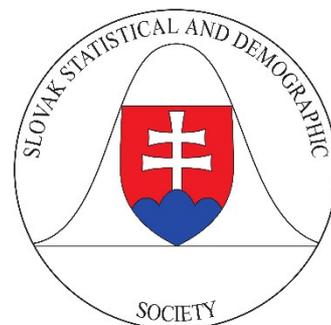


SLOVAK STATISTICAL AND DEMOGRAPHIC SOCIETY  
and  
University of Economics in Bratislava  
Institute of Management,  
Slovak University of Technology in Bratislava

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**VIEWS OF THE SLOVAK ECONOMY IN 2016**  
Proceedings of scientific papers and abstracts



BRATISLAVA  
2016

SLOVAK STATISTICAL AND DEMOGRAPHIC SOCIETY

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IMPACT EUROPEAN ECONOMIC POLICY  
IN THE CONTEXT  
OF THE SLOVAKIA SLOVAK EU PRESIDENCY

under the auspices

***IVAN KORČOK***

State Secretary of the Ministry of Foreign and European Affairs  
of the Slovak Republic

Plenipotentiary of the Government for the Slovak Presidency  
in the Council of the EU

Bratislava

2016

Slovak Statistical and Demographic Society **thanks** for their help in organizing events Views of the Slovak economy in 2016

Organizations:

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## Preface

Dear readers,

Slovak Presidency of the Council of the European Union in the second half of 2016 will be a milestone of our membership in the European Union. After more than twelve years since we joined the European Union, we will for the first time assume the duties and responsibilities of a country that is steering the work of one of the most important institutions – the Council of the European Union.

For Slovakia, this will be a great honor and responsibility at the same time. The priorities of our Presidency are being formulated these days. They will also contain a very important agenda in economic and financial area. In this regard, our Presidency will deal with a lot of legislative dossiers while pursuing an overarching ambition to help boost Europe's growth and jobs. The deepening and completion of the Single Market, most notably within the concept of the Digital Single Market or the Energy Union, will also figure in a prominent place of our agenda.

In my view, a successful Presidency also entails genuine academic, expert and public discussion on European topics. Therefore, I appreciate the conference on Slovak economy which generated very valuable input to this debate in form of many scientific papers.

I am confident that our Presidency will be a successful endeavor and I invite all experts from the academia and non-governmental sector to join us in our ambition to communicate the European topics to the public.

*Ivan Korčok*

## Budgetary Policy of the EU - the Slovak Perspective

*Vladimír Maňka*

*Member of European parliament*

The current system of financing of the EU budget is opaque, and complicated, understood only by a small group of experts. Representatives of many of the EU Member States find the system to be unfair. The citizens are more likely to oppose an increase of the EU budget; they feel that we are taking the finances away from their national budgets.

Yet, the new challenges require common solutions, and more resources within the shared budget. We need to continue the European integration, and to transfer from the national level all issues, with which we can deal more effectively together on the European level.

### **The most critical current budgetary challenges:**

#### **1. Late payments on the EU level**

The European Parliament and the Council of the EU have approved a strategy for jobs and growth until 2020. However, what is the point of such a strategy, if the Council refuses to back it up with sufficient financial resources? In addition, many Member States do not fulfil their financial obligations within the common budget, which also has consequences.

**At the end of 2014, the unpaid invoices on the EU level reached almost 25 billion EUR.** The plan of the European Commission was to decrease the deficit to 20 billion EUR in 2015 and to 2 billion EUR by the end of 2016. The insufficient financial coverage of payments also means a slower implementation of the programmes within the multiannual financial framework 2014-2020. **If we continue this way in Europe, there are risks of structural deficits and deformations with severe consequences.** It is crucial that the European institutions and Member States join forces in order to prevent the same situation occurring in the future.

If we are not able to solve such a fundamental issue - the unpaid invoices - we should not be surprised that we lag behind the USA and the developed world.

## 2. Change of philosophy of financing of the EU budget

Each year, during the annual budgetary procedure, there are tensions between the Council and the European Parliament. That is also why we need to create a **smart European budget**, which would provide the EU with own resources necessary to fulfil the strategic objectives, and lower the contributions of the Member States to the EU budget.

The Council of the EU has to fulfil its commitment enshrined in the Treaty of Rome, and adopt a system of financing of the EU budget, which would not depend on the political or economic situation in the Member States.

The reform of own resources should lead to a more stable, just, and predictable revenue side of the Union budget. At the same time, the burden related to the contributions from the respective national budgets would decrease, and the budget would become more transparent and comprehensible for the citizens.

The reform of own resources is led by High Level Group, chaired by Mario Monti, former Prime Minister and Minister of Finance of Italy. One of the possibilities, considered by the Group, is the option to introduce an own resource based on taxation according to the ecological impact (energy consumption and CO<sub>2</sub> emissions) along the entire production chain. This system would provide economic incentives to the third countries and their businesses, which considerably pollute the environment, to decrease their emissions. Furthermore, the competitiveness of the European companies would increase, because the non-European companies would lose their unfair advantage based on cheap, environmentally harmful production.

The negotiations on the new system of own resources will peak during the Slovak Presidency of the Council of the EU in the second half of 2016. The EU should be able to reach its objectives without increasing the taxation burden on citizens and businesses. We owe this to our citizens!

**3. There is a great absence of investments in the EU, which we acutely need in order to restart the economic growth and to create jobs.** That is also why the European Investment Plan and the European Fund for Strategic Investments (EFSI) have been created. The investment plan is principally meant to finance investments, which would not be possible without the risk sharing.

Reinforcement of investments and multiplication of public and private investments through better coordination, in domains related to the objectives of EUROPE 2020 strategy, are the best political responses to establishing the budgets in the coming years.

In 2015, the annual GDP growth in Slovakia increased by 1,1 point to 3,6%. The most important contributing factors were significantly increased investments, and substantial consumption by households. It is estimated that the investments grew by 12,7% in 2015 due to a more intense absorption of the EU funds, as the programming period 2007-2013 was coming to an end.

Slovakia is still catching up with the more developed Member States, although slower than before the crisis. The actual GDP per inhabitant of Slovakia in 2014 was about 75% of the EU level.

Structural and cohesion funds provided by the EU in 2011 - 2013 (including the national co-financing) represented 86% of public investments in Slovakia. In this context, it is commendable that the European Commission tries to enable the use of the European Structural and Investment Funds in priority domains according to the economic recommendations for individual Member States.

**4. Tax avoidance** by businesses mean tremendous losses in tax income of the Member States and, hence, also in the EU budget. The unfair tax competition in some cases means transfer of GDP from one Member State to another, and transfer of GDI to tax havens outside of the EU. Thus, the contributions of the Member States to the EU budget are lowered.

**5. Youth Employment Initiative** is the cornerstone of the EU priority of creating growth and jobs. It is essential to continue, and even to enhance the financing of this programme, in order to offer a perspective of an actual entry to the labour market thanks to quality jobs, further education or apprenticeship, to a higher number of young people.

**6. Solving the migration and refugee crisis** requires a joint and coordinated approach. However, the current budgetary means to solve this problem are insufficient. The annual budget 2017 will be influenced by internal and external security challenges, which may also mean threats of terrorism or extremism.

The European Commission must present mid- and long-term political and financial plan on dealing with the migration crisis and its impact on the budget 2017. All measures financed by the EU should be considered as investments in order to face challenges related to refugees and migration. We must solve the underlying causes of the migration phenomenon by improving living conditions, especially through better education and health care, but also through investment into infrastructure in countries of origin of migrants, or countries, where they first sought protection.

Financing of measures related to migration and refugee crisis may neither endanger nor restrain other important EU policies.

It is important to increase the financing of re-location and return programmes in order to achieve an effective European asylum and migration policy, and to prevent irregular migration at the same time. We need to find means within the EU budget to develop re-location places and safe zones in Africa and in the Middle East.

### **Conclusion:**

In Europe, there is a risk that after seven years of economic crisis, we will enter a long period of low economic growth, low inflation, and unemployment.

Twenty-five million people in the EU - including five million young people - are unemployed; 124 million people experience poverty. We are facing climate change and energy insecurity. Many businesses are struggling and have limited access to financing.

We have concentrated too much on austerity, and we have invested too little in domains, which bring high return of investment, growth and jobs.

If we create a synergy with the ECB regarding monetary policy, fight against tax avoidance and tax fraud, if we use the European funds to finance projects with high added value and high return of investment, if we help the young generation to find work, and if we manage to create a more positive disposition among our citizens, we can restart growth and jobs, and improve living conditions in the entire EU.

**Expert assessment of the state and development of the economy  
of Slovakia for the year 2015 compared to the year 2014 and the estimation  
of the future development of GDP**

*Jozef Chajdiak*

The opinions of experts (participants of the conference Views of the Slovak economy 2016) were used for the evaluation of economy of the state and development of five indicators which characterized the situation and development of the Slovak economy as the whole.

The following indicators were used:

- X1 - gross domestic product per capita,
- X2 - inflation,
- X3 - rate of unemployment,
- X4 - state budget balance to GDP
- X5 - the balance of foreign trade to GDP.

To assess the state and development of individual indicators, the point scale with values ranging from -2 (very bad) through 0 (neutral, medium, average state or development) to +2 (very good), with step of half a point was used. The number of points for SR was allocated in comparison with the state and development in the EU. Furthermore was determined the overall assessment of state and development of the Slovak economy as the average of the points allocated to individual indicators (or terms) for each expert

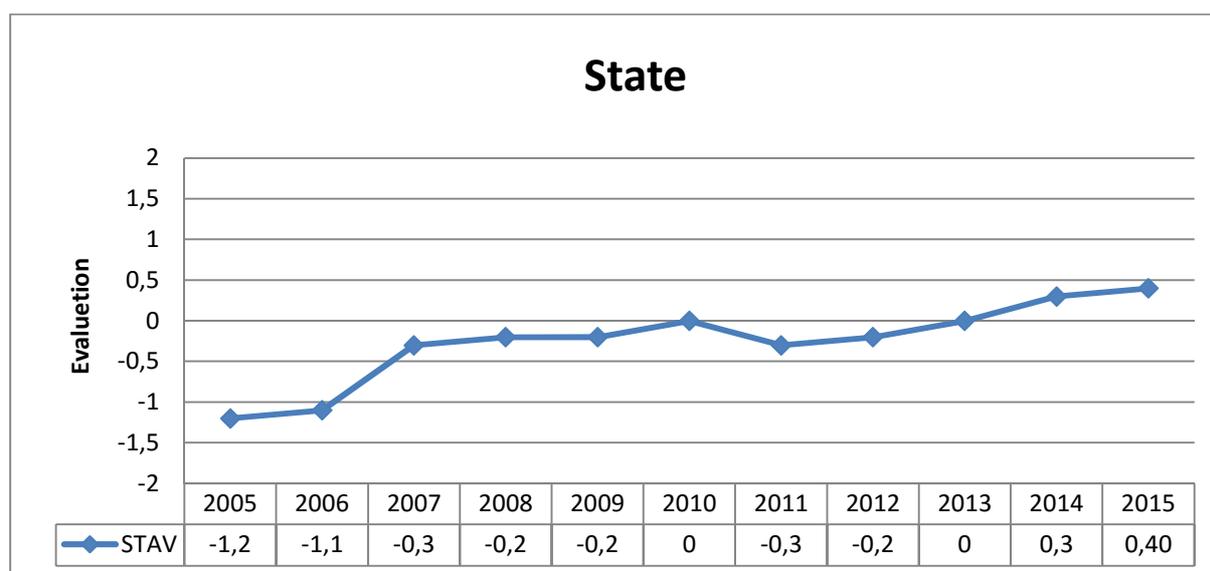
The median (intermediate value) from the assessment of individual experts by the means of average value (Table1) was used for the overall assessment of the state or development of economy of Slovakia

**Table 1 Expert assessment of the state of Slovak economy**

year 2015	x1	x2	x3	x4	x5	average
Beka	2,0	-1,5	-0,5	0,5	1,5	0,40
Haluška	0,5	2,0	-2,0	0,5	2,0	0,60
Chajdiak	0,0	1,5	-1,0	-1,0	1,5	0,20
Radvanský	0,5	2,0	-1,0	-1,0	2,0	0,50
Sivák	1,5	-1,0	-0,5	0,0	1,0	0,20
Vaňo	1,0	2,0	1,0	0,0	2,0	1,20
Medián						0,40

The state of SR economy in the year 2015 is assessed by experts with marks from -2 to +2, from the average marks + 0.2 to +1.2 in the resulting middle (median) value of the total experts' evaluation +0.4. Already for the second consecutive year, we achieved the best evaluation of the state. The median of the total expert evaluations equal to 0.40 is appointed from the individual average values of experts in the Median line.

Expert assessment is realized since 2006. The achieved values for the state are expressed on the charts 1 and 2. The total expert assessment of the economy condition may be better represented graphically (figure 1). The final evaluation of the condition in past years was following: for 2005 -1.2 for 2006, -1.1, for 2007-0.3, 2008 -0.2, 2009 -0.2, 2010 0.0, 0.3 in 2011, and 0.2, in 2012, in 2013 + 0.5, 2014 +0.3 and in 2015+0.4. Time line were from 2005 to 2015 (-1.2, -1.1, -0.3, -0.2, -0.20, 0, -0.3, -0.2, 0.0, 0.3, 0.4).



**Fig 1 Expert assessment of the state of the Slovak economy**

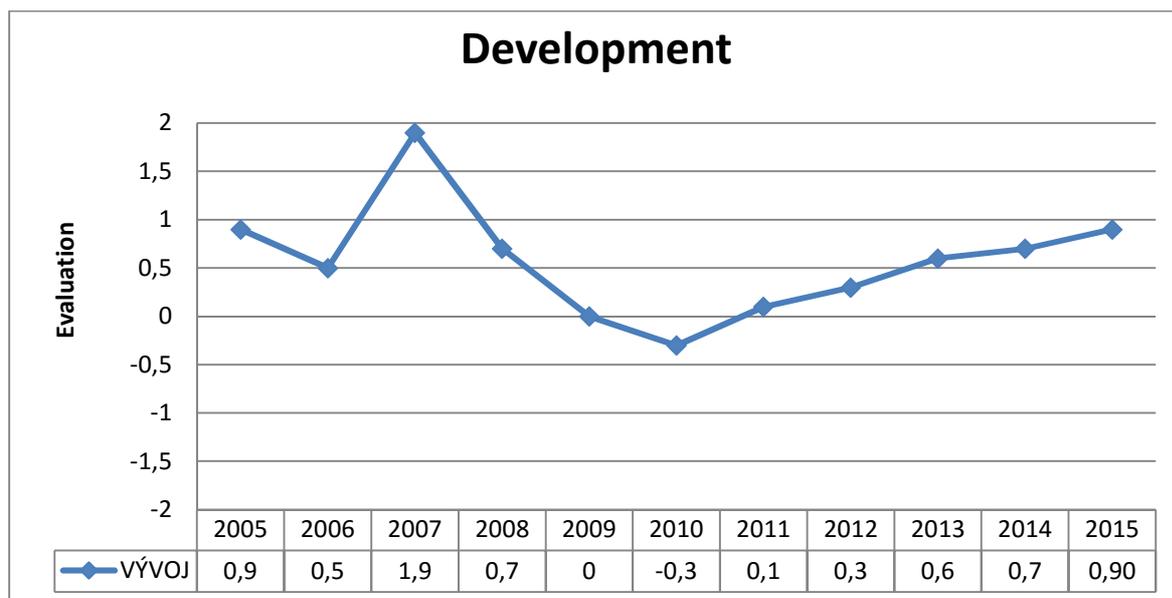
Experts’ asses the development of Slovak economy in 2015 compared with 2014 by marks from -2 to +2 from the average marks from 0.0 to +1.1 in the final middle (median) value of the total evaluation of experts +0.9. In the Median line (together – the last line) +0.90 is appointed from the individual average values of experts.

**Table 2 Expert assessment of the Slovak economy development**

Development 2015/2014	x1	x2	x3	x4	x5	average
Beka	2,0	-1,5	1,5	-1,5	-0,5	0,00
Haluška	0,5	1,5	0,5	0,5	1,5	0,90
Chajdiak	1,5	1,5	1,5	0,0	1,0	1,10
Radvanský	1,0	1,5	1,5	0,5	0,0	0,90
Sivák	1,0	0,0	1,0	0,0	-0,5	0,30
Vaňo	1,0	2,0	0,5	0,0	1,5	1,00
Medián						0,90

In assessment of development in 2005 compared to 2004 the result was +0.9, in evaluation of the development in 2006 compared to 2005 the result was +0.5. In assessing the development in 2007 compared to 2006 the result was +1.9, in assessing the development in 2008 compared to 2007 the result was +0.7 result, in 2009 compared to 2008 the result was 0 in 2010 compared to 2009 the result

was -0.3, in 2011 compared to 2010 the result was +0.1 in 2012 compared to 2011 the result was +0.3; in 2013 compared to 2012 it was 0.6 ; in 2014 compared to 2013 the assessment was + 0.7 and in 2015 compared to 2014 the evaluation is +0.90 e.g. rather mixed development with a significantly positive development in 2007 compared to 2006 and the subsequent slowdown in development in 2008 and 2009 and a slight improvement from 2012. The time series were 2005-2014 (+0.9, +0.5, +1.9 0.7, 0, -0.3, +0.1, +0.3, +0.6, 0.7, 0.9). We are in the center. Graphic presentation of the development is on the figure 2.



**Fig 2: Expert assessment of the Slovak economy development**

During the conferences Views of the Slovak economy from 2001 to 2015, we can observe the transition from poor assessment of the state of Slovak economy to middle assessment of state and development at quite good development of the economy.

