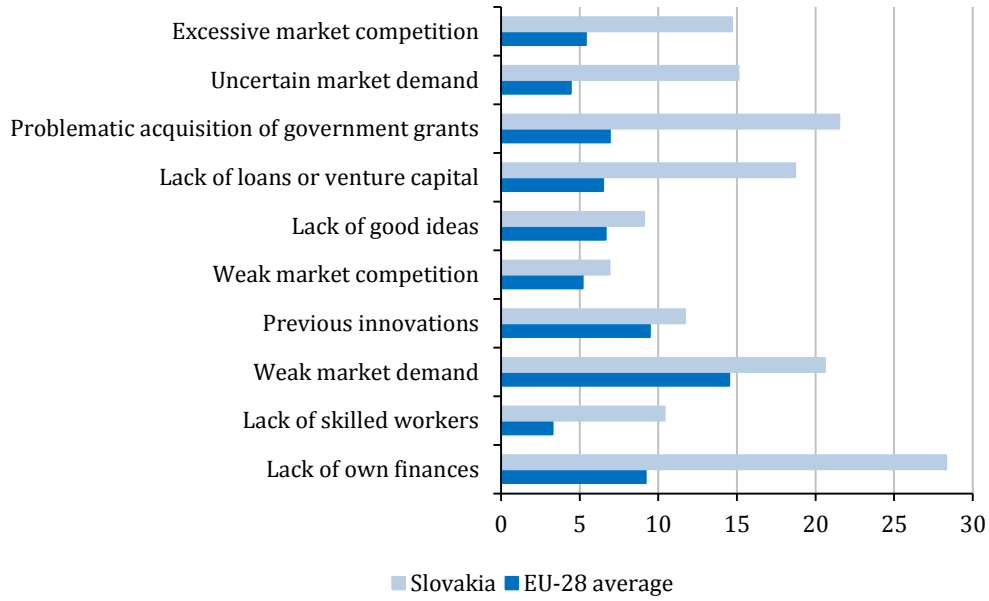
TOP3: Sweden, Finland, Denmark; V3: Hungary, Poland, Czechia.

Source: Authors' compilation based on Eurostat database (2017).

The Slovak business sector is relatively well integrated into the international production chains. They are the channels through which innovation progress in the business sector is taking place. The persisting weaknesses are the government role and involvement of the public sector. In the case of Slovakia (like in other CEE countries), the public funding of innovative enterprises is linked to the EU funds. In the EU Member States located in the CEE, up to 18% of innovating enterprises received financial support from the EU funds. However, in Slovakia, it was only 10% (the lowest value among CEE countries). The provision of direct support from public resources to innovative enterprises is relatively widespread practice in the EU. For example, up to 42% of such enterprises received support from public resources in Netherland; in Finland, it was 34%. While the EU and CEE's average amounted in this indicator to 27%, it was only 13% (the lowest value in the entire EU) in the case of Slovakia. Although, the innovation in the business sector is the result of a combination of a large number of factors, the lack of funding in Slovakia can be one of the main causes of its lagging. Non-innovative enterprises in Slovakia state that among most important factors of non-performance of innovative activities may be the lack of their finances, problematic acquisition of the government grants, subsidies, loans and venture capital (along with weak market demand).

Figure 3.3

Reasons for Non-innovation* in 2014 (% of non-innovative companies)



Note: * – Very important reason for non-innovation.

Source: Authors' compilation based on Eurostat database (2017).

Slovak Economy and Fourth Industrial Revolution: Factors and Prerequisites

The Slovak economy (similarly as other economies) is permanently facing the opportunities and threats of technological progress currently named the fourth industrial revolution.[7] At the same time, the narrower concept of *Industry 4.0* is promoted. The phenomena such as robotics, nanotechnology, biotechnology, new materials, internet of things, artificial intelligence, 3D printing, big data, and others, create strong impulses for structural change in many industries and sectors. They are the reasons for complex changes in society (e.g. Smart City concepts, eGovernment or e-mobility). The fourth industrial revolution represents

[7] In order to distinct (and be able to identify) the economic development mainly based on the use of new knowledge / innovation, the several names for economy (or society) has been adopted over past 30 years. We mention only some of them: informational, knowledge-based, intelligent, digital, internet or new.

the transformation from the simple digitalization phase to innovation phase based on mutual combinations of material, digital and biological technologies. Information and communication technologies are the pillars of fourth industrial revolution and determines the economic and social change more than ever before. The reflexion of these trends is necessary for the economic analysis and economic policy. Our ambition is not to provide a comprehensive analysis of the phenomenon, but rather to identify suitable indicators from the available data and analyse the selected factors of the fourth industrial revolution development in Slovakia and the European context.

The prerequisites and readiness for digitization of economies are evaluated by Networked Readiness Index 2016 (published by the World Economic Forum in the Global Information Technologies Report). According to the latest issue of the report, Slovakia ranked 47th (139 rated countries). That places the country to the end of a group of advanced and high-income economies. The index is based on a combination of soft and hard indicators. Slovakia lags behind particularly in the quality of those factors that affect the functioning of the public sector. Factors like the quality of legislative environment, the quality of educational system, the status and promotion of informatization by the government, and the taxation of profits. On the other hand, there is a list of positively evaluated indicators like low software piracy, the local competition intensity, the mobile network coverage, the number of households equipped with computers and the internet, or the use of ICT by the business sector.

The Digital Agenda Scoreboard provides a statistical data of enterprises use of ICT in the production process, in customers relationship, in communication with its environment or communication with public administration. The Slovak business sector is one of the best involved in the use of ICT when compared to other areas of the digital society. Table 3.4 shows some indicators of ICT penetration into commerce (eCommerce) or business (eBusiness).

Table 3.4
Indicators of eCommerce and eBusiness in Slovakia and Selected EU-28 Countries (2016)

	SVK	EU-28	SVK/ EU-28 in %	EST	CZE	POL	HUN
Enterprises exploiting B2C opportunities of web sales - SMEs, (in % of enterprises)	5	7	71	7	13	5	7
Enterprises selling cross-border to other EU countries - SMEs, (in % of enterprises)	6	8	75	-	-	-	-
Enterprises selling online – Large enterprises (in % of enterprises)	34	38	89	31	48	32	31
Enterprises selling online - SMEs (in % of enterprises)	11	17	65	15	26	10	12
Turnover from eCommerce – Large enterprises (in % of enterprises)	24	23	104	16	38	22	25
Turnover from eCommerce – SMEs (in % of enterprises)	11	9	122	11	22	7	8
Cross-border eCommerce (in % of individuals)	22	18	122	23	9	4	12
Ordering goods or services online (in % of individuals)	56	55	102	56	-	42	39
Integration of internal processes (with an ERP) - SMEs (in % of enterprises)	29	34	85	-	-	-	-
Persons employed provided with a portable device by their enterprise (in % of total employment)	15	20	75	19	19	19	18
Enterprises using mobile internet for their enterprise applications (in % of enterprises)	31	30	103	29	39	27	19
Cloud computing services (medium-high sophistication), (in % of enterprises)	12	13	92	17	10	5	8
Enterprises paying to advertise on the internet (in % of enterprises)	27	25	108	24	31	28	19
Use of analytical CRM software - SMEs (in % of enterprises)	16	-	-	19	-	-	-
Enterprises with High levels of Digital Intensity - SMEs (in % of enterprises)	17	18	94	21	21	12	12
Enterprises sending e-invoices (in % of enterprises))	15	18	83	19	13	13	8
Enterprises using social media (in % of enterprises)	34	45	76	39	-	25	34
Enterprises having a website with some sophisticated functionalities - SMEs (in % of enterprises)	72	57	126	76	63	64	60

Notes: SVK – Slovakia, EST – Estonia, CZE – Czechia, POL – Poland, HUN – Hungary.

Source: EC (2016).

The comparison in most indicators suggests that the business sphere utilises the ICT capabilities at the level comparable to the EU average, V4 countries, or Estonia.[8] Above-average results are achieved by enterprises in Slovakia in eCommerce turnover (SMEs, as well as large companies). Similarly, this is also the case for the Slovak consumers who are excessively involved in cross-border shopping (online purchase of goods from another EU Member State). The relatively low level of companies involved in a cross-border trade to other EU countries (75% of the EU-28 level) may be rather caused by the structure of economy focusing on the production of intermediate goods than the under-utilization of corporate ICT facilities.

The share of Slovak enterprises with websites utilising sophisticated functionality is high (133% of the EU average). One of the Industry 4.0 pillars is a mobile connectivity. In this field, the enterprises achieve mixed results in Slovakia. In the share of employees who use a portable device from their employer, Slovakia reached 75% of the EU average. On the other hand, we share the same level of enterprises that utilise the mobile internet in their business applications with the EU-28 average.

The low rate of broadband internet penetration is the factor that may affect a deeper engagement in the fourth industrial revolution in Slovakia. In 2015, the value represented 22.7[9] subscribers per 100 inhabitants, which was the 4th worse value within the EU (the EU average was 31.6, Estonia reached 29.9). Slovakia recorded the second lowest broadband internet coverage with only 86.3% of Slovak households covered by standard broadband internet[10] in 2015. The situation in the business sector is also negative, only 22,4% of enterprises in Slovakia used fast, fixed broadband internet (the EU-28 average was 31.7%, the best performing Denmark achieved 63.6%) in 2016. We rank below the EU average also in the case of mobile internet penetration, however, the lag is not as wide as in the previous cases. In the number of mobile broadband internet subscribers per 100

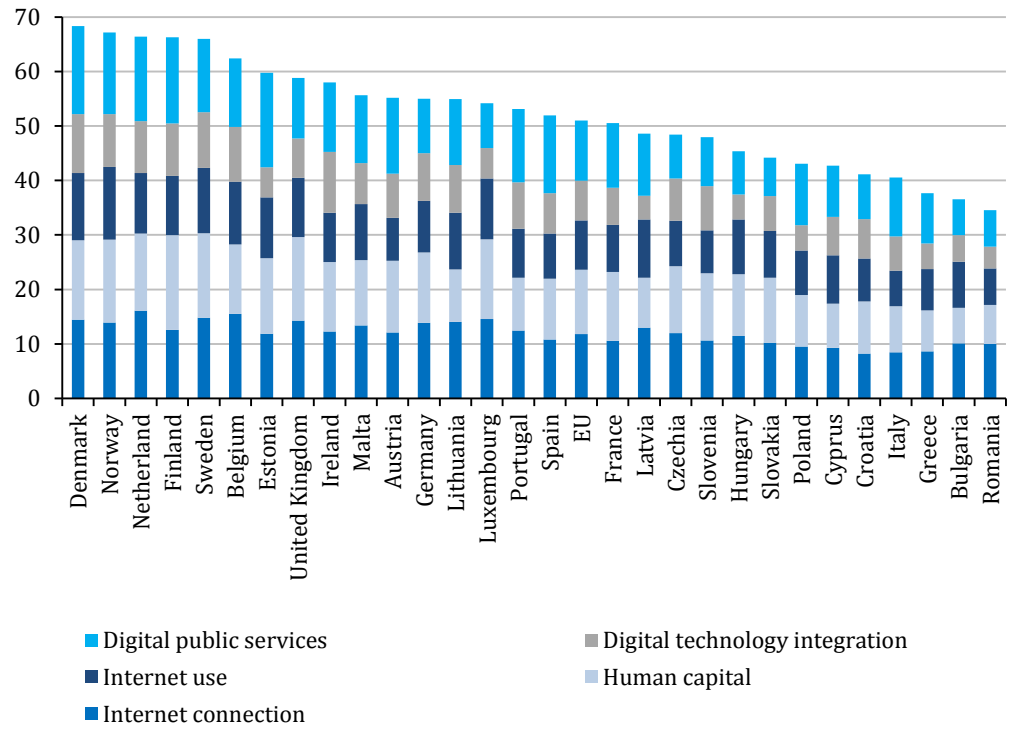
[8] We selected Estonia as an example of the post-transitive economy that has made the largest progress in the ICT implementation.

[9] *Fixed broadband take-up* (number of subscribers/100 inhabitants).

[10] *xDSL cable* (standard and *NGA*), *FTTP* or *WiMax* networks.

inhabitants, Slovakia reached 63.4 subscribers per 100 inhabitants (June 2015), the EU-27 average reported a value of 75.3 (Estonia achieved even 104.5).

Figure 3.4
Digital Economy and Society Index (2016)



Source: Authors' compilation based on EC (2017).

The possibilities of ICT usage have enormous potential in the society. The 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 link between the government, business and household sector. The eGovernment sector is probably the most visible form of fourth industrial revolution integration into the society.

In Slovakia, the digitalization has been a normative part (and a priority, in particular, on a pro-forma basis) of economic policy for several years.

The European Commission uses the Digital Economy and Society Index (DESI) to evaluate its level. The index evaluates five dimensions: Internet Connectivity, Human Capital, Internet Use, Digital Technology Integration and Digital Public Services. According to the 2015 results, Slovakia is considered to be a country with underdeveloped digitisation with the worst results in Digital Public Services (Figure 3.4). According to the DESI index, Slovakia was the third worst rated in the area of Digital Public Services in the EU. The European Commission's Digital Agenda Scoreboard provides some indicators to assess the state of Slovak digitalization of public administration compared to the EU in several areas: the use of websites and ways of citizens interaction with the authorities, the involvement of enterprises in digital public administration and use of open data. If we look closely at the use of public institutions websites by citizens in Slovakia (Table 3.5), we may see a relatively unflattering state and development in all four types/stages of interactions compared to the regional leader in informatization - Estonia (1st - interaction with the public institution, 2nd - acquisition of information from the website of a public institution, 3rd - download the official form, 4th - submission of filled form to a public institution).

In 2008, we approximately shared the same starting position in eGovernment implementation with Estonia (the oldest data available). However, in 2015, Estonia was significantly ahead of us. On the other hand, we have to conclude that Slovakia achieved above-average results in the first two types of activities compared to the EU-28 average. In the third and fourth type of interaction with the public administration (in eGovernment terms, these are the activities with a higher degree of sophistication), Slovakia experienced even a slight decrease in 2015 compared to 2008. The highest difference is in the number of citizens submitting filled forms to public institutions (only 13% in Slovakia in 2015).

Table 3.5
Public Institutions Websites Usage (% of citizens)

	Interaction with the public institution (last 12 months)		Acquisition of information from the public administration website (last 12 months)		Download of the official form (last 12 months)		Submission of filled form to the public institution (last 12 months)	
	2008	2015	2008	2015	2008	2015	2008	2015
EU-28	35	46	33	40	23	28	17	26
Czechia	19	32	18	31	9	14	5	10
Estonia	37	81	37	71	27	39	27	71
Hungary	28	42	26	39	20	27	13	24
Poland	22	27	20	19	14	17	7	16
Slovakia	40	51	35	44	26	24	16	13
Finland	62	80	56	74	43	63	27	59

Source: Authors' compilation based on EC (2017).

* * * *

The year 2015 meant some new realities for R&D funding: the last year of the EU Structural Funds and Cohesion Fund implementation caused an increase in R&D intensity to 1.18% of GDP; the foreign resources of national R&D expenditures became the main driver. There was also the interesting fact that the sector of higher education became the main sector in the sectoral approach of R&D funding. Based on the experience and the phase of the current programming period, we may say that R&D expenditures will decrease (both absolute and relative) in the following years. In the field of innovation performance, we did not see any positive movement in 2015, except the increase in R&D intensity. The Slovak economy remains a moderate innovator in the European context with a considerable lag in large part of the innovation development factors (especially in the patent activity, venture capital use or cooperation of the public, academic environment with the enterprise sphere, etc.).

According to the current CIS 2014 Survey results, the Slovak enterprises continue to rely heavily on the purchase of ready-made technology. In the context of innovative cooperation, they mainly cooperate with the market actors (such form is fairly developed). The

weakness of the innovation system remains in the involvement of the public sector and the lack of funding. The economic progress based on qualitative factors is currently conceptualised as the fourth industrial revolution. The use of ICT in enterprises in the context of fourth industrial revolution implies changes not only in production methods but also in commerce and final consumption. The Slovak business sector is relatively best involved in the use of ICT compared to the other areas of digitalization. The prerequisite of fourth industrial revolution effects utilisation is connectivity and penetration/coverage of broadband internet. In this respect, Slovakia is lagging behind the EU. The low ability of Slovakia to implement the outcomes of fourth industrial revolution and exploit its effects in society may be observed in the lack of progress in the eGovernment implementation.

4. EXTERNAL ECONOMIC RELATIONS

In the balance of payments of Slovakia, the trend continued from the previous years in the form of a relatively high surplus of the balance of goods and a slight surplus in the balance of services in 2016 (Table 4.1). However, in combination with the passive balances of primary and secondary incomes, the current account achieved a negative balance of -0.7% of GDP after several years with a surplus. The negative balance was also recorded in the financial account, mainly due to the development of other investments. The capital account ended again with a four-digit surplus.

Table 4.1
Main Components of the Balance of Payments in Slovakia, 2012 – 2016

	2012	2013	2014	2015	2016
Balance of goods (EUR million)	2,506	3,012	2,859	2,115	2,374
Balance of services (EUR million)	421	357	108	95	341
Balance of primary income (EUR million)	-1,210	-691	-869	-927	-2,061
Balance of secondary income (EUR million)	-1,034	-1,321	-1,194	-1,115	-1,237
Current account (EUR million)	684	1 357	904	168	-583
Capital account (EUR million)	1,415	1,064	730	2,790	1,631
Financial account (EUR million)	319	-567	-324	863	-174
Balance of goods / GDP (%)	3.4	4.1	3.8	2.7	2.9
Current account /GDP (%)	0.9	1.8	1.2	0.2	-0.7
Financial account/GDP (%)	0.4	-0.8	-0.4	1.1	-0.2

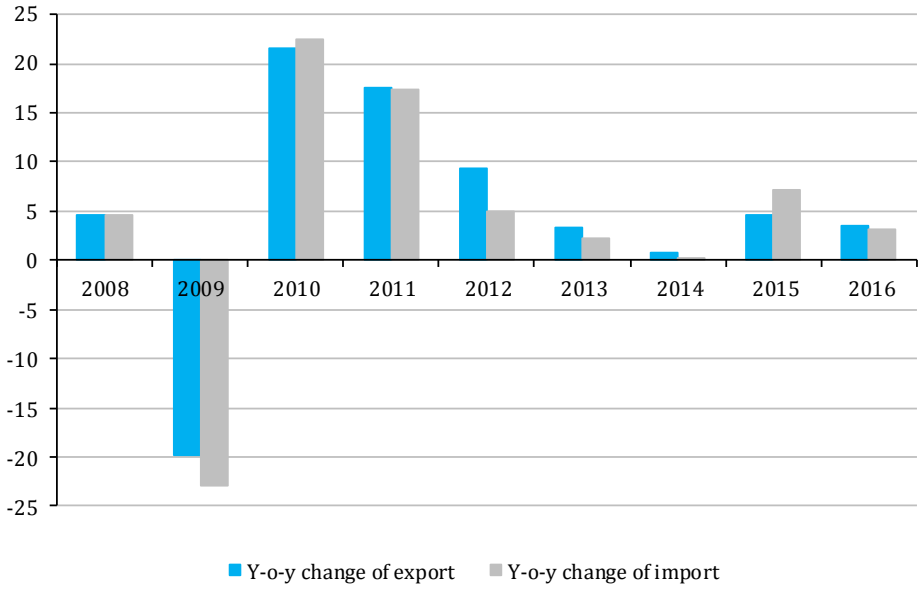
Source: NBS (2017a); Authors' calculations.

Ongoing Growth in Both Exports and Imports

In 2016, the foreign trade performance slowed slightly with exports increasing by 3.5% and imports by 3.2% (Figure 4.1). Thus after the fall of foreign trade in 2009, the positive y-o-y growth trend in the volume of exports and imports continued. It has been coupled with a slightly increasing export performance and import intensity. A closer look at the developments in individual quarters of 2016 shows that the stronger y-o-y

export and import dynamic was achieved in the second and fourth quarters (see Figure 4.2). The imports even slightly decreased in the third quarter (y-o-y).

Figure 4.1
Y-o-Y Changes in Exports and Imports 2008 – 2016 (%)

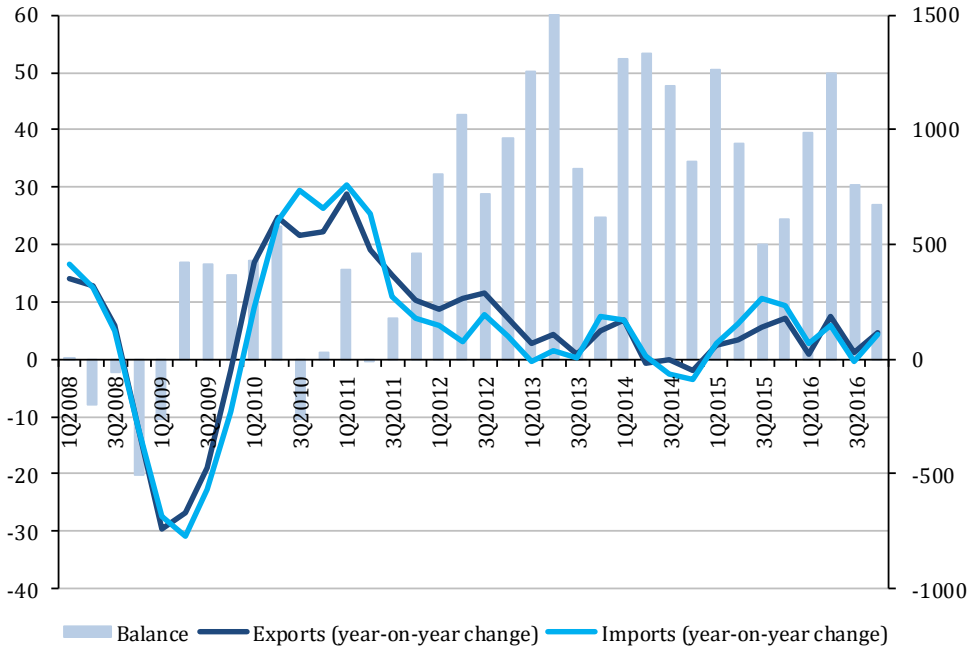


Source: Based on NBS data (2017a), Authors' calculations.

Similarly to the previous year, Slovakia recorded the highest active balance with Germany (EUR 4.2 billion) and the highest passive balance with China (EUR 4.4 billion). From the territorial point of view, the y-o-y increase occurred again in the volume of exports to the EU (by 3.5%) and imports from the EU (by 6%) in 2016 (SO SR, 2017). Due to this development, the EU countries maintained the share in the total exports of Slovakia at 85.2% and the share of the EU countries in total imports increased to 67.3%. Foreign trade with Germany continued to grow, especially imports (increase by 10%). Imports from Austria, the United Kingdom and Poland also grew rapidly. On the contrary, imports from Russia (almost by quarter), the Republic of Korea and Czechia declined. On the export side, a higher volume was reported mainly for France, the

United Kingdom and the Netherlands. On the other hand, the strongest decline was recorded for Poland.

Figure 4.2
Year-on-year Growth Rates of Exports and Imports (left axis, %) **and Foreign Trade Balance** (right axis, EUR million) **in Individual Quarters of 2008 – 2016**



Source: Based on NBS data (2017a).

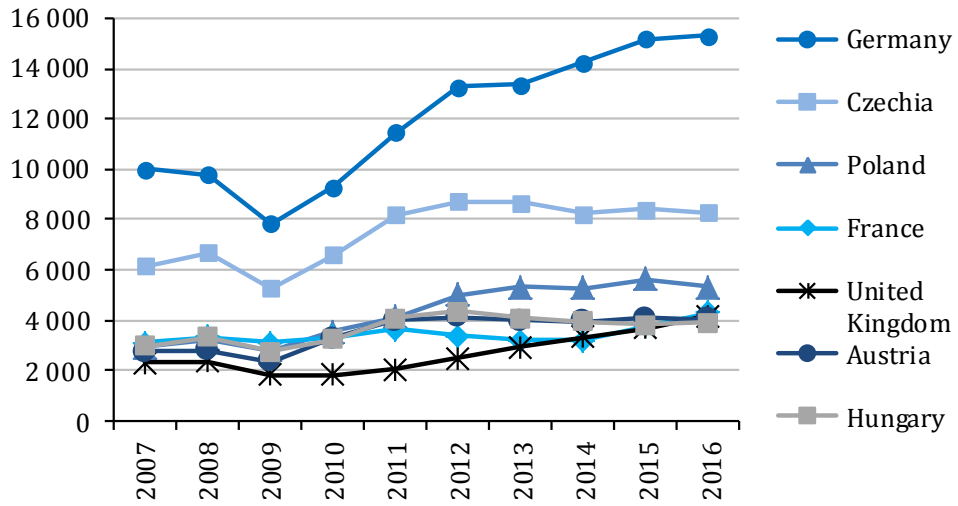
From commodities point of view, the greatest dynamics of foreign trade was recorded in personal vehicles and other vehicles (especially in the case of export), as well as parts, components and accessories of motor vehicles (SO SR, 2017). In 2016, the passenger cars reached a record of 20% share in export of goods. In comparison, the share of the same category in Czechia reached 12%. Due to the dynamic development of the share of cars in exports over the last five years, the product concentration of exports is the highest among the CEE countries in Slovakia.I In case of the small Slovak economy, such high concentration

can be explained with lower possibilities for diversification of production and exports (NBS – analysts of the Monetary Section, 2017).

The Risks Associated with the Development in the External Environment and the Low Diversification of the Slovak Export

In connection with the latest developments in world markets, it is necessary to point out the risks arising from the possible decline in exports of passenger cars from Slovakia to the Great Britain and the USA. These countries belong (besides Germany and France) among the most important export markets of the Slovak automotive factories. Regarding total Slovak exports, the United Kingdom was the fifth largest trading partner of Slovakia (after Germany, Czechia, Poland and France) in 2016. The share of exports to the UK was 5.9% of total exports and continuously grew since 2010 (Figure 4.3).

Figure 4.3
Largest Export Markets of Slovakia (EUR million)



Source: Based on NBS data (2017a).

Almost half of the Slovak exports to the UK are vehicles. Another important export item is electronics, especially televisions. Both

commodities are considered to be for long-term consumption and are sensitive to the price changes. In connection to the British Pound depreciation caused by planned exit of the UK from the EU (the so-called Brexit), a decline in the interest of British consumers in Slovak production could be expected. That may also lead to a slower start of Jaguar Land Rover production in Nitra between 2018 and 2019. In addition to the direct impact on the price competitiveness of Slovak exporters, the Brexit will also indirectly influence the Slovak economy by slowing the business partners of Slovakia. The strongest links to the UK foreign trade have Germany, Poland, France and the Netherlands (IFP – MF SR, 2016).

In 2016, the trade balance of Slovakia with the UK was highly active due to lower imports of British production to Slovakia. The depreciation of the British Pound, which is setting higher prices for Slovak exports and making British imports cheaper, will reflect in the final balance of goods in the next period. Regarding the organisation of business relations with the UK after the Brexit (probably in 2019), it would be obviously better for Slovakia (given the existing trade links) to have the imposed tariffs, and barriers to trade as low as possible.