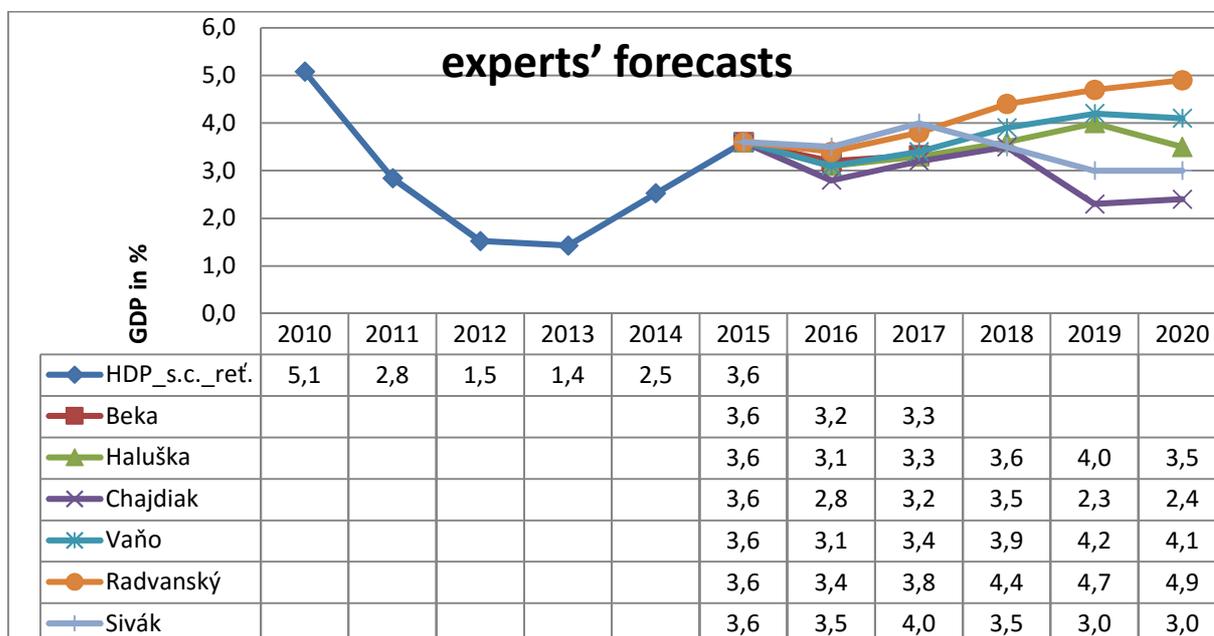
### **Estimation of future development (2016-2019) the rate of change in GDP volume**

In 2009, we achieved a fall in GDP (in comparable prices) of 5.3% (the opposite top - annual reduction in SR). In 2010, we achieved GDP growth (in comparable prices) of + 4.8%. After this growth from the year 2011 followed the slowdown of growth + 2.79%, in the year 2012 the growth + 1.6%, in 2013 growth of + 1.4% and in 2014 the acceleration of growth of + 2.4%. The results of economy modelling and the estimation of future development for the years 2015-2019 of the individual departments and lecturers are in Table no. 3 and in the graph no. 3. The authors are in their forecasts rather optimistic; they assume the development from 2.2% (Chajdiak) to + 3.8% (Vaňo, Beka).

**Table 3: Expert assessment of the growth rate (decrease) of GDP for years 2016-2019**

Year	% of growth GDP						
ROK	GDP	Beka	Haluška	Chajdiak	Radvanský	Sivák	Vaňo
2010	5,1						
2011	2,8						
2012	1,5						
2013	1,4						
2014	2,5						
2015	3,6	3,6	3,6	3,6	3,6	3,6	3,6
2016		3,2	3,1	2,8	3,4	3,5	3,1
2017		3,3	3,3	3,2	3,8	4,0	3,4
2018			3,6	3,5	4,4	3,5	3,9
2019			4,0	2,3	4,7	3,0	4,2
2020			3,5	2,4	4,9	3,0	4,1

Beka – NBS, Haluška – Infostat, Chajdiak – ÚM STU, Radvanský – EÚ SAV, Sivák – EU, Vaňo – Sberbank


**Fig 3: Expert assessment of the growth rate (decrease) of GDP (2000 till 2015 reality; from 2016 experts' forecasts)**

In 2010 the GDP of Slovakia increased (in % fixed prices by chaining 2010) by 5.1. %. In 2011 the increase amounted to 2.8%, and in 2012 followed the GDP slowdown to 1.5% and in 2013 further slowdown to 1.4%. In 2014 the

growth accelerates to 2.5% and in 2015 the growth made 3.6%. The results of economy creating and estimating the future development for the years 2016-2020 of individual workplaces and lecturers are in table 3 and in the graph 3. Authors are quite optimistic in their prognosis and they expect the development from 2.3% (Chajdiak - 2019) till 4.9 (Radvanský - 2020) i.e. predict the development of GDP in the whole period of predicting 2016-2020.

The work was supported by grant:

VEGA no.1/0335/13: “Statistical analysis of selected indicators of the competitiveness on the set of SR offsetting cashiers enterprises“

## Statistical report on basic development tendencies in the Slovak economy in the 4th quarter of 2015

*Statistical Office of the Slovak republic*

### Gross domestic product in the 4th quarter of 2015

A year-on-year performance growth in the Slovak economy gradually speeded up, in the course of 2015. In the 4th quarter of 2015, the volume of gross domestic product (GDP) increased at constant prices by 4,3 %, which was by 1,5 p.p. more than in the 4th quarter of 2014. It was the highest year-on-year growth recorded for the last five years. In quarter-on quarter comparison (the 4th quarter of 2015 compared with the 3rd quarter of 2015), the volume of GDP, after seasonal adjustment, increased actually by 1 %. At current prices, the volume of GDP increased, year-on-year, by 4,2 % to EUR 20 168,9 million.

In 2015, gross domestic product formation reached EUR 78 070,8 million worth. At current prices, in comparison with 2014, it rose by 3,3 %. At constant prices, a year-on-year growth rate of GDP speeded up by 1,1 p.p. to 3,6 %.

Strengthening of economic growth was underpinned by both, foreign and domestic demands, which constantly speeded up in the course of each quarter of 2015. In the 4th quarter of 2015, export of goods and services rose by 9,1 % and domestic demand by 6,5 % (it was its highest growth from the 3rd quarter 2010). Higher gross capital formation by 19,7 % (of which gross fixed capital formation by 19,4 %) was regarded as a decisive factor of domestic demand growth. Final consumption expenditure grew, year-on-year, by 2,9 % in total, of which final consumption of public administration increased by 3,2 %, final consumption of households by 2,9 % and final consumption of non-profit associations for households by 1,9 %.

Production performance of economy, measured by the volume of added value, increased in most sectors. Its growth was recorded in information and communication by 13,8 %, construction by 8,3 %, industry by 5,6 %, financial and insurance activities by 2,2 %, public administration; education; human health and social work activities by 2,1 %, professional, scientific and technical activities by 1,7 %, real estate activities by 1,2 %, wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities by 0,7 %, arts, entertainment and recreation; other service activities by 0,3 %. Added value was reduced in agriculture by 1,8 %. Positive trend was also recorded in higher collection of net taxes on products by 9,2 %.

Gross operation surplus and mixed incomes constituted EUR 9 851 million of the generated gross domestic product by income approach 1). Compared with the 4th quarter of 2014, their volume grew by 1,9 %. Remunerations of

employees 2) in the amount of EUR 8 258 million increased by 6,3 %. The volume of collected taxes on production and imports grew by 6,9 % to EUR 2 330 million. The value of subsidies was higher by 9,1 % and reached the value of EUR 270,2 million.

### **Prices**

The price trend over the year 2015 was characterized by a deflationary environment. The negative dynamics of consumer prices will mainly continued fall in energy prices affected by lowering the cost of oil.

The average annual inflation rate in the fourth quarter of 2015 reached a negative value of -0,5 %. The largest downward effect on price levels, regulated prices, whose annual decline deepened by 1,3 p. p. to 2,1 %. Core inflation was negative at -0,1 % increase in food prices by 0,2 %. After long-term annual growth turned negative and net inflation (excluding changes in indirect taxes), at -0,2 %.

The average inflation rate in 2015 reached the level -0,3 % (in 2014 reached -0,1 %).

### **Employment in the 4th quarter of 2015** (according to Labour Force Sample Survey)

Strong economic growth helped to maintain positive trends in the labour market, during the year 2015. In comparison with the 4th quarter of 2014, employment, according to Labour Force Sample Survey (LFSS), increased by 2,6 % to 2 452,4 thous. persons. In absolute terms, the number of the employed grew by 61,5 thous. persons. Compared with the 3rd quarter of 2015, the seasonally adjusted total employment rose by 0,9 % or by 21,7 thous. persons to 2 450,8 thous. persons.

An increase in total employment was affected mainly by a growth in the number of employees by 52 thous. persons (by 2,6 %) to 2 080,8 thous. persons. Increasing number of the self-employed) by 8,2 thous. persons (by 2,3 %) to 368,3 thous. persons was due to higher number of the self-employed working abroad. The number of the self-employed without employees rose by 5,5 thous. persons (by 1,9 %) to 290,6 thous. persons and the self-employed with employees by 2,7 thous. persons (by 3,6 %) to 77,7 thous. persons. The number of persons carrying on business within the territory of the SR decreased by 4,3 thous. to 315,8 thous.

The highest absolute year-on-year employment increase was registered in trade (25,3 thous. persons) and in industry (25,2 thous. persons). The number of the employed persons in the sector of service activities went up by 40,3 thous. persons to 1 490,3 thous. persons. In terms of particular sectors, besides trade, the significant growth was also noted in transportation and storage by 15,1 thous., education by 10,2 thous., information and communication by 8,9 thous.

persons. Industry was considerably affected by the growth in manufacturing where the number of the employed persons increased by 30,3 thous. persons. In agriculture, the employment decreased for the fourth consecutive quarter. Compared with the 4th quarter of 2014, it was cut by 10,4 thous. persons.

Compared with the 4th quarter of 2014, the employment rate of persons in the age category 20-64 grew by 1,8 p.p. to 68,4 %. It was the highest figure over the last seven years. The employment rate of men went up by 1,5 p.p. to 75,7 % and of women by 2,1 p.p. to 61,1 %.

Age structure of the labour market was changed thanks to increases in the number of workers in most age categories. The highest increase was in favour of the workers aged 25-34 years by 19,5 thous. persons and persons aged 35-49 years by 18,2 thous. The number of workers decreased only in the age group 15-24 years by 0,8 thous. persons.

The growth in the number of the employed persons and also in the employment rate was recorded in all regions. The employment rose relatively the most in Žilinský kraj (by 5,2 %), Banskobystrický kraj (by 4,8 %) and in Trnavský kraj (by 4,7 %). The most significant rise in the employment rate of the 20-64 age category was registered in Banskobystrický kraj and Trnavský kraj (equally by 3,6 p.p.). Bratislavský kraj reached the highest employment rate (76 %), but there was also recorded the second slowest growth (by 0,6 p.p.).

On average, in the year 2015, the total employment increased by 2,6 % to 2 424 thous. persons.

160,6 thous. persons were employed abroad less than one year, according to LFSS. Compared with the 4th quarter of 2014, their number grew by 24,4 thous. persons (by 17,9 %). The dominating group of migrants consisted mainly of the employed working in construction (42,4 thous. persons), industry (36,5 thous. persons), human health and social work activities (35,8 thous. persons). In terms of the age structure, dominating category was constituted by workers of the age category 25 – 34, whose share of the employment abroad accounted for 33,3 %. In European countries, the most Slovak citizens worked in Austria (49,7 thous.) and in the Czech Republic (40,3 thous.). With regard to regions, the most persons working abroad come from Prešovský kraj (39,3 thous.) and from Žilinský kraj (29,8 thous.). Their number increased the most in Trnavský kraj (by 53,8 %), the only one decline was observed in Nitriansky kraj (by 0,9 %).

Average number of job vacancies grew, year-on-year, by 2 891 posts (by 18,6 %) to 18 455 posts in the 4th quarter of 2015. The number of job vacancies increased absolutely the most in trade (by 514 posts). More significant increase was also recorded in public administration, social security; transportation and storage; human health and social work activities. The most significant year-on-year decline of job vacancies was registered in professional, scientific and technical activities (by 122 posts). The number of offered job vacancies was also

reduced in water supply; electricity, gas, steam supply; arts, entertainment and recreation and in real estate activities.

### **Unemployment in the 4th quarter of 2015**

The downward trend in unemployment continued throughout the year 2015. In the 4th quarter of 2015, the number of unemployed persons, according to the LFSS methodology, decreased, year-on-year, by 42,1 thous. persons (by 12,2 %) to 302,7 thous. persons. A decline in unemployment proved to be more considerable in men (by 35,4 thous.) than in women (by 6,8 thous.). The unemployment rate was cut by 1,6 p.p. to 11 %. It decreased for men by 2,3 p.p. to 9,6 % and for women by 0,8 p.p. to 12,7 %. In quarter-on-quarter comparison (the 4th quarter of 2015 compared with the 3rd quarter of 2015), the seasonally adjusted unemployment decreased by 13,8 thous. persons (by 4,4 %) to 298,3 thous. persons.

In terms of age structure, the largest group of unemployed persons was constituted by persons aged 35-49 with the number 96,9 thous. persons and the share of 32 % of the total unemployment. A year-on-year decrease of the unemployed was recorded in most age groups, of which the largest one was represented by the 25-34 age group (by 22,1 thous. persons). More unemployed persons were registered only in the age category 60 and over (by 1,7 thous. persons).

Unemployed persons, who have never had a job, constituted 21,6 % out of the total unemployment. In terms of the economic activity of the last employer, the most persons last worked in industry (21,6 %). In this sector, the unemployment was reduced by 3 thous. persons. The steepest decline in the unemployment was registered in trade, where it fell by 9,2 thous. persons.

The highest number of unemployed persons was recorded in Prešovský kraj (64,5 thous.) and in Košický kraj (49,9 thous.). The unemployment declined in all regions, relatively most in Trnavský kraj (by 24 %) and in Banskobystrický kraj (by 23,4 %). The highest regional unemployment rate (16,2 %) was registered in Prešovský kraj. The unemployment rate was reduced in all regions, the most significantly in Banskobystrický kraj (by 4,2 p.p.).

In the year 2015, the unemployment fell, year-on-year, by 12,4 % to 314,3 thous. persons. The unemployment rate was reduced by 1,7 p.p. to 11,5 %.

### **Average monthly wage of employee in economy of the SR in the 4th quarter of 2015**

In the 4th quarter of 2015, the average nominal monthly wage of an employee in economy of the SR (including an estimate for employees working for self-employed/tradesmen) rose, year-on-year, by 4,1 % to EUR 956. The development of real wage, which increased by 4,6 %, year-on-year, was affected by a slight decline in consumer prices in comparison with a growth of nominal

wage. After seasonal adjustment, the average nominal wage grew by 1,2 % compared with the 3rd quarter of 2015.

The highest average monthly wage was reached by employees working in information and communication (EUR 1 944), financial and insurance activities (EUR 1 686), electricity, gas and steam supply (EUR 1 560). In ten sectors, the wage was lower than the average in economy of the SR. The lowest average nominal wage was recorded in accommodation and food service activities (EUR 580), other service activities (EUR 661), agriculture (EUR 692) and in construction (EUR 699).

Compared with the 4th quarter of 2014, relatively the fastest growth of the average nominal wage was recorded in real estate activities (by 14,3 %), information and communication (by 10,2 %). It was reduced in professional, scientific and technical activities (by 8,6 %), agriculture (by 3,9 %), electricity, gas and steam supply (by 1,6 %) and in administrative service activities (by 0,7 %).

In terms of the legal form of entities, the average nominal monthly wage increased, compared with the 4th quarter of 2014, in allowance organizations by 6,2 % to EUR 1 023, budgetary organizations by 5,9 % to EUR 1 013, large enterprises employing 20 people or more by 4,3 % to EUR 1 118 and in small enterprises employing 19 people or fewer by 4,2 % to EUR 748.

In territorial terms, the average nominal monthly wage was higher than the average of the whole economy of the SR only in Bratislavský kraj (EUR 1 185). In other regions, it ranged from EUR 776 in Prešovský kraj to EUR 894 in Trenčiansky kraj. The average wage was higher than in the 4th quarter of 2014 in all regions with the highest relative increase (6,9 %) in Žilinský kraj and in Nitriansky kraj (5,1 %).

In the year 2015, the average nominal monthly wage of an employee in economy amounted to EUR 883. It increased by 2,9 %, year-on-year; the real wage went up by 3,2 %. The nominal wage growth was by 1,2 p.p. slower than in 2014.

## **Population**

By demographic information in the 4th quarter of 2015 in the Slovak Republic live born 13 789 children (about 312 more than in the 4th quarter of 2014) and died 13 516 people (about 406 fewer than last year).

Natural increase of population was 273 persons. Foreign migration Slovak Republic obtained 1 923 people (migrated the 2 769 and emigrated 846 persons). The total increase of the population was 2 196 people (about 1 881 people more than last year). On 31 December 2015 the Slovak Republic had 5 426 252 inhabitants.

## **Preparation and performance of the Presidency in the Council of the European Union**

*Katarina Vachalkova, Frantisek Bernadic*

In reference to PES 2016, ISBN 978-80-88946-70-0; the Article is dealing with the substance and starting points of the preparation and performance of the Presidency in the Council of the European Union. The focus is on the main objective of the Presidency from the Council's position as the legislator, which is the assurance of the legislative process continuation within the adoption of legal acts in the EU at all decision levels – starting with the working group, through the Committee of Permanent Representatives up to the negotiations in the particular formations of the Council.

The Article is broken down into two parts. The general part is dealing in detail with the specific aspects of a successful Presidency and analyses not only the formal aspect of the Presidency in form of the documents under preparation but also the theoretical setup of the communication mechanisms, Presidency performance format and the activity of the Presidency directly in the Council Working Party.

The specific part outlines the measures that have been carried out in terms of the Slovak Presidency in the Council in 2016 at the level of the Statistical Office of the Slovak Republic in the particular phase of the preparation for the Presidency with the perspective of their utilisation during the sole performance of the Presidency as well as after its finalisation. In conclusion, the main benefit of the Presidency for the chairing country is mentioned not only from the promotional and presentation aspects but mainly from the professional because the Presidency in the Council is to be considered as a unique opportunity for the increase of professional knowledge and experience of all parties involved.

**Slovak economy in the view of public 2016**

*Valéria Bezáčková*

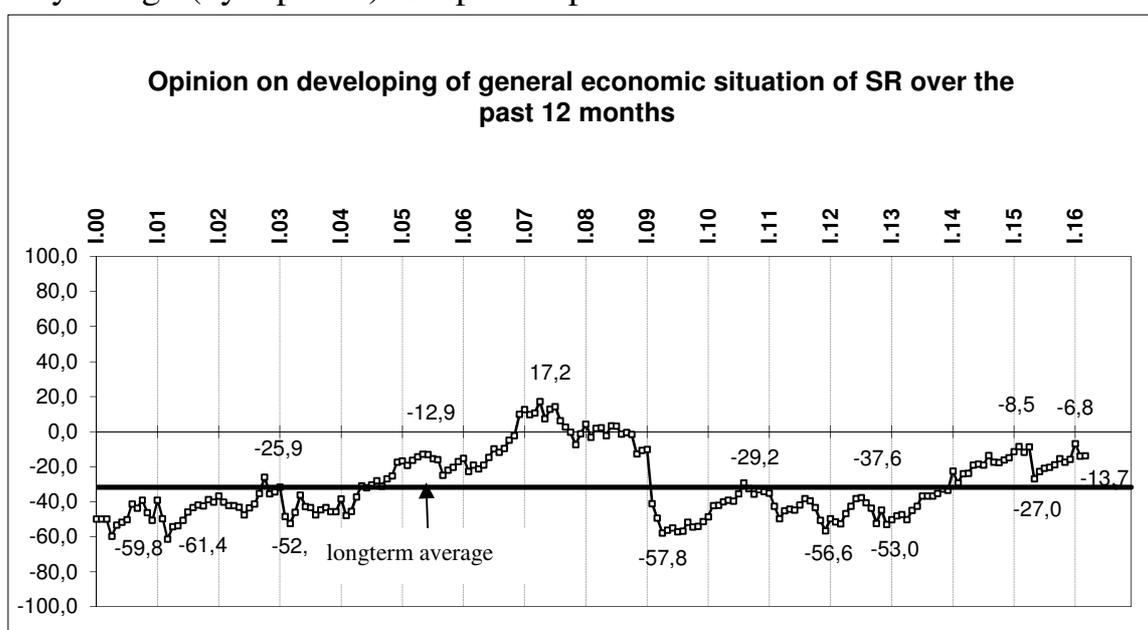
**1 Introduction**

Consumer Barometer is a public opinion survey, which monitors consumer mood of citizens older than 16 years. This survey is part of an international programme, which is coordinated and supported by the Directorate General for Economic and Financial Affairs of the European Commission.

The focus of this information is that part of Consumer Barometer, by which the public assesses changes of overall economic situation in Slovakia in the last 12 months and estimates its development in the future. Results in graphs are presented in the form of seasonally non-adjusted coefficient that gains values from interval from -100 (if all the statements of those surveyed have a maximum negative) to +100 (otherwise, if all statements are maximally positive).

**2 The evaluation of the previous economic situation in Slovakia**

At the perception of the previous development of the economic situation in Slovakia in March 2016 the confidence reached -13.7, which means that the same number of respondents as a month ago chose the positive response (18%), more respondents than in February chose neutral statement (the situation has not changed 39%) and less respondents (37%) classified the evolution in the past 12 months as the worsening of economic situation in Slovakia. The March assessment exceeds the long-term average, it is similar as the evaluations obtained a month ago (more favourable by 0.2 point), and more unfavourable than year ago (by 2 points). Graph no.1 provides the overview of results.



**Graph no.1: Opinions of respondents on developing of economic situation of SR over the past 12 months**

**Table no.2: Indicator of the previous development of the economic situation in the EU member states**

Indicator	Development of economic situation during the last 12 months							
	March 2009	March 2010	March 2011	March 2012	March 2013	March 2014	March 2015	March view2016
Belgium	-75	-35	-15	-47	-47	+1	-17	-17
Bulgaria	-48	-60	-57	-55	-56	-40	-42	-34
Czech republic	-51	-47	-32	-49	-44	-23	-4	+7
Denmark	-54	-24	-5	-10	-8	+9	+20	+7
Germany	-57	-44	+29	+13	-8	+7	+10	-1
Estonia	-68	-55	-3	-17	-6	-4	-1	-17
Ireland	:	:	:	:	-46	+3	+17	:
Greece	-71	-76	-85	-94	-88	-72	-52	-83
Spain	-69	-75	-60	-71	-76	-32	-10	-7
France	-73	-46	-43	-55	-58	-48	-37	-40
Croatia	:	:	:	:	-64	-57	-48	-23
Italy	-67	-45	-48	-54	-73	-55	-30	-17
Cyprus	-46	-61	-57	-74	-82	-67	-41	-11
Latvia	-77	-69	-37	-19	-6	-6	-6	-12
Lithuania	-58	-68	-37	-23	-13	-4	-2	-14
Luxemburg	-52	-40	-13	-36	-47	-23	-27	-10
Hungary	-78	-59	-38	-52	-36	-10	-18	-18
Malta	-44	-57	-42	-47	-22	+7	+11	+11
Netherlands	-67	-37	-9	-58	-67	-16	+1	-6
Austria	-59	-39	+11	-27	-25	-23	-29	-27
Poland	-33	-16	-23	-25	-32	-16	-9	-4
Portugal	-74	-55	-67	-74	-77	-43	-22	-13
Romania	-44	-61	-64	-52	-42	-41	-12	-17
Slovenia	-60	-68	-67	-68	-71	-61	-32	-21
<b>Slovakia</b>	-46	<b>-44</b>	<b>-42</b>	<b>-48</b>	<b>-43</b>	<b>-21</b>	<b>-7</b>	<b>-14</b>
<b>Finland</b>	-59	-11	+20	-20	-21	-24	-30	-27
Sweden	-65	-1	+29	-16	-16	-2	-5	-10
Great Britain	-77	-48	-52	-60	-53	-12	+3	-9
<b>EU together</b>	<b>-67</b>	<b>-46</b>	<b>-27</b>	<b>-40</b>	<b>-46</b>	<b>-22</b>	<b>-11</b>	<b>-15</b>
*								

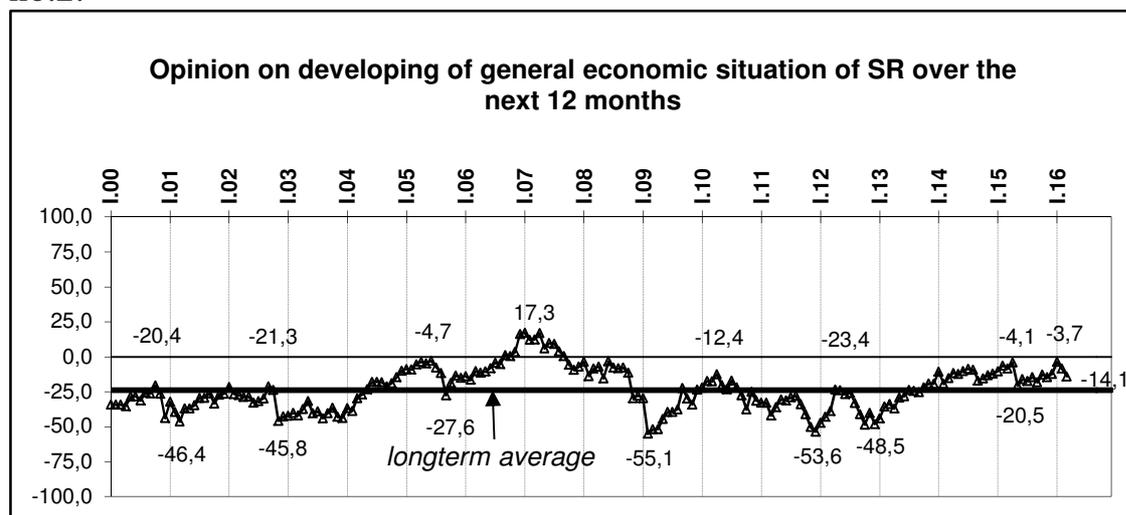
\* in statistical averages there are not included states, which at that time did not belong to the EU

: at the time of publishing the result was not available

Table no.2 shows that a recent evaluation of the previous development of the economy during March 2016 in the most (24) member states prevailed the pessimism over optimism. Positive values in March 2016 occurred in Malta, the Czech Republic and Denmark. Previous development of the economy in their own country again considered as the most critical in Greece (-83).

### 3 Expected development of economy in Slovakia

Laic prognosis of economic development in Slovak Republic in 2015 have similar course as the perception of the previous development of the Slovak economy. Currently 37% of those surveyed predicted a worsening of economic situation in Slovakia, 33% unaltered state and 18% of respondents expect the improvement. In March 2016 the indicator with the value -14.1 exceeded the long-term average and residents were more pessimistic than a month ago (by 5.7 points) and the year ago (difference also 5.7 points). The results may be compared in graph no.2.



**Graph no 2: Expectations of respondents concerning the development of the economic situation in Slovakia in the next 12 months**

Table no.2 shows that in the 24 EU countries in March 2016, more citizens have a pessimistic rather than optimistic view on the future of economy. Index of expected development of economy was positive in three states- Malta, Spain and Italy. Compared with March 2015, the prospects for the future, according the statements of citizens were improved in eight states. In 18 countries were laic prognosis of the economic development more pessimistic than a year ago, Slovakia in March 2016 reached a value (seasonally adjusted -14), which is in 3 points less favourable than the EU average. The position of decreasing confidence placed Slovakia together with Germany on the 20th -21st place. The most pessimistic economic expectations had in March 2016 particularly in Greece, Bulgaria and France. The European Union as a whole showed for the year an increase in pessimism for about 12 points, when the value of the relevant indicator dropped from +1 to -11.

**Table no2: Indicator of the expected development of economic situation in the EU Member States**

Indicator	How will develop the economic situation in the state in next 12 months							
	March 2009	March 2010	March 2011	March 2012	March 2013	March 2014	March 2015	March 2016
Belgium	-24	4	-3	-11	-21	+11	-1	-9
Bulgaria	-37	-29	-26	-28	-31	-18	-27	-22
Czech republic	-21	-9	-26	-45	-22	-3	+2	-1
Denmark	-2	+16	+7	+9	+7	+18	+24	-1
Germany	-52	-10	+17	-5	-10	+3	+1	-14
Estonia	-38	0	+16	-6	+4	+7	+8	-10
Ireland	:	:	:	:	-21	+21	+26	:
Greece	-64	-44	-65	-77	-64	-52	-16	-80
Spain	-47	-17	-15	-24	-28	+5	+16	+4
France	-47	-17	-29	-24	-41	-25	-16	-22
Croatia	:	:	:	:	-35	-30	-16	-10
Italy	-27	-9	-23	-22	-31	+1	-9	+1
Cyprus	-48	-40	-25	-38	-28	-31	-26	-3
Latvia	-47	-22	-19	-8	+1	+1	+3	-4
Lithuania	-52	-28	-9	-12	+2	-4	+1	-1
Luxemburg	-42	-8	+2	-22	-28	-11	-19	-4
Hungary	-65	-23	-20	-35	-22	+2	-13	-16
Malta	-29	-22	-36	-33	+2	+14	+8	+8
Netherlands	-51	+7	+2	-46	-35	+15	+11	-11
Austria	-38	+1	+13	-23	-6	-9	-16	-17
Poland	-30	-5	-20	-16	-27	-11	-6	-4
Portugal	-59	-33	-56	-57	-61	-25	-9	-8
Romania	-33	-33	-38	-33	-24	-28	+3	-12
Slovenia	-39	-14	-23	-25	-24	-27	-9	-21
<b>Slovakia</b>	<b>-51</b>	<b>-16</b>	<b>-36</b>	<b>-37</b>	<b>-32</b>	<b>-12</b>	<b>-6</b>	<b>-14</b>
Finland	-17	+25	+10	-9	-1	-2	-4	-2
Sweden	-8	+27	+17	-7	0	+5	-8	-13
Great Britain	-33	+5	-29	-30	-26	+8	+7	-11
<b>European Union together</b>	<b>-40</b>	<b>-7</b>	<b>-14</b>	<b>-22</b>	<b>-25</b>	<b>-2</b>	<b>+1</b>	<b>-11</b>

**\*\*in statistical averages there are not included states, which at that time did not belong to the EU**

: at the time of publishing the result was not available

## 4 Conclusions

According to the assessment of the previous development of the economy in the Slovak Republic in March 2016, distrust prevailed over trust, even when the level of mistrust was relatively low. The current value of the indicator is similar to that of a month ago, but it is less favourable than a year ago and is higher than its long-term average. Even in the prognosis of the future direction of the economy in Slovakia in March 2016, slightly pessimistic views prevailed, but more than a month ago and a year ago.

At the EU level, in both cases (the perception of the previous development of the economy in the country as well as economic expectations) there was an increase in pessimism in comparison to the situation a year ago. An international comparison shows that the results for Slovakia in March 2016, in terms of the perception of the current development, were more favourable, with expectations less favourable than the average for the 27 EU Member States. In the ranking of countries from the highest to the lowest confidence, Slovakia in March 2016 achieved the 14th-15th place in the perception of economic development and the 20th-21st place in economic expectations.

## 5 References

- [1] SR Statistical Office. 2015. The questionnaire, data files, and the results of the survey 3/2016 Consumer barometer, March 2016
- [2] SR Statistical Office 1997-2016. Archive of the author Consumer Barometer survey.
- [3] European Commission DG ECFIN, March 2016. Business and Consumer Survey Results.

## The Macroeconomic development in Slovakia till February 2016

*Jozef Chajdiak*

It is possible to describe our macroeconomic development as slightly improved. The question is whether it is already clear upward trend or just a gradual climb from the bottom.

Fig.1 shows the evolution of population. We may say that the evolution of population stagnates and we may expect its decline. Fig. 2 shows the development of the number of births. It seems that the demographic wave in 2009 reached a peak in the number of births (61,445) and from 2010 (60,599 births) begins the decrease (according the author's forecasts, the number of births will decline, and estimates are that even under the 40,000 births per year in not too distant future). Fig 3 shows the age structure by gender in 1980 and 2014 in the so-called. "Tree of Life". Figure 4 shows the development of (medium) life expectancy of 0-year-olds and 65-year-old men and women.

Fig. 5 shows the development of the Czech crown in SKK. (Slovak crown) calculated to the valid exchange rate of euro. Exchange rate of Czech crown gradually deteriorates and in the current period it is 1.11 SKK per 1 CZK.

Figure 6 shows the development of annual inflation / deflation in Slovakia. We managed to reduce inflation into negative numbers (deflation).

On Figures 7 – 14 is the development of revenues and expenditures of the state budget and their parts or the development after conversion. Despite the proclaimed intention since 1996 we have failed to reach a balanced budget.

Fig. 15 shows the development of the balance of foreign trade. We've moved into surplus position.

In Fig. 15 and 17 there is development of GDP (in current prices chaining). With the exception of 1999 and the period from 2008 to 2012 we can notice volume growth of GDP.

On the Fig. 18 and Fig. 19, the volume of debt of the central government (so called Maastricht debt) in % of GDP and in absolute terms.

On Fig. 20 and Fig. 21 shows the working wage developments in the economy. In the nominal monthly values calculated at the level of quarters in 1989.

Fig. 22 shows the development of the total number of unemployed. Recently, we can observe their decline.

Fig. 23 shows the development of employed according the Labour Force Survey. We can follow the growth of the number to the point after which there was a trend decline. Since the year before last, the number of employed rises again.