The USA tends to increase the protectionism in the foreign trade policy after the last presidential election. Thus, the option of a significant increase in tariffs on production from Europe can not be ruled out. It would complicate the access of the European suppliers to the US market. That would particularly affect Volkswagen Slovakia (among others Slovak exporters) which exports about one tenth of its production to the USA, especially luxury cars (Porsche Cayenne, Audi Q7 or Volkswagen Touareg). In addition to this direct impact, the US protectionism would (similar to the Brexit) affect Slovakia indirectly through its main trading partners within the EU, notably Germany.

The concentration of the Slovak economy on the automotive industry undoubtedly brings a lot of positive results. However, following the previous part of the chapter, it is necessary to point out to the risks related to the weak diversification of production and export of Slovakia.

Such concentration also means greater vulnerability of the economy in the case of external shocks in future.

Even in 2016, the growth of automotive production continued and reached a new record. In Volkswagen Slovakia, PSA Peugeot Citroën and Kia Motors Slovakia, more than 1,040 thousand cars were produced (representing 191 vehicles per 1,000 inhabitants) (AIA SR, 2017). Thus, Slovakia defended the position of the largest car producer per capita in the world. Due to Jaguar Land Rover's investment, even higher number of cars[11] produced may be expected in the upcoming years. Along with a number of produced cars, also the arrival of smaller investors in the automotive industry and the expansion of already existing subcontractors is expected.

Such development is also linked to the question of (in)sufficiency of skilled labour. According to the Automotive Industry Association (AIA SR, 2017), there is a lack of about 14,000 workers in the automotive industry in Slovakia. This lack can be addressed by qualified graduates of the dual education system in the future. However, it is currently undergoing the second year, which means the first graduates will come to the labour market in three years at earliest. Other possible solutions are (effective) re-training of the unemployed requiring some time or eventual return of a part of Slovaks living abroad (e.g. as a result of the Brexit). A temporary solution is also to supply a workforce from abroad, which is already taking place within the automotive producers currently operating in Slovakia.[12]

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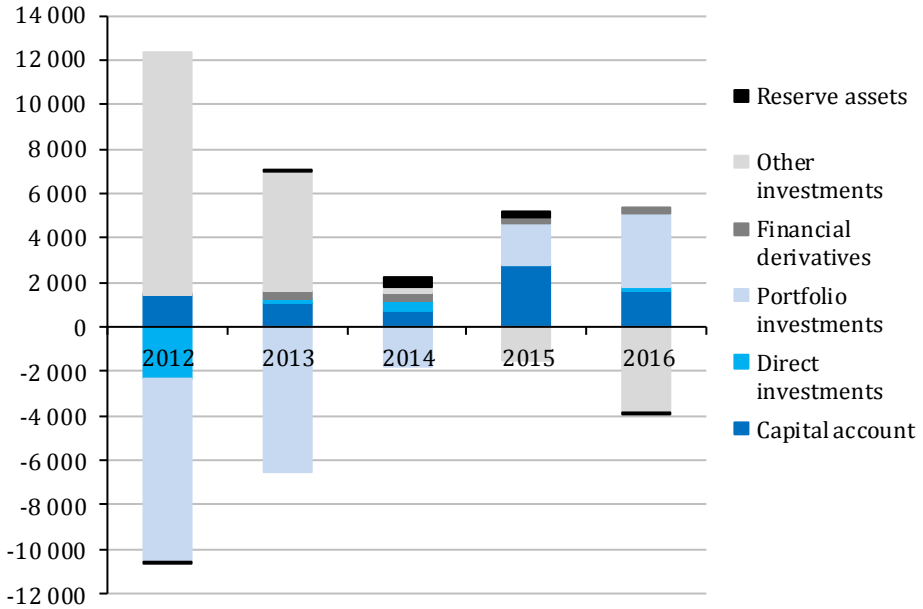
[11] Jaguar Land Rover plans to produce the first cars in Slovakia by the end of 2018, the estimated annual production in the first phase is 150,000 vehicles.

[12] The participants in the Newmatec Conference organized in March 2017 under the auspices of the Automotive Industry Association signed a Memorandum stipulating the need to create a flexible labour market responding flexibly to the need of labour force in terms of the number and qualification, as well as the need to change the Slovak education system and increase the number of graduates in technical universities. These are the prerequisites needed in order to maintain the competitiveness of the automotive industry in Slovakia. In addition, it is necessary to set up the environment and conditions supporting the development of applied research, R&D, as well as the conditions and environment for application of the digitization of industry and infrastructure in line with the principles of Industry 4.0. And last, but not least, it is necessary to stabilize the economic and business environment in Slovakia (IPSAS, 2017).

Capital and Financial Account

As can be seen in Figure 4.4, the negative balance of the financial account was primarily caused by the development of other investments in 2016. In the direct investment item, the positive balance was achieved when the net assets growth slightly exceeded the net liabilities. Portfolio investment reached a positive balance for the second consecutive year, even higher than in the previous year. It was due to a significantly higher growth of net assets than that of liabilities.

Figure 4.4
Capital and Financial Account of the Slovak Balance of Payments in 2012 – 2016 (EUR million)



Source: Based on NBS data (2017a).

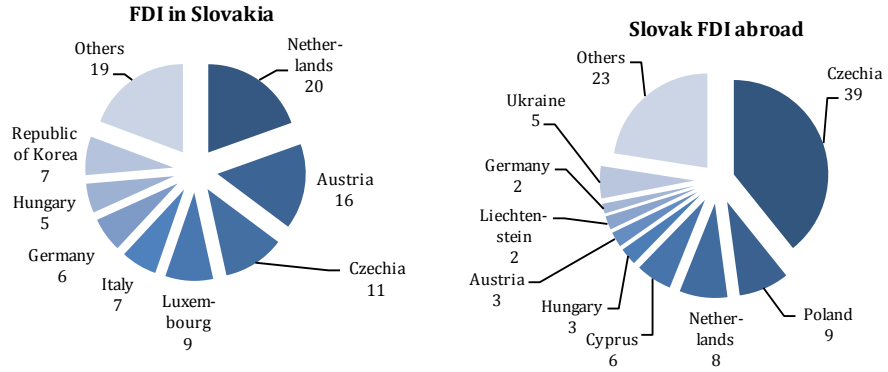
Foreign Direct Investments in Slovakia and Slovak investments abroad

In 2015, the level of foreign direct investments (FDI) in Slovakia exceeded 40 billion EUR (according to the latest available data of the

NBS, 2017b), 91% of them came from Europe and 8% from Asia. Figure 4.5 demonstrates the shares of the largest investor countries. In addition to the EU Member States (in particular the Netherlands, Austria and Czechia), the Republic of Korea is also included among them. Over the last five years, the FDI share has grown in particular in the case of Czechia (from 6% in 2011 to 11% in 2015) and fell in the case of Germany (from 12% to 6%).

In connection with the investment of British car producer Jaguar Land Rover (a subsidiary of Indian Tata Motors Ltd.), the increase in investments from the Great Britain is expected in 2017 and 2018. At the end of 2015, their share in the volume of FDI represented 1.1% in Slovakia. Jaguar Land Rover's investment is going to reach 1.4 billion EUR and Slovakia will directly support it in the form of subsidy for tangible and intangible assets acquisition with 130 million EUR (spread over a period of several years).

Figure 4.5
FDI in Slovakia and Slovak FDI Abroad in 2015 by Investor's Country Origin or Investment Destination (in %)



Source: Based on NBS data (2017b), Authors' calculations.

In the 2002 – 2016 period, the subsidies for tangible and intangible assets acquisition represented more than one-third of the Slovak subsidies provided to foreign investors in Slovakia (Vlachynský and Kristály, 2017). Almost half of the subsidies took a form of tax relief on

the corporate income. According to the authors, the total of 176 investment subsidies was provided to 148 enterprises (some of them received the subsidy twice or even three times) in the mentioned period, amounting to almost 1.65 billion EUR. Paradoxically, the subsidies were provided mostly to the regions with the lower unemployment rate. Such pattern did not change even after the adoption of the new Act no. 561/2007 Coll. on Investment Aid.

Various surveys help us to understand better what foreign investors think of Slovakia as the investment opportunity. As a result of a survey conducted in February 2017 by Chambers of Commerce of Germany, Austria, Sweden and the Netherlands operating in Slovakia, and in cooperation with Advantage Austria Bratislava (offering services to Austrian companies and their foreign business partners), there has not been more positive business situation for the last eight years than as it is today in Slovakia (SACC, 2017). The current economic situation is positively evaluated by 45% of the surveyed enterprises, and another 47% perceive the situation as satisfactory. However, the share of enterprises, which would have repeated their investment in Slovakia even today, has declined significantly from 85% to 79%. It is the lowest value since the introduction of the survey in 2004. Slovakia is overall rated as the second most attractive location for investment in the CEE. Similarly to the previous years, the most attractive country remained Czechia, Estonia ranked 3rd and Slovenia 4th.

Among the best rated local factors in Slovakia are the EU membership, the productivity and the willingness of workers to perform assignments, the availability and quality of local suppliers, the qualification of workers and labour costs. However, the development of some local factors reduces the satisfaction of investors with Slovakia as an investment location. It is mostly the already mentioned availability of professional workers. In comparison to the previous year, the Slovak education system (especially vocational and higher education) was evaluated worse. The introduction of dual education system represents the proper innovation. However, it is necessary to increase the number of participating pupils. More intensive links with practice are also required

in the case of higher education. TCorruption and transparency in public procurement belong among the worst rated local factors in Slovakia (SACC, 2017).

Of course, Slovakia is not only an FDI recipient but also a country investing abroad (although to a much lesser extent). The volume of Slovak direct investments abroad was less than 2.2 billion EUR in 2015. In this case, up to 95% of Slovak investments was located to other European countries (with the highest share in Czechia – almost two-fifths of total investments; Figure 4.5), 2.4% of investments was directed to the American continents and 2.2% to Asia. In comparison to 2011, a drop in Czechia's share (from 53% to 39%) as well as an increase in Poland's share (from 4% to 9%) has been recorded in total Slovak FDI abroad.

* * * *

Similarly to the previous year, it is expected that foreign demand will positively contribute to the growth of the Slovak economy in 2017. The exports should be accelerating as well as the imports, due to increase in investments linked to the construction of the new car plant. In total, the contribution of net exports to GDP growth is likely to be lower than in 2016.

Due to the start of Jaguar Land Rover production as well as the expansion of Volkswagen Bratislava production, even a more pronounced y-o-y acceleration of exports may be expected in 2018 and 2019. However, the export dynamics may be mitigated by the impact of external risks – mainly the Brexit (especially its "hard" version, i.e. the complete withdrawal of the UK from the single European market), as well as the US's protectionist foreign trade policy.

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

The economic situation in the Euro area has been partially stabilised recently, although with great help from the European Central Bank (ECB), which continues in its loose monetary policy. At the political level, the planned withdrawal of the United Kingdom from the European Union (EU) had a destabilising effect and triggered a wide discussion about the future of the Union with (so far) 27 Member States.

The chapter focuses on the ECB's activities aimed at supporting the economy of the Euro area, the ended Presidency of Slovakia in the EU Council with emphasis on the role of Bratislava Summit, as well as the following debate on the future development of the EU. The final sections of the chapter focus on the fulfilment of the EU Council recommendations in Slovakia and evaluation of macroeconomic imbalances in Slovakia.

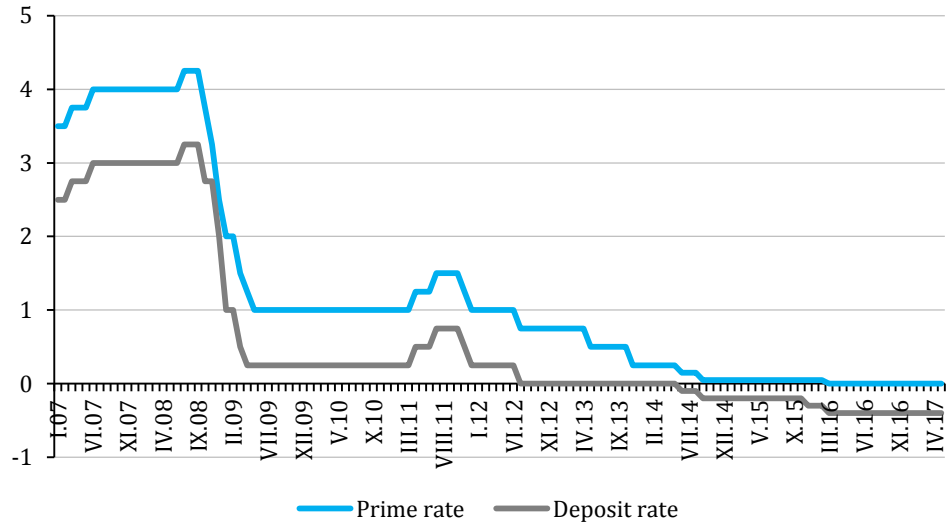
ECB's Monetary Policy Remains Expansionary

The monetary policy of the ECB remained expansionary during the whole year 2016 and at the beginning of the following year (see Figure 5.1). Since March 2016, the prime interest rate unchanged at 0% rate and the deposit rate in the negative value (-0.40%). Even in the following months, change of the rate in an upward direction is not expected. It means that in combination with the gradual increase in the US interest rate, the appreciation of US dollar vis-à-vis Euro towards the parity takes place. Thus, the depreciated Euro may, on the one hand, promote the competitiveness of the Euro area exporters on the global market, but on the other hand, it may increase the prices of imports from the countries outside the Euro area.

In December 2016, the ECB made adjustments to the quantitative easing program by lowering the monthly securities purchases from 80 billion EUR to the current 60 billion EUR (i.e. back to the original volume

of purchases). At the same time, it extended the purchases for another nine months. Thus, instead of finalising purchases in March 2017, the deadline has been shifted at least to the end of 2017. In total, the duration of quantitative easing would be up to two years and nine months, which further increases the risks associated with the return to standard monetary policy.

Figure 5.1
Development of the ECB Key Interest Rates



Source: ECB (2016).

During 2016, the inflation in the monetary union remained closely above zero or in negative values. In February 2017, the inflation accelerated slightly and reached 2% y-o-y change (Eurostat, 2017) which creates some room for gradual tightening of monetary policy. However, the ECB's argument against the retraction of current stimulus is that inflation has been driven by higher energy prices in recent months and not by e.g. higher wages. According to the latest European Commission forecast (EC, 2017a), the Euro area inflation is supposed to reach 1.6% in 2017. This means that it would be kept close to 2% (value considered by the ECB as price stability) and therefore the central bank could gradually start exiting its expansionary monetary policy.

Thus, the influence of the ECB's monetary policy on interest rates developments in Slovakia retains the character of the previous period, i.e. low interest rates on deposits and loans in the Slovak banking sector. At the same time, the relatively low interest rates on the government bonds market intensify the government efforts to borrow largely. That creates pressure on the shift of the constitutional debt threshold upwards. However, the public debt limits are expected to be gradually tightened under the current constitutional law from 2018 onwards.

Slovak Presidency of the EU Council

In the second half of 2016, Slovakia presided over the Council of the EU for the first time during its membership in the Union. The Slovak Presidency in cooperation with the European Parliament has very quickly agreed on the EU budget for 2017 and presented the concept of effective solidarity as an alternative to the compulsory solidarity in the context of migration. During the Slovak Presidency, the European Border and Coast Guard Agency was established as an important tool for curbing the illegal migration. Furthermore, at the European level, the ratification process of the Paris Climate Change Agreement was completed. The goal of the agreement is to maintain the global average temperature growth well below 2°C by the end of the century. As of July 2017, the roaming will be removed in the mobile communications; a frequency bridging agreement (for high-speed internet) has been adopted, and some progress has also been made in the digital economy – the agreement on the elimination of geographical barriers among the Member States.

In Bratislava, the informal (extraordinary) summit of EU-27 Member States'leaders (excluding the Great Britain) took place on 16th September 2016 within the Slovak Presidency. The so-called "Bratislava Declaration" was adopted during the summit along with the work program proposed by the President of the European Council, the Presidency of the European Council and the European Commission (so-called Bratislava Plan or Road Map) representing a political goal for the upcoming months.

In addition to the general goal of achieving the EU-27´s success, the plan focuses on a number of specific areas. Within the area of migration and external borders, the goals include not to allow a repetition of 2015 migrants' flows, to provide for the control over the external borders and to return to functioning of the Schengen area. The internal and external security goals are to support the Member States in ensuring internal security and in the fight against terrorism. In addition, one of the stipulated goals is strengthening EU cooperation on external security and defence. Finally, in the context of economic and social development, the main goal is "*to create a promising economic future for all… and provide better opportunities for youth*" (European Council, 2016). The Bratislava Summit can be seen as the beginning of the Union's self-reflection process after British citizens decided to leave the European Union.

Wide Range of Scenarios for Future EU Development

Following the Bratislava Declaration, in March 2017, the European Commission (EC) published the *White Paper on the Future of Europe* with sub-title *Reflections and Scenarios for the EU-27 by 2025* (European Commission, 2017d).[13] The document outlines five scenarios of future development in Europe that help to launch a debate on the further direction of the EU after the UK leaves the Union. The discussion is expected not only at the level of the European institutions, but also with the citizens of the Member States. The Commission stresses in the document that the different scenarios are neither mutually exclusive, nor exhaustive. The presented scenarios of the future development of the Union by 2025 are as follows:

1st scenario – Carrying on

According to this scenario, the European Union will focus on completing the already existing reform agenda. The strengthening of

[13] *"European Commission White Papers are documents containing proposals for European Union (EU) action in a specific area.. ... The purpose of a White Paper is to launch a debate with the public, stakeholders, the European Parliament and the Council in order to arrive at a political consensus."* (EUR-Lex, 2017).

the single market is expected along with conclusions of trade agreements with partners around the world. The scenario also works with improving the functioning of the Euro area, strengthening financial supervision, and partly modernised budget. At the same time, the enhanced cooperation in the management of external borders is expected. Moreover, a shift towards a common asylum system, a better coordination on security matters, closer defence cooperation and more coherent EU foreign affairs are expected as well.

2nd scenario – Nothing but the single market

This scenario represents the lowest intensity of integration. It would mean the strengthening of the single market for goods and capital, but also making the free movement of people and services more difficult. The cooperation within the monetary union would be limited and its vulnerability high. The European budget would focus on the funding of essential functions needed for the single market. There would be no common migration and asylum policy, and internal border controls would be strengthened. There would be no increase in the defence cooperation. The foreign affairs would address some issues at the bilateral level, and new trade agreements would not be concluded.

3rd scenario – Those who want more do more

This scenario appears to be one of the most likely. It means deepening integration but coupled with even stronger "multi-speed" Europe (i.e. different stages of integration across the EU Member States) as currently is the case.[14] It is expected that one or more "coalitions of the willing", interested in closer cooperation, will emerge in specific policy areas. The other Member States would have the opportunity to join the states that have strengthened their cooperation later. In this scenario (unlike the first scenario), the cooperation within the group of countries would be strengthened e.g. in the area of taxation[15], social

[14] The EU's multi-speed character is currently based mainly on the fact that not all Member States are participating in the monetary union and not all of them are part of the Schengen area.

[15] A proper example could be found in the so far unrealized partnership (so-called enhanced cooperation) in the field of financial transaction tax, in which only ten countries including Slovakia is currently willing to participate.

affairs, security or defence. Thist would be linked to creation of additional budgets to the European budget in areas with closer cooperation of some countries. However, given the "multi-speed" nature, the functioning of the EU would become more complex.

4th scenario – Doing less more efficiently

According to this scenario, a common approach by all Member States towards deeper integration would be achieved, however, only in some policy areas. In other areas, the Union would not continue in a deeper integration or it would act on a smaller scale (e.g. in the area of regional development). Within the single market, the common standards would be set at a lower level. However, they would be better promoted in selected areas. Trade agreements with other countries could be concluded quite quickly. The Euro area would strenghten, but the whole EU would not tend towards more intense integration. The European Defense Union could be established and the cooperation on protection of the external borders (European Border and Coast Guard), security (joint anti-terrorism agency) and asylum policy (EU Asylum Agency) could be improved. Therefore, the EU budget would have to be remastered accordingly. In the field of foreign affairs, the EU would speak with one voice. However, there might be contradictions among the Member States regarding the choice of priority policies.

5th scenario – Doing much more together

This scenario can be considered as the most ambitious and thus least realistic. It would mean a shift towards deeper integration in all policy areas. It would involve sharing of even more competences and resources, which could lead to dissatisfaction with the transfer of too many competences from the national to the European level. The monetary union would be strengthened and economic, financial and fiscal union would be achieved. The EU budget would have to be upgraded and modernised. Also, the fiscal stabilisation function for the Euro area would be activated and the European Stabilization Mechanism could be transferred into the European Monetary Fund. The single market in the field of energy, digital networks and services would be completed. In the field of defence, security, asylum and

foreign policy, the progress described in the fourth scenario would be achieved. The decisions would be adopted and executed faster.

Considering the small size of the Slovak economy and its high openness, Slovakia greatly benefits from the existence of the EU single market (particularly from the free movement of goods), as well as from the membership in the monetary union. However, in the case of further deepening of integration in different policy areas, it is worth considering the advantages and disadvantages for Slovakia carefully. On the one hand, for example a stronger external border protection, as well as improved security coordination, would be beneficial for the Member States, including Slovakia. On the other hand, as regards deepening fiscal integration, it would depend on its concrete form, what kind of benefits and risks would be there for Slovakia as one of the most fiscally responsible EU Member States. Only when knowing the concrete process of the deepening of European integration, it would be possible to evaluate whether it is preferable for Slovakia to be a part of the EU core or to remain within the Member States with a lesser degree of integration.

The UK exit from the EU (probably in 2019) will have many economic and political consequences for the future of the Union and its Member States. The Brexit may lead to increase in Member States contributions to the common budget as compensation for the UK's contribution or maintaining the current level of Member States contributions accompanied by the necessary cuts in EU budget expenditures. The second option would have an even stronger impact on Slovakia (as Slovakia is purely the beneficiary of the EU funds) than the first one.

In the second quarter of 2017, the Commission will contribute to the debate on these five scenarios by other documents focusing on the social dimension of Europe, the use of globalisation, the deepening of the economic and monetary union, the future of European defence and EU finances. The White Paper on the Future of Europe was also debated at the extraordinary European Summit in Rome on 25th March 2017 on the occasion of the 60th anniversary of signing the Treaties of Rome.[16] The

[16] The Treaties of Rome have become one of the foundations of later European integration. It is a commonly referred name of the two treaties signed on 25th March 1957, namely the Treaty establishing the European Economic Community (now the Treaty on the Functioning of the EU) and the Treaty establishing the European Atomic Energy Community. Both treaties have been

leaders of the Member States (except the United Kingdom) signed a declaration containing a common vision for the next period. According to the declaration, the EU has to be united and indivisible, and in ten years, it should be safe, prosperous, competitive, socially responsible and able to play a key role in the world (European Council, 2017).

Progress in Implementation of EC Recommendations for Slovakia

In recent years, several areas have been included in the Country-Specific Recommendations of the European Commission (EC) for Slovakia. Many of them concerned fiscal policy, in particular - the achievement of long-term fiscal sustainability, reduction of general government deficit to below 3% of GDP, progress towards a medium-term goal of a balanced budget, establishment of the national fiscal council, adoption of expenditure limits, and tax administration efficiency. A further set of recommendations were concerned about the labour market, in particular – the long-term unemployment and youth unemployment. The education system, the quality of the business environment, the efficiency and quality of public administration, as well as the judiciary system are also considered problematic (European Commission, 2017c).

However, the implementation of recommendations is still lagging behind in Slovakia. Only some of them have been implemented, e.g. reduction of general government deficit below 3% of GDP or establishment of the Council for Budget Responsibility. Some of the recommendations are postponed from year to year (e.g. the introduction of binding expenditure limits). The 2017 Country Report for Slovakia (European Commission, 2017b, p. 14) states that "*Slovakia's track record since 2011 in formulating policies to address the CSRs and underlying structural problems shows a mix of policy progress and persistent challenges*". At the same time, the European Commission points out that Slovakia did not respond adequately to the 2016 recommendations. According to the EC, certain progress has been made in the area of

amended several times, most recently by the Treaty of Lisbon, which became valid on 1st December 2009.

activation measures for the long-term unemployed and in the field of human resources management in the public administration. The areas with limited progress include raising tax compliance, improving the cost-effectiveness of health care, improving procurement procedures and increasing efficiency of the judiciary system. In the regulatory and administrative burden on businesses, no progress has been observed by the EC.

Development of Macroeconomic Imbalances Indicators in Slovakia

The specific area monitored by the EC within the European Semester is macroeconomic imbalances. Since the launch of the Macroeconomic Imbalance Procedure (MIP) as an integral part of economic policy coordination within the EU in 2012, Slovakia has not been identified even once as a country requiring an in-depth analysis and determination whether there are imbalances present in the country and what nature are they.

In the first Alert Mechanism Report (AMR) published in 2012, Slovakia exceeded the thresholds for several indicators, namely net international investment position, unemployment rate, current account balance, real effective exchange rate and nominal labour unit costs (Table 5.1). Since 2013, Slovakia has exceeded the thresholds only for two indicators – net international investment position and unemployment rate (European Commission, 2016). However, the higher net international investment position of Slovakia is not considered by the EC to be an imbalance, which could lead to more pronounced macroeconomic problems, due to its nature, as it is the result of a higher FDI inflow. The relatively high unemployment rate is a structural problem of a long-term nature. However, under the MIP, this indicator signals rather the ability of the economy to respond to the shocks than the existence of imbalance risks for the future. Therefore, it does not necessarily imply the need for in-depth analysis, once it exceeds the threshold.

Table 5.1
Indicators of the MIP Scoreboard in Slovakia

External imbalances and competitiveness		**Thresholds**	2012 AMR	2013 AMR	2014 AMR	2015 AMR	2016 AMR
Current account balance	% of GDP, 3-year backward moving average	+6% and -4%	-4.2	-3.4	1.8	0.2	1.0
Net international investment position	% of GDP	-35%	-63.1	-65.5	-64.1	-65.1	-69.4
Real effective exchange rate	42 trading partners, HICP deflator, 3-years % change	±5% (EMU), ±11 (non-EMU)	10.9	3.4	-3.2	2.1	1.3
Export market share	5-years % change	-6%	31.3	21.1	3.2	-2.2	3.2
Nominal unit labour costs	2010 = 100, 3-years % change	9% (EMU), 12% (non-EMU)	9.7	6.3	1.2	2.5	2.2
Internal imbalances							
Y-o-y change in house prices	adjusted by final consumption of households deflator	6%	5.0	-5.2	-5.9	-0.5	1.5
Private sector credit flow	consolidated, % of GDP	14% (formerly 15%)	3.1	2.7	3.1	5.4	3.9
Private sector debt	consolidated, % of GDP	133% (formerly 160 %)	68.7	71.1	71.2	74.8	76.2
General government debt	% of GDP	60%	41.1	43.5	52.1	54.6	53.5
Unemployment rate	3-year backward moving average	10%	12.1	13.4	14.1	14.0	13.8
Financial sector liabilities	non-consolidated, y-o-y % change	16.5%	2.0	1.0	2.8	-0.3	7.0
New indicators of employment							
Activity rate	% of total population aged 15 – 64, 3-years change	-0.2 p.p.					1.6
Long-term unemployment	% of active population aged 15 – 74, 3-years change	0.5 p.p.					0.0
Youth unemployment	% of active population aged 15 – 24, 3-years change	2.0 p.p.					-4.0

Notes: AMR – *Alert Mechanism Report*; HICP – *Harmonised Index of Consumer Prices*. Figures highlighted are the ones falling outside the thresholds established by the AMR. *Source*: European Commission (2016).

* * * *

The planned withdrawal of the UK from the EU brings complications to both parties, not only of economic nature. It also initiated the wide-ranging debates on the future of European integration. The discussions have been launched by the EC formulating five scenarios of the future EU development. Therefore, it will be crucial for all EU Member States (including Slovakia) to define their positions towards the further direction of integration in the near future.

At the same time, a more rigorous implementation of EC recommendations (whether to introduce binding expenditure limits, improve procurement procedures, increase the effectiveness of the judiciary system, or reduce the administrative and regulatory burdens on businesses) remains challenge for Slovakia. The Slovak Republic belongs to a small number of Member States that have so far avoided in-depth analysis of macroeconomic imbalances by the EC. Despite this, it is important not only to address the issue of (mainly the long-term) unemployment but also to keep also the other indicators of macroeconomic imbalances within acceptable limits to prevent possible negative consequences of asymmetric shocks.

6. PRICE DEVELOPMENT

In the year 2016, the price development did not deviate from its three-year long trajectory towards a decline of prices. Such a pattern of deflationary tendencies sustained for an unprecedentedly long period, and overall price level was on average lower than in 2013. However, the differing factor was also a significant contribution to such development from the domestic economy in comparison to the previous years. In the past, the traditional factors usually originated in the external environment.

Prices Declined on Average

The phenomenon of decreasing prices (or stagnating prices) has been relatively familiar over the past three years in Slovakia. The last increase of price level was in December 2013, and even the unconventional methods of monetary policy conduct by the European Central Bank failed to reverse the decline of prices back to the positive values in 2016. Thus, the overall price level declined by 0.5% on average in 2016.

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

- *Decline in regulated prices* – prices in regulated industries also contributed to the overall price level development. They declined for the third time in a row at the beginning of the year. The intervention of Regulatory Office for Network Industries was also unusual. It led to a fall in gas prices during the calendar year in July 2016 and reduced the gas price by almost 4.9%.
- *Low prices of agriculture products* – especially wheat and corn were sold at low prices at world markets leading to a drop in grocery prices (mainly in the first half of 2016). For example, the price of corn bushel was only 39% of 2012 price in August 2016. Similarly, the price of wheat bushel was only 44% of 2012 price.[17]

[17] It is important to realize that these products do not affect the consumer basket only directly, but also indirectly by influencing the prices of products produced from them. For

- *Reduced VAT on selected food items*[18]
- *Gradual increase in fuel prices* – the collapse of fuel prices in 2015 created room for gradual transmission of inflationary pressures in 2016. In particular, due to the base effect of 2015, the average decrease of price level was hampered by fuel price increase. The average price of diesel was at the end of the year by 18% higher than at the beginning. In the case of Natural 95 petrol, it was higher by 10%.
- *Real wage growth did not transfer into inflationary pressures* – mainly due to the stagnation of price level over past three years, the room for significant real wage growth was created. However, the increase in demand for products and services had only limited influence on the price level development.

The positive trend was a continued growth for working persons in the nominal salary, which was supported by a decline in the price level for past three years. Thus, real wages grew even faster than nominal ones at 3.8% pace. However, given the increasing dynamics of inflation towards the end of 2016 and first months of 2017, it may be concluded that the growth of real wages at a higher rate than nominal is already overcome.[19]

Even though the average price level declined in y-o-y, the development of individual categories measured in consumer basket suggests that the dynamics of price changes did not develop equally. A decline in product prices was experienced only in three out of twelve categories. However, their cumulative share in the whole consumer basket exceeded 50% (see Figure 6.1).

The qualitatively different price level development was also not recorded in the neighbouring economies outside the Euro area. In Czechia and Hungary, the prices were able to keep above the stagnation level and grew marginally. In Poland (just like in Slovakia), the prices experienced a slight decrease. The price level stagnation is not only a phenomenon in CEE, but across the EU shows the resulting Euro area inflation, which remained in the positive growth area, but with a very low value of 0.2%.

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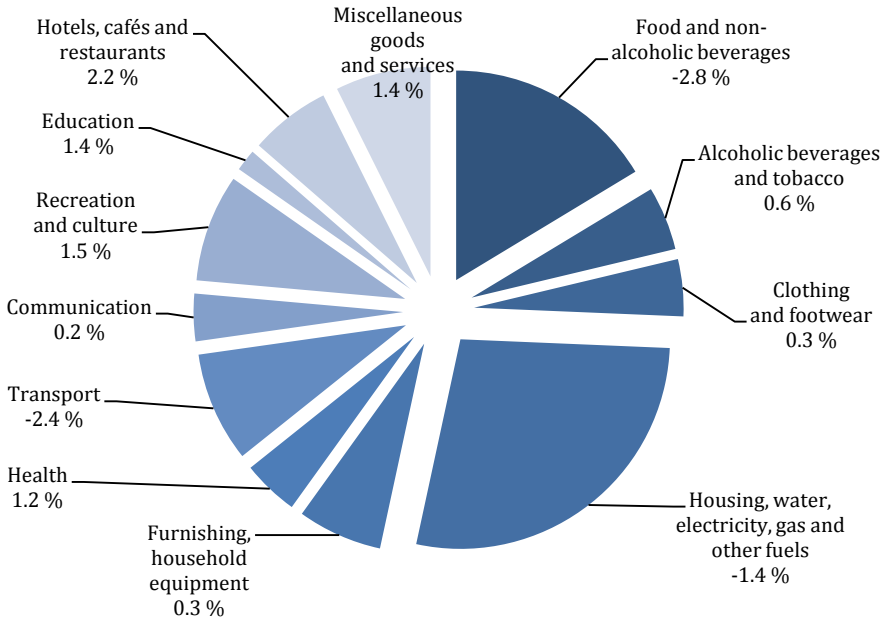
example, the corn not only serves as a final product for consumption but also as animal feed. Therefore, we may expect lower prices also in these products.

[18] We pay special attention to this factor in the chapter below.

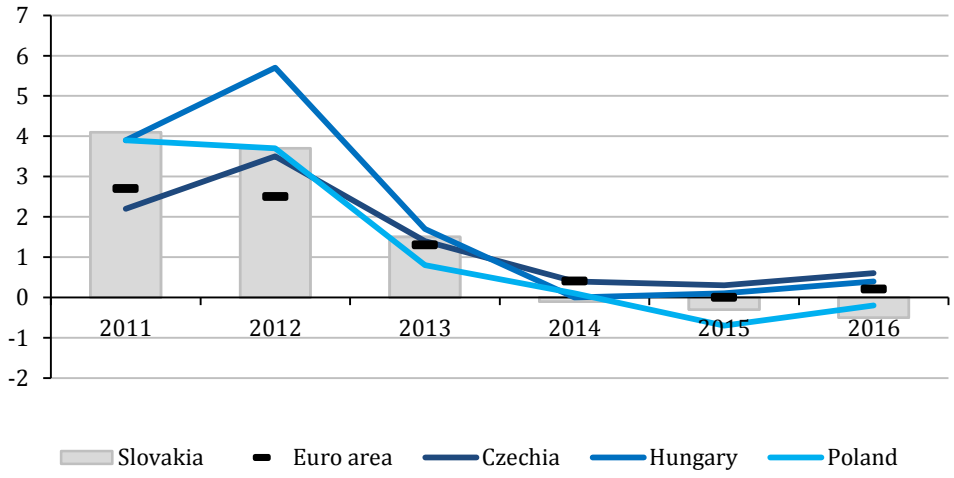
[19] For further details see chapter on Labour Market and Wage Developments.

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 (2017).

Figure 6.2
International Comparison of Year-on-year Change in Consumer Prices Level, (%, HICP)



Source: Eurostat (2014).

More Dramatic Fall in Producer Prices

While on the demand side of the economy, the y-o-y growth of prices occurred in several products (Figure 6.1), the supply side of the economy provides us with different outcomes. On average, the producer prices decreased in some sectors – in the industry, agriculture, and mildly also in the construction sector. Therefore, we may conclude that the reversal in the price development of the producers' products did not occur even in 2016.

The price level in industry sector decreased sharply for the third consecutive year. The last year development repeated and industrial producer prices fell by more than 4%. The same conclusion applies to products meant for exports, which experienced a similar fall with only marginally smaller decrease. Thus, the trend continues due to the inability of domestic demand with recovered foreign demand for industrial products to provide sufficient inflationary impulse and steer the development of prices to positive values.

In the agriculture sector, more than 5% decline in prices may be assigned to two strong deflationary factors. The first one was a good harvest of crops after the weaker year of 2015,[20] and the second one was the general decline in the agricultural commodity on world markets. Both factors pushed prices of agricultural products to deflationary zone recording the largest drop in prices in all monitored sectors.

A gradually recovering construction sector maintained stagnant or only mildly decreasing prices of construction materials. Such trend was not reversed, even by the investment boom in 2015 (the end of programming period). On the other hand, the prices of construction works responded to rising demand by increased prices and compensated the marginal decline in construction materials prices.

[20] The production of all cereals in Slovakia grew in y-o-y by 27%.

Table 6.1
Year-on-year Change in Industrial Producer Prices
(index of previous year = 100)

	2014	2015	2016
Industrial producer prices – domestic	96.4	95.8	95.7
of which: industrial production	98.2	96.8	96.5
Industrial producer prices – total	96.5	97.1	95.9
Industrial producer prices – export	96.7	97.8	96.2
Agriculture product prices	92.2	97.8	94.7
Construction material prices – producer prices	97.3	99.2	99.6
Construction work prices	101.3	101.8	101.2

Source: SO SR (2017).

Prices Grew Only for Government Consumption

Regarding price deflators, the private consumption deflator was negative once again, which could lead consumers to realise their postponed purchases from the past. This is evidence-based by the growing consumption of households, as the consumption gradually takes place. It was postponed mainly due to uncertainty about the economic development in past years. Only the prices of government consumption products experienced a positive growth (although, this is not an unexpected phenomenon). The prices of government consumption (i.e. the government demand for products) is not only determined by their prices but also by other factors. The importance of these factors is determined by the political preference.

Similarly, the prices in Slovak foreign trade declined, so even an imported inflation (as a traditional contributor to the growth of domestic prices) contributed to the overall decline in prices. The trend of change in the development of trade terms was not confirmed. The ratio of export prices to the import prices returned to the negative values after the temporary stop in 2015. In this case, the prices of export products decreased at a higher pace than the prices of imported products.

Table 6.2
Development of Price Deflators (sppy, in %)

	2014	2015	2016
GDP deflator	-0.2	-0.2	-0.4
Private consumption deflator	-0.1	-0.1	-0.4
Fixed investments deflator	-0.4	0.0	-0.7
Government consumption deflator	0.3	0.7	1.3
Export deflator of goods and services	-1.9	-3.3	-1.4
Import deflator of goods and services	-1.4	-3.4	-1.1
Terms of trade	-0.5	0.0	-0.3

Notes: sppy = the same period of previous year.
Source: MF SR (2017).

Impact of Reduced VAT Rate on Selected Food Products

For a better understanding of the VAT development context, we utilise the history overview. It may be summed up that 2004's Tax Reform fundamentally changed the level of universal indirect taxation in Slovakia. The reduced VAT rate on food was abolished, and the uniform rate of 19% was introduced for all products.

Meanwhile, the VAT rate was adjusted from 19% to 20%, and the exemptions were also introduced. The reduced VAT rate (10%) on medicines and medical equipment was introduced, followed by later reduction of the rate on books. The Value Added Tax Act was fundamentally amended in 2015 after several years of debates. The new version of VAT Act was adopted with a reduced rate on certain food products. The amendment was preceded by the pressure from domestic food producers who pointed to the fact that Slovakia had one of the highest VAT rates on food in the EU by 2015 (Euractiv.sk, 2015).

The VAT rate change on selected products is for a long time widely discussed topic in the academic sphere; the greatest attention is paid to the intensity of the transfer of VAT change to the final price of the product. From the large pool of available scientific studies, the identified asymmetric relationship may be highlighted. The transfer of VAT change to the final price depends mainly on the nature of change (whether it is

increasing or decreasing). The hypothesis is that the increase in VAT is reflected by strong growth in the price of the final product, while the reduction of VAT rate is transferred to the final price by a lower intensity with a maximum value of 50%.

In the case of Slovakia, the Institute for Financial Policy at Ministry of Finance focused precisely on the topic of VAT reduction on selected products in its research study (IFP, 2015). The Institute pointed out to the absence of a statistically significant link (or mechanism) between the VAT reduction and decrease in the price of the product. The example of link absence was identified in the case of VAT reduction on books in 2008. Lower VAT rate did not cause a statistically significant fall in prices.

The National Bank of Slovakia had a little more optimistic assumption about the transfer of the VAT reduction to the final prices. It utilises the transfer elasticity estimate with approximately half of rate reduction (NBS, 2016) in its models. The selection of this level of transfer elasticity is empirically supported by the example of the Great Britain (see, e.g. Pike, 2009). However, the author of paper adds that with increasing time, the prices of products with reduced rate tend to regain their original values.

Box 1: It should be remembered that the VAT rate reduction on selected foods from 20% to 10% would (in case of full transfer elasticity) result in the decrease of price by 8.3% and not 10% (as it may be intuitively seen). It is a reduction in the tax rate, not a decrease in the price of product without VAT. Therefore, if the product price without VAT is 10 EUR and the VAT rate is 20%, the final price is 12 EUR. If the rate is reduced from 20% to 10%, the final price will be 11 EUR and that represents a decrease by 8.3% from previous 12 EUR.

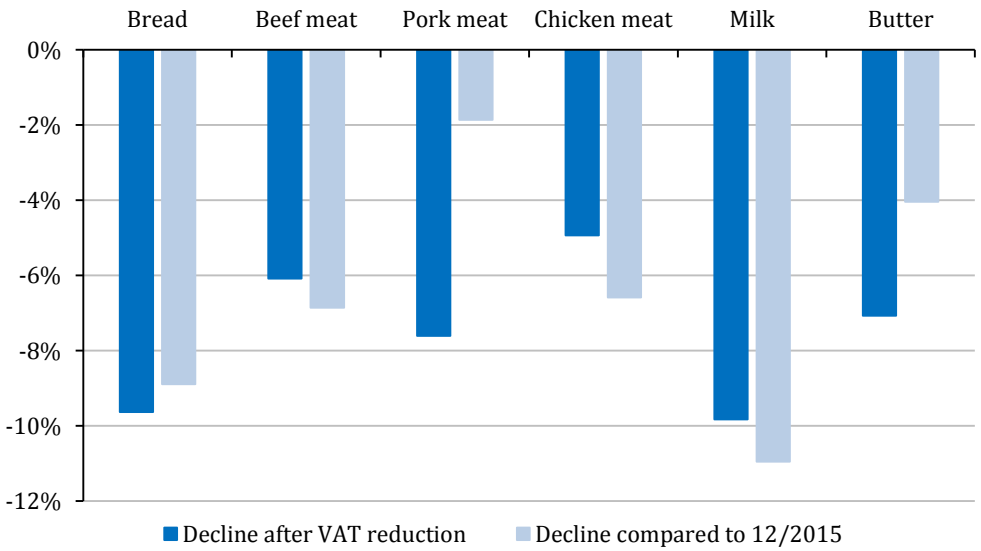
However, the real data provide fundamentally different results than the expected assumptions of low transfer elasticity in VAT reduction to the final price. All product prices (monitored by the SO SR) showed a clear decline in the prices in 12/2015 and 1/2016. The price of some products decreased even more than 8.3% after the introduction of the new VAT rate (e.g. bread

and milk, see Figure 6.3). The overall arithmetic average (i.e. without taking into account the weights in the consumer basket) of the price decrease was 7.5%. That represents a very high transfer elasticity of VAT reduction to the final price. Such development was an unexpected deflationary impulse with the magnitude of -0.3 p.p. (NBS, 2016).

Similarly, the assumption from Pike's previous study (2009) is worthy of evaluation. The author concluded that prices decrease immediately after the introduction of the lower rate, but they tend to return to their original values in time.

The look at the comparison of price declines between 12/2015 and 12/2016 seems to reject this hypothesis. The prices of most products remained at an approximately same level as immediately after the rate cut (some even declined deeper, e.g. beef and chicken meat or milk). If prices were to converge back to their original values in the future, it is likely that this will be driven mainly by the market factors and not by increasing margin of producers or sellers.

Figure 6.3
Price Development of Products with Reduced VAT Rate



Source: SO SR (2017); Autors' calculations.

The question is what caused that (despite the expectations of slight or even absent effect of reduced VAT introduction) the prices decreased by almost the full value of VAT reduction? The answer may be sought rather in the sphere of ideas than "hard data". In particular, in the establishment of certain "common responsibility" for the price development. Among other elements that contributed to the decrease in prices were: transparency, very intensive consumer awareness of upcoming change, media coverage of the topic or even signing of a memorandum between the Slovak government and the interest groups and associations representing the key-sellers on the market. An unconventional element was the involvement of the Union of Pensioners of Slovakia, which participated in the control of the price development in the shops. However, the individual impact of these factors is beyond the abilities of empirical evidence. All these factors combined contributed to the fact that even empirically proven findings from previous research studies may be mistaken under such specific conditions. The effect is directly the opposite of the originally expected change.

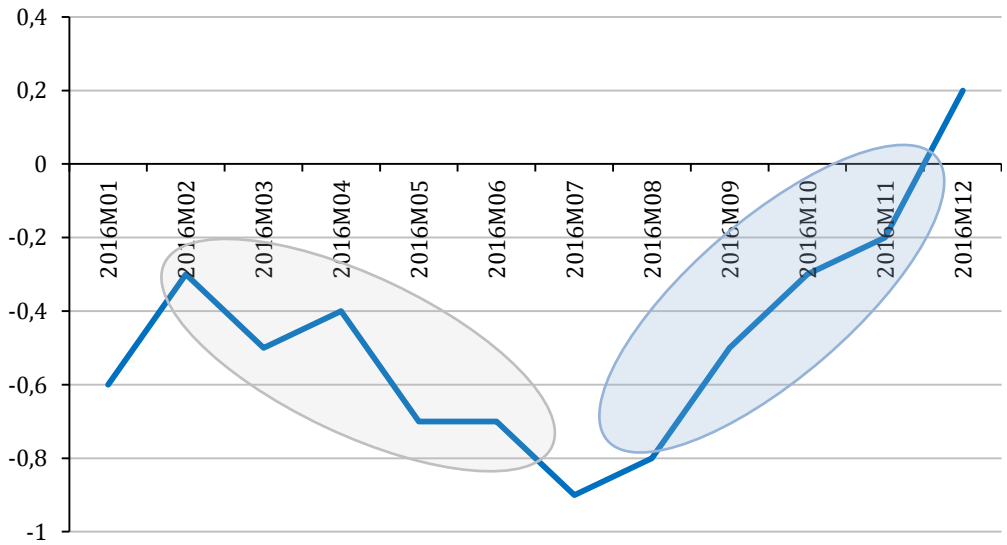
Why Did the Price Development Change over the Course of the Year?

Although the overall price level decreased in y-o-y by 0.5% on average, the dynamics of its development changed during the year. This is captured in Figure 6.4 when the decline in the price level continued in the first half of the year, and then the growth (i.e. the moderation of the decline) suddenly appeared in July 2016. Since then, the growth continued back to positive values, and the positive inflation rate was reached in December 2016 after three years.

However, the cause identification of this breakthrough in the price development is not simple. The possible reason may include, for example, the changed expectations of consumers and producers about future development, the change in the character of monetary policy

(monetary restriction), the change in the tax system, or the increase of demand in the economy and others.[21]

Figure 6.4
Monthly Development of Inflation Rate (y-o-y change, in %)



Source: SO SR (2017).

However, the verification of this hypothesis proves them wrong. The expectations in the economy did not change fundamentally according to the index of economic sentiment in Slovakia. They continued with a gradual positive growth (only slight fluctuations were recorded). Thus we cannot confirm they had a major impact in this case.

The monetary policy of the ECB continued in its original monetary setting implemented several years ago. No major changes occurred in the basic interest rate or quantitative easing. Therefore this factor cannot be directly linked to the breakthrough in the price development as well.

The tax system was amended (above-mentioned introduction of a lower VAT rate on selected food), but the impact of this change was rather pro-deflationary than pro-inflationary.

[21] It is not the ambition of the authors to analyze all possible factors – rather those, which might be very important for price development.

The developments in overall demand would support inflationary trends in the country, and the recovered foreign demand could even help more strongly to recover positive inflation rate. The only factor weakening this hypothesis is the fact that strong domestic demand prevails in Slovakia since 2014 with no significant increases during the recent year.

Therefore, we may only assume that one of the factors leading to the price development turnaround is the possibility of inflationary impulse transfer from the monetary policy implemented several years ago. However, such long transmission mechanism of monetary policy does not seem to fit in commonly used theories about the length of delay in transmission of monetary measures to the real economy.

However, as we have already mentioned in the last year's publication, even the monetary policy executor (ECB) was not able to accurately identify the length of transmission mechanism under the non-standard conditions prevailing in the EU. Therefore, it is possible that the effects of the monetary measures just reflected in the half of 2016, despite the fact that these measures were executed long before this date. In particular, the low-interest rate is a motivation for market players to consume (and not save) or to utilise cheap loans to finance investments and consumption and more.

* * * *

The return of inflation to positive values is expected for the upcoming year but in the absence of inflation target (close to 2%) achievement.[22] However, this forecast is based on several assumptions, which do not have to be necessarily fulfilled. The first assumption is a steady development of oil and natural gas prices, which has gone through a very turbulent period in recent years. Another one is the stabilisation of domestic and foreign demand. However, this factor will be valid only if there are no demand or supply shocks in the economy and the positive economic expectations will continue to prevail. And last, but not least,

[22] There is a broad consensus among institutions dealing with monetary policy and price developments.

the assumption of common monetary policy influence, which continues to be conducted extremely loosely. The search for so-called “exit” strategy from the current setting will be very important for the future price level development. Based on these assumptions, it may happen that the real development of price level will differ from the forecasted one. After all, we could see a similar example of the conflict between the expectations and the reality in the VAT reduction effects.

7. DEVELOPMENT OF SELECTED FINANCIAL MARKETS INDICATORS

In the following chapter, we look closely at the analysis of financial market developments, paying particular attention to:

- Changes in interest rates on new loans to households compared to the Euro area average;
- Changes in the volume and structure of new loans to households and non-financial corporations;
- Changes in the volume and structure of deposits of the population and nonfinancial corporations;
- Changes in the volume and structure of non-performing loans;
- Price developments in the real estate market and the structure of mortgages provided for real estate purchase.

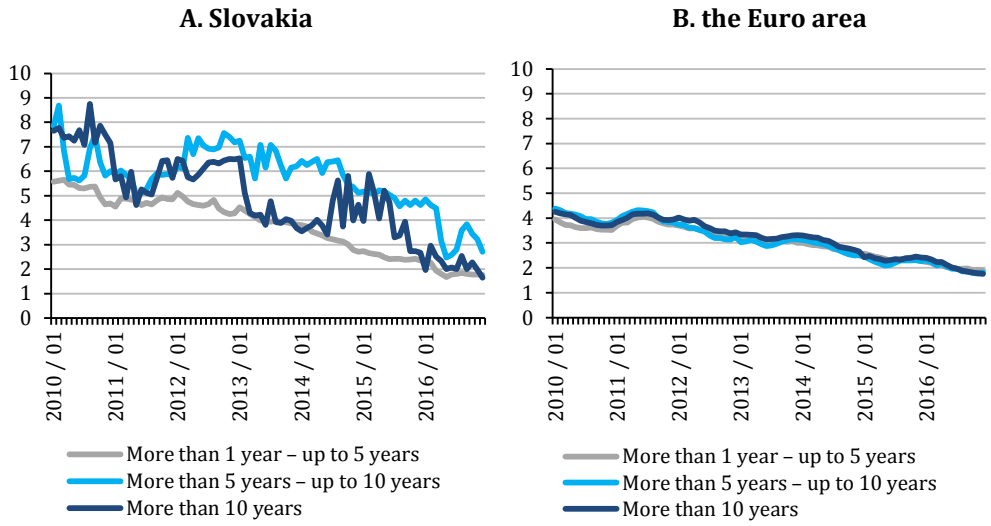
The Development of Interest Rates on Loans in Slovakia and the Euro area

In recent years, especially as a result of legislative changes in housing loans and in line with the ECB's expansionary policy, there has been a significant fall in interest rates on housing loans in Slovakia. In 2010, the interest rate on loans over ten years reached 7.65% per annum (p. a.), however, it was 1.65% p. a. at the end of 2016.

The interest rates have virtually matched the average interest rate in the Euro area in loans with the same maturity. However, the differences remain in loans with a shorter maturity (Figure7.1).

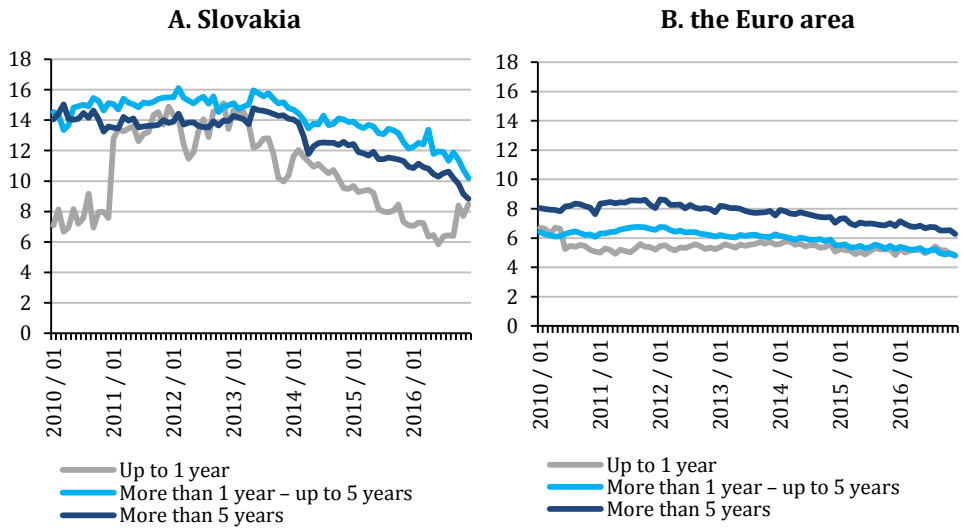
Since 2010, the interest rates developments of new loans have been relatively volatile, especially in the category of loans maturing within one year. In 2010, the interest rate reached 7.1% p. a. There was also a significant increase in the interest rates to a maximum level 15.13% in 2011. On the contrary, the lowest level was reached in June 2016 (5.86% p. a.), however, there was a relatively strong increase to 8.7% p.a at the end of 2016.

Figure 7.1
Interest Rates on Loans (new loans) in % p. a. – Housing loans



Source: NBS (2017).

Figure 7.2
Interest Rates on Loans (new loans) in % p. a. – Consumers Loans



Source: NBS (2017).