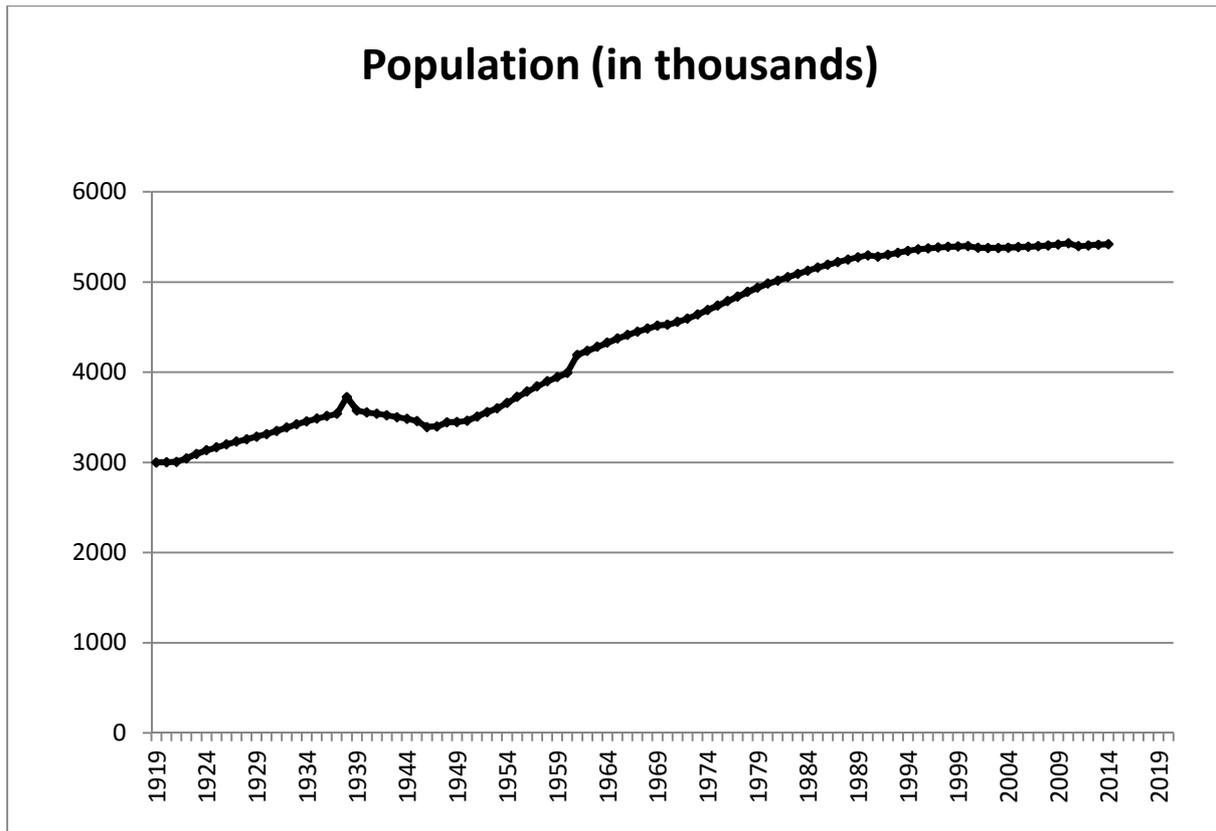


Fig. 1 Population ( in thousands)

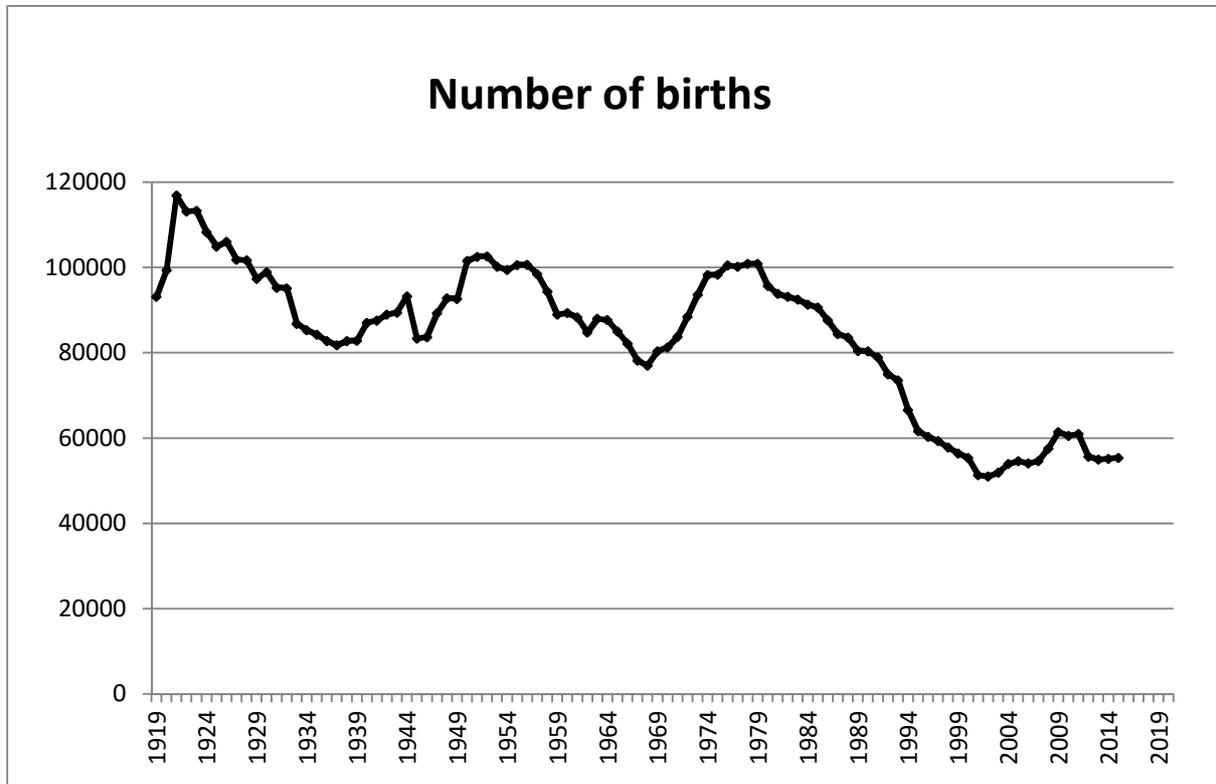


Fig.2 Development of the number of births

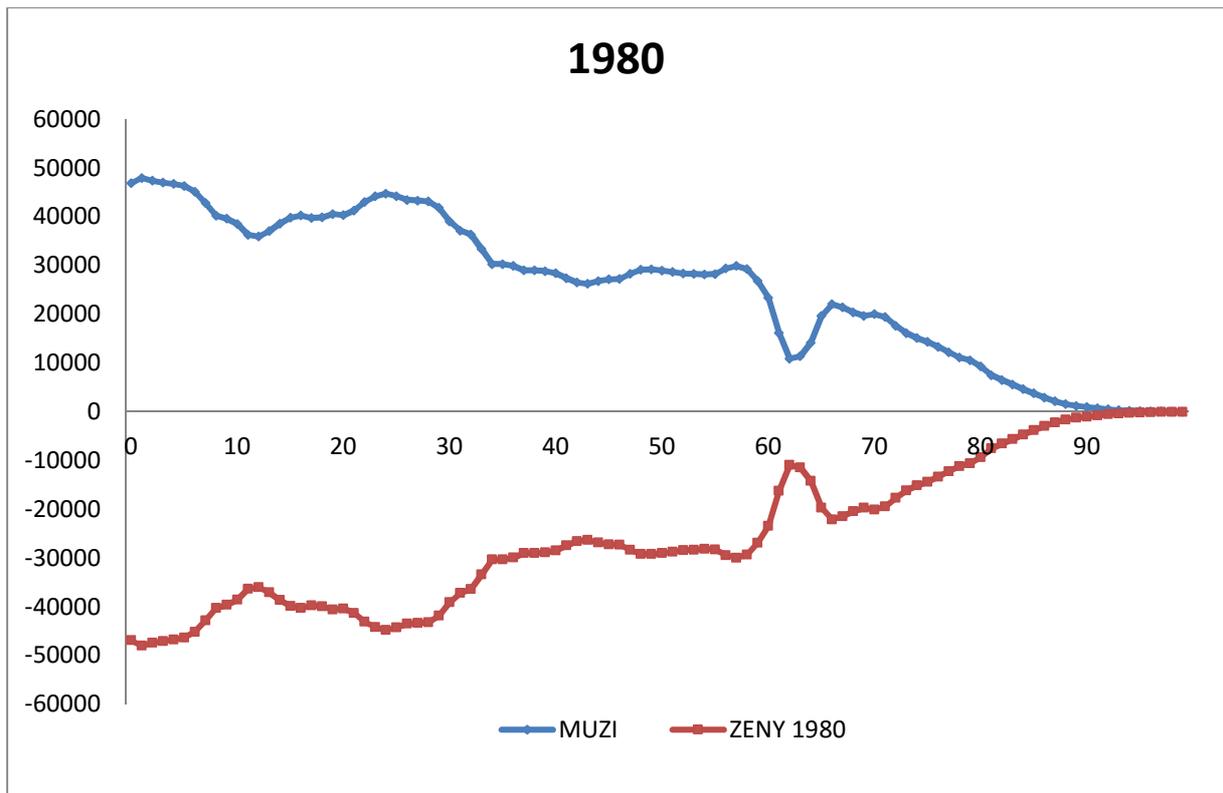


Fig.3a - year 1980 Men Women

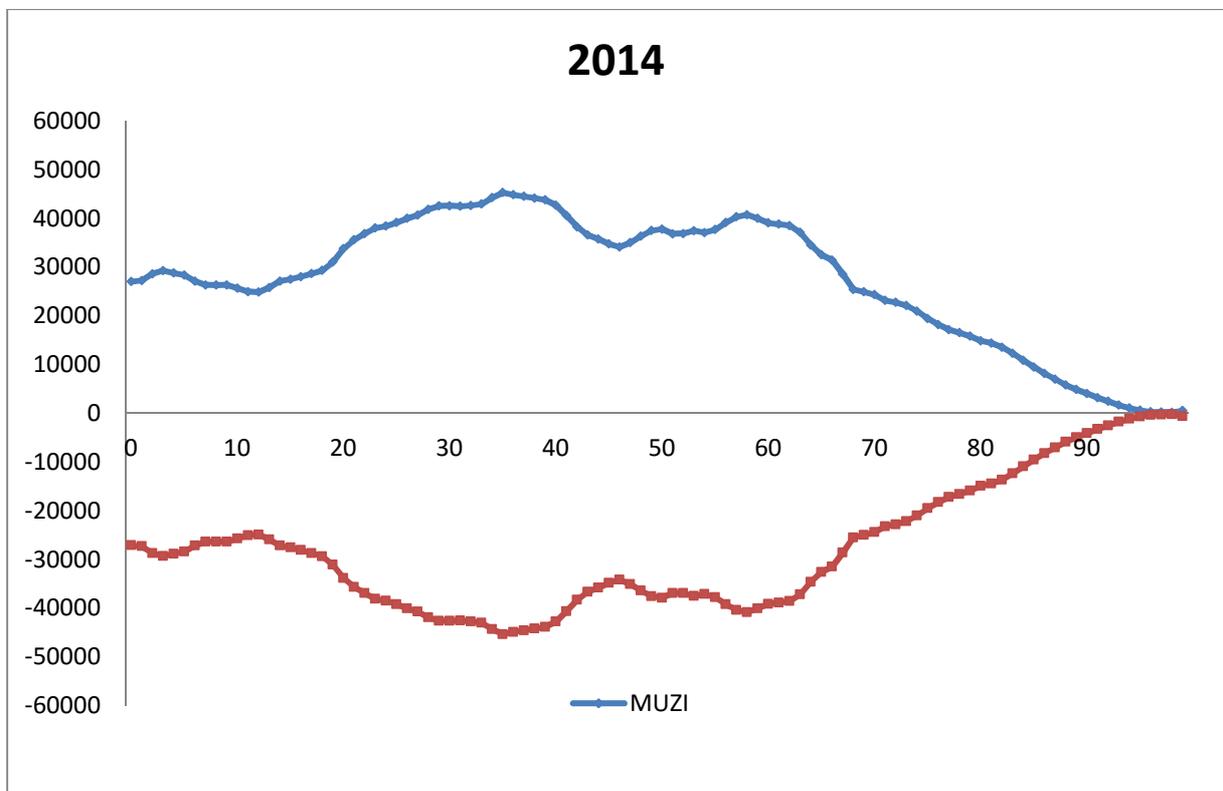


Fig. 3b – year 2014 Men Women

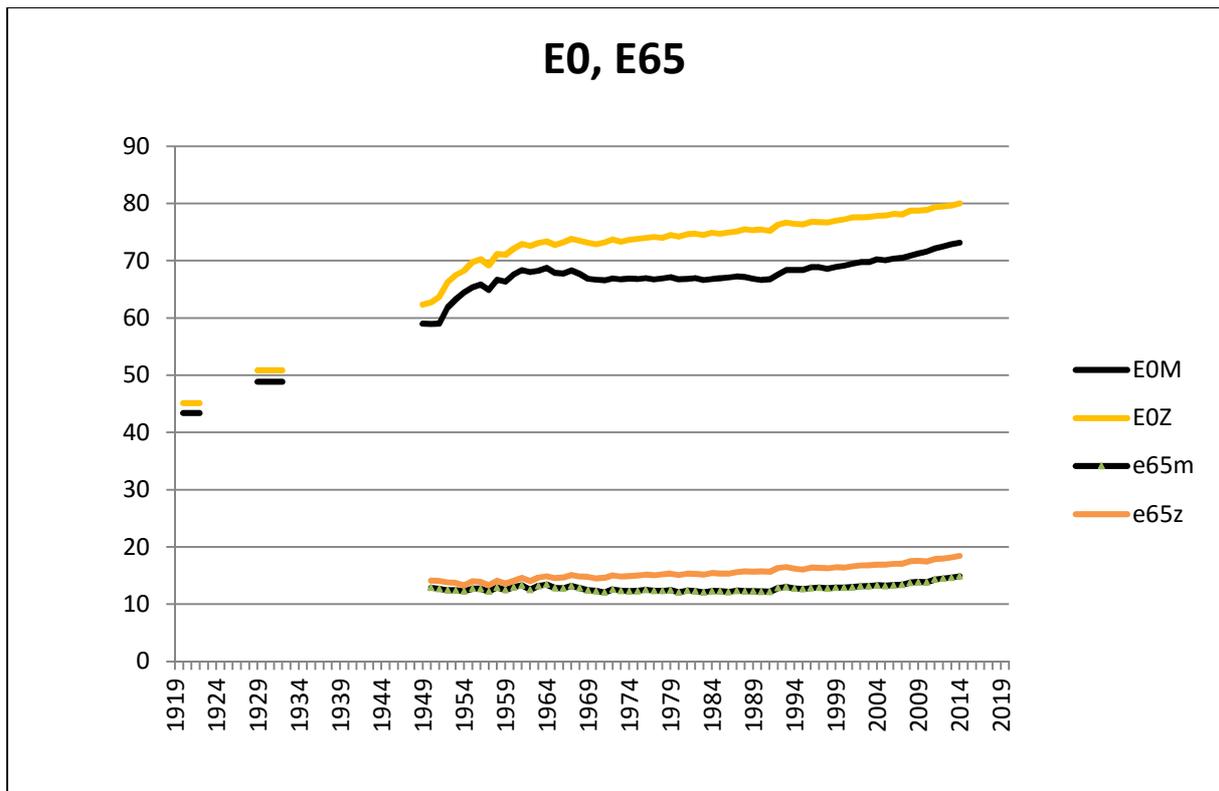


Fig. 4 Expected (medium) length of life O and 65 years old men and women



Fig.5 Exchange rate of Czech crown (from Jan.2009 calculated by Exchange rate)



Fig.6 Year to year inflation (in %)

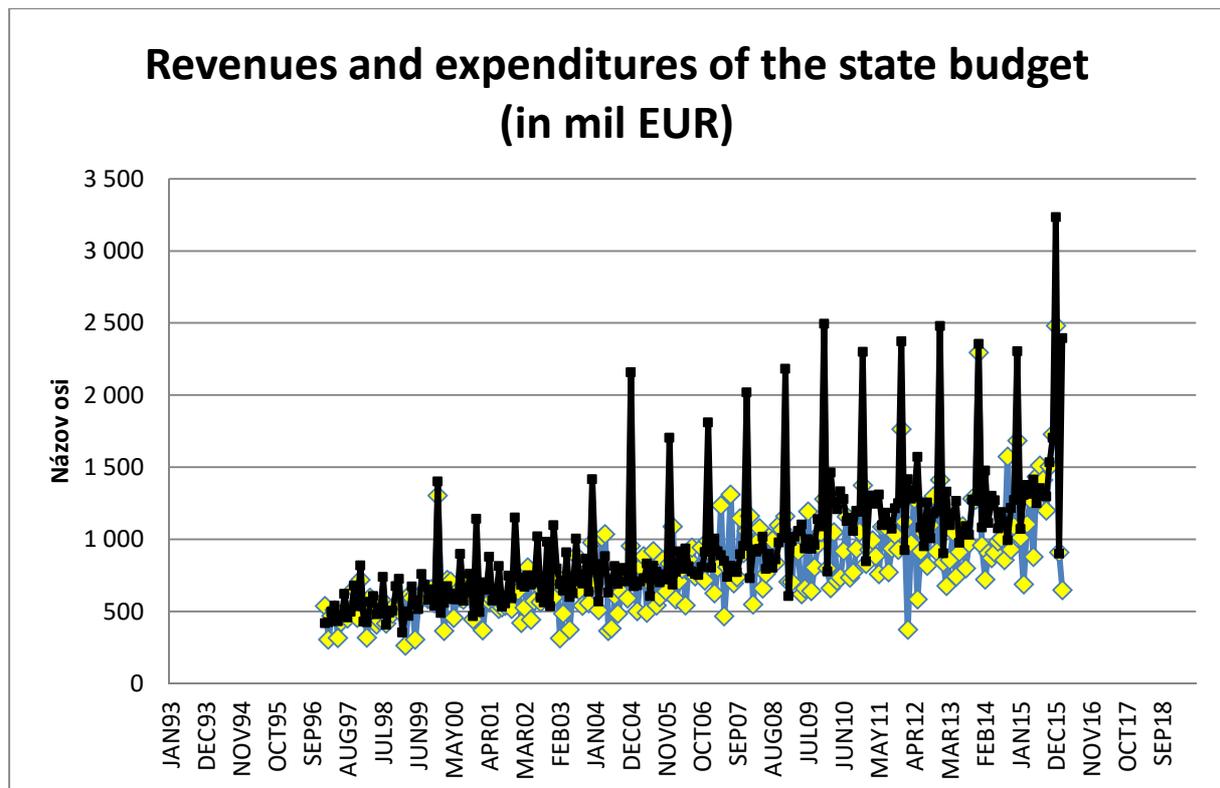


Fig 7 Revenues and expenditures of the state budget (in mil. €)