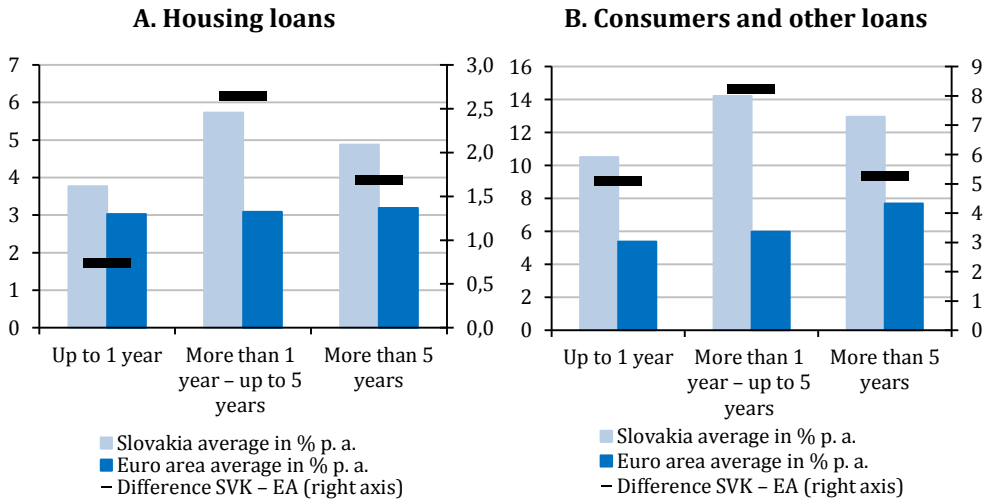
The development of interest rates was interesting also in loans with various maturity. In 2013, the interest rates for all kinds of loans were

relatively the same. Their values slowly began to diverge later on. However, the opposite trend took place in 2016, and the rates began to converge again.

Figure 7.2 shows that despite the gradual decline in consumer's loans (from their maximum in 2012), there is still a large gap between their levels in Slovakia and average of the Euro area.

The differences in the average interest rates for housing and customers loans in 2010 – 2016 are shown in Figure 7.3.

Figure 7.3
Comparison of Average Interest Rates in Slovakia and the Euro Area for 2010 – 2016 (new loans)



Source: NBS (2017); Authors' calculations.

The Development of Loans and Deposits in 2010 – 2016

Regarding the increasing availability of loans as a result of the interest rates reduction on the interbank market, the regular y-o-y growth of loans to households and the non-financial corporation is also recorded in Slovakia. The y-o-y increases in provided loans are visible especially in the case of loans to households. Since 2010, the volume of loans almost doubled. A significant share of the total volume of loans is represented by housing loans (increased by 11.4 billion EUR since 2010).

Table 7.1
Loans granted in 2010 – 2016 – households (EUR million)

	2010	2011	2012	2013	2014	2015	2016
Total	*15,578*	*17,177*	*18,757*	*20,535*	*23,036*	*25,893*	*29,094*
Consumers	2,075	2,197	2,511	2,806	3,360	3,905	4,562
Housing	10,840	12,311	13,688	15,292	17,353	19,703	22,243
Other	2,663	2,669	2,558	2,437	2,324	2,285	2,289

Source: Macroeconomic database NBS.

Tabuľka 7.2
Loans granted in 2010 – 2016 – non-financial corporations (EUR million)

	2010	2011	2012	2013	2014	2015	2016
Total	*14,537*	*15,492*	*15,000*	*14,612*	*14,389*	*15,685*	*16,528*
Operational	897	774	777	974	731	889	573
Housing	2,840	2,766	2,774	2,511	2,376	2,459	2,432
Investment	5,850	6,119	5,588	5,215	5,611	6,427	7,233
Other	4,951	5,833	5,861	5,911	5,671	5,909	6,289

Source: Macroeconomic database NBS.

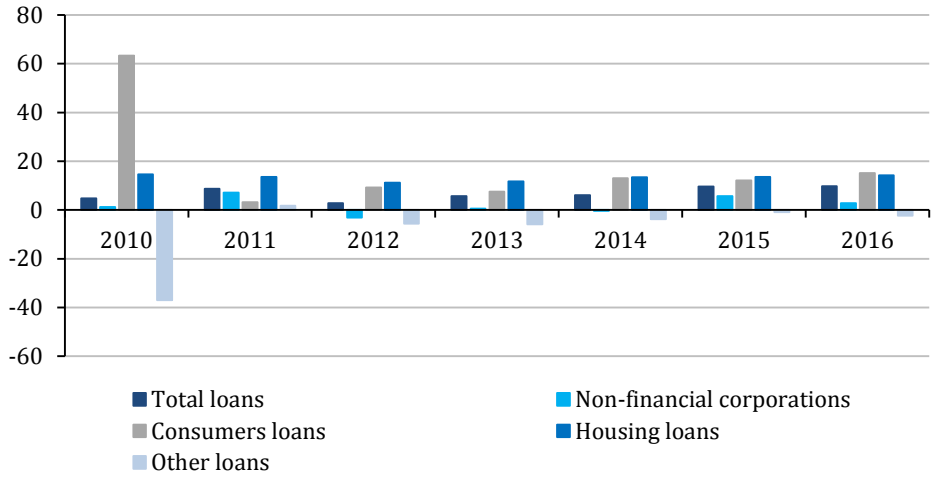
In the case of loans provided to nonfinancial corporations, we may observe only a slight increase in the volume of loans since 2010. The total provided loans grew by 1.9 billion EUR. Investment loans represent the largest share in the structure of provided loans. Since 2010, they increased by 1.3 billion EUR.

Figure 7.4 shows the y-o-y changes in loans for 2010 – 2016. The largest increase can be observed for long-term loans for housing and consumers loans. For housing loans, the y-o-y changes range from 11% to 14%.

The relatively dynamic growth of housing loans is gradually reflected in the real estate prices (see Figure 7.5). Traditionally, the highest prices are in the Bratislava region, where the value of real estates reached the 2009 level and achieved an average level of 1,790 EUR per m^2 this year. In comparison to the Slovak average, the average price in the Bratislava region is higher by 511 EUR per m^2. The second highest average prices were recorded in Košice region. On the contrary, the lowest average prices of real estates were in Nitra region (reaching 587 EUR). However,

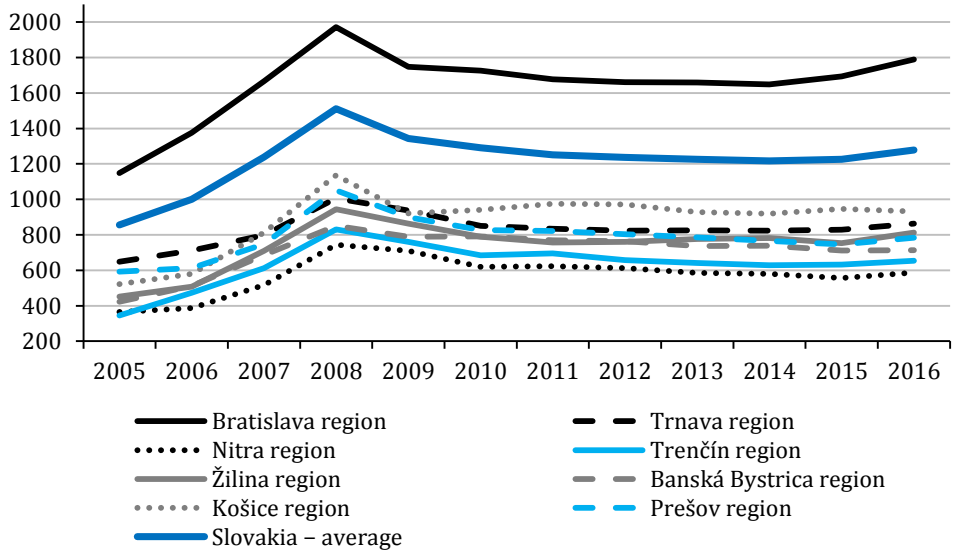
in the case of Nitra region, we may expect higher growth of the real estate prices over the upcoming years mainly due to an increased demand and a limited supply of housing related to the gradual start of the Jaguar Land Rover production.

Figure 7.4
Y-o-y Growth (Decrease) **in the Volume of Loans, 2010 – 2016**



Source: NBS (2017); Authors' calculations.

Figure 7.5
Real Estate Prices Development per m² by Region, 2005 – 2016



Source: Macroeconomic database NBS.

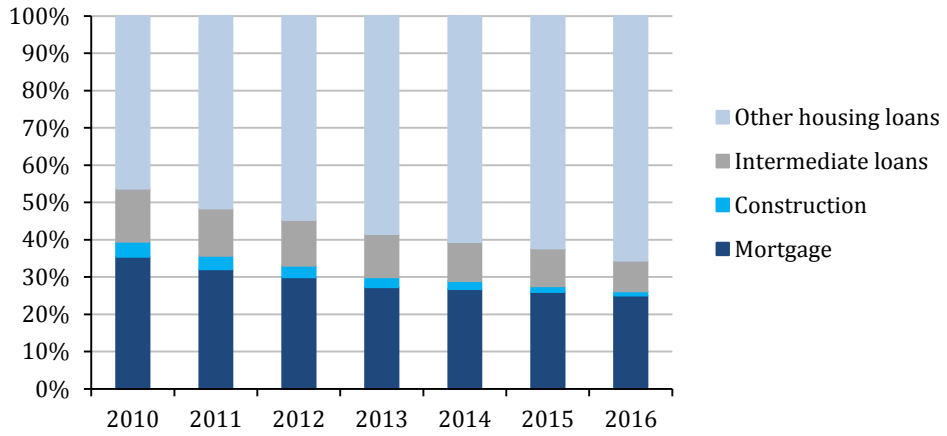
A more detailed overview of the structure and the volume of provided housing loans in 2010 – 2016 is given in Table 7.3 The total volume of loans reached 22,2 billion EUR at the end of 2016. The share of individual loans types is shown in Figure 7.6.

Table 7.3
Volume of Housing Loans in 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
Housing loans	10,840	12,311	13,688	15,292	17,353	19,703	22,243
of which:							
Mortgage	3,842	3,949	4,090	4,173	4,648	5,121	5,559
Construction	434	446	432	408	364	308	255
Intermediate loans	1,543	1,561	1,677	1,760	1,819	1,981	1,827
Other housing loans	5,021	6,355	7,489	8,951	10,522	12,294	14,602

Source: NBS (2017).

Figure 7.6
Development of Individual Housing Loans Types in 2010 – 2016



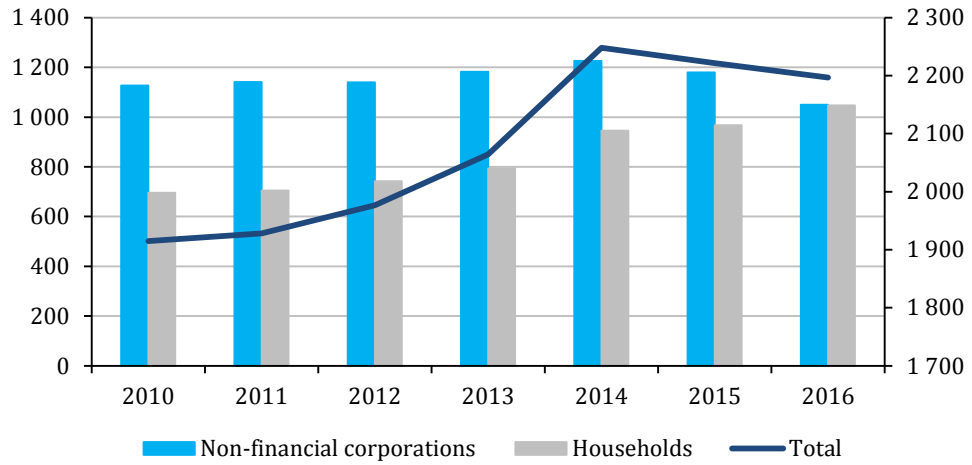
Source: NBS (2017); Authors' calculations.

The constantly increasing share of the total housing loans may be observed in so-called "other housing loans" while the share of classic mortgage loans is decreasing. Also, the share of construction loans and intermediate loans recorded a decrease in the overall housing loans in the analysed period.

The dynamics of housing loans, particularly enabled by more accessible refinancing and low-interest rates, resulted in tighter conditions required by the NBS as a financial market supervisory authority. Effective as of 1st March 2017, the new rules tighten requirements on clients' incomes and limit the loan size based on the costs of the purchased property. The amount of the loan repayment cannot exceed an amount equal to the sum of the subsistence minimum and 20% reserve of the income. Thus, the loan applicants have to either use a higher share of own funds or have sufficient income to meet the new requirements. The new rules also include the introduction of so-called "stress test" – testing to what extent is the creditor able to repay the loan in the event of an interest rate increase by two per cent points. At the same time, the process of loan applicants' income verification is tightened.

From 2009 to 2011, the volume of non-performing loans increased to approximately 2 billion EUR. The most significant y-o-y increase was recorded in 2010 when the total volume of non-performing loans increased by 291 million EUR. The largest share of this increase was represented by loans provided to non-financial corporations with 58.8%, loans provided to households reached 35.9% and loans to the entrepreneurs with 3.7% share.

Figure 7.7
Development of Non-Performing Loans in 2010 - 2016 (EUR million)

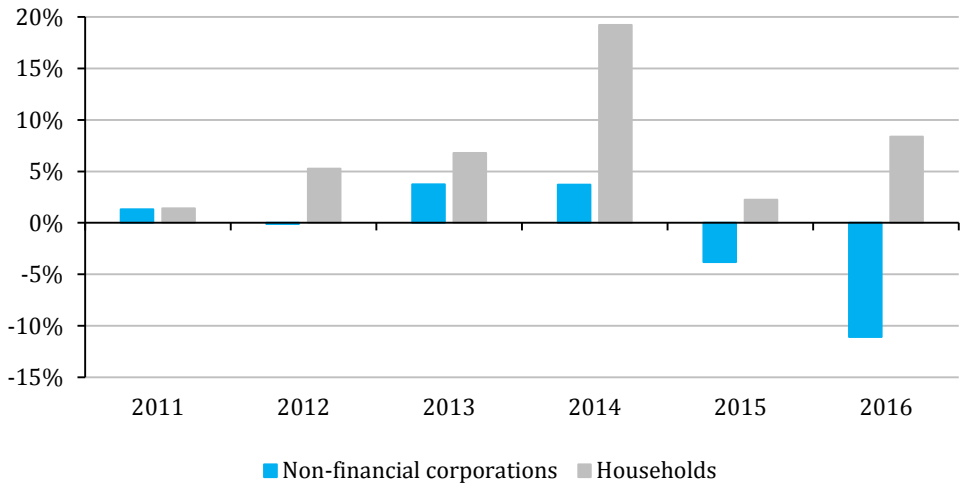


Source: NBS (2017); Authors' calculations.

From 2011 to 2014, we may observe a steady increase in the volume of non-performing loans provided to nonfinancial corporations reaching 1.22 billion EUR in 2014. In 2015 and 2016, there is a decline in non-performing loans to non-financial corporations reaching around 1 billion EUR. The opposite trend may be observed in the case of household's non-performing loans. Since 2010, they experienced an ongoing growth reaching 1.04 billion EUR and thus achieved equal level with non-financial corporations. The total volume of non-performing loans in households' and non-financial corporation sectors reached its peak in 2014 (2.2 billion EUR).

The highest y-o-y increase of households' non-performing loans was recorded in 2014 (an increase of 19.2%). By contrast, the most pronounced decline by 11% in non-performing loans provided to nonfinancial corporations was experienced in 2016 (see Figure 7.8).

Figure 7.8
Y-o-Y Change of Non-Performing Loans in 2011 – 2016 (in %)



Source: NBS (2017); Authors' calculations.

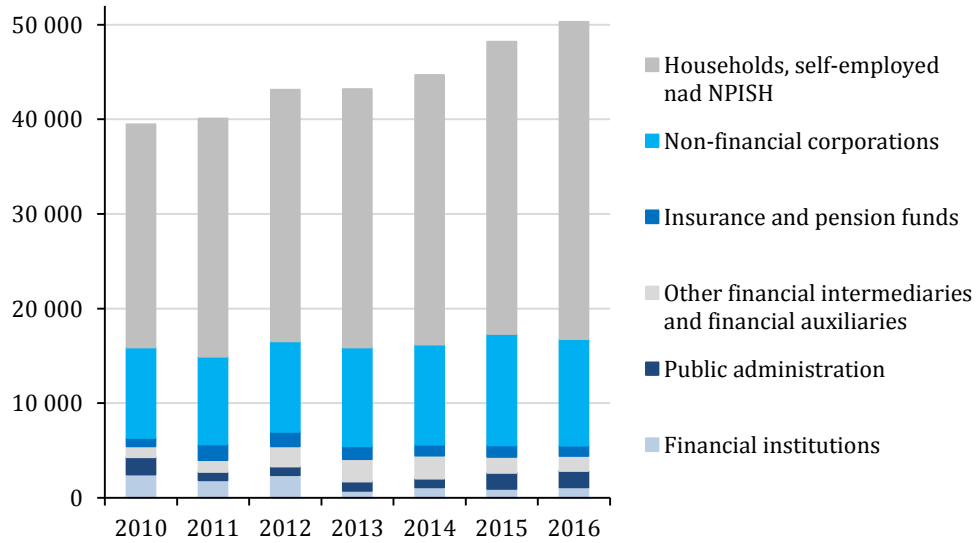
Deposits by Sectors

The total volume of deposits received by financial institutions experienced a growth of 11.5 billion EUR in the period 2010 – 2016 (Figure 7.9). The highest increase in deposits (9.9 billion EUR) was

received from households, self-employed and non-profit institutions serving households (NPISH) sectors and non-financial corporations (1.7 billion EUR). The share of household deposits in the total volume increased from 58.2% to 63.6% in the analysed period. In other sectors, the shares in the total volume of deposits decreased (with the exception of a slight share increase of 0.2 p.p. in the sector of other financial intermediaries).

An interesting trend is the relatively significant the y-o-y increase in deposits from households, self-employed and NPISH. In comparison to 2015, the deposits increased by 2.6 billion EUR, out of which, the deposits of households amounted to 2.5 billion EUR. A significant decrease by 500 million EUR was recorded for nonfinancial corporations and by 125 million EUR for the sector of other financial intermediaries and financial auxiliaries. On the contrary, a slight increase of 50 million EUR occurred in the public administration sector and 151 million EUR in the financial corporations' sector.

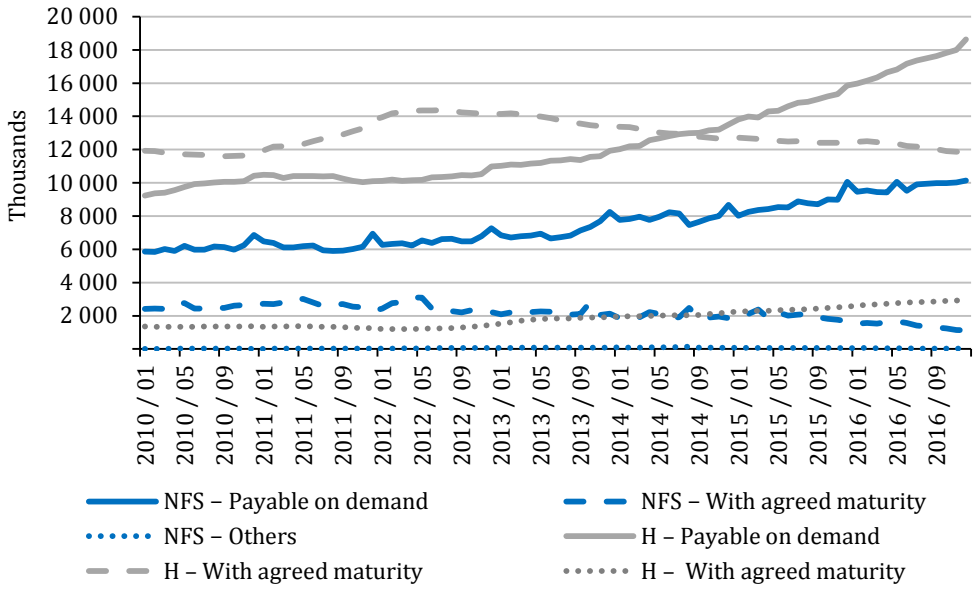
Figure 7.9
Deposits by Sector in 2010 – 2016, End of Calendar Year (EUR million)



Source: NBS (2017).

By a closer look at the structure of deposits from households and non-financial corporations, we may observe that dominant part was formed by deposits repayable on demand. In the case of households, the volume of these deposits amounted to 18.6 billion EUR and in the case of the non-financial corporations to 10.1 billion EUR by the end of 2016. In the case of households, from 2012 onwards, we may see a loss of interest in depositing savings on the deposits with an agreed maturity and a notice period.

Figure 7.10
Development of Deposits by Type (EUR million)

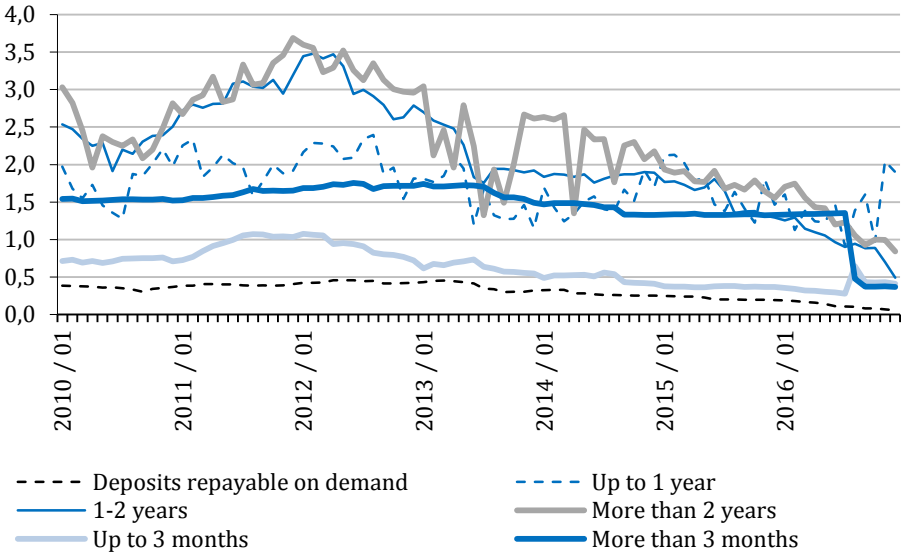


Notes: NFS – Non-Financial Sector, H – Households.
Source: NBS (2016).

From 2012 to 2016, the volume of savings declined by approximately 2 billion EUR in this type of deposit.

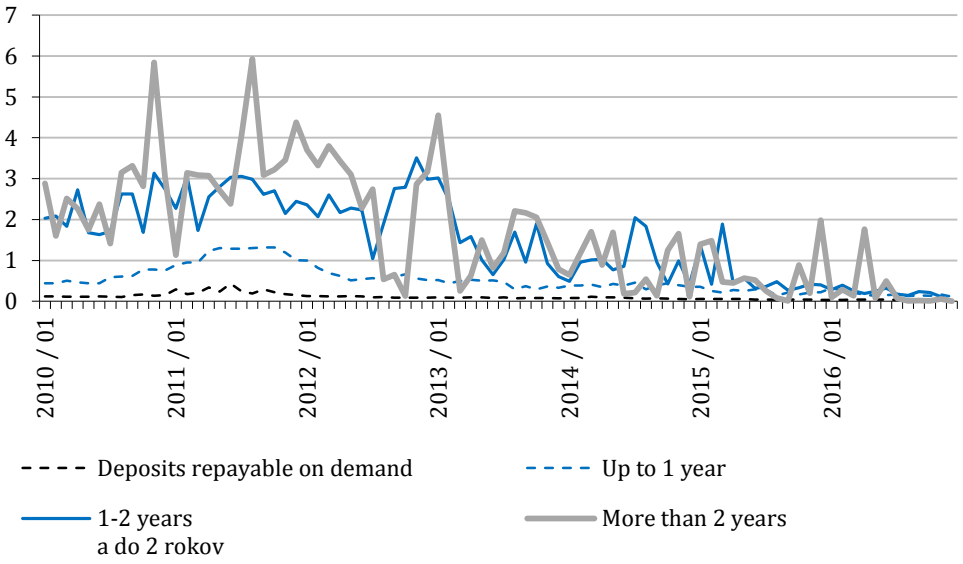
Looking at the level of the interest rates on deposits (Figure 7.11 and 7.12), we may conclude that the diversion of households and non-financial corporations from deposits with a longer notice period towards demand deposits is understandable (especially given the low-interest rates differences on individual types of deposits). In Slovakia, the interest rates on deposits copy (with only minor variations) the Euro area trends (unlike in the case of loans).

Figure 7.11
Development of the Average Interest Rates on Household Deposits, 2010 – 2016 (in %, p. a.)



Source: NBS (2017); Authors' calculations.

Figure 7.12
Development of the Average Interest Rates on Non-Financial Corporation Deposits, 2010 – 2016 (in %, p. a.)



Source: NBS (2017); Authors' calculations.

The analysis of selected financial market indicators shows that the interest rates on deposits in Slovakia were brought closer to the level of interest rates in the Euro area mainly due to the expansionary policy of the ECB and the domestic banks' policy. However, we still may observe the differences between the average interest rates on some type of loans in Slovakia and the Euro area. It is visible in the category of consumers loans for households, and partly in the case of housing loans with shorter maturities.

The housing loans situation changed for the benefit of borrowers in the past two years. The legislative changes in combination with the ECB's expansive policy have prompted a relatively strong competition among the financial institutions in the area of housing loans.

The legislative changes allow to refinance an existing loan at lower costs (even outside the fixation period) or to pay a full amount of borrowed money in the case of interest rate fixation change. That led to a high interest of borrowers to refinance the existing loans at lower interest rates. However, there is also taking place a tightening of loans provision rules for the population by the NBS. Stricter rules for loans provision are designed to avoid a potential credit crunch problem in the case of a rapid increase in the interest rates on already provided loans.

* * * *

In conclusion, we may say that the average interest rates gap on loans remains the same between Slovakia and the Euro area. This difference is particularly striking in the area of consumer loans for households. In the case of the interest rates on deposits, we may observe a shift from the longer-term deposits towards demand deposits. It is mainly due to the low-interest rates on deposits with a longer notice period, which doesn't motivate the depositors to deposit money for a longer period. There is a substantial increase in the indebtedness of the population, mainly as a result of the real estate market recovery. In this respect, the current favourable situation in the real estate market is combined with the recovery of flats constructions in the more developed parts of Slovakia. The increase is most evident in the Bratislava region where real estate prices significantly exceed the average real estate prices in Slovakia, as well as in other regions of the country.

8. PUBLIC FINANCE

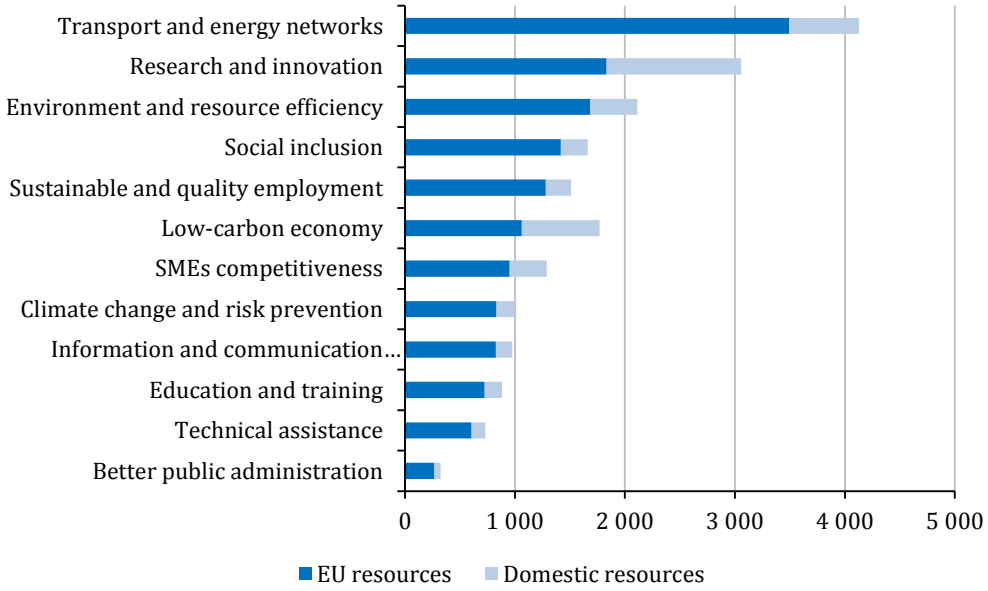
In 2016, the public finance development was marked largely by the end of the political cycle, the formation of a new government and its program declaration, as well as by the long-term commitment of Slovakia to drive public finances to a balanced budget on a structural basis. Over the course of the year, the intensity of discussions on the need to release so-called "debt brake" intensified (it was established by Constitutional Law No. 493/11 Coll. On Budgetary Responsibility). The discussions were launched by the Ministry of Finance of the Slovak Republic (MF SR). The main motivation of MF SR (justifying the need for the release) is the need to increase the intensity of constructions, especially the transport infrastructure.

Currently, the gross public debt is in the first penalty band defined as the interval between 50 – 53% of GDP. In 2016, its share of GDP reached 51.9% and gradually declines. It is mainly due to the economic growth and the associated tax revenue growth, one-time change in methodology to ESA 2010, as well as the expenditure and revenue measures introduced in public administration budget. The preventive arm of the Stability and Growth Pact requires a gradual reduction of the public finance deficit in medium-term to a structural deficit of at most 0.5% of GDP. However, the commitment to reach a balanced structural balance has been revised several times (from 2017 to 2019).

The proposal to mitigate the rules of the Budget Responsibility Act seems rational at first glance. It is appropriate to accumulate funds on the government bonds market during the time of low-interest rates and thus reduce the overall interest burden of the public debt. These funds could be invested in the development of road infrastructure, which is undoubtedly missing in several regions of Slovakia, or its current condition is unsatisfactory. However, it is important to note that in addition to the transport infrastructure, Slovakia does not also finance other important areas in long-term. Some of them are prerequisites for an increase of competitiveness and maintenance of a long-term, stable and healthy growth and the associated increase in living standards. The investments in education, science, research, innovation, active labour market policy,

defence and regional development have been insufficient for a long time. Today, the cohesion policy funds play a dominant role in most of these areas. In the case of transport infrastructure, the entire allocation for the 2014 – 2020 programming period has already been assigned to specific infrastructure projects under the Operational Program Integrated Infrastructure. The volume of resources reaches over 4 billion EUR in this operational program (together with national co-financing) for 2014 – 2020 (or 2023) – see Figure 8.1. We may also see in Figure 8.1 that European funds in areas such as research and innovation, environment protection, social inclusion, employment, and competitiveness of SMEs represent a significant source of public expenditures in these areas.

Figure 8.1
Areas of Financial Implementation for 2014 – 2023 (EUR million)



Source: European Commission (2017a).

However, the main problem remains in the way these resources are used, their efficiency and absorption capacity of the domestic economy. In the current programming period, a real financial implementation of these resources is still relatively low.

Projects (particularly in the area of transport infrastructure) are often extremely lengthy in their preparatory phase and there are often delays in construction. Therefore, a legitimate question arises in the case of "debt brake" release. Is there sufficient amount of quality and cost-effective projects available that could be financed and carried out from these resources?

When discussing the release of "debt brake", the credibility of fiscal policy is another important factor that needs to be taken into account. The Budget Responsibility Act has the nature of the constitutional law to prevent its frequent changes, and its main objective is to ensure the long-term sustainability of public finances with awareness of all possible risks that may arise in the future. Since the mandatory expenditure limits have not yet been adopted (the existence of such limits is assumed by the Act), the debt limit is currently the most effective domestic fiscal rule that puts pressure on responsible government management. (Council for Budget Responsibility, 2017).

As part of the Budget Responsibility Act amendment discussions, the possibility of switching from a reference gross public debt indicator to net public debt indicator was discussed. However, in the event of such amendment, it would be necessary to adopt the existing sanction zones adequately so the long-term sustainability of public finances would not be jeopardised. The Council also notes "in efforts to meet the government targets of the 2017 – 2019 budget, defined as the achievement of the medium-term fiscal target of 2019 (…), the fiscal policy would not be limited to these conditions by the debt brake rule." Thus, the gross debt would decrease faster than sanction zones from 2018 onwards. An important source of investments funding is the efficiency increase of tax collection and planned expenditures by implementing the evidence-based policymaking. Currently, this principle applies only to limited areas and is conducted by the Institute for Financial Policy (IFP) of the Ministry of Finance within the framework of the Value for Money project. However, the real possibility of Institute to influence the political decision-making on public expenditures is still limited.

Development of the General Government Budget Balance

According to preliminary data sent by MF SR to the Eurostat, the deficit of public administration budget amounted to 1,68% of GDP and achieved lower values than originally planned (by 0.25 p.p.) in Slovakia. The achieved results are better mainly due to the growth of the Slovak economy, taxes and payroll levies and the non-tax revenues, which were higher than expected.

The revenue from taxes and payroll levies was 1.03 billion EUR higher than planned, and the non-tax one was higher by 597 million EUR. In total, the government revenues exceeded the plan by 4.4 billion EUR (Table 8.1).

Table 8.1
Development of Government Revenues and Expenditures (accrual basis)
(EUR thousands)

	2014	2015	2016	2016	2016
	Actual	Actual	Actual	Planned Budget	(A – P)
Total revenues, of which:	*31,407*	*35,431*	*35,041*	*30,602*	*4,439*
Taxes and levies	23,141	25,331	26,032	24,993	1,039
Non-tax	5,805	4,570	5,066	4,487	579
Grants and transfers	2,461	5,531	3,943	1,122	2,821
Total expenditures, of which:	*33,441*	*37,608*	*36,403*	*32,159*	*4,244*
Current	30,661	31,540	33,007	29,684	3,323
Capital	2,779	6,068	3,395	2,475	921
Balance (ESA 2010 based)	-2,056	-2,160	-1,362	-1,557	195
% of GDP	-2.72	-2.74	-1.68	-1.93	0.25

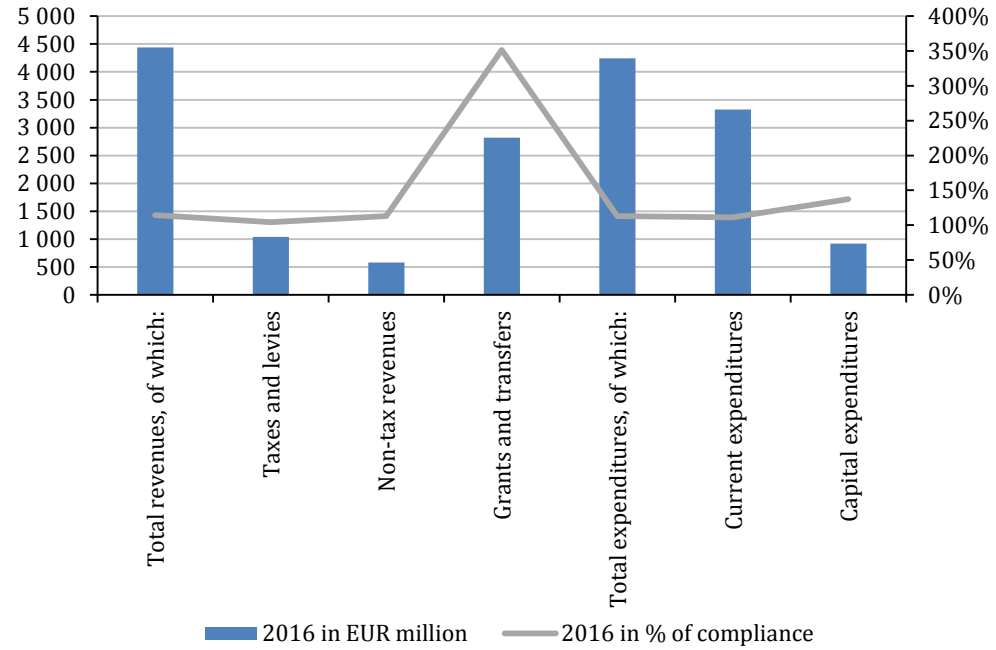
Notes: (A – P) – Actual minus Planned Budget.
Source: MF SR (2017b).

The revenues from social contributions increased by 260.7 million EUR and the revenue from health insurance contributions by 126.1 million EUR. It is due to a favourable situation on the labour market and improved collection of levies.

Despite the improvements in social security funds, they continue to run deficits in a long-run trend. In 2016, the Social Insurance Agency recorded a deficit of 180 million EUR and public health insurance funds had the deficit of 72.6 million EUR.

Management of municipal administration also improved the deficit of public administration in fiscal terms. It was mostly the result of the management of municipalities whose expenditures increased by 238 million EUR. On the other hand, the finances of the self-governing regions contributed negatively by 19.1 million EUR.

Figure 8.2
Difference between Planned and Actual Government Revenues and Expenditures in 2016 (EUR million, %)



Source: MF SR (2017b).

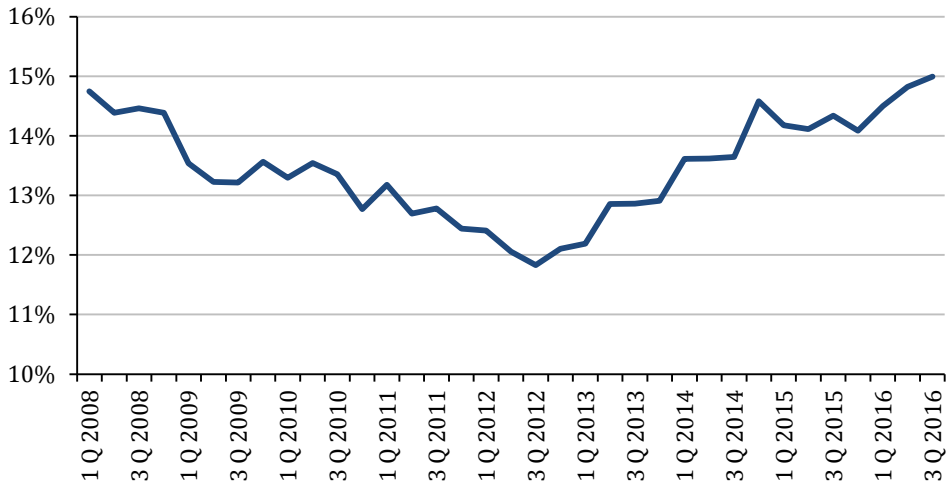
The State Budget Development in 2016

In 2016, the tax revenues were higher by 358 million EUR than planned, which has positively reflected in the state budget management. The budget revenues were almost identical to the projected values, but

lower by 12.1% than in 2015 due to a lower financial implementation of Cohesion policy resources. In a detailed look at the structure of tax revenues, the personal income tax revenue increased by 139.2 million EUR, of which the tax on dependent activity represented 135.5 million EUR and 3.6 million EUR accounted for the entrepreneur tax. The corporate tax was higher by 295 million EUR than planned. The special levy from regulated industries was represented by 29.5 million EUR.

The Value Added Tax (VAT) collection was lower by 278 million EUR than planned. One of the reasons for such development is the decline in investment activity funded by Cohesion Policy resources. In y-o-y comparison, the volume of collected VAT is lower by 2.6%. The positive sign regarding VAT is its gradual increase in effective tax rate (see Figure 8.3).

Figure 8.3
Effective Tax Rate of Value Added Tax in 1Q 2008 – 3Q 2016



Source: IFP (2017).

The state budget expenditures were lower by 991 million EUR than planned, with the largest decrease recorded in the current transfers (lower by 842 million EUR). Within the current transfers, the transfers to individuals and non-profit legal entities amounted to 340 million EUR less than projected; the transfers to non-financial entities and the

transfers to legal entities not classified as public administration entities were lower by 499.5 million EUR.

The end of 2007 – 2013 programming period and slow financial implementation of the new 2014 – 2020 programming period were also reflected in the revenue of the state budget. The revenues were lower by 203 million EUR in this category and reached the total of 1.9 billion EUR. In comparison to 2015 (when most of the funds were implemented), the revenue was lower by 54.7%.

Table 8.2
Central Government Budget Development in 2013 – 2016 (EUR million)

Indicator	2013	2014	2015	Planned 2016	Actual 2016	% of compliance 2016	Year-on-year change, %
Total revenues	*12,797*	*12,496*	*16,233*	*14,276*	*14,275*	*100.0 %*	*-12.1 %*
of which:							
1.Tax	9,135	9,293	10,612	10,993	11,068	100.7 %	4.3 %
of which:							
Tax on personal income	214	239	64	18	-8,5	-47.2 %	-113.3 %
Corporate income tax	2,003	1,917	2,607	2,825	3,187	112.8 %	22.2 %
Income tax coll. by deduction	178	175	162	166	179	107.8 %	10.5 %
VAT	4,735	4,919	5,510	5,647	5,368	95.1 %	-2.6 %
Excise taxes	1,977	2,009	2,096	2,160	2,170	100.5 %	3.5 %
2. Non-tax	1,283	1,637	1,274	1,107	1,217	109.9 %	-4.5 %
3. Grants and transfers	2,379	1,566	4,346	2,175	1,989	91.4 %	-54.2 %
of which:							
Income from EU budget	2,175	1,257	4,280	2,143	1,939	90.5 %	-54.7 %
Total expenditures	*14,820*	*15,420*	*18,166*	*16,247*	*15,256*	*93.9 %*	*-16.0 %*
of which:							
Current expend.	12,968	13,441	13,507	14,352	13,353	93.0 %	-1.1 %
Capital expend.	1,854	1,979	4,658	1,894	1,902	100.4 %	-59.2 %
Deficit/Surplus	-2,023	-2,923	-1,932	-1,970	-980	49.7 %	-49.3 %

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.

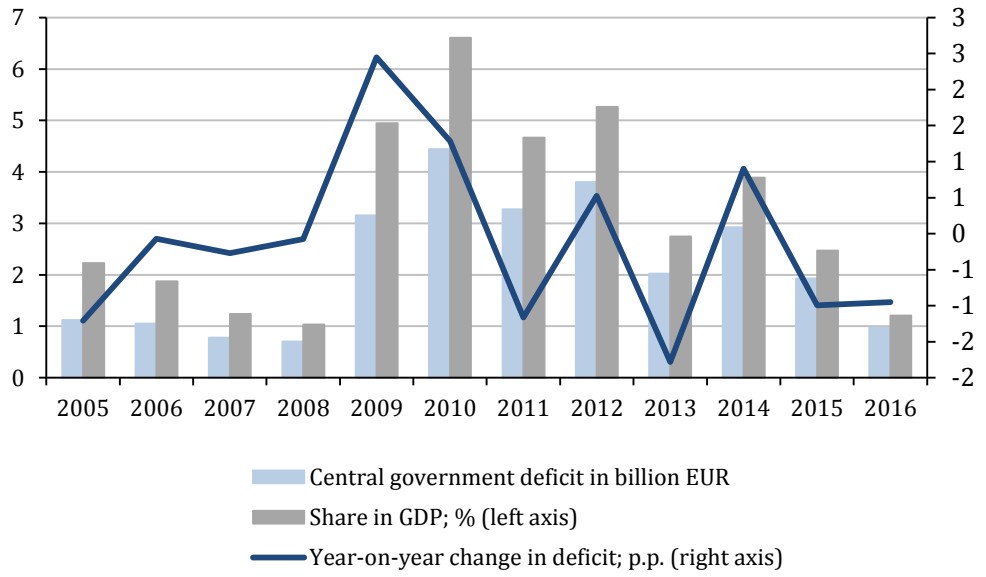
Source: MF SR (2017a); Author's calculations.

The financial corrections to the EU funds had a negative impact on the general government deficit reaching 187.6 million EUR in 2016. The systemic corrections reached 112.5 million EUR and the individual correction amounted to 75 million EUR.[23]

The State Budget Deficit and Central Government Debt

Regarding the above-mentioned favourable development of the state budget revenues and lower expenditures by 6.1% than planned, the state budget deficit decreased by 50.2% on a y-o-y basis. The state budget ended with a deficit of 980.3 million EUR representing 1.12% of GDP. Thus, we may conclude that its share in GDP returned to the pre-crisis level in 2007.

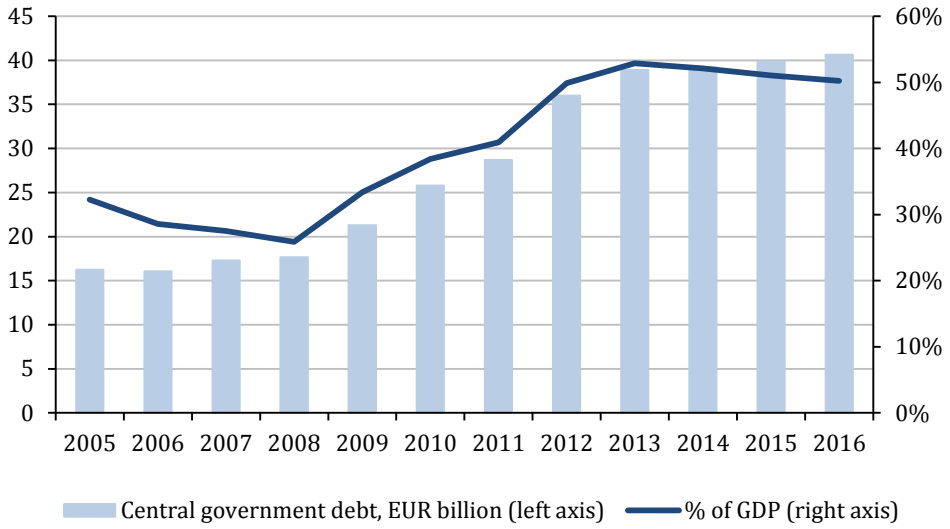
Figure 8.4
The State Budget Deficit in 2005 – 2016



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

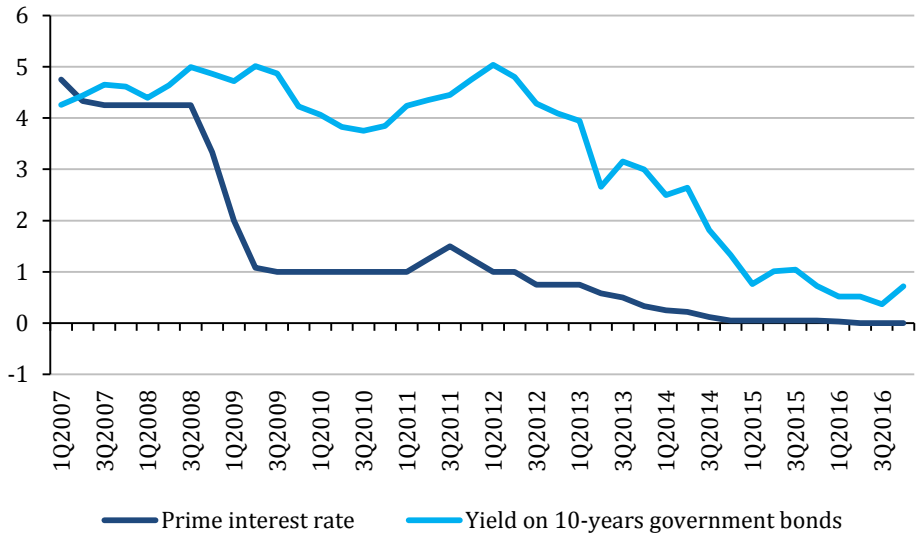
[23] The systemic corrections are applied in the case of repeated weaknesses identified in already implemented projects. They are mainly related to deficiencies in the management and control system. Individual corrections are linked to the mistakes occurred in individual projects.

Figure 8.5
Central Government Debt in 2005 – 2015



Source: MF SR (2015b); Authors' calculations.

Figure 8.6
Interest Rates on 10-years Slovak Government Bonds by their Maturity in 2007 – 2015 (%)



Source: Macroeconomic Database NBS (2016).

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

Since Slovakia joined the EU in 2004, the country has received 12.1 billion EUR in total as the net recipient from the EU budget. Given the performance of the Slovak economy and the performance of individual regions (measured by GDP per capita in PPP), Slovakia is the net recipient of financial resources from the EU budget, especially within Chapter 1. Sustainable growth.

Table 8.3
Expenditures of EU budget in Slovakia in 2008 – 2015 (EUR million)

	2008	2009	2010	2011	2012	2013	2014	2015
1. Sustainable growth	852.8	633.5	1,208	1,096.8	1,646	1,439.2	1,120	3,147.9
1.1 Competitiveness for growth and employment	43.3	48.7	11.8	40.9	70.4	58.4	69.2	61.6
1.2 Cohesion for growth and employment	809.5	548.8	1,096.1	1,056	1,575.7	1,380.8	1,051.7	3,086.3
1.2.1 Structural funds	510.1	385.9	633.7	917.6	1,212.9	812.1	1,026.3	3,053.6
1.2.2 Cohesion fund	299.4	198.8	462.4	138.2	362.7	568.7	507.2	1,281.1
2. Preservation and management of natural resources	357	513	676.5	647.9	618	566	532	566.5
3. Citizenship, freedom, security and justice	11.1	8.5	8.7	29.2	12.6	11	5.6	9
4. EU as a global partner	11.5	26.6	0.3	0.5	0.5	0	0	0.5
5. Administration	9.4	10.8	11.5	10.7	9.7	9.9	10.2	10.9
6. Compensation	0	0	0	0	0	0	0	0
Total	*1,241.8*	*1,192.4*	*1,905*	*1,785.1*	*2,286.8*	*2,026.1*	*1,668.8*	*3,734.8*

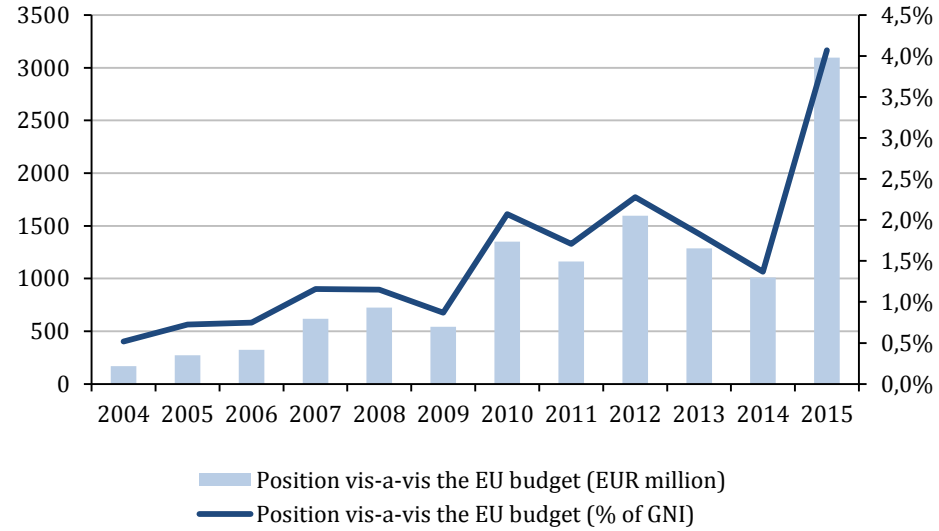
Notes: 2016 data were not available at the time of chapter publication.

Source: European Commission (2017b).

At the same time, we may observe a gradual (but not linear) increase in the net position vis-à-vis the EU budget since Slovakia joined the EU (see Figure 8.7). While in 2004 the net position of Slovakia was about 0.5% of gross national income (GNI), it reached a record at 4.0% of GNI in 2015. Due to an unprecedented rate of financial implementation in 2015, the net position reached 3.09 billion EUR in this year. In

comparison to 2014, the increase represents the amount of 2.08 billion EUR and the increase of 2.7 p.p. of GNI.

Figure 8.7
Net Financial Position of the SR vis-à-vis the EU Budget, 2004 – 2015



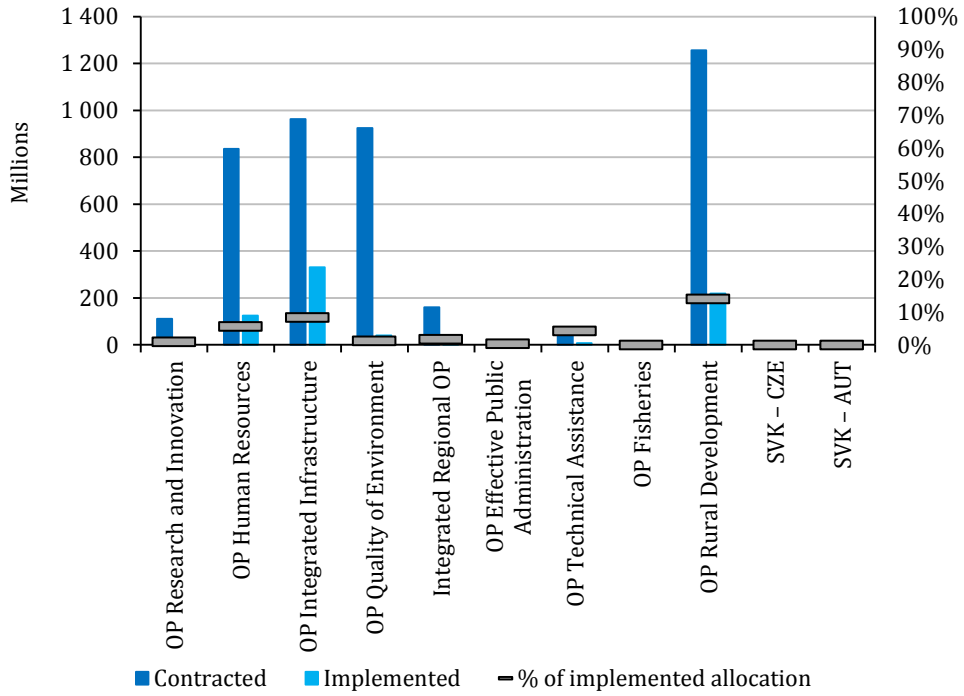
Notes: 2016 data were not available at the time of chapter publication.

Source: European Commission (2017b).

EU Cohesion Policy Implementation in 2014 – 2020 Programming Period

At the end of 2016, the overall level of financial implementation from the EU budget achieved 5% of the total committed implementation for 2014 – 2020. Two years after the start of the programming period, the financial implementation is at relatively low level. In absolute terms, there was an implementation of 775 million EUR. The highest implementation was achieved in the Operational Program (OP) Integrated Infrastructure (331 million EUR), the OP Rural Development (218 million EUR) and the OP Human Resources (124 million EUR). The lowest financial implementation was recorded in the OP Research and Innovation (21 million EUR) and the OP Effective Public Administration (989 EUR thousand).

Figure 8.8
State of Financial Implementation of the Committed Resources in 2014 – – 2020 by Operational Programs – 31st December 2016 (EU source)



Source: Deputy Prime Minister's Office for Investments and Informatization, SR (2017); Authors' calculations.