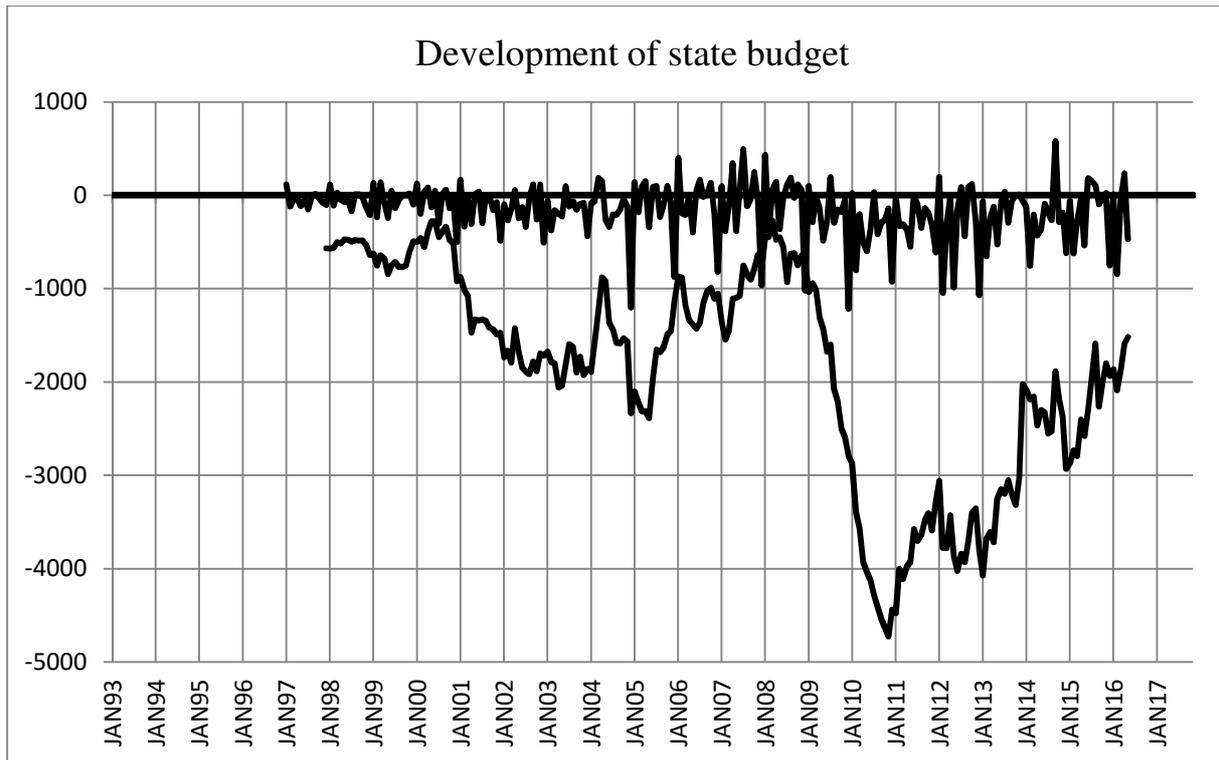


Fig.8 Monthly and moving annual State budget balance (in mil. €)

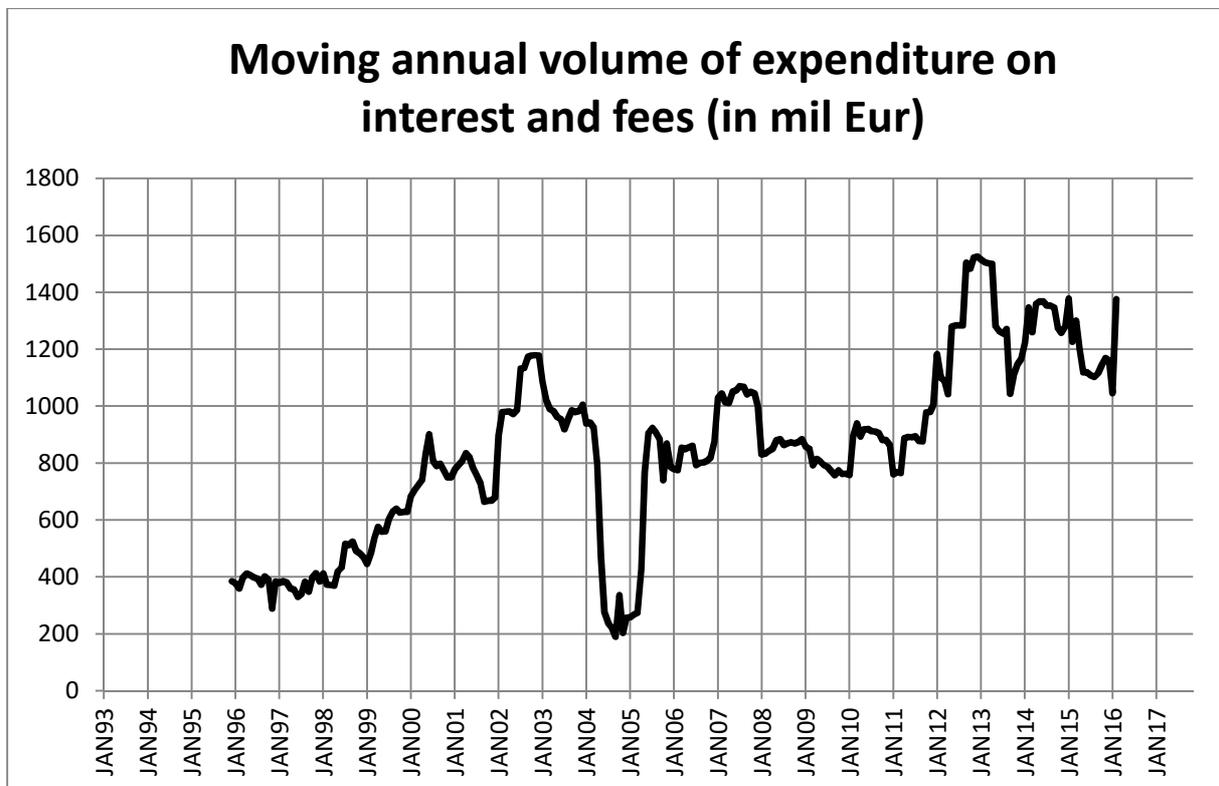


Fig. 9 Moving annual volume of expenditure on interest and fees (in mil. €)

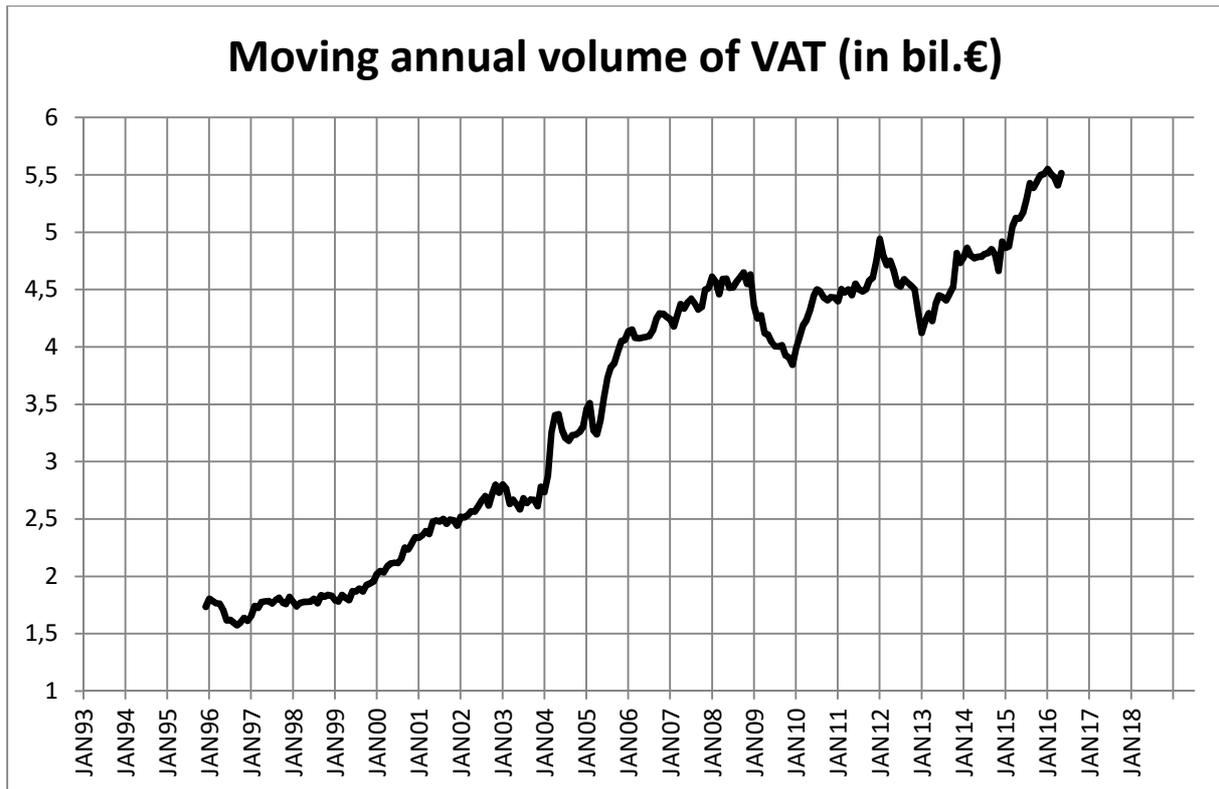


Fig. 10 Moving annual volume of VAT (in bil. €)

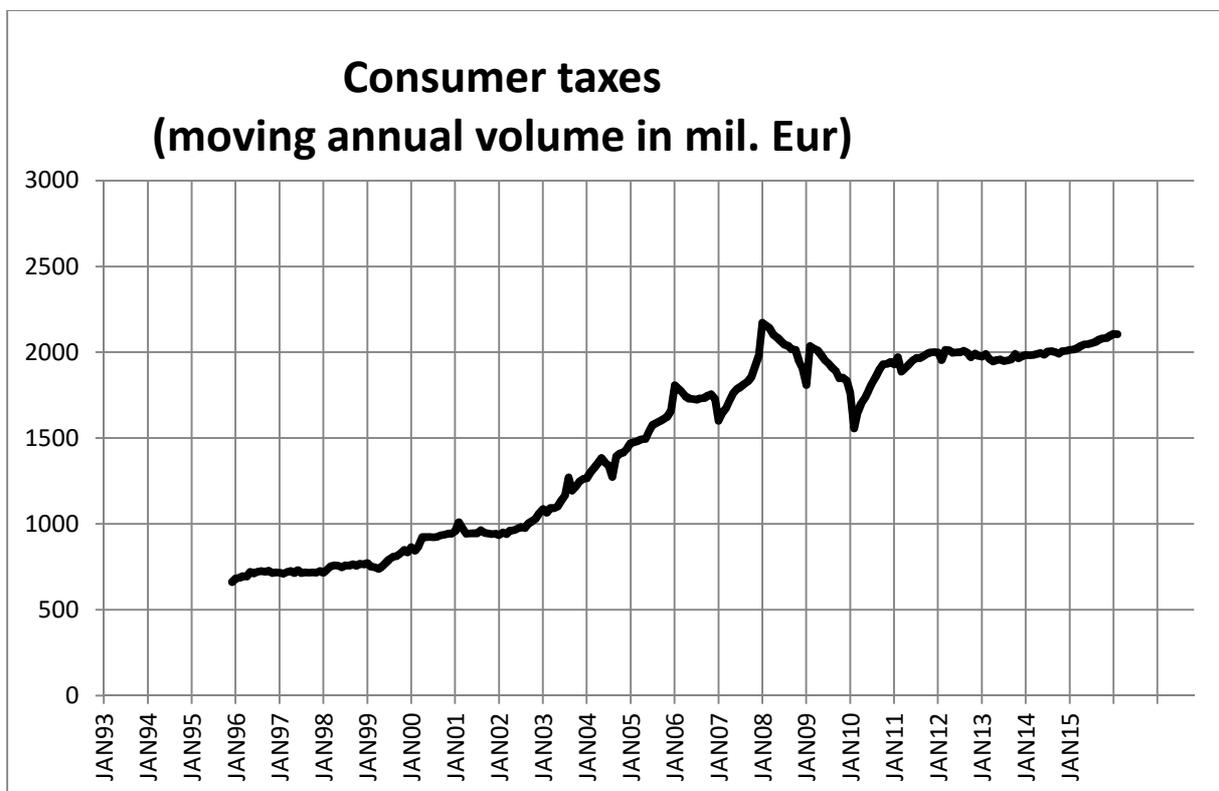


Fig. 11 Moving annual volume of consumption taxes (in mil. €)

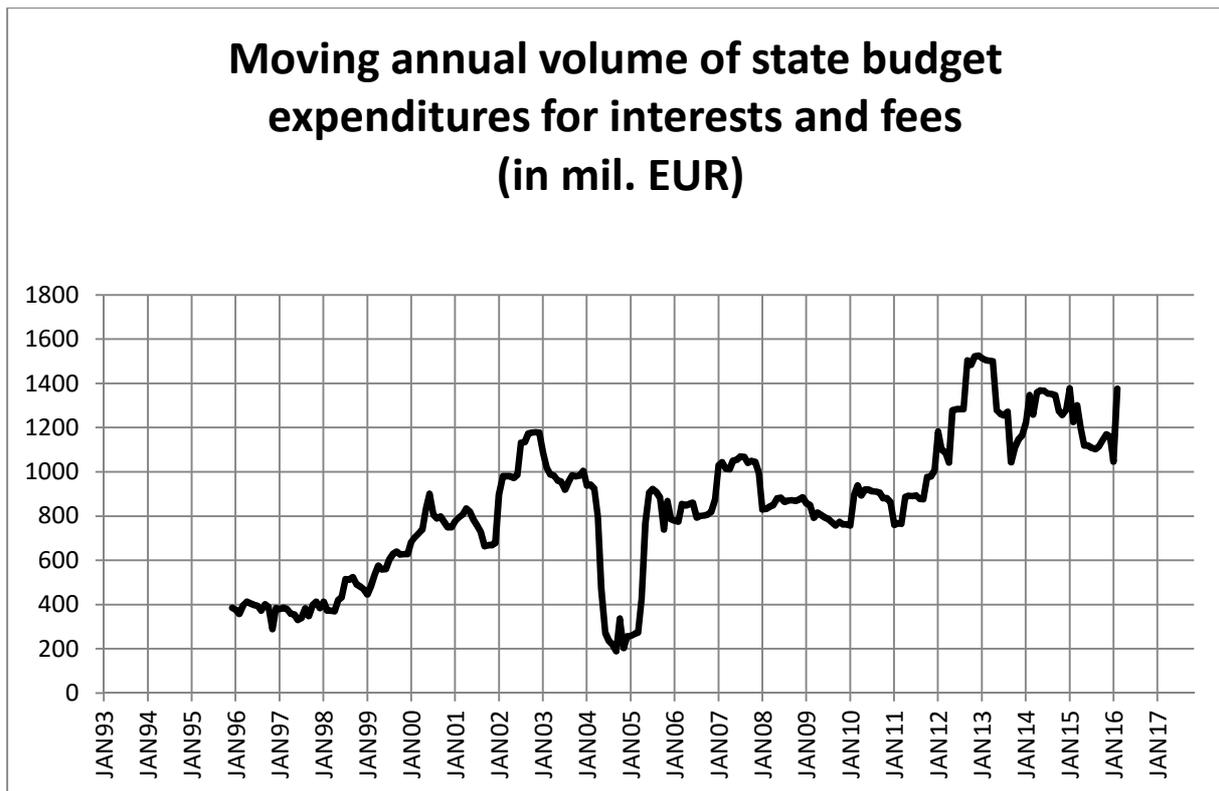


Fig. 12 Moving annual volume of state budget expenditures for interests and fees (in mil. €)



Fig. 13 The share of moving annual government budget balance to GDP (in %)

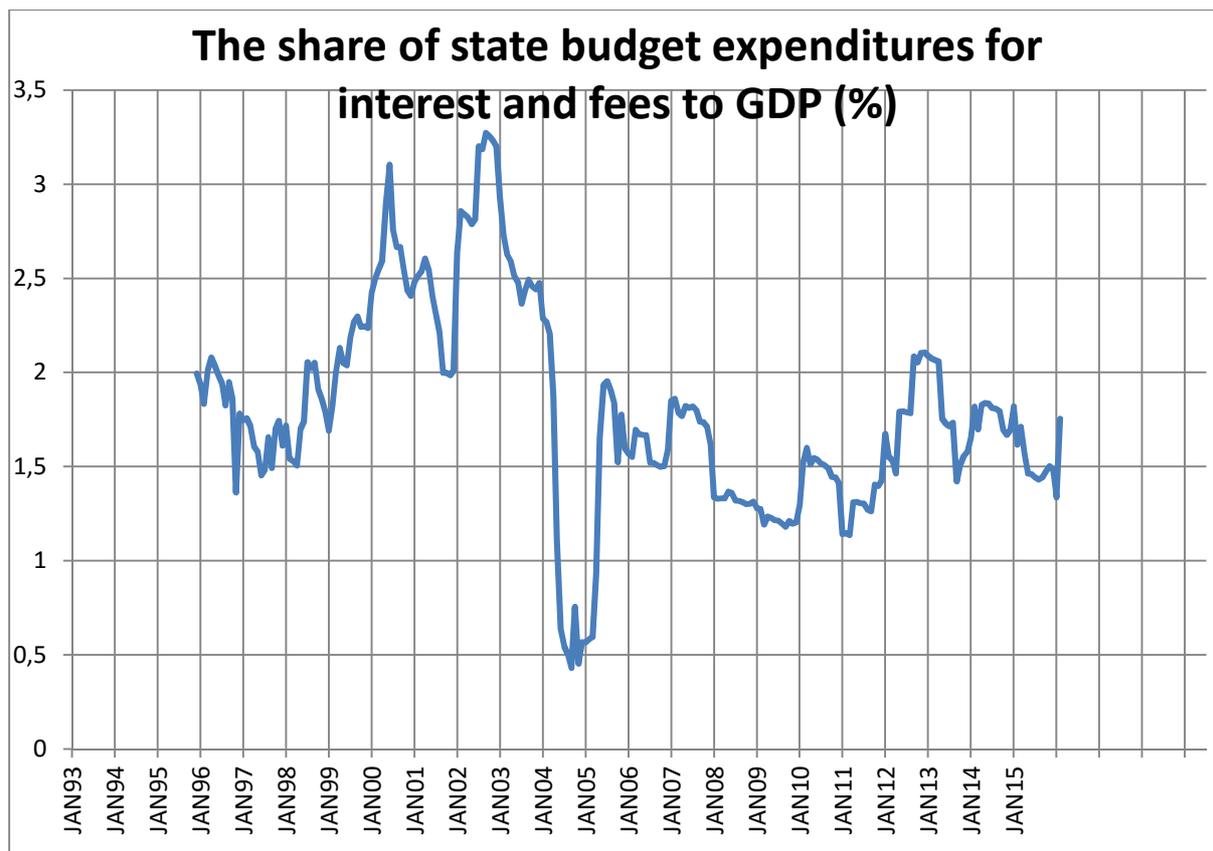


Fig. 14 The share of state budget expenditures for interest and fees to GDP (in %)

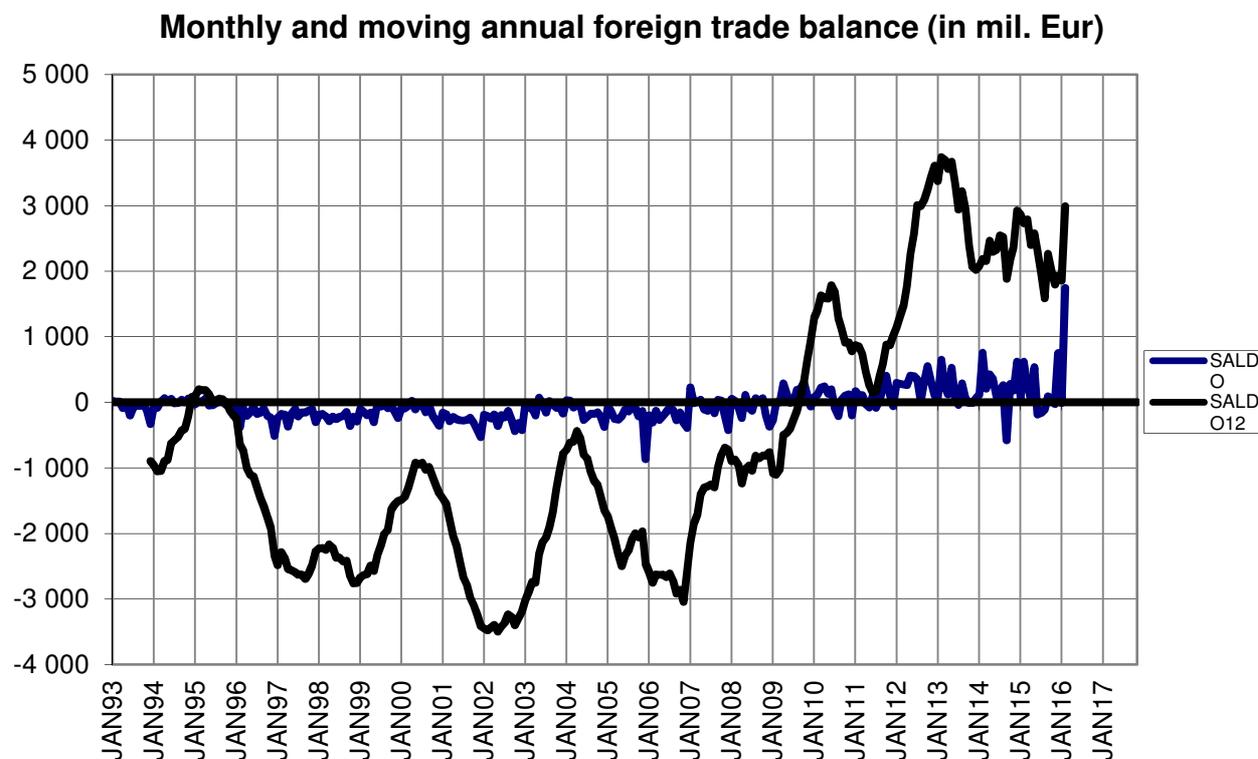


Fig. 15 Monthly and moving annual foreign trade balance (in mil. €)

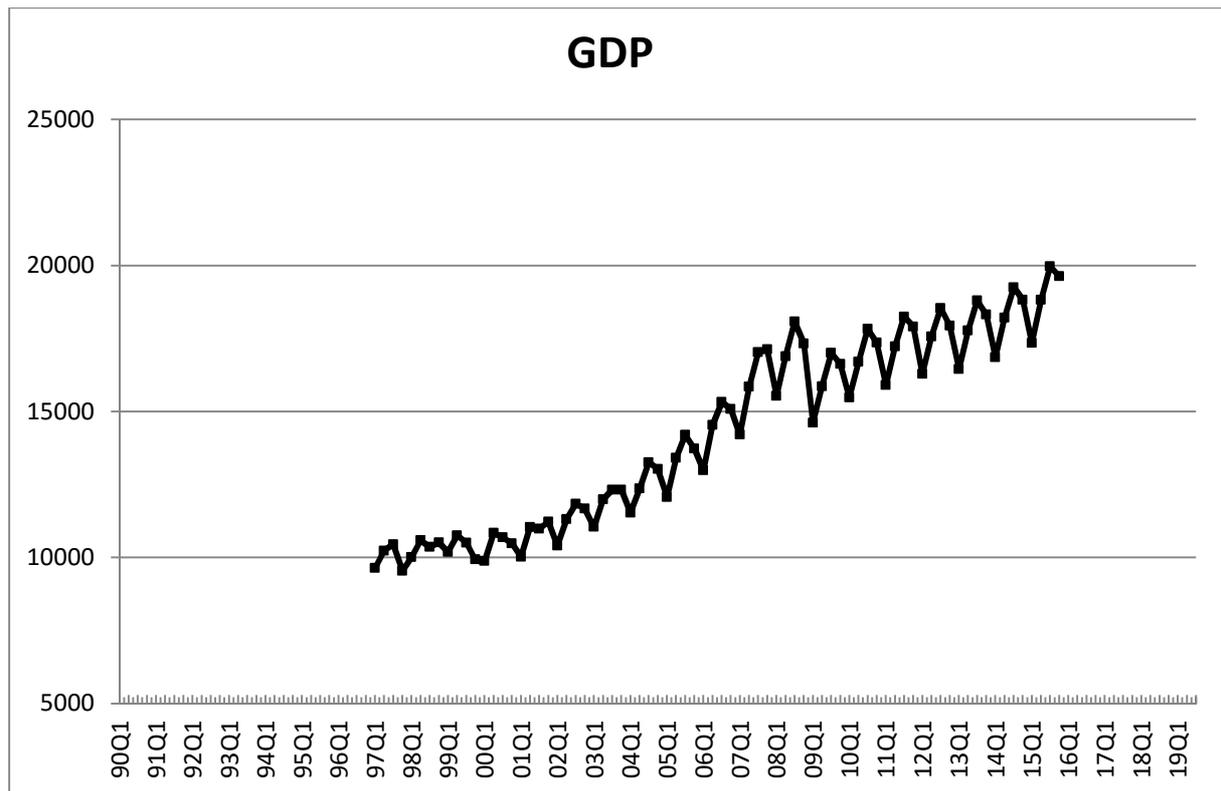


Fig. 16 Quarterly volume of GDP at constant 2005 prices

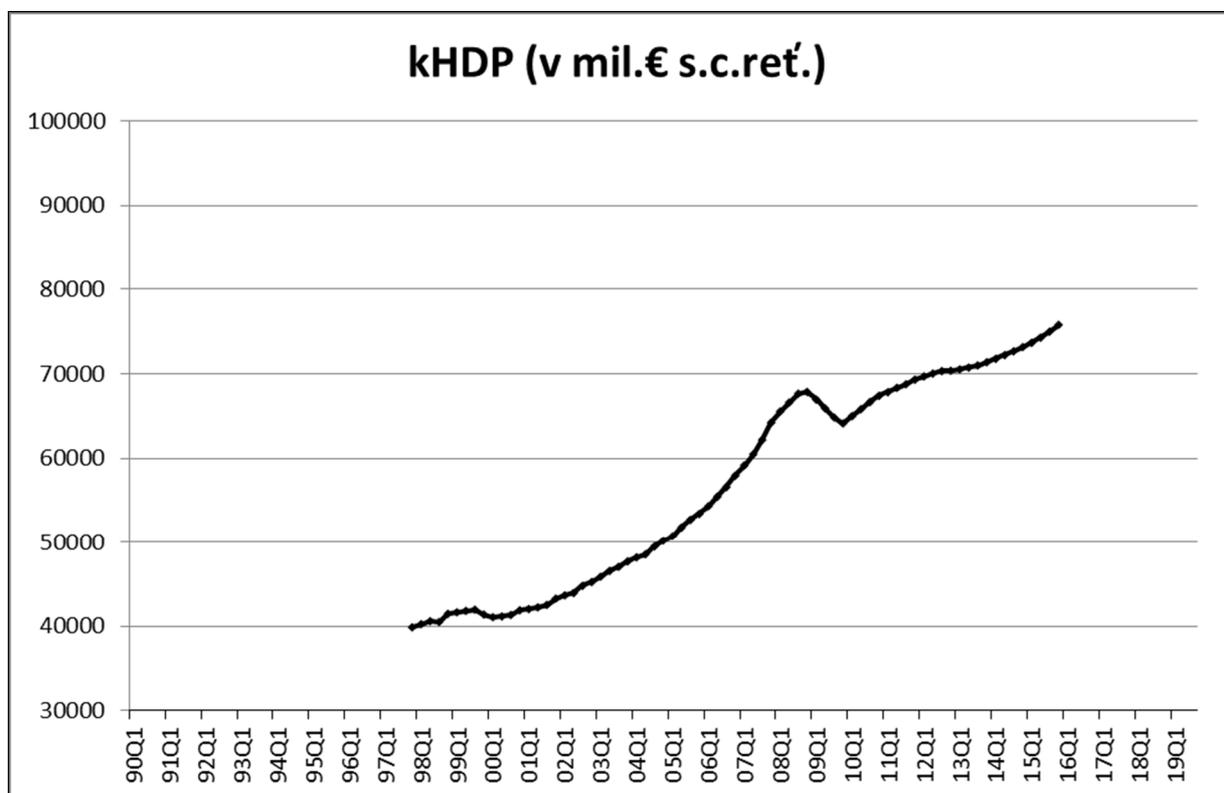


Fig. 17 The moving annual volume of GDP at 2005 constant prices

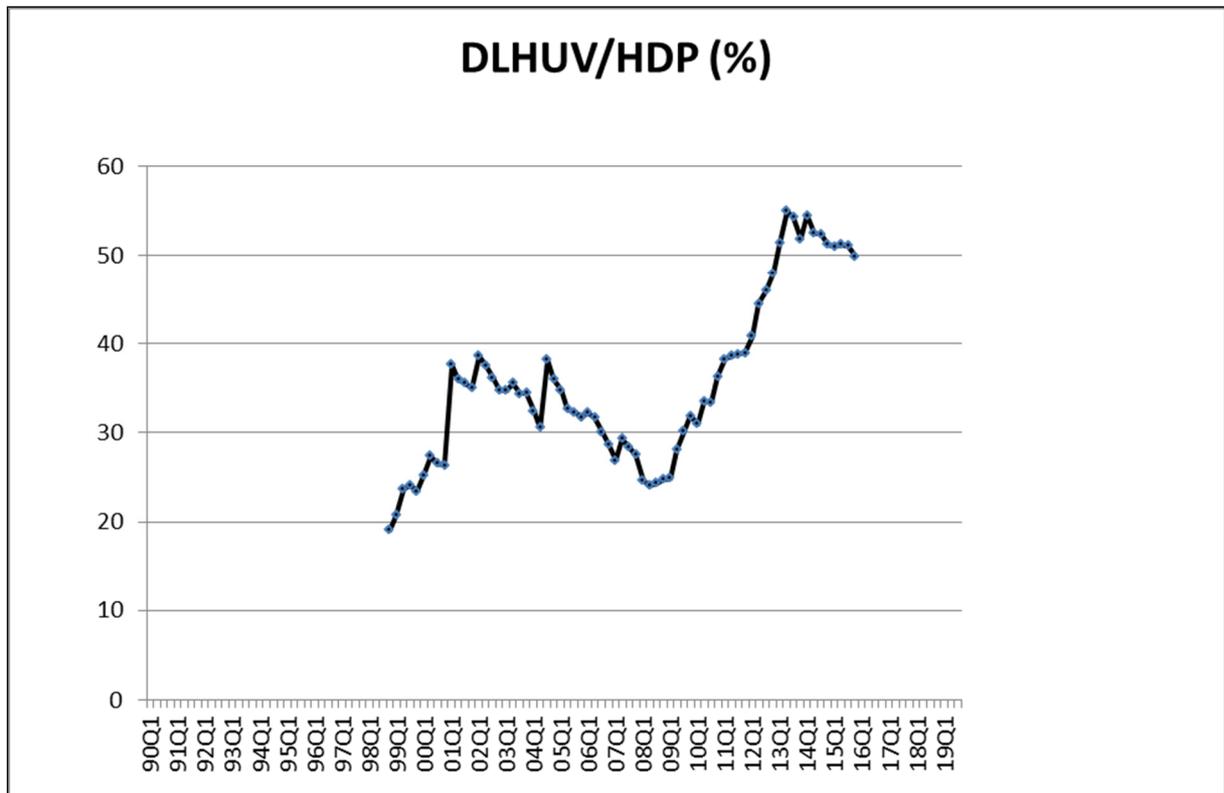


Fig. 18 The share of central government debt (Maastricht) to GDP (in %)

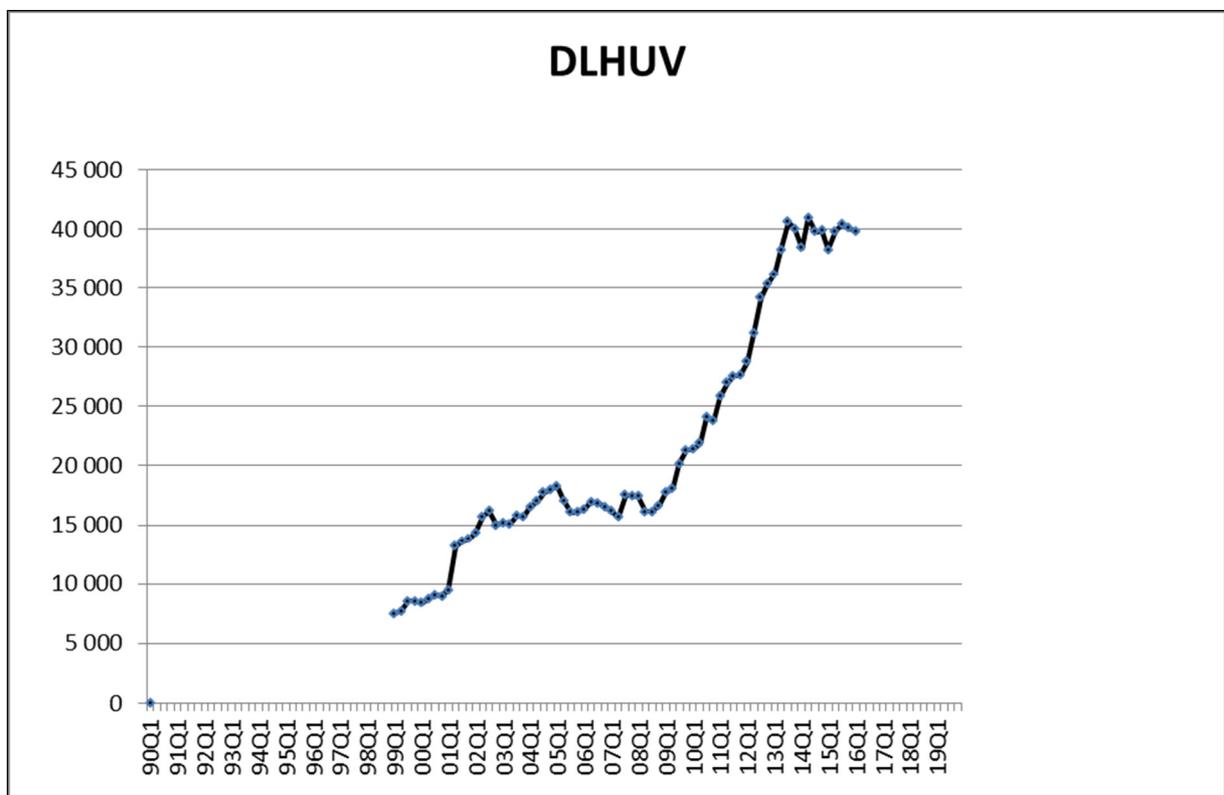


Fig. 19 Central government debt (Maastricht) (in bil. €)