In relative terms, the OP Rural Development (14%), the OP Integrated Infrastructure (8.35%), and the OP Human Resources (5.66%) were the programs, which achieved the highest relative level of financial implementation in the 2014 – 2020 programming period.

Interreg V-A Cooperation Program Slovakia – Czechia and Interreg V-A Cooperation Program Slovakia – Austria did not implement any funds at the end of 2016 along with the OP Fisheries.

Thus, the situation from the previous programming period is repeating, which was characteristic by slow financial implementation and slow contracting in the early years of the programming period. Therefore, we may expect that the largest amount of financial resources will be implemented at the end of the programming period between 2021 and 2023.

9. DEVELOPMENT OF EMPLOYMENT AND WAGES

The year 2016 may definitely be labelled as the year of employment recovery. Not only has the employment recovered fully after the years of the post-crisis employment shortfall, the number of working persons even surpassed the pre-crisis values; employment climbed to the new historical maximums. The number of unemployed persons has decreased during last three years by one-third, and the unemployment rate in Slovakia is now actually lower than the Euro area average. The vital demand for labour, along with a notable increase in the average wage (both in nominal and real terms), motivates inactive people to enter the labour market. The economically active population has grown for the fifth year in a row (despite a decline in the number of working-age population).

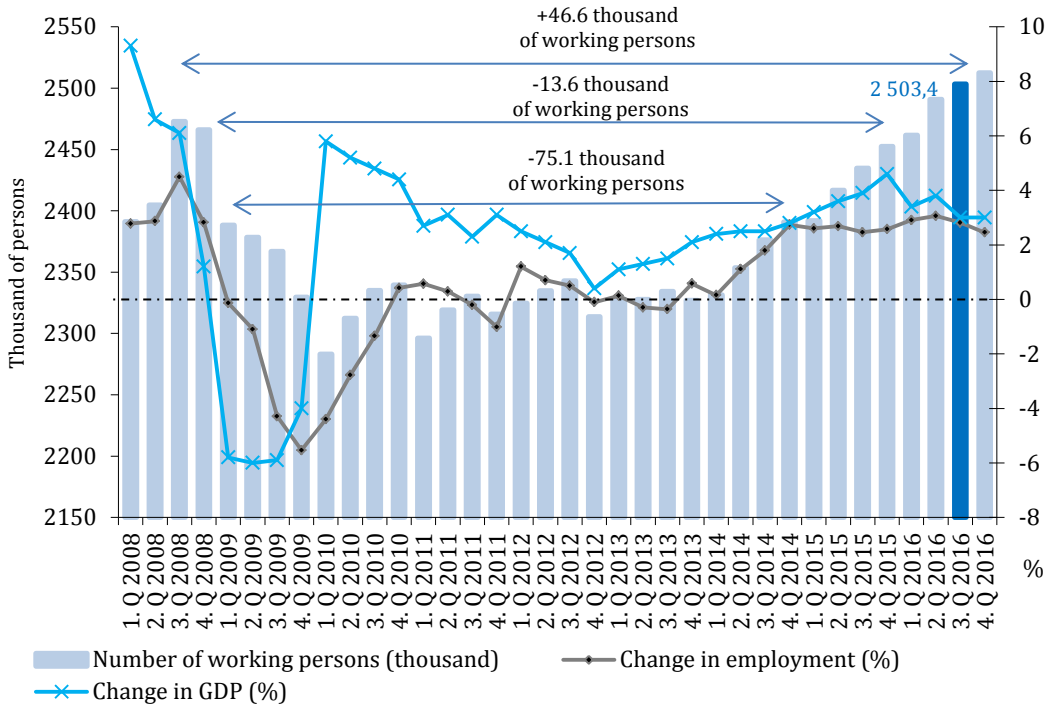
The positive developments in the labour market, culminating mainly in the last two years, have also brought the signals of certain structural shifts. Particularly two interesting areas should be considered: the selected service sectors contributed to the total growth of employment more than construction and industry altogether; and the fall in the number of unemployed is almost exclusively caused by a decrease in the long-term unemployment, what reduces the share of long-term unemployment in the total unemployment. The long-term unemployment rate fell (compared to its peak period) by more than a half, thanks to what Slovakia lost its 1st position (lasting for years) in the field of the EU's long-term unemployment rate and now ranks 7th among the EU countries.

Sectoral Overview of Employment Development

The employment calculated from the number of working people (LFS, i.e. including all working persons – employees and entrepreneurs) has been increasing for five years in a row (at the pace accelerating particularly in the last two years). The average annual growth rate of employment was 2.8% in 2016, representing a y-o-y increase in the number of working persons by 68 thousand (according to the Statistical

Office, estimated by the LFS methodology). Together with a similar increase in the labour force in 2015, there were 130,000 new workers that have become employed in the last two years. In the third quarter of 2016, the number of working persons surpassed the two and a half million threshold (see Figure 9.1), for the first time in the history of Slovakia (historically the highest quarterly value of the number of working people). In addition, the annual average number of 2016: 2,492 thousand working persons, exceeds historical maximum of 2008 by 58 thousand.

Figure 9.1
Quarterly GDP and Employment Developments, 2008 – 2016



Note: GDP based on quarterly national accounts at constant prices, the reference year 2010 (constant prices calculated by chain-linked volumes with the reference year 2010, ESA 2010 methodology), Employment based on LFS, Number of working persons in thousands, columns – left axis; year-on-year changes in %, lines – right axis. "Post-crisis shortfall in employment" (in working persons) in legend – comparison of 4th quarter 2008 with the same period of 2014, 2015 and 2016.

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

The result of this favourable employment development (culminating in the last two years) is not only the complete recovery of employment and its return to the pre-crisis level, but even surpass of the most successful period in the Slovak history. In the last quarter of 2016, there were 46.6 thousand more working persons than in the last quarter of 2008 (so-called "post-crisis shortfall in employment" was followed in the latest editions of this publication as the difference between the fourth quarter of 2008 and the analysed period, see Figure 9.1). Nonetheless, there are 83,000 less working age persons in the labour force than in 2008.

As regards the employment structure (by type of the employment arrangement), both employees and entrepreneurs contributed to its growth. The number of entrepreneurs grew twice the pace of employees' growth (5% vs. 2.5% growth rate). This time also the number of self-employed experienced growth (as opposed to the previous year); the growth of self-employed in various groups of this category has been confirmed by several reporting statistics.

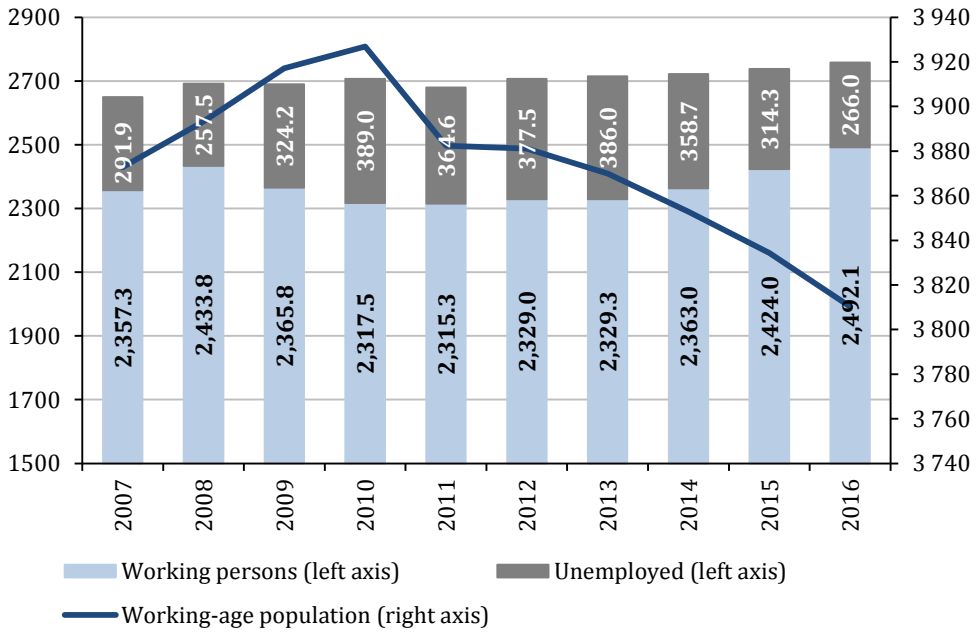
Growing economy and strengthening demand for labour, and crumpling size of productive population on the other hand, resulted in a situation where some sectors and regions has reported a lack of workforce. "Importing" of foreign workers is no longer a new phenomenon in Slovakia (see the case of automotive industry, Chapter 4 – *External Economic Relations*). Along with the growing nominal wages, it motivates increases in activity rate, which should keep growing in the upcoming period.

Current Labour Market Developments Stimulate Economic Activity

Apart from the institutional changes (such as a change in the labour legislation or social system parameters), it is the favourable employment development concurrencing with the demographic decline, and resulting into the wage growth, what may stimulate the increase in economic activity and motivate both, employers, to hire also the persons usually belonging to the so-called "disadvantaged groups", and persons currently

out of the labour market, to participate in the work force again. Indeed, the rate of economic activity (*labour force participation rate*), is rising for the fifth year in a row in Slovakia, with even more accelerated pace in the last two years. In 2016, labour force participation rate exceeded 60%. The number of economically active persons has been growing since 2012, despite the fact that the number of persons in the *productive age* (15 – 64 years by the SO SR definition) decreases every year (productive age population culminated in Slovakia in 2010, since then, the number of persons in a productive age decreased by 117 thousand; see Figure 9.2).

Figure 9.2
Development of Working-Age Population and Economically Active Population (Active Population in Breakdown of Working Persons and Unemployed) (in thousands of persons)



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

Figure 9.2 illustrates how the economically active population is still growing despite shrinking size of the productive age population (which, from the labour supply point of view, is considered as unfavourable demographic trend). For better demonstration, Figure 9.2 shows the

active population in the composition of both its segments – working persons and unemployed. In the last three years, the number of economically active persons is increasing, since inflows in the segment of working persons exceeds decline in the number of unemployed. As this is happening despite shrinking working-age population (line graph in the Figure), we may assume, that such development is not the result of a demographic change but it rather reflects qualitative changes in the labour market.

Looking at the opposite development trends in the working-age and economically active population, it is legitimate to raise a question whether the increasing participation of the post-productive population (persons older than 65) in the labour market may have caused the increase in the overall economic activity/labour force participation rate. The answer is yes, but its contribution was only minor. By *decomposition of the economically active population into 5 years cohorts*, we find out that the major contributor to the economically active population over the past 10 years was the age category 55 – 59 years (the increase in economically active persons of this age over 2006 – 2016 was 122 thousand). The second-largest contributor was the 35 – 39 age cohort (an increase by 78 thousand) and then the 60 – 64 age cohort (increase by 69 thousand). To compare, size of the economically active group in those aged 65 and more increased over the same period only by 14 thousand persons. Contrary to that, the younger cohorts (all cohorts up to 35 years) experienced a decline in economically active population. Such a longer-term view also confirms that the productive population itself is responsible for the increase in economic activity. However, almost exclusively its oldest segments, since the rise in the number of economically active in the above-mentioned middle age cohort 35 – 39 years was actually influenced by a demographic factor (the number of the total population in the cohort increased by more than 92 thousand, so by 14 thousand more than was the increase of active persons). Even when adjusted by a demographic factor (increases/decreases in the total population of a certain cohort), we may confirm that the age group 55 – 60 years has been major contributor to increase in economic activity.

Industry Sector along with Services Contribute to the Employment Growth

Regarding sectoral decomposition of employment change, particular attention is usually paid to the *industry* and developments in its branches – and that is for a good reason. The industrial sectors employs 527,000 people representing 23% of the total employment (calculated from the number of employed; alternatively 27% if calculated by LFS category working persons). Favourable development in the industry continued also in 2016; the industrial output grew by 3.3% y-o-y, out of which, the highest increases in manufacturing were recorded in the manufacture of electrical equipment (9.9%), metals (8.3%) and vehicles (7.4%). Although the production growth rates were lower than in 2015, and industrial sales grew less than half the pace compared to 2015, the trend was good enough to boost overall employment in industry by 3.6%. The growth in the industrial employment was mainly driven by manufacturing (Table 9.1). The industrial branches employed 18.6 thousand persons more than in the previous year.

Table 9.1 captures the changes of selected parameters developments in some market sectors. The assumed relation between sales (or the previous years' sales – e.g. a case of sales in "t-1"), employment and subsequently wages, was confirmed in some branches. The table also reveals interesting variations elsewhere. One of them is a record growth in sales in *construction,* due to the accelerated financial implementation of the EU funds in 2015. The output of domestic construction companies grew at 18.5% after years of decline, which was reflected in sales of 2015, but also in a sharp fall in 2016 (termination of programming period; negative impact of base effect). The *mining and quarrying* branch is also interesting example; the wages grew at the second highest pace despite the decline in both sales and employment. On the contrary, in the case of ICT services, the robust employment growth remained stable despite the decline in sales and wages.

Table 9.1
Dynamics of Selected Indicator Developments in Main Market Sectors
(index; SPLY – same period of last year)

Production of goods:	Sales 2015 (sppy)	Sales 2016 (sppy)	Employment (sppy)	Wages (sppy)	Wages (EUR)
Industry	108.9	104.1	103.6	103.1	995
Mining and quarrying	101.0	***94.7***	***98.6***	106.8	1,112
Manufacturing	108.6	103.6	104.1	103.2	975
Electricity, gas, steam supply	111.5	107.6	***94.9***	105.9	1,621
Water supply, waste management	107.1	105.2	102.8	102.2	913
Construction	120.8	***86.4***	101.2	103.0	651
Production of services:					
Sale and repair of motor vehicles	116.7	116.7	103.8	107.2	942
Wholetrade	103.2	102.1	***95.2***	102.0	879
Retail	101.7	102.2	***99.2***	105.1	635
Accommodation	103.7	112.2	101.8	106.3	673
Food service	104.8	103.1	101.2	104.2	395
Transportation and storage	102.5	105.0	100.6	105.0	856
ICT services	106.0	***96.2***	105.8	***97.9***	1,747
Selected market services	106.1	110.0	106.1	105.1	869

Notes: Sales at constant prices in 2010 (excluding Wholesale calculated at current prices). Employment calculated from the average number of employed (employees and entrepreneurs, excluding women on maternity leave), based on quarterly statistical reporting.

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

However, from the total employment point of view, the sectors of market services deserve particular attention, as there was observed the most pronounced growth of employment from the all main sectors (6.1%). The *selected market services* not only experienced a robust positive y-o-y change in employment, but the sector also employs a significant part of working population (232 thousand). In y-o-y comparison, the employment increased by 13.3 thousand in these branches. Along with increases in employment in *ICT services*, *the sale of motor vehicles*, *food services and accommodation*, these services sectors were employing 22 thousand persons more than a year ago. Such value is even higher than values achieved in the industry and construction sector together. Along with the *Healthcare sector* (where the employment of public, non-market, services increased the most – by 8 thousand persons), the

contribution of above mentioned service sectors to the total employment growth was higher by one-third than the contribution of industry and construction sectors.[24] The higher contribution of labour-intensive services may have further implications for wage growth – these branches use to achieve relatively lower value added and productivity (or their growth rates are lower compared to industry sector). Therefore, this may limit the growth of wages even in the record-breaking growth of employment. On the other hand, the stronger role and the growing share of services create a prerequisite for more stable employment even at relatively lower economic growth rates. Thus, this may be considered as a desired structural change.

The Success of Last Three Years is One-Third Drop in Unemployment

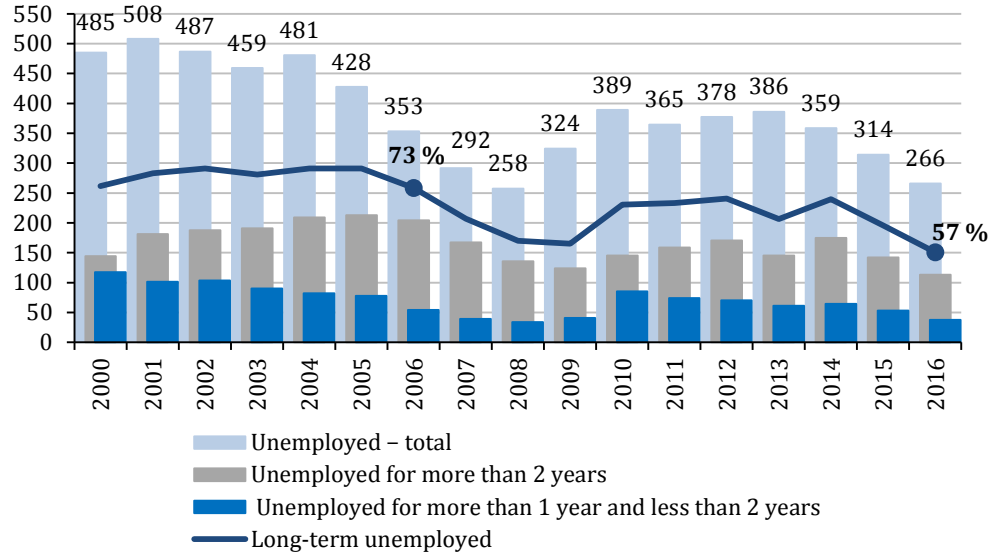
Taking into account that the number of unemployed started to steadily decline only since the last quarter of 2013 (an ongoing y-o-y decline), its reduction by one-third by the end of 2016 is indeed a significant success (given the short period). More precisely, while in the last quarter of 2013 (when after two years of growth *the number of unemployed* finally started to decrease) there was about 387 thousand unemployed in Slovakia, in the same period of 2016, it was only 252 thousand (two-thirds of the original size). The average annual value of unemployed in Slovakia (266 thousand) is only about 8.5 thousand higher than unemployment level in the most successful year 2008. Regarding the dynamics of decline in unemployed, the important fact is that the downward trend in the number of unemployed persons gradually accelerated over the period of these three years (from 7% to 15% rate; y-o-y changes).

Similarly to the previous year, the highest contribution to decrease in the total unemployment comes from *the long-term unemployed*. The number of persons unemployed for more than a year and less than two years decreased by 30% in y-o-y. The second fastest reducing group was

[24] In this part, we utilise the data from quarterly statistical reporting (published by the SO SR), therefore, the employment is calculated from the number of employed persons.

the group of unemployed for more than two years (the largest part of unemployment in Slovakia) with a decrease of 20%. The size of these groups and their share in total unemployment is illustrated in Figure 9.3. Figure 9.3 also shows the total number of unemployed, so we can clearly see approaching of total unemployment to the situation from the most successful year 2008.

Figure 9.3
Comparison of Total and Long-Term Unemployment Developments
(unemployed in thousand persons)



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

In terms of absolute values, the number of short-term unemployed changed only minimally in 2016; while the number of unemployed for more than one year (long-term unemployed) dropped by 45 thousand in y-o-y, the number of short-term unemployed decreased only slightly, by more than 3 thousand (LFS estimates). It is an interesting phenomenon. In a period of favourable economic development with a clear positive impact on the labour market (as witnessed), it is expected that the share of long-term unemployed in the total unemployment would grow (usually a harder employable group and in some cases with weak working

habits, therefore, the employers prefer to employ people who are short-term unemployed). For example, in the pre-crisis years with a positive trend in terms of decreasing unemployment, the share of long-term unemployment in the total approached 70% (see Figure 9.3). Even in the most successful year 2008, the share of long-term unemployed was 66%. Nowadays, the number of unemployed again approached the lowest pre-crisis values (and even lower than in years before 2008), but long-term unemployment represents a significantly lower proportion of unemployed (56.6%) than in the pre-crisis years. It may be a signal that the labour market is nowadays more flexible and dynamic (the inflows and outflows in short-term unemployment are higher) and the demand for labour limited by actual labour supply may lead to the emerging opportunities for long-term unemployed to be hired, or the active labour market policy might have motivating character as well. In any case, it is an interesting change compared to the similarly favourable development of labour market in the pre-crisis years.

As we have already mentioned in the first chapter of this monography, *the unemployment rate* also approached the historical minimums: the level of 9.7% from 2016 is only 0.1 p.p. higher than the lowest recorded unemployment rate in Slovakia (the one of 2008). The highest unemployment rates remain in the youngest aged cohorts of active population (cohorts 15 – 19 years, 20 – 24 years and 25 – 29 years, with unemployment rates 44%, 20%, and 11%, respectively). Apart from these, above average unemployment rate is then present only in cohort 55 – 59 years, but the deviation from the average is minimal here.

Thus, we may conclude that the unemployment rate is still at a rela-tively high level (despite the success in its reduction) due to youth unemployment – especially the unemployed under the age of 25. In Slovakia, they represent 45.7 thousand persons, and together with the third cohort with the highest rate of unemployment (mentioned age group 25 – 29 years), young people aged 30 and less create the group of unemployed of 84.2 thousand persons, which represents 32% (almost a third) of total unemployment in Slovakia.

The preliminary values of *registered unemployment rate* reported by Central Office of Labour, Social Affairs and Family are only slightly

different from the ones estimated by LFS: the value of 9.5% is lower by 0.2 p.p. compared to the LFS value. The improvements in unemployment resulted also in shortening of the *average length of job seekers´ registration* in the labour offices registers. It has reduced from 16.05 months to 12.87 months, which means that now it exceeds the one-year period (definition of long-term unemployment) only by less than a month. The average length of job seekers registration below one year was reported between 2005 – 2009. Despite the y-o-y drop in *the number of job seekers* by approximately 53 thousand, the number of those job seekers entitled to receive the unemployment benefit did not fall, it actually slightly increased. The latest available data (March 2017) registers 33,115 recipients of unemployment benefits, which is 2,204 less than in March 2016. To compare, average annual value for 2008 was around 23,000 recipients. *The volume of benefits paid* increased y-o-y by up to 13 million EUR, but rather as the result of the rise in the average benefit, than due to a slight increase in the number of recipients (compared to 2015): the average unemployment benefit grew from 344 EUR in 2015 to 367 EUR in 2016. Therefore, the expenditures on unemployment benefits ranked fourth in the post-crisis period after the years 2012, 2013 and 2009.

The Slovak success in unemployment reduction is also clearly visible in *Europe-wide comparison*. While in the critical year 2010, when the unemployment rate peaked in Slovakia (14.5%), its value was 4.9 p.p. higher than the EU-28 average, nowadays the unemployment rate of Slovakia exceeds the European average only by 1.2 p.p. In 2007, the last year when the annual employment and unemployment outcomes were not yet affected by the crisis, Slovakia even led the ranking of current EU-28 with an unemployment rate reaching 11.2%. Nowadays, the Slovak unemployment rate of 9.7% ranks 8th among EU countries. This result is actually better the Euro area average (10%). However, it should be noted that other V4 countries achieve significantly better results. The unemployment rate in Czechia (4%) is even the lowest one in the whole EU. [25] Greece, Spain, Croatia and Cyprus achieve the highest

[25] In Poland, the unemployment rate reached 6.2% in 2016 and in Hungary it was 5.1%. Therefore, the unemployment rate in the rest of V4 group is well below the Euro area average.

unemployment rates, but also a country such as France reported higher unemployment rate than Slovakia in 2016. Even though, the fall in unemployment over past 2 – 3 years is a phenomenon spread across the whole Europe, the average of the EU-28 or the Euro area is deteriorated mostly by these countries.

Even more significant is the improvement in *long-term unemployment*. In 2012, Slovakia lost its unflattering leadership among the EU Member States in the long-term unemployment rate when Greece and Spain rose to the top. The decrease from 9.4% (Slovakia in 2012; Eurostat, 2017) to the current 5.8% of the active population is the third largest drop in the EU over this period. Thus, Slovakia dropped from the 1st to the 7th rank in the EU. Also, a long-term evaluation is important. The long-term unemployment rate was above 10% between 2000 and 2006 in Slovakia. Its current value reaches less than half of the 2002 – 2005 level.

Confidence in the trend of further, relatively dynamic reduction of unemployment in Slovakia is also confirmed by the latest European Commission forecast (EC, 2017b). Slovakia is predicted to reduce the unemployment rate by another 1.1 p.p. in 2017 (to 8.6%, which would be level by a full percentage point lower than the minimum one from 2008) and by 2.1 p.p. in 2018, while the forecast for the Euro area predicts a reduction of unemployment by 0.6 p.p. for 2017 and 1.1 p.p. for 2018. The average EU unemployment rate is predicted to be reduced by 0.5 p.p. in 2017 and 0.8 p.p. in 2018.

Wage Development Context

The culmination of favourable employment trends along with the shrinking working-age population contributes to the tension between labour demand and supply with a clear implication for wage growth. On the other hand, the "import of cheaper labour" and also an increasing importance of service sectors (with usually lower value added and productivity; NBS, 2017) act against the growth in average wage. These factors may partly be the cause that the wage growth oscillated around 3% despite the record high employment.

The national average of monthly wage grew from 883 EUR to 912 EUR representing 3.3% y-o-y increase in 2016. The growth rate of *average monthly nominal wage* accelerated by almost 0.5 p.p. y-o-y. The rate of real wage growth increased even more (due to the development of consumer prices) – the growth rate 3.8% is by 0.6 p.p. higher compared to the previous year. Over the past three years, we have witnessed a stable nominal and real wage growth as illustrated in Figure 9.4. The longer-term view also reveals that Slovaks had to wait for 14 years to double the average wage (the value 912 EUR from 2016 is slightly higher than double of the average wage in 2002).[26]

As *median wage* grows at a similar rate as the average wage in recent years in Slovakia, the difference between the average and the median gross wage is increasing (in long-term). While in 2015 (the last available value for a median wage) the difference represented 222 EUR, for example (mentioned) 14 years ago, the difference between the average and median wage was only 90 EUR. In 2015, a half of the working persons earned less, and a half more than 775 EUR.[27]

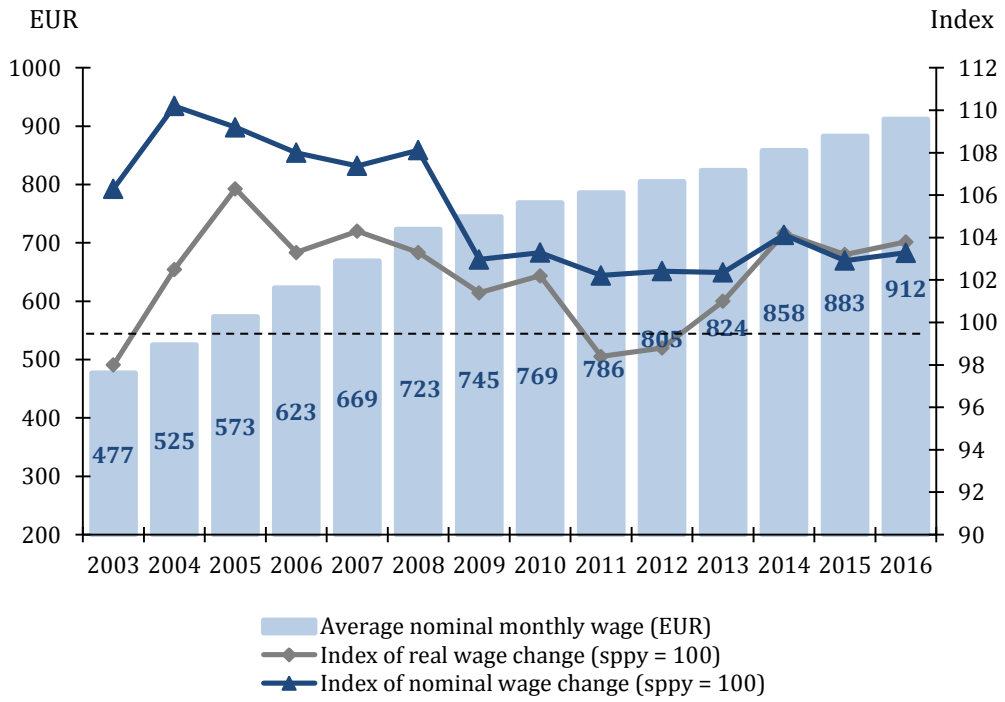
As regards the highest wages, the most lucrative sector, the information and communication sector, lost its primacy in 2016 and was the only sector of the economy in which the average monthly wage declined in y-o-y (albeit only slightly). With the average wage of 1,739 EUR, it ranked second, after financial and insurance activities (1,747 EUR). The third place in average wage belongs to the supply of electricity, gas and steam. In addition to above, the 1,000 EUR threshold is exceeded in two more sectors: public administration and defence, and mining and quarrying (data from quarterly statistical reporting in 2016).