Fig. 20 Average month salary of operative in the national economy



Fig. 21 Basis operative real salary index in the national economy



Fig. 22 Total number of unemployed



Fig. 23 Number of employed in thousands according General Labour Force Survey (GLFS, in Slovak VZPS)

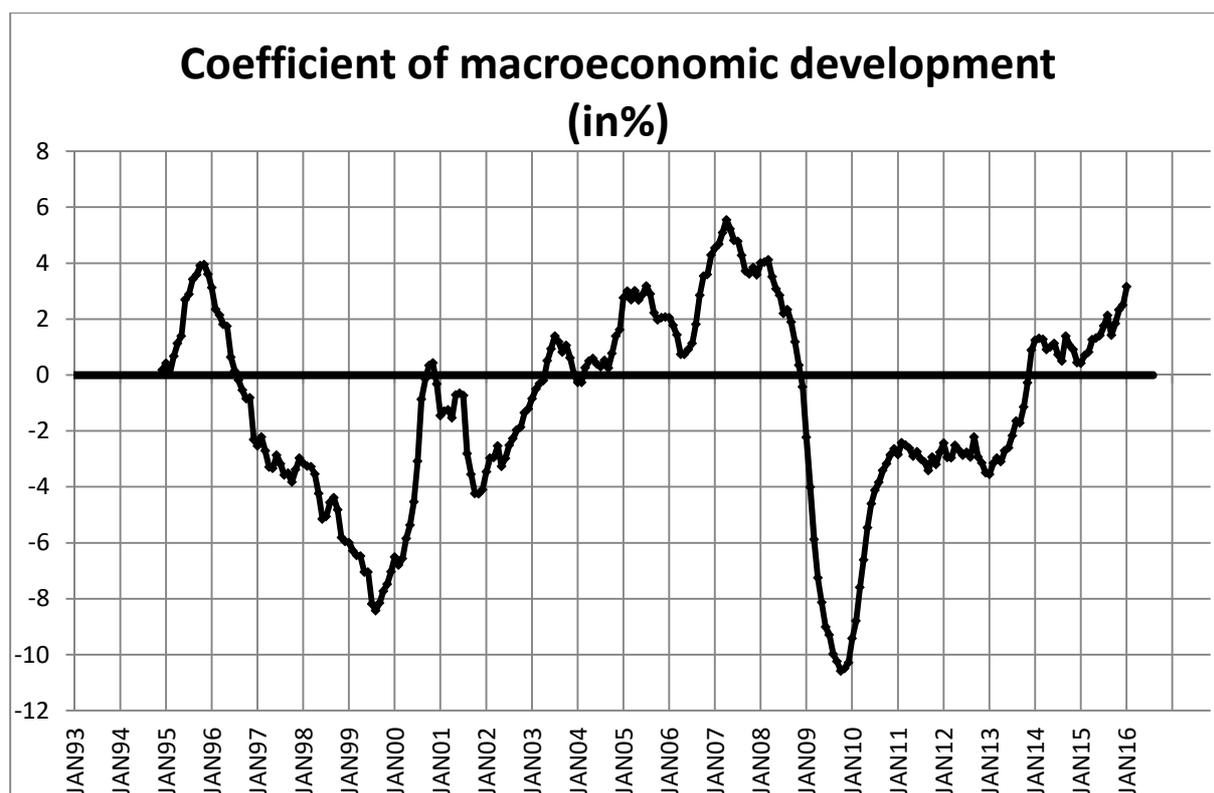


Fig. 24 KMV - Coefficient of macroeconomic development (in %)

Finally, Fig. 24 shows the monthly development of coefficient of macroeconomic development. The peak was reached in April 2007, the further only local maximum in January 2008 and from that moment the macro development measured CMD significantly deteriorates until October 2009. Next follows the turn of development. In the past year it is moving in positive numbers.

**Data source:**

EIS Slovensko, Statis, Bratislava

[www.statistics.sk](http://www.statistics.sk)

[www.nbs.sk](http://www.nbs.sk)

[www.finance.gov.sk](http://www.finance.gov.sk)

[www.upsvar.sk](http://www.upsvar.sk)

**Contact:** [chajdiak@statis.biz](mailto:chajdiak@statis.biz)

VEGA č. 1/0241/16

Big Data as a tool for prediction and design of socio-economic processes

## Development of the Slovak Economy in 2015 and Expectations for 2016

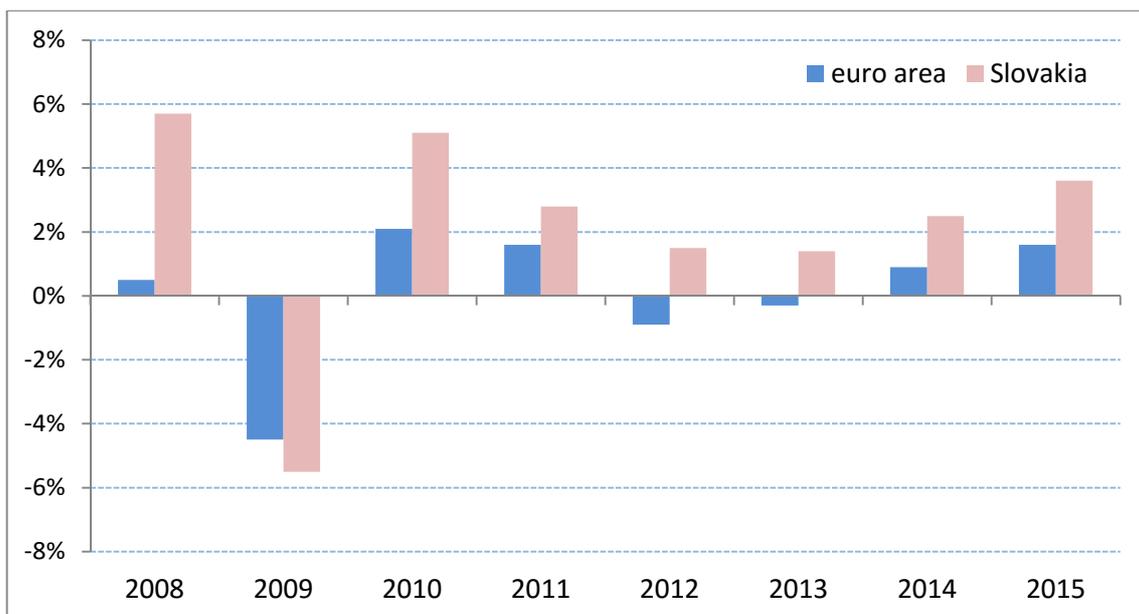
*Dr.h.c. prof. Ing. Rudolf Sivák, PhD.*

Vice-Rector, University of Economics in Bratislava  
Department of Finance, Faculty of National Economy  
University of Economics in Bratislava

Growth trend of the Slovak economy has been strengthening since early 2013 and such favorable developments continued in the year 2015 as well. Annual growth rate of real GDP has gradually accelerated from 2.9% in the first quarter to 4.3% during the fourth quarter of 2015. Quarterly seasonally adjusted growth rate has been oscillating around 1% during the whole year. For entire year 2015, the Slovak economy grew by 3,6 percent, which is notable acceleration in comparison with 2.5% GDP growth in 2014 and at the same time the fastest growth rate during last five years. In the aggregate, recovery of the Slovak economy appeared to be based on solid ground after deep recession in 2009. In the last quarter of 2015, real seasonally adjusted GDP was 11.4% higher in comparison with pre-crisis peak (4<sup>th</sup> quarter of 2008).

*Accelerating growth of the Slovak economy* corresponds to strengthening recovery in the Euro-area, which is key export market for Slovakia. Economic growth of the European monetary union (EMU) in 2015 accelerated from 0.9% to 1.6%. Real GDP growth rate of Slovakia was in 2015 two percentage points higher in comparison to EMU, which is equivalent to average long term difference between growth rates of the two entities.

*Figure 1: Real GDP Growth in Slovakia and Euro Area*

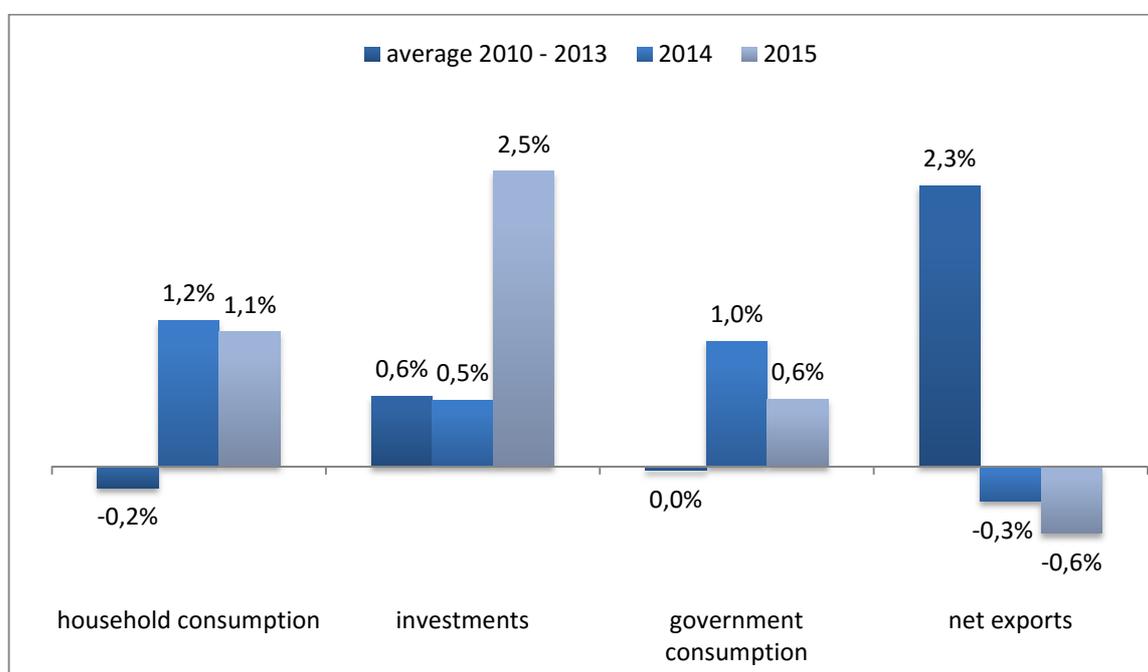


Source: Eurostat

Another noteworthy process regarding GDP growth has been continuing in 2015. Figure 2 documents this *process of changing structure of GDP growth sources*. During years consecutive to global financial crisis net exports dominated over other demand components. Among domestic sources, only investments had been contributing positively to GDP growth during years 2010 – 2013. A change occurred in 2014, followed by even more robust positive contribution of domestic demand and negative contribution of net exports during 2015.

Negative contribution of net exports to GDP growth in Slovakia may appear surprising in the context of stronger growth in Euro-area and other important trading partners (especially Visegrad countries). In fact, real exports of Slovakia grew by 7% in 2015, which is almost double the growth rate achieved in 2014 (3.6%). Hence, stronger growth of key export markets had been passed to the value of Slovak exports. However, trade balance surplus (i. e. net exports contribution as well) has in comparison with previous year declined by 465 million euro due to accelerating growth of imports (8.2% annually). Such strong growth of imports corresponds to dynamics of domestic demand. Total domestic demand in 2015 grew by 4.9%, i. e. the fastest growth rate since pre-crisis year of 2008.

*Figure 2: Contributions of Main Demand Components to Total Real GDP Growth in Slovakia*



Source: Author's calculations, Statistical Office of the SR

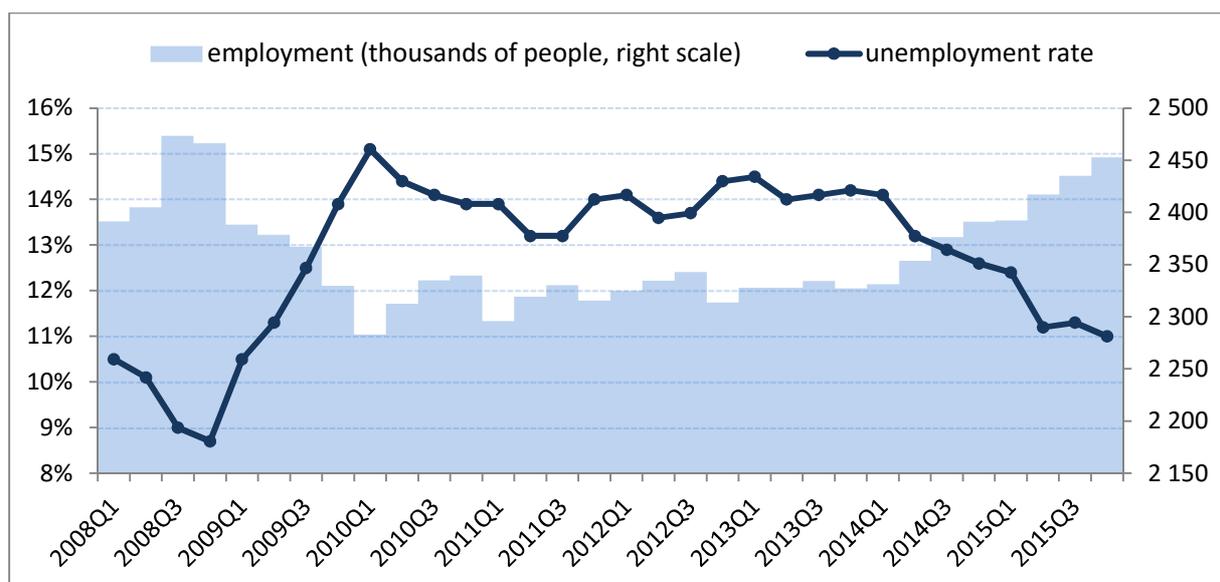
GDP growth decompositions presented above shows that strongest factor behind the acceleration of Slovak economy was growth of (gross) investments. In 2015, investments contributed with 2.5 percentage points to total GDP growth

of 3.6%. Within investments, main contributor of growth were investments made in transport infrastructure. Engineering construction (i. e. part of total construction output where transport infrastructure belongs) grew annually by 57% or 696 million euro, which is equivalent to 0.9% of GDP. Thus, acceleration of engineering construction created as much as one quarter of the total GDP growth in 2015. Jump in infrastructure investments was very likely fueled by accelerated financing from EU funds in 2015, which is probably not going to recur in coming years.

Total domestic construction output in Slovakia grew by 18.5%, which is fastest growth rate of construction output since independent Slovakia exists (1993). At the same time, growth in construction output had cut negative series of six consecutive years (2009 – 2014) of decline. Year 2015 was positive also for Slovak industrial sector. Industrial production grew by 6%, i. e. fastest in last three years.

Developments in *labor market reflected positive trend of the whole economy*. During last quarter of 2015, the unemployment rate<sup>1</sup> dropped to 11.0%, i. e. in comparison with corresponding period of the previous year declined by 1.6 percentage points. Total employment in final quarter of 2015 reached 2,45 million euro, which is annual growth of 62 thousand people. Figure 3 shows that unemployment rate reached its lows, respectively employment reached its peak since recession in 2009. Slovak labor market had been lagging the GDP recovery for quite some time, but since half of 2014, main indicators point to strengthening of favorable developments of the labor market.

*Figure 3: Total employment and Unemployment rate in Slovakia*



Source: Statistical office of the SR

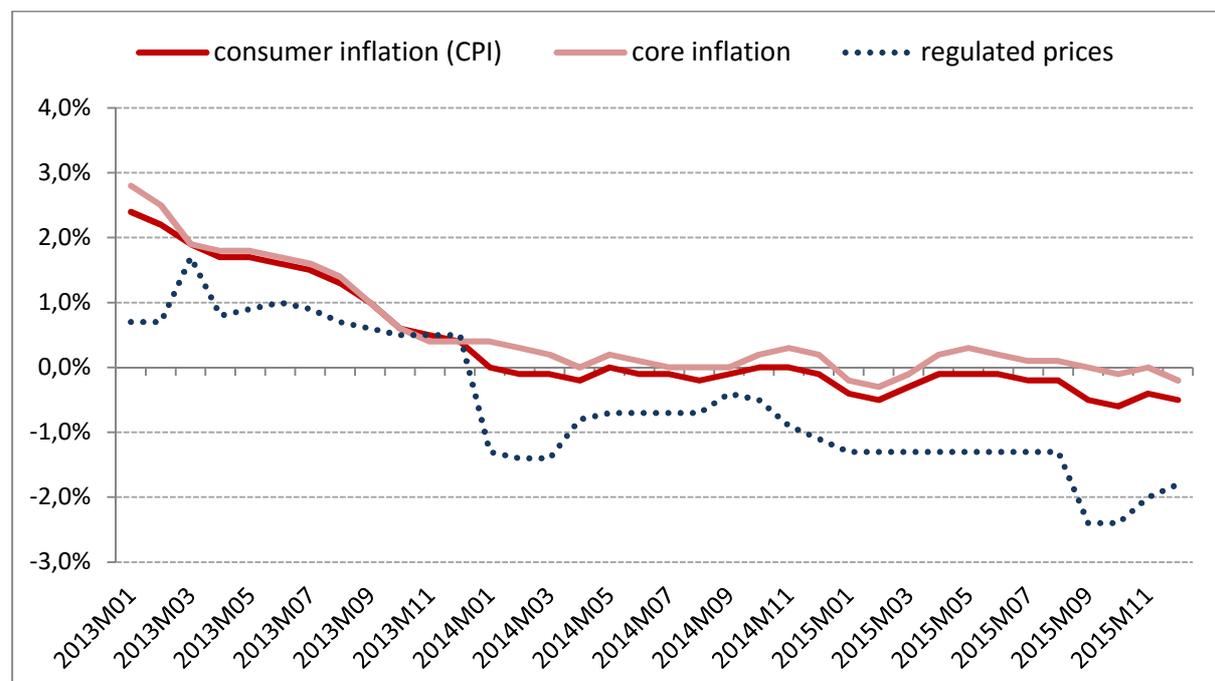
<sup>1</sup> According to Statistic Office method (i. e. not Ministry of Labor)

*Strong growth of real wages* continued in 2015, though at somewhat softer rate in comparison with previous year. The reason behind slight deceleration of real wages growth is slower growth of nominal wages (2.9% vs. 4.1%). However, very low inflation caused real wages grew quite strongly regardless deceleration of nominal growth. Put together, average real employee compensation grew by 3.2% in 2015 (in comparison with 4.2% in preceding year). In last two years, real wage growth in Slovakia has been approaching previous cyclical peaks reached during pre-crisis years 2006 – 2008. Growing employment and real wages were, on the other hand, fueling recovery of household consumption shown in figure 2.