[26] The wages grew rapidly mainly in the past decade until the crisis. Between 2000 and 2008, the average y-o-y wage growth was 8%. However, due to inflation the households could not fully benefit from the wage growth effects. Shortly before 2000 and after it, the real wages even dropped in some cases (despite high rates of nominal wage growth).

[27] The increase in the gap between the average and median wage represents increasing income inequalities between high-income and low-income households.

Figure 9.4

Development of Average Nominal and Real Wage (2003 – 2016)



Notes: Based on quarterly statistical reporting, excluding the entrepreneurial income. Since 2006, the income of armed forces is included.

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

In terms of growth dynamics, the average monthly wages in the agriculture, mining and quarrying, and in public administration and defence grew at the highest pace (6.6 – 7.2%). The latter two also belonged to the three sectors where the average wage grew the highest in absolute terms; in both the average monthly wage rose by 72 EUR. However, the leader in the highest y-o-y improvement is the supply of electricity, gas and steam, where employees earned monthly almost 100 EUR more than in the previous year. The average wage reaches below-average values in ten sectors; the lowest-paid sectors are (repeatedly) accommodation and food services (554 EUR) and construction (651 EUR). However, the wage growth of 3-4% was experienced even in these low earning sectors.

Households Save More

As noted in the first chapter, the basic macroeconomic parameters indicate that economic growth has been transferred also to income of households in recent years. The significant improvement in income was recorded particularly by this segment of the household sector, where the major part of the total income represent wages. Not all of this income improvement is automatically returned to the economy in the form of increased private consumption, with a potential positive effect on the sectors oriented at production for domestic subjects. Part of the favourable wage development has transferred into the savings, at increasing pace.

The persistent growth trend in wages and stable price developments theoretically allow households to focus more on savings. And indeed, g*ross household savings* grew by 8.8% in 2016, while final household consumption increased only by 2.5%. Significant turnaround in household savings has occurred already over the past two years (2014 – 2015), when after four years of stagnation, the gross household savings grew in y-o-y by even more than 20%. Over the last three years, we have observed the highest rates of savings growth since 2009 (the year in which the household savings were motivated by uncertain economic developments and negative expectations).

However, more than two-percentage increase in *household consumption* lasting two years is also worthwhile, although it is still low in comparison with development before 2009 when household consumption grew y-o-y by around 10%. Households´ trade-off between additional consumption and savings is captured by the *saving rate* developments in recent years (the ratio of gross savings to adjusted gross disposable income in the household sector).[28] The household savings rate was close to 10% in 2016. Such high values were lastly

[28] The value of saving growth itself does not inform whether the savings have been created at the expense of final consumption. The rate of savings already includes an indication of disposable income, therefore, the growth of rate of savings can provide sufficient information on development.

achieved at the turn of the millennium.[29] The household savings rate is culminating in the last two years, despite the low-interest rates and sound credit availability (in theory, they increase household consumption and lead to drop in savings) and in the conditions of growing employment (which should reduce the fear of job losses with influence on fall in savings rate).[30]

Much more conservative behaviour of households (in favour of higher savings rates; when compared to the pre-crisis period), under conditions of a stable wage growth, slows the recovery of domestic demand and production in sectors oriented on goods and services for domestic consumption. On the other hand, such behaviour serves as an important stabilising factor.

From the increase in *household disposable income*, which grew at the highest pace since 2008 (due to employment and nominal wages growth with favourable price developments over the last two years), benefited both final consumption and savings (savings in bigger proportion). According to the European Commission (EC, 2017a), the growth in the savings rate culminated in 2016, and since 2017 the final consumption should benefit from the increase in disposable income more. The projected y-o-y growth of final consumption is close to 3%. In the year 2018, the increase in disposable income should also be supported by acceleration in the nominal wage growth (above 4%) due to reported lack of labour in individual sectors.

Women Earn about 20% Less

The flaw in the overall picture of the favourable trend of steadily growing average wage is persisting gender differences in earnings. We can´t say that the statistics of recent years suggest any major improvement in the case of Slovakia. In terms of GPG (*gender pay gap*), which defines the difference in

[29] Since 2008, the household savings rate has been above 6% (with the exception of 2009-2010, when the deteriorating economic conditions and the resulting uncertainty caused its temporary increase to over 8%). In the last three years, the propensity to save has been growing steadily.

[30] The explanation could provide decomposition by regions of Slovakia, by demographic factor, by household type or income / asset dependence. These are beyond the scope of this publication.

gross hourly earnings between men and women in the percentage of men earnings, the gender pay gap is around 20% (20% of average male earnings) in recent years in Slovakia. The latest Slovak GPG value of 19.6% puts Slovakia to sixth highest place in Europe (after Estonia, Czechia, Germany, Austria and UK) in gender pay gap. While at the opposite end of the rank, in Italy and Luxembourg, a gender pay gap accounts for only 5.5%, in neighbouring Poland 7.7% (the long-term lowest gender pay gap in our region), and 14% in Hungary.

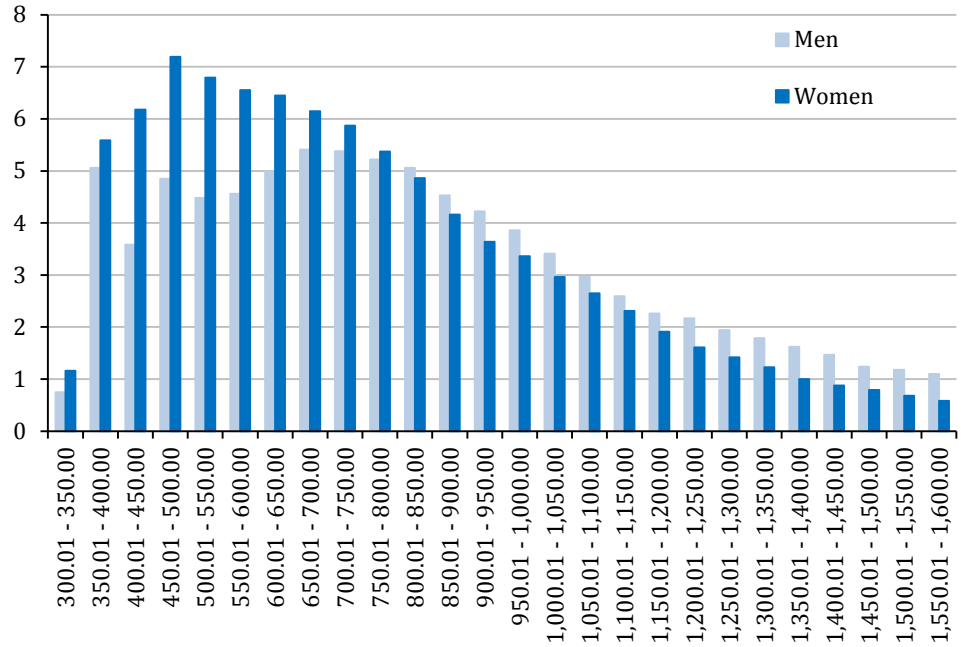
At the same time, the *education background* of women is higher – 28.1% of working women have the university degree compared to only 19.6% of working men in Slovakia; 42% of working women attained higher secondary education[31] compared to 36.9% of men. Whereas, 39.6% of men have apprenticeships (with or without graduation) compared to 25.4 % of working women.[32] The difference in *employment rate* between men and women decreased by 2 p.p. since 2008. The differences were diminishing faster in the first years after the crisis because men's employment declined faster than a female one. We may eliminate the impact of the crisis by comparing the *economic activity*. The difference in the labour force participation rate for women and men is declining, especially during the last two years, i.e. during the culmination of the employment recovery in post-crisis period.

The extent of wage inequality between male and female employees is more closely illustrated by the decomposition of the average wage to 50 EUR interval. The Figure 9.5 demonstrates that the most numerous groups of working women earn from 450 EUR to 550 EUR, but the largest proportion of male employees earn from 650 EUR to 700 EUR and 700 – 750 EUR. The merge of wage ranges allows us to find out that about half of women in Slovakia (49%) earns a monthly wage below 700 EUR, while in the case of men it is only 35%. It corresponds to the values and differences in the median wage of men and women – the median of the monthly wage is 710 EUR for women and 842 EUR for men.

[31] Full general or higher professional education.

[32] Aggregated according to Slovstat database for 2016 (SO SR, 2017a).

Figure 9.5
Share of Employees – Men and Women in Wage Ranges, 2015 (in %)



Notes: The average gross nominal wage in the breakdown by 50 EUR. Wage ranges with less than 1% of men or women are omitted (these are the wage ranges with an average wage below 300 EUR and above 1,600 EUR).

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

Regional Overview of Labour Market Parameters Development

The favourable aggregate results of the labour market reflected the development from all regions of Slovakia. According to LFS (employment calculated from the number of working persons), the fastest growth of *employment* was achieved in Bratislava, Trnava and Prešov regions in 2016. According to quarterly statistical reporting (employment calculated from the number of employed), the employment increased mostly in Trenčín, Nitra and Prešov regions. The higest *employment rate* was reported in the Bratislava Region (78.7%), where it also increased the most y-o-y, by 3.5 p.p.. However, also in the region with the lowest employment rate – Košice, the employment rate increased by 0.7 p.p. However, this is the slowest pace and therefore (despite the positive

value), it cannot be said that the employment rate in Košice converges towards other regions, or the Slovak average (69.8%).

Table 9.2
Dynamics of Labour Market Development in Slovakia by Regions (2016)

	Employment		Unemployment		Wages		Enterprises
Region	Working persons in %	Job vacancy in %	Unemployment rate	Change of UR in p.p.	EUR	%	%
BA	4.7	-6.1	4.9	-0.8	1,161	3.5	10.7
TT	3.9	18.5	8.5	-2.5	837	4.8	9.3
TN	3.1	42.1	5.9	-1.3	827	1.8	7.9
NR	2.9	37.7	8.7	-2.1	755	2.6	8.9
ZA	2.8	71.6	8.6	-1.7	815	3.7	7.7
BB	1.0	31.4	13.1	-2.2	776	3.3	8.7
PO	3.6	34.4	14.8	-2.1	708	3.7	7.7
KE	0.5	55.4	11.5	-1.6	825	2.7	8.1
SR	2.8	16.6	9.7	-1.8	912	3.3	9.1

Notes: Data in % represent y-o-y change (2016 compared to 2015, in the case of enterprises – change as of 31st December). "Working persons" – employment based on LFS, "Enterprises" – business entities in the private sector.

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

In the neighbouring Czechia, the employment rate is 76.7%, in Hungary 71.5 % and Poland 69.8%.[33] In comparison to 2015, the employment rate in Hungary and Slovakia recorded the highest increase among all EU members. The third highest y-o-y increase of employment rate is shared among Czechia, Latvia and Spain (followed by Malta, Ireland, and Poland). From the employment development point of view, in 2016, the V4 region was thus the best performing one in the whole Europe (according to LFS).

A positive signal for the regions of Slovakia is also the fact that the number of *job vacancies* in quarterly reporting (Table 9.2) increased most notably in regions with average or below-average employment rates. The dynamics in *the number of enterprises* in the private sector also reflects favourably in all regions. In all regions, the enterprises were

[33] Working persons aged 20 – 64 as a percentage of the total population in given age; Eurostat data.

rather established than shut down. The resulting rate of growth in the number of the enterprises is almost comparable among the regions (the largest increases in private enterprises were observed in Bratislava, Trnava, Nitra and Banská Bystrica regions).

Two out of three regions with the highest recorded growth of the *average monthly wage* are those belonging to the worse half of regions in terms of wage level (Prešov and Žilina regions). The largest numbers of unemployed people come from the Prešov Region (59,000), and the Banská Bystrica Region (44,000), similarly, the highest unemployment rate is observed in these regions (14.8% and 13.1%). Therefore, it is positive that these regions ranked second and third in the field of the largest decrease in the unemployment rate (see Table 9.2).

We may not conclude that the successes in the labour market are concentrated only in certain regions of Slovakia. Many of the regions benefited from the economy improvement, either in the sphere of employment bulk, unemployment rate decline or the average wage growth. The least successful region in terms of labour market improvements was probably the Košice Region (based on LFS).

* * * *

The favourable labour market developments over the last two years are spreading to other areas of the economy. Higher employment and disposable income contribute to domestic demand growth resulting in the increasing household consumption and even faster savings formation. The savings rate should peak in 2017 after which the positive development should be shifted to a greater extent in private consumption. This should be supported by a further acceleration in wage growth (nominal wage growth is projected to be above 4%) due to the lack of labour in some sectors (as the impact of labour supply shortages is expected to be more significant than larger share of service sector in total employment growth). Increased tensions between labour demand and supply, along with higher incomes should also increase the economic activity of Slovakian population.

In the Europe-wide comparison, we have to point out that the unemployment rate in Slovakia is lower than the average of the Euro area and close to the EU-28 average. In terms of the y-o-y dynamics of employment development in 2016, the region V4 was the best performing region in the field of employment increase in the EU. Despite the favourable development of nominal and real wages, the gender pay gap remains. In the field of income inequality, Slovakia ranks the fifth highest in the EU.

10. OVERVIEW OF SELECTED LEGISLATIVE AND ECONOMIC POLICY MEASURES IN 2016

In the first part of this chapter, we present an overview of strategic documents and legislative changes that were adopted in 2016, and we expect them to affect the functioning of the Slovak economy. In the second part, we deal with the influence of regulatory framework on the business environment in Slovakia.

In March 2016, the parliamentary elections and subsequent creation of a new government were the most important political events that created a strategic framework not only for the character of economic policy but also for its medium-term horizon. The government formulated its economic policy goals in the *Manifesto of the Government of the Slovak Republic for years 2016 – 2020*. The primary aim of the document (in terms of content, the text is considerably large[34]) is to "ensure the economic, social and environmental development of Slovakia and to deepen social cohesion, reduce regional disparities, strengthen an active role of the state and fight against corruption along with improvement of quality of public sector services provided to citizens" (Government of the Slovak Republic, 2016c, p.1). The whole document is about the strengthening of an active government role in economic policy, and the measures are rather directed at the expenditure side of public finances. There is a visible influence of cohesion policy as a source of investments and priorities formulation. Due to the nature of the document, we should not expect profound elaboration of priorities. However, we state some ideas that we consider to be noteworthy. The primary source of prosperity is considered (in addition to macroeconomic stability) to be "structural changes in the industry sector and economy, institutional reforms of public administration associated with a reduction of costs of government management and increasing efficiency of public utilities provided to households and enterprises" (p.19). At the same time, "the government is committed to achieve a balanced budget and to strengthen the budgetary discipline by 2020" (p.2). We appreciate the

[34] It is the most comprehensive Policy Statement since 2000 (30,595 words).

ongoing application of the principle (and project) of „value for money“ in the management of public finances. In the field of economic policy performance at the strategic level, we appreciate the intention that “the government will determine the basic contours of the future economic direction in the medium and long-term horizon by adopting the strategy of economic policy” (p.10). Attention is also paid to some issues of innovation and technology policy. The ambition is to create prerequisites for a smooth transition to a new stage of so-called Industry 4.0, to strengthen the innovative performance and improve capital resources of medium-sized businesses (by the EU funds or in cooperation with the banking sector). It is worth noting that “the new industrial policy will not be aimed at the provision of subsidies to energy-intensive industries but rather on the support of implementation of innovations that reduce energy, material and emissions intensity” (p.11). A part of the document is also devoted to investment construction and the construction of transportation infrastructure, which remains a government priority, especially by the implementation of the European Investment and Structural Funds. In this context, the adoption of so-called Constitutional Investment Exemption covering the funding of major investments is considered. The priority is also the adoption of a new Construction Act and the acceleration of the entire zoning and construction administration. In the field of public finances, the intentions are “to reduce corporate tax to 21% and annually review the possibility of further reductions, to abolish tax licences for the tax period starting in 2018, to increase limits for the application of lump sum taxes for entrepreneurs, and continue to apply special levies and taxes in regulated sectors of the economy with an option of extending them to other sectors” (p.20). The government is also preparing an amendment to the Financial Regulation Act. In the field of institutional environment improvement and combating corruption, the government intends to take several measures: Anti-Offshore Companies Law applicable to all public resources; the improvement and extension of the compulsory publication of contracts system; the introduction of personal liability for persons dealing with public resources; the draft of anti-corruption clause

for the all drafts of acts; the establishment of a central register of receivables against the state; the government will consider limiting cash payments to legal entities. In the field of educational policy, the interesting is the intention "to combine the implementation of fundamental internal changes with the regular annual increase of public resources in education and training so the total volume of increase during the election period would reach 2 billion EUR" (p.31); Therefore, the share of expenditures on education in GDP should reach the EU average by 2020. In the healthcare sector, a number of planned measures may invoke the positive expectations, notably the introduction of the Diagnosis-Related Group (DRG) and the implementation of the e-Health system in 2017.

In addition to *Manifesto of the Government of the Slovak Republic*, the Slovak economic policy should reflect the *Council Recommendations*[35] on the National Reform Program of Slovakia and which presents the Council's opinion on Slovakia's Stability Program for the year. In 2016, the Council drew attention in its recommendations to some areas in which economic policy efforts in Slovakia should be directed. The long-term sustainability of public finances seems to be problematic, especially due to threats linked to an ageing population and healthcare. Weaknesses also persist in the field of tax administration. The Council recommends the adoption of long-delayed binding expenditures limits and the implementation of the Value for Money Program to increase the efficiency of public expenditures. The long-term unemployment, the unemployment of Roma persons, and the unemployment of low-skilled and young are considered to be a problem. The Council also draws attention to under-utilisation of the educational system to increase the economic potential and inefficient public administration, including the lack of a fight against corruption and weaknesses in public procurement. The public administration functioning is one of the factors that have a negative impact on the business environment attractiveness. In this matter, the Council recommends to Slovakia as following: to increase the

[35] It is a Council Recommendation on the National Reform Program of Slovakia for 2016, which presents the Council's position on Slovakia's Stability Program for 2016.

cost-effectiveness of health care, to improve tax discipline, to target active tools of labour market policy on disadvantaged persons, to increase the attractiveness of the teaching profession, to strengthen quality-oriented competition and to more prosecute illegal public procurement practices. The National Reform Program 2016, apart from the fiscal policy priorities (a gradual deficit reduction, promotion of value for money principle and changes in the tax system), considers the labour market, quality of health care and primary education to be the greatest challenges. A framework overview of the future scope of public works is provided in the document entitled the *Development Program for Priorities for Public Works in years 2017 to 2019*. It contains a plan of 91 public development works in a total amount of about 8.5 billion EUR, which should be realized between 2017 and 2024. The largest share is the development of transport infrastructure (54 works from the field of highways, express roads, first-class roads and railway infrastructure; 80% of which should be financed from the Operation Program Integrated Infrastructure. The Ministry of Environment of the SR plans to carry out 31 public works focused on flood prevention measures (93% will be financed from the Operation Program Quality of Environment. For other projects, the use of European Investment and Structural Funds is not considered.

The Slovak Government approved the *Intelligent Industry Concept for Slovakia*; the aim of the document is to "convince the public about the importance of concrete steps implementation through recommendations that would keep the position of Slovak enterprises on the industrial map of Europe and in global structures so they would contribute to the power and influence of the whole society" (Government of the SR, 2016b, p.6). Its aim is to "take into account technological trends, rapid industrial globalisation, changes in the industrial structure and new demands from the consumers. Its aim is to emphasise the need for better adoption of human resources through new business models, new technologies and new forms of industrial production" (Government of the SR, 2016b, p.10). The concept may be understood as part of science, innovation technology policy. The text is very optimistic and ambitious. The concept

should serve as a "bridging framework to link existing measures and infrastructure with new elements. It could be a way to create from Slovak industry sector a regional (or even European) leader in the age of intelligent technologies." (Government of the SR, 2016b, p.10). The concept contains recommendations for achievement of desired progress: the establishment of Intelligent Industry Platform (an expert group consisting of key actors and government bodies), the development of an Action Plan, or recommendations to focus on intelligent industry research.

An ongoing challenge for the entire public sector is digitisation in Slovakia. The aid to achieve necessary progress should be the *National Concept of Public Administration Informatization.* The document "brings a new systematic and coordinated view of the issue of public administration informatization" (DPMOII, 2016, p.3). The document defines strategic goals, principles and priorities (at the level of development programs and projects) and eGovernment tools. The Strategy "also introduces a new philosophy of computerization with emphasis on the openness of processes, real competition and the increase of IT value in key public administration functions" (DPMOII, 2016, p.3).

The goals of the Government's Policy Statement in the field of taxation and fight against tax evasion began to be implemented in 2016 by the amendment to the Income Tax Act (341/2016 Coll.). The amendment included a reduction in the corporate tax rate to 21%; introduces the taxation of dividends with the simultaneous abolition of health levies from dividends.[36] A significant (and surprising) change is the increase in the maximum limit for the application of lump sum tax, which increased from 40% to 60% of the income for entrepreneurship or self-employed; the limit for such application is 20,000 EUR (initially 5,040 EUR). The amendment also includes the strengthening of legal certainty in transfer pricing; tightening and alleviating of sanctions for cooperating taxpayers. Since 2018, the tax licenses should be abolished. The operational expenses of the leased property were limited. Therefore, the

[36] The income in form of dividends within Slovakia is taxed by 7% rate.

“expenditures for the technical recovery, operation, repair and maintenance of a movable asset (e.g. a passenger car) and real estate under loan agreements will be considered as a nondeductible expense from 1st January 2017” (Benko, 2016).

The amendment to the VAT Act (297/2016 Coll.) brought several changes. It introduces an obligation for the tax office to pay interest if it withholds the excessive VAT deduction, changes the postponement of VAT self-taxation when the goods are purchased from the EU countries, and changes also relate to the transfer of tax liability in case of construction works provision and goods with installation or assembly required.

The amendment to the Act on Special Business Levy in Regulated Industries (338/2016 Coll.) was adopted. The original Act was adopted in 2012 (and its validity has already been prolonged once). It was adopted as one of the solutions to the consequences of the financial and economic crisis. The amendment changes, for example, the levy calculation. Similarly, the amendment to the Act on Special Levy of Financial Institutions (281/2016 Coll.) extends the obligation of a special levy for banks at the current level of coefficient of 0.2% of the basis for the levy calculation in years 2017 and 2020. Since 2021, the amendment has a zero rate of special levy. The amendment to the Excise Duty on Tobacco Products Act (296/2016 Coll.) increases the taxation of tobacco products. The new Act regulates the taxation of non-harmonized tobacco products for the first time, which are smokeless tobacco products (electronic cigarettes).

Changes in health insurance contributions were brought by the amendment to the Act on Health Insurance (356/2016 Coll.). The amendment cancels the maximum assessment base for the calculation of health insurance contributions (health insurance advance payments will be paid based on actual income). The minimum assessment base remained same. In the field of education, the conditions for funds provision from the Education Support Fund (352/2016 Coll.) has changed. The method of interest rate calculation changed for the loan granted and the range of applicants expanded (under new conditions,

also youth and young researchers up to 35 years may also apply). The source of support to the fund is the budget chapter of the Ministry of Education, Youth and Sports. However, the fund may also receive loans from international financial institutions and commercial banks. The amendment brings the possibility to forgive a part of the outstanding loans to the graduates of universities who find work in Slovakia.

Waste management was modified by a major amendment to the Waste Act (313/2016 Coll.). The Act introduces new obligations for enterprises, but they consider them quite controversially. It introduces so-called "obligation of extended liability", in which the enterprises contribute to a certain "chain of producer responsibility" for the packaging they put into circulation. These resources then contribute to municipalities for a separate waste system. The Act establishes a new category "producer of non-packaging products" (e.g. anyone who prints advertising material, catalogue or similar), which creates an obligation to register in the Registry of Non-packaging Producers and to enter into a contract with the waste management company (and pay the fees). The enterprises must e.g. keep the records of waste (to know its weight or to file reports). Every entrepreneur who packs the goods for customers in packaging must register in the Register of Packing Producers. "In order to register, in most cases entrepreneur will have to enter into the contract with the waste management enterprise. Additionally, the entrepreneur will have to verify their suppliers too, because if their obligations are not fulfilled, the Waste Act is transferring the obligation to purchasing entrepreneur in certain circumstances" (Seneši, 2015). Also, every entrepreneur must register who purchases packaged goods from abroad and uses it for business activities. The entrepreneurs who produce kitchen waste (residuals of raw material and unconsumed meals) must keep the record of it and report it once a year. The entrepreneurs must not throw such garbage into the municipal waste. They have to agree on their disposal by the waste management enterprise, and the municipality may determine how often this should be done. The large amendment to the Waste Act affects not only the waste producers but also potentially all business entities. In addition, such

amendment increases the administrative costs of enterprises and represents a direct cost growth factor for selected industries.[37]

The regulation of the business environment should be improved by the new Act on Support of Small and Medium-sized Enterprises (290/2016 Coll.). According to the explanatory clause, "the ambition of the Act is also an effort to explicitly promote the "Think small first" principle in the Slovak legal environment" (Government of the SR, 2016a, p.1). The Act lists the direct and indirect forms of assistance, which Ministry intends to implement. The Act introduces new forms of indirect support (mentoring or coaching) and so-called "stress testing" which means "a test of legislative and – non-legislative materials impact on SMEs, aiming to analyze the specific aspects of the impact of proposed and existing legislative and other non-legislative materials on SMEs" (Government of the SR, 2016a, p.2).

A major legislative change was the adoption of a major amendment to the Enforcement Order, Bankruptcy and Restructuring Act. The aim of the amendment to the Execution Order is to "streamline the recovery of creditors' claims while providing an adequate protection of the debtor's fundamental rights. The aim is also to establish a clear method and scope for determining the amount of the charges, as well as to establish procedural rules allowing faster and more effective enforcement of legitimate interests" (National Council of the SR, 2016, p.1). The District Court of Banská Bystrica is supposed to be a causally competent court for the execution of proceedings in Slovakia, which will receive the submissions exclusively in electronic form. Another change is the random assignment of bailiffs to bailiffs' executors. Such measure should secure independence, curtail the courts from the executive agenda and speed up the proceedings (but not immediately, the current cases are still to be dealt under the previous version of Act). The Central Executor Register was introduced. The acceleration of enforcement may also allow an increase in the number of cases where enforcement may be suspended by the bailiff executor without the need for court approval.

[37] For example, the Food Chamber of Slovakia states that the amendment „means a 5 – 10-fold increase in producer costs for packaging waste" (www.potravinari.sk, 2017).

The reason for the suspension of the bailiff may also be the nonrecognition of the property within 30 months of the commencement of the bailiff against the legal entity. The adopted amendment "forces all creditors to exercise greater caution at the stage of the contract formation, which may result in the bailiff in the future" (Horňák, 2016). This can be done through the use of securitized claims by a pledge or by a third party. Another change, for example, is the permission for the debtor to request once during the time of bailiff to postpone the immediate bailiff due to social reasons.

The amendment to the Bankruptcy and Restructuring Act is intended to bring greater stability to the business environment. The amendment introduces the Insolvency Register (containing information on ongoing bankruptcy and restructuring proceedings). It changes so-called "Personal Bankruptcy" which became more affordable for people (reducing the costs associated with the start; the debtors will be protected against total loss of housing). "The debtor will have one of two alternatives available – either bankruptcy or a repayment schedule. In the event of bankruptcy, the debtor hands the property to monetization and the court then decides about the reduction of debt. In the case of repayment schedule, the debtor retains part of the property and pays an amount determined by the court within the specific period. The debt balance will not be enforced" (www.EPI.sk, 2017).

Regulatory Framework and Effective Public Administration as Factor of Competitiveness

About the business environment, the quality of 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 10.1). According to the latest Global Competitiveness Report 2016 – 2017, 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 for is not positive Slovakia. Table 10.1 shows the ranking of Slovakia and the other V4 countries. According to the report, corruption, tax rates, inefficient government bureaucracy, tax regulations, and restrictive labour regulations were the five largest barriers in doing business in 2016.

Table 10.1
Selected Factors of Institutional Pillar
(Country rank according to GCR 2016 – 2017)

	SVK	POL	HUN	CZE
Public trust in politicians	110.	104.	97.	92.
Irregular payments and bribes	89.	39.	57.	51.
Judicial independence	120.	81.	102.	50.
Favoritism in decisions of government officials	136.	75.	135.	96.
Wastefulness of government spending	118.	84.	92.	7.
Burden of government regulation	131.	119.	123.	111.
Efficiency of legal framework in settling disputes	137.	73.	114.	99.
Transparency of government policymaking	84.	109.	136.	77.
Reliability of police services	101.	84.	70.	62.

Source: WEF (2017).

Some indicator in the World Bank Doing Business (WB, 2017) also provides the scope of government regulation about the business environment. Table 10.2 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 2017) express the costs.

For comparison, we also state the average of OECD and V3 high-income countries (Hungary, Poland and Czechia). In Slovakia, the largest regulatory barrier seems to be the area of construction proceedings and acquisition of construction permit (lasts up to 286 days).

Table 10.2
Selected Indicators of Doing Business (2017)

		SVK	OECD*	V3 Average	SVK/OECD Ratio	SVK/ V3 Average Ratio
Starting a Business	Procedure (number)	6.0	4.8	6.0	125	100
	Time (days)	11.5	8.3	17.7	139	65
	Cost (% of income per capita)	1.2	3.1	8.3	39	14
Dealing with Construction Permits	Procedure (number)	10	12.1	16.7	83	60
	Time (days)	286	152	200	188	143
	Cost (% of warehouse value)	0.1	1.6	0.3	6	38
Registering Property	Procedure (number)	3.0	4.7	4.7	64	64
	Time (days)	16.5	22.4	26.2	74	63
	Cost (% of property value)	0.0	4.2	3.1	-	-
	Quality of the land administration index (0 – 30)	26.5	22.7	23.5	117	113
Paying Taxes	Payments (number per year)	8.0	10.9	8.7	73	92
	Time (hours per year)	192.0	163.4	260.7	118	74
	Total tax rate (% of profit)	51.6	40.9	47.0	126	110
	Postfiling index**	89.9	85.1	87.4	106	103
Enforcing Contracts	Time (days)	705	553	563.7	127	125
	Cost (% of claim)	30.0	21.3	22.5	141	134
	Quality of judicial processes index (0 – 18)	10.5	11.0	11.0	95	95
Resolving Insolvency	Recovery rate	55.6	73.0	56.7	76	98
	Time (years)	4.0	1.7	2.4	235	169
	Strength of insolvency framework index (0 – 16)	13.1	12.1	12.0	108	109

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

Source: WB (2017).

In comparison to the OECD high-income countries average, this value is 1.8 times higher, even in case if the number of required procedures is compatible (10 in Slovakia, 12 in the OECD). On the other hand, in Slovakia, the real estate registration is relatively effective in term of days needed, the number of processes and financial costs. The acquisition of construction permit and real estate registration is not related just to business, but also household sector. The long construction proceeding is

a factor influencing the effectiveness of European Structural and Investment Funds implementation, as well as Foreign Direct Investments. In the international comparison, the area of justice is also inefficient, as the length of litigation regarding the enforceability of contracts lasts up to 705 days in Slovakia. Similarly, the low efficiency of the judicial system indicates also the length of an insolvency proceeding. In Slovakia, it lasts on average of 4 years representing 2.35 times longer time compared to the OECD average of the high-income countries. This value represents the amount of time needed by creditors to receive back the provided credit through the courts and is one of the longest in the EU.

On the other hand, the relatively low costs of starting the business (39% of the OECD average or 14% of the V3 average) may be evaluated positively.

* * * *

The quality and scope of the adopted legislation may be undoubtedly considered as one of the key factors of socio-economic development. The regulatory framework was influenced by parliamentary elections in 2016 and formation of the "left-right wing" government in Slovakia. The government formulated the concept of the economic policy character in its Policy Statement. In 2016, some of the priorities have been already executed in the form of adopted changes in tax legislation and a major amendment to the Enforcement Order Act. Both groups of measures were fairly welcomed and are expected to have a positive impact on the quality of business environment. It is safe to assume that a large part of the public capital expenditures will be funded from the EU funds. Therefore, their thematic focus, prioritisation, speed, flexibility and implementation will strongly depend not only on national regulatory and administrative capacities but also on the transnational regulatory framework. We assume that similarly to the previous years, as well as for the future, it will strongly influence the Slovak legislation through the transposition of European law. In this context, the so-called "gold-plating" of regulation and the need for better evaluation of their impact on the national environment (for example Amendment to the Waste Act). A key challenge remains in the efficiency of public administration and

public sector (particularly in health and education sectors). According to the Country Report for 2016, Slovakia needs to step up its efforts to address the efficiency of tax collection, the sustainability of the healthcare system, improve the results of the education system, remove weaknesses in public procurement, and reduce administrative and regulatory barriers to the business environment.

11. OUTLOOK FOR 2017 AND 2018

After partial analysis of selected areas of development, we return to a summary overview with the intention to comment on potential development in the short term. We would like to note that our primary goal is not to provide a detailed quantitative forecast of a large number of macro-indicators.[38] The quantifications are secondary here; we rather would like to sketch the trajectory of most likely development: we try to identify what trends are going to continue and what trends will be interrupted.

At the beginning of the chapter, we return to our previous outlook and confront it with actual developments. These confrontations should help to improve the quality of outlooks in the future. Subsequently, we focus on factors that should influence the further development and, in the third step, we outline trends with intervals for probable quantitative values of main indicators.

11.1. Comparison of the Previous Forecast with Real Development

In 2016, we did not expect a dramatic development change compared to the previous period in our last outlook (Morvay et al., 2016). There were no significant effects, which could lead to a change of tendencies that already existed between 2014 and 2015. A similar picture remains for several years now: the economy growths at around 3%, the employment rises above expectations, and the price level is declining for a longer period than expected. In 2016, the development did not significantly differ from the one in years 2014 – 2015. Moreover, as shown below, in many ways, this tendency is likely to persist. However, the last phase of development (2014 – 2016) also has its surprises, for example:

[38] A significantly more detailed forecast (also for the medium-term horizon) elaborated at the Institute of Economics SAS represents the work of Radvanský and Lichner (2017). It includes a considerably broader range of indicators that we are dealing with.

- The employment is growing at a pace that would almost nobody anticipated due to the past experience (in the past, a strong economic growth was needed to make employment grow even at a modest pace).
- Deflation was not as negative as it was expected with regards to the so-called "deflationary spiral".

Table 11.1
Comparison of Forecast with Real Development

Parameter		2014 (r)	2015 (r)	2016 (f)	2016(r)
Year-on-year change in real GDP	%	2.6	3.8	3.2 to 3.7	3.3
Year-on-year change in GDP, current prices	%	2.4	3.6	3.1 to 3.9	2.9
Year-on-year change of workers, LFSS (%)	%	1.4	2.6	1.4 to 1.9	2.8
Unemployment rate, LFSS	%	13.2	11.5	10.0 to 10.5	9.7
Average annual change of inflation measured by consumers price index	%	-0.1	-0.3	-0.2 to 0.3	-0.5

Source: Real data (r) for 2014 - 2016 based on SO SR, forecast (f) based on Morvay et al. (2016).

We tried to incorporate these "surprises" into our outlook (we have dealt with them in other chapters or the previous year's publications, see Morvay et al., 2016). Other institutions also acted similarly. Therefore, we accepted the idea that some structural changes may be behind the rapid employment growth even with a relatively weaker GDP growth. Also, we accepted the fact that a fall in the price level does not necessarily have to hamper the economy (even in certain circumstances it may also help).

For 2016, we expected a moderate slowdown in economic growth, a continuation of positive development in labour market, but also a mitigation of deflation. Retrospectively, we see two problems:

1. Although we assumed that the labour market development would be positive, the real development was even more favourable. We did not expect growth in employment to accelerate in times of economic slowdown.

2. We expected that deflation from 2014 and 2015 would not be further exacerbated. In fact, the drop in the 2016 price level was even more pronounced than before.

11.2. Key Determinants of Future Development

Many external and internal determinants should remain similar to the previous year. For example:

- A similar nature of the domestic fiscal policy. After a substantial portion of fiscal consolidation was implemented over the period 2010 – 2013, the fiscal policy became less restrictive. The ongoing effort to further reduce the public finance deficit is still present, but not as vigorous as in the earlier period. Also, the idea of "debt brake" release is discussed (see Public Finances chapter). The release of "debt brake" would provide a possible additional growth stimulus (utilising current low-interest costs). However, we think of it as a risk element. It may lead to the loss of fiscal policy's credibility and the disruption of discipline, which was established with great effort in the past.
- The policy of quantitative easing (QE) under the direction of the European Central Bank is likely to persist. Monetary policy will remain expansionary with extended use of non-standard instruments. However, the later return to the use of standard instruments may be even more complicated (more details in the chapter about ECB's monetary policy.
- The external environment should have similar effects on the dynamics of the economy as in the previous year. As shown in Table 11.2, the growth rate of both the Euro area and Germany in 2017 and 2018

should be very similar to the previous year. There are also no significant differences in the forecasts of selected institutions. However, there are several phenomena representing change. For example:

- The fluctuations in investments due to extraordinary EU funds implementation will end. In the first chapter, we highlighted the problem of investment expansion in 2015 due to the opportunity to implement EU funds from the programming period, which was already completed. The exceptional increase in 2015 was followed by the same extraordinary decrease in 2016. However, the effect of such wave ended, and investment development becomes smooth.
- Inflation in the Euro area should increase in 2017. In the forecasts of relevant institutions (listed in Table 11.2), there is a uniform assumption of a substantial increase in the inflation rate. It leads to a transition from the price level stagnation in the Euro area (inflation rate 0.2% in 2016) to inflation close to 1.5% in 2017 and 2018. That will also help to increase the price level of Slovak economy. The recovery of price level movements is considered to be essential for "restart" of real convergence.

Table 11.2
Forecasted Changes in Real GDP in the Euro area and Germany

	2016 real		2017 forecast	2018 forecast
Euro area				
Year-on-year change in real GDP; %	1.8	Gemeinschaftsdiagnose	1.8	1.7
		EC	1.7	1.8
		IMF	1.7	1.6
Germany				
Year-on-year change in real GDP; %	1.9	Gemeinschaftsdiagnose	1.5	1.8
		EC	1.6	1.8
		IMF	1.6	1.5

Notes: We have selected the forecasts of three different types of institutions. The "Gemeinschaaftsdiagnose" 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 (2017), April 2017; EC (2017), May 2016; IMF (2017), April 2017.

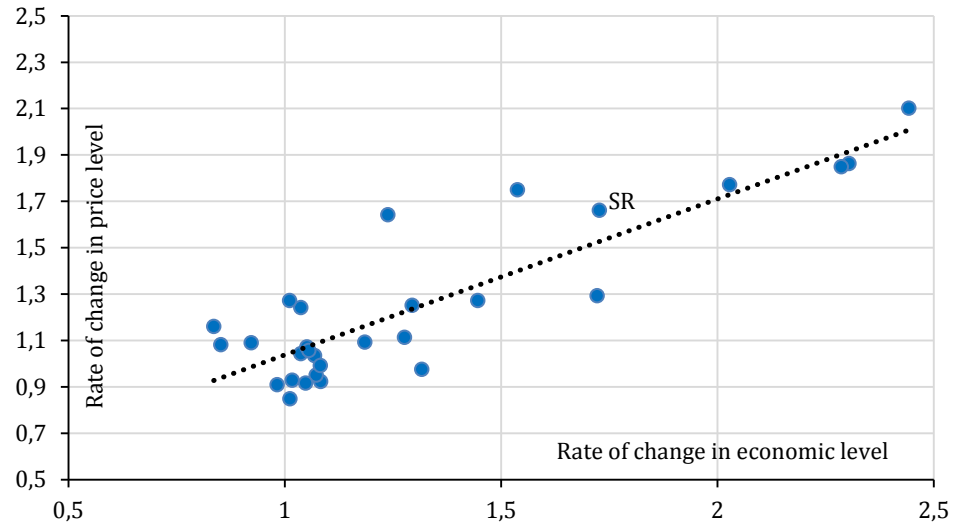
The more pronounced changes in the relative economic level[39] are associated with significant changes in the relative price level. Figure 11.1 shows that the economies, which were the most successful in the growth of relative economic level also achieved the highest relative price level increase (top right corner in Figure 11.1). Advanced economies are concentrated to the left bottom of the Figure 11.1 with a combination of insignificant changes in both two variables. Less economically advanced – catching up – economies are concentrated in the top right corner with great variations in both variables. From the Slovak economy point of view, the relative economic level, as well as the relative price level, increased about 1.7 times of the initial level between 2000 – 2015. It suggests that catching up in the price level is also important in the process of further catching up to the most advanced economies. The recovery of price level increase (more precisely: the catching up in the price level to the most advanced) is a desirable phenomenon. Although, it is linked to inflation perceived as a negative phenomenon by the public. Therefore, it is important that the situations of stagnation or even decline in price levels (in the external and domestic environment) should not repeat in the outlook horizon.

11.3. Expected Trends

The overcome of deflationary period seems to be a fundamental break in 2017 (at least for now). Although there may be controversies about the relevance of inflation factors (more details in the chapter on Price Development), the fact is that inflation expectations and changes in the price level at the beginning of 2017 were indeed significantly different from the beginning of 2016. Inflation in the first three months of 2017 achieved relevant outcomes (after several years). After approximately a half-percentage price declines in the first six months of 2016, a one-percentage increase occurred (Figure 11.2). Therefore, it is very likely that the deflationary period finally ended in Slovakia.

[39] "Relative levels" are the ratio of the certain indicator in country to the EU-15 average of the indicator.

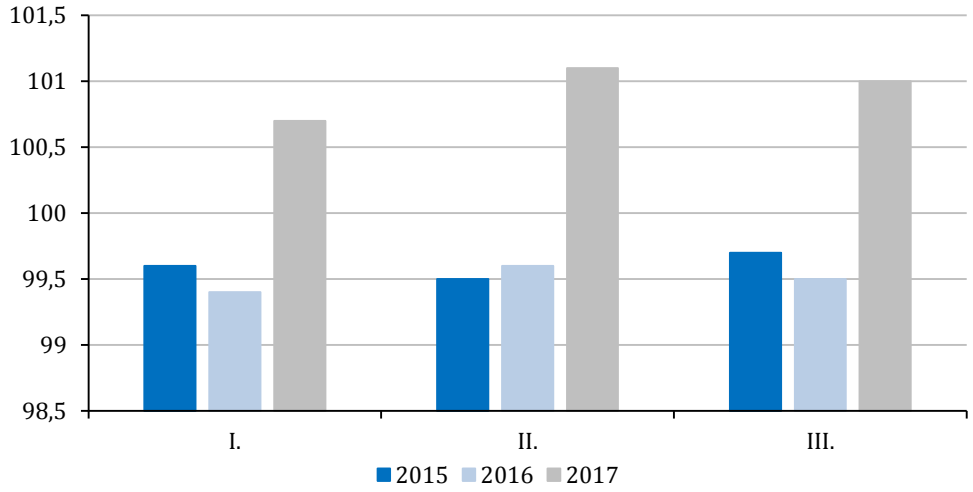
Figure 11.1
Combination of Changes in Relative Economic Levels and Relative Changes in Price Levels (index of change for 2000 – 2015)



Notes: The rate of change in the relative economic level is based on GDP per capita in the PPP. It is the ratio of indicator level in the country to the EU-15 level of the indicator. The figure shows the change of indicator for 2000 – 2015 period (level in 2015 / level in 2000). The rate of change in the relative price level is based on Price Level Index. It is the ratio of the country price level to the EU-15 level. The figure shows the change of indicator for 2000 – 2015 period (level in 2015 / level in 2000).

Source: Database Eurostat; Authors' calculations.

Figure 11.2
Interruption of Deflation: Y-o-Y Changes in the Level of Consumer Prices (index, sppy = 100, first three months of relevant years)



Source: SO SR.

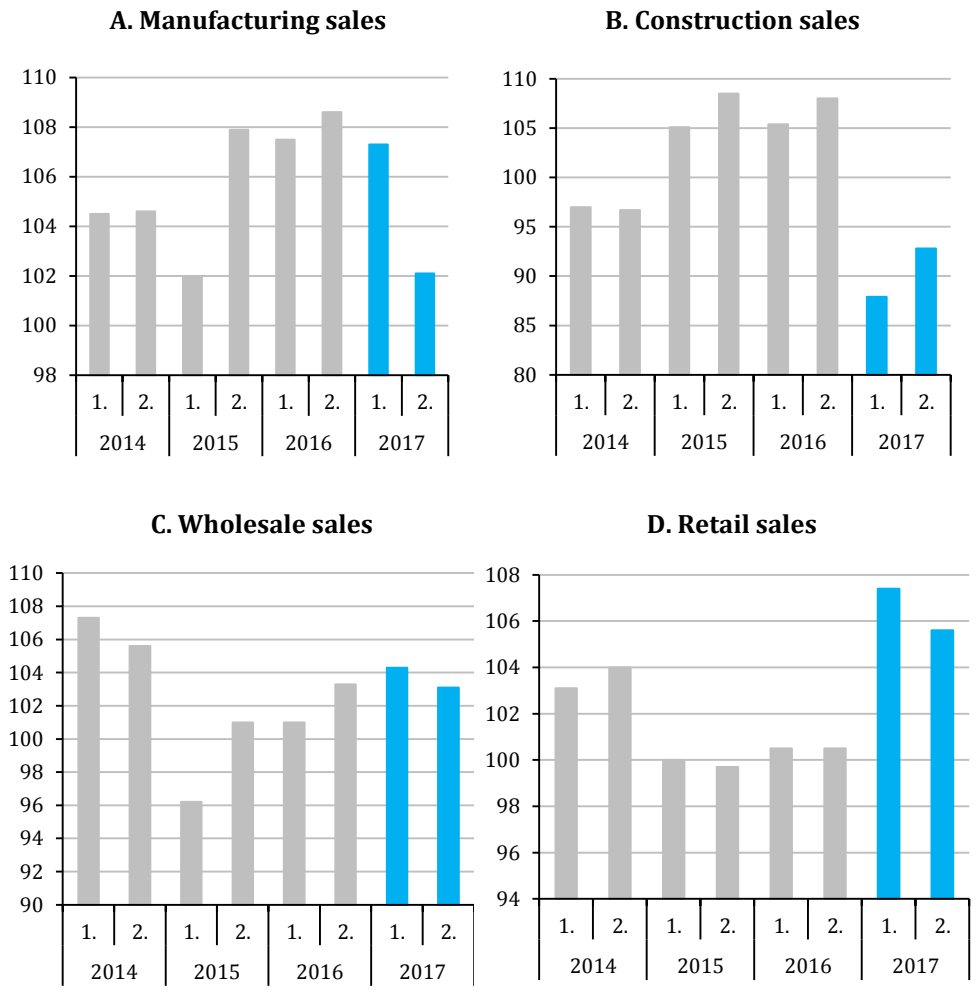
After the employment reached its historical maximum and the unemployment rate its historical minimum in 2016, a further improvement of these parameters will become increasingly difficult. It may be expected that the increase in total employment and the reduction of overall unemployment will no longer be an attractive priority. Rather, the emphasis will focus on sub-objectives such as increasing employment in economically disadvantaged regions or disadvantaged groups. It is also expected that pressure on the wage growth will intensify. Since early 2017, politicians give even more emphasis on the wage growth. After a long phase of employment growth, there is an expectation that wages could rise significantly (due to high demand for labour). Therefore, there are proposals for a relatively significant increase in the minimum wage or the obligation to introduce 13th and 14th salary, or a broad change of Labour Code (with measures focusing rather at the expense of employers). The expectations of wage growth are justified, but some measures might be inadequate (flat-rate enforcement of additional salaries regardless of business performance). It is highly likely that even without political pressure, the rate of wage growth will increase due to the shrinking competition of enterprises in recruiting employees (due to non-availability of the free labour force).

The accelerated wage growth will stimulate the growth in final household consumption. After the household saving rate has risen recently, it is unlikely that it will further increase substantially. Therefore, the wage growth (and thus the growth of disposable household income) is likely to be even more pronounced in the growth of final household consumption.

Expectations of a relatively strong growth in household consumption also account for the development of retail sales at the beginning of 2017 (Figure 11.3 D). Although, we know that no serious conclusions may be drawn from the performance of industries in the first two months of the year. It is rather a hint of the industries activity development in a particular year. Construction data reflect a particularly unfavourable climatic impact on activities in this industry (an unusually cold start of the year).

The retail industry started in much better conditions than in the previous two years.

Figure 11.3
Dynamics Indicators of Selected Branches (year-on-year indexes, the same period of previous year = 100)



Explanation: Same period of previous year = sppy; Figure A is the index of revenues for own performances and goods in industry (sppy = 10, 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.

It is beneficial to maintain a relatively high proportion of manufacturing in GDP to promote productivity growth (as shown in Chapter 2). The growth of labour productivity in the manufacturing has been higher than in other sectors for a long time. There is an ongoing process of deindustrialisation across Europe. Thus the weight of industry on GDP or employment is decreasing. In the Slovak economy, the share of industry is relatively high without a decreasing trend.[40] Needless to state, from the support of productivity point of view, such situation has a favourable influence on it. As mentioned in Chapter 2, the boom of manufacturing brings growth in a certain segment of services. Thus, the productivity growth in manufacturing may gradually shift also to this service segment. Regarding the advantages of a higher proportion of manufacturing in the economy, this should be not considered as a strike on the natural tertiarisation of the economy. Rather, we think that maintaining a high proportion of manufacturing in Slovakia along with its decrease in advanced countries should not be considered as a problem (but rather an opportunity). At the current stage of development, even a high proportion of manufacturing (mainly technologically advanced) may be seen as a positive and it is desirable to promote it by industrial policy (so far neglected in Slovakia).

In the short-term (the rest of 2017 and 2018), we expect economic growth to continue (with a pace of 3.5-4%, a slightly higher in 2018); a deflation will be overcome, as well as another growth of employment (although with lower pace). The decrease in the unemployment rate is also expected (due to its link to employment growth). Both, the growth of economy and employment will also be supported by the launch of the production of another major car producer and its associated activities, by the likely favourable development of household consumption and recovered growth of capital formation. Taking into account the public budget (with another planned mitigation of public finance deficit), we may assume that economic growth will again be accompanied by an acceptable level of macroeconomic balance.

[40] For more details see Luptáčik et al. (2016).

Table 11.3
Forecast of Selected Macroeconomic Parameters

Parameter		2015 (r)	2016 (r)	2017 (f)	2018(f)
Year-on-year change in real GDP	%	3.8	3.3	3.3 to 3.8	3.5 to 4.0
Year-on-year change in GDP, current prices	%	3.6	2.9	3.7 to 4.7	4.0 to 5.0
Year-on-year change of workers, LFS	%	2.6	2.8	1.7 to 2.3	1.0 to 1.6
Unemployment rate, LFS	%	11.5	9.7	8.3 to 8.8	7.8 to 8.4
Average annual rate of inflation measured by CPI	%	-0.3	-0.5	0.9 to 1.4	1.4 to 2.0

Source: Real data (r) for 2015 - 2016 based on SO SR, forecast (f) based on authors.

Table 11.4a
Expected Changes in Real GDP in Slovakia by Forecasts of Various Institutions

	2016		2017 forecast	2018 forecast
Year-on-year change in real GDP (%)	3.3	External institutions		
		EC	3.0	3.6
		IMF	3.3	3.7
		IfW	3.2	3.2
		Domestic institutions		
		IFP	3.3	4.0
		NBS	3.2	4.2
		IER SAS (Radvanský et al.)	3.7	3.8

Table 11.4b
Expected Rate of Inflation in Slovakia by Forecasts of Various Institutions

	2016		2017 forecast	2018 forecast
Average annual change in inflation measured by HICP (%)	-0.5	External institutions		
		EC	1.4	1.6
		IMF	1.2	1.5
		IfW	1.3	1.6
		Domestic institutions		
		IFP	1.1	1.7
		NBS	1.4	2.0
		IER SAS (Radvanský et al.)	1.3	1.9

Table 11.4c
Expected Unemployment Rate in Slovakia by forecasts of various institutions

	2016		2017 forecast	2018 forecast
Unemployment rate measured by LFS (%)	9.7	External institutions		
		EC	8.6	7.6
		IMF	7.9	7.4
		IfW	8.0	7.1
		Domestic institutions		
		IFP	8.4	7.6
		NBS	8.4	7.7
		IER SAS (Radvanský et al.)	8.4	7.6

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 2016, which could affect the forecast.

Source: EC (2017), February 2017; IMF (2017), April 2017*;* Projektgruppe Gemeinschaftsdiagnose (2017), April 2017; IFP (2017); forecast of the Committee for the Macroeconomic Forecasts, February 2017; NBS (2017), Mid-term forecast P1Q 2017; Radvanský - Lichner (2016), April 2017.

* * * *

The ongoing economic growth and relative macroeconomic stability for several consecutive years (with generally favourable outlook) may lead to inadequate demands on economic authorities or negligence in prudence and discipline. That is the area where we see the potential risk in future (alongside a series of hardly foreseeable risks from the external environment). These inadequate requirements may be understood as

introduction of one-off measures for labour compensation increase; major changes in Labour Code (at the expense of employers); the efforts to weaken the debt brake mechanism, the repetition of old problems with insufficient implementation of the EU funds, the inability and inaccuracy to absorb investments and others. Even a stable, growing economy with rising demand for labour is not able to bear much insensitivity.

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Published since 1993.

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