Very characteristic point of Slovak economy in years 2014 and 2015 was *extraordinary low inflation rate*. For the whole year of 2015, annual rate of inflation dropped to -0.3%, according to both CPI and EMU-compliant HICP. Compared to 2014, negative consumer price inflation in Slovakia has deepened by 0.2 percentage points. Indeed, extremely low inflation could be viewed even positive from some (particularly consumers') point of view. But, regarding current inflation rate is quite distant from inflation target of 2%, from the policy perspective it means threat to price stability. Core inflation averaged 0.0% during 2015, which is again lowest in the history of independent Slovak Republic.

Declining average consumer prices during 2015 have been mirrored in every important component of consumer basket. Food prices declined by 0.3%, housing and related energies were cheaper by 1.0% and regulated prices dropped by 1.6%. Among significant components of the consumer basket, the sharpest price decline was in transportation (6.2%). Declining consumer prices in Slovakia continued to reflect mainly external factors, namely general and sharp decline in commodity prices. According to IMF commodity indices, dollar prices of energy commodities declined by 45%, food commodities prices declined by 17% and industrial input prices declined by 19% during 2015. Given declining commodities prices, extremely low inflation has been a global phenomenon since 2014.

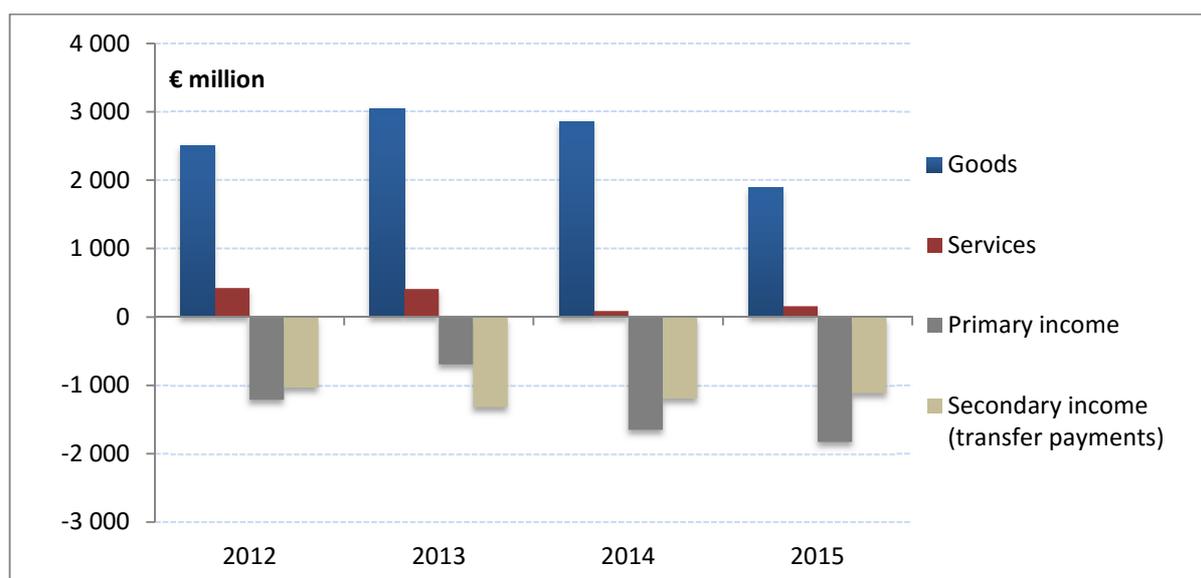
**Figure 4:** Consumer price developments in Slovakia (annual – YoY rate of change)



Source: Statistical Office of the SR

From the perspective of external financial flows, the Slovak economy deflected slightly from balanced state of 2014. *Current account deficit* reached 897 million euro in 2015 which is equivalent to 1.1% GDP. Current account of Slovakia ended in deficit for the first time since 2011 (-3 500 million euro at that time) while historically largest current account surplus was reached in 2013 (1 450 million euro). As shown on figure 5, successive worsening of external balance of the Slovak economy is caused mainly by declining trade surplus and rising income outflow (mainly due to FDI's profit repatriation). During year 2015, trade balance surplus declined by 970 million euro and primary income outflow rose by 179 million euro. Despite some worsening of external position, current account deficit of 1.1% GDP certainly does not pose significant risk for Slovak economy.

*Figure 5: Components of Slovakia's Current Account (net amounts)*



Source: The National Bank of Slovakia

### *Summary and assumptions for year 2016*

During 2015, economic developments in Slovakia were dominated by positive elements. Domestic demand rose at its fastest rate since 2008. Acceleration of GDP growth by 1.1 p. p. to 3.6% was supported by strong growth of investments, which in turn creates rather positive prospects to the future. After lagging first phase of post-recession recovery, labor market during started to reflect more tightly the improving economic reality during last couple of years. Rising employment and employee compensations have been fueling rebound in household consumption dynamics. Current very low inflation rate is quite distant from inflation target of 2% so from the policy perspective it means

threat to price stability. However, given declining commodities prices, extremely low inflation has been a global phenomenon since 2014. During 2015, main indicators of external position of the Slovak economy (net exports, current account) worsened slightly.

It's quite reasonable to expect that solid GDP growth rate around 3.5% will remain the case of Slovakia in 2016 as well. Basic effects of extraordinary public investments in infrastructure during 2015 will push against even stronger growth that would be otherwise probable. On the other hand, private investments are set to accelerate due to investments in automotive sector and thus, to at least some extent, substitute expected weaker public investments. Improving labor market should further support domestic demand recovery. Global financial market swirls in August 2015 and January 2016 (mainly reflecting fears of sharp growth deceleration of China) appear not to have significant impact on real economy of key export markets. External environment could thus create quite favorable conditions for continued economic growth in Slovakia. Inflation development will be once again dominated by external factors and key energy commodities appear to have bottomed out during first quarter of 2016. However, consumer inflation in Slovakia should stay at very low levels, below 1%, for the whole year 2016.

## **Concept of the European carbon tax as a possible part of Slovak presidency of the Council of EU**

*Viliam Páleník<sup>2</sup>*

Slovak Republic will take over the presidency of the Council of the European Union from the Netherlands in the second half of 2016. Slovak officials approved the Programme basis for its presidency in February 2016[3]. The priorities include employment, competitiveness, the single digital market, protection of citizens and the energy union.

Slovakia will in particular support the strengthening of Economic and monetary union and the increase of competitiveness. High on the agenda will be also the annual EU budget for 2017 and building of Capital markets union. Another important topic will be alleviation of obstacles for digital economy, an easier use of electronic services and its general availability and an increased protection for consumers.

Slovakia's representatives want to focus on sustainable migrant and asylum policies during its forthcoming presidency. Such policies should be based on the protection of the external borders of the EU's visa-free Schengen zone and re-establishment of the zone's full functioning after several member states reintroduced border checks to stem the flow of migrants. The main focus is on a positive agenda, i.e. a set of regulations about intelligent borders aiming to tackle illegal immigration and speeding up the processing of passengers using the latest technology. In terms of the programme and priorities on which Slovakia should focus it is vital that extension of the EU or the Eastern Partnership are not forgotten during emotional debates about the migration crisis.

Although the government of SR will officially introduce its program and priorities for the Slovak presidency in June 2016 [4], it's more than expected that the priorities will reflect a standard European agenda bound to be completed in the second half of the year.

### **Employment, growth and competitiveness union**

Another important topic is the Employment, growth and competitiveness union and so-called mid-term review of the Multi-annual financial framework (MFF) for the EU lasting from 2014 until 2020. The main question is whether

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<sup>2</sup> This work was prepared as a part of the project APVV-0371-11 „Inkluzívny rast v stratégii Európa 2020 – naivita alebo genialita?“

EU sources are sufficient, allocated to right priorities and the area of own resources. The European Commission aims to prepare a change in the system for constituting the EU's traditional own resources and own resources based on VAT and GNI (i.e. the maximum amount of interests for any delay in enabling of own resources, requiring another twelfths of sources based on VAT and GNI in advance, exemption from financial responsibility in certain cases and a negative interest running of deposits on the account of own resources). Next chapter is focused on a possible alternative of an essential change of EU own resources<sup>3</sup>

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<sup>3</sup> Following parts were created by shortening of the original article [1], where you can find more information and arguments

### **High level group on EU own resources**

The high level group chaired by Mario Monti was created to look into the reform of EU own resources, since it is essential to fashion a new concept of the own resources system and to do so as quickly as possible. This publication is meant to support this activity and to bring an added value to the work of high level group.

The High Level Group on Own Resources' First Assessment Report shows that the current scheme is unclear and complicated, with the desired results not being achieved in a number of assessment criteria. Moreover, the list of countries receiving rebates and corrections under the current system is expanding, meaning they contribute less to funding the budget. With the system set up as it is, we shall end up with discussions on the budget being more about Member States seeking to minimize their contributions.

Difficulties in negotiations on the Multiannual Financial Framework 2014–2020 were also behind the establishment of the high level group, which is tasked with preparing a change in the system for constituting the EU's own resources that will help boost the budget's true economic potential. The idea is for the group to continue the Commission's work in putting together the EU budget.

There are the conclusions reached by the Commission and discussed by the Council during work on the Multi-Annual Financial Framework 2014–2020 among the main tasks the group has addressed. These conclusions contain the following three elements desirable for a new own resources system: simplification of Member States' contributions, presentation of a new own resources system and reform of the corrections system

### **Criticism of the present own resources system**

Criticism of the current own resources system comes mostly from the European Parliament, the Commission, the Court of Auditors and the EESC. The main problems can be broken down into four points:

1. The current own resources system is too complex and lacking in transparency, especially regarding contributions from gross national income and harmonised value added tax. In particular, the latter should be replaced by a version that is simpler, better targeted and easier to collect. The reason is that the harmonised value added tax is not in fact a tax, but an artificial calculation modelled on a situation in which such a tax did exist. Its actual introduction would entail high administrative costs for tax payers and tax offices that would not be offset by the benefits for economic growth – quite the contrary, in fact.

2. Own resources do not originate with the EU, but are in fact contributions from national budgets that account for as much as 83% of the European budget (2013). This situation has been snowballing since 1988, when the contribution based on gross national income was introduced. Another adverse consequence of its introduction was that Member States started to be divided into either net

contributors or net beneficiaries. If funds from the European budget are not used efficiently, suspicions grow as to the need for such a budget.

3. National fiscal deficits also lead to more contributors making late payments into the budget, as the Commission has noted. A system which permits payment delays is incompatible with the multiannual financial framework, in which expenditure is planned and guaranteed in advance. Delay in payments from Member States also puts pressure on the EU budget, which might not then be able to fulfil its obligations. Added to this, there are increasing calls for further corrections for Member States in arrears.

4. Reforming the own resources system requires the agreement of all Member States. This is also a reason why it has not happened earlier. Previous attempts to significantly rewrite the rules have been unsuccessful. When the matter is discussed in national parliaments, decision-makers at national level often only see how much is paid into the European budget, but do not see the benefits that EU policies bring to the people of Europe, find them inadequate – or, perhaps, rely on others paying. It is therefore important to clarify the system of own resources and systematically inform the public in the Member States about EU budget expenditure and its benefits for the European Union as a whole.

### **Proposals for new own resources**

The authors propose to analyse in a greater detail the concept of a new type of environmental tax that would have the following characteristics:

Taxing energy consumption and CO<sub>2</sub> emissions: the aim of the new tax is to combine environmental protection with a recovery in economic growth. It will tax products according to how much energy is consumed and CO<sub>2</sub> emitted in the production process, irrespective of whether all or part of that process is inside or outside the EU. Different tax rates will be established for several dozen product groups. These tax rates will be determined on the basis of an input-output analysis for the entire production process of a sample product. End use of goods and services on the European market will be taxed. Exported goods and services will not be taxed. In keeping with the principle of fiscal neutrality, costly or administratively demanding environmental protection requirements will be abolished and/or taxes on labour will be reduced. The effects will be:

- Cutting costs for companies will make them more competitive on domestic and foreign markets, enhancing opportunities for growth in domestic production and, consequently, employment and GDP.
- European companies will be able to compete fairly with non-European competitors, with the principle of a level playing field for all applying, so there will be no incompatibility with WTO rules.
- The introduction of environmental levies will make environmentally unfriendly products relatively more expensive and

environmentally friendly ones relatively cheaper, which will change consumer behaviour for the better with regard to environmental protection.

- Fiscal neutrality means no increase in absolute prices of European products.
- Introduction of the tax will probably push up absolute prices of imported goods, meaning that importers will pay a significant part of the own resources.
- Improved growth and higher employment levels will more than offset the increase in the prices of imported products caused by the environmental tax.
- The extra economic growth will generate additional tax revenues, which will help make the tax acceptable to the Member States.

#### **Simultaneous reduction in costs for business:**

It is also suggested to abolish or reduce taxes, charges and other costs of business in the EU, in order to support business. It is also advised that the Commission compiles a quantified list that sets out a volume of funding sufficient to compensate for the loss of revenue once the new tax has been introduced, so that fiscal neutrality is achieved – for example, excise duty on mineral oils, carbon credits and reduced social security and tax burdens on employment.

In reducing costs for producers, key sectors of the European market could be targeted that are heavily regulated, putting these producers at a disadvantage compared with their worldwide competitors. Studies (Egenhofer, C. et al, 2013) suggest, for example, that reducing the price of energy in the steel industry would have a strong impact on production.

#### **Conclusions and recommendations**

Since the current situation of the EU's own resources is unsatisfactory, it is the matter of the general consensus that there is a need for a thorough reform. If done properly, a change to own resources would mean that Article 201 of the Treaty of Rome would actually be implemented for the first time. This is not, in fact, what has been happening so far, since the EU budget is still largely made up of Member State contributions.

The creation of the high level group tasked with preparing a change to EU own resources is widely appreciated. Own resources as they stand are unclear and complicated. Moreover, a growing number of Member States are receiving corrections and rebates – confirmation that wealthier countries are shouldering a disproportionate burden in financing the EU budget. In fact, the gross national income component, which makes up the bulk of the EU budget, is not actually

an own resource as such, but a contribution from the budgets of the Member States. Moreover, this share is constantly increasing. This is why it is essential to work together on the following tasks: simplifying the system of contributions and payments for Member States, presenting a new own resources system and reforming the corrections system.

The new own resources system should meet the following criteria: equity and fairness, efficiency, stability, transparency and simplicity, accountability and budgetary discipline, focus on European added value, subsidiarity and fiscal sovereignty, and limits on political transaction costs.

It is found appropriate to introduce the European carbon fee, the concept of the new environmental tax. It would be based on taxing the end consumption according to how much energy is consumed and CO<sub>2</sub> emitted in the production process, irrespective of whether all or part of that process takes place inside or outside the EU. In line with the principle of fiscal neutrality, all European producers would receive compensation in the form of abolition or reduction of certain charges and taxes.

One potential effect of introducing a new environmental tax is that European businesses would then compete on a level playing field with non-European competitors. It would also make environmentally unfriendly products relatively more expensive and environmentally friendly ones relatively cheaper.

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<http://ekonom.sav.sk/sk/publikacie/-p31-6>[2] HIGH LEVEL GROUP ON OWN RESOURCES (2014): First Assessment Report. Brussels, 48 p.

Electronic sources:

[3]

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[4]

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## **European tax as an EU own resource**

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The presentation is based on study “Analysis and quantification of a new fiscally neutral European tax” carried out by Industriewissenschaftliches Institut (IWI) jointly with Peter Luptacik and following a call for tenders launched by the European Economic and Social Committee. The information and views set out in this study are those of the author(s) and do not necessarily reflect the official opinion of the European Economic and Social Committee. The European Economic and Social Committee does not guarantee the accuracy of the data included in this study. Neither the European Economic and Social Committee nor any person acting on the Committee’s behalf may be held responsible for the use which may be made of the information contained therein.

The study is available at the homepage of European Economic and Social Committee (EESC):

<http://www.eesc.europa.eu/?i=portal.en.publications.38639>

### ***1. Introduction***

The budget of the European Union is financed by own resources, other revenue and the surplus carried over from the previous year. According to the First Assessment Report of the High Level Group on Own Resources (Brussels, 17 December 2014) own resources are defined as “revenue accruing irrevocably to the EU in order to finance its budget without being conditional to a decision by national authorities”.

Current Own Resources Decision defines 1,23 % of the Gross National Income (GNI) as of the EU as the ceiling of own resources. Criticism of the present system is coming primary from the European Parliament and the Commission, the Court of Auditors and the European Economic and Social Committee (EESC) initiate the discussion on this system by considering new types of own resources that would change the current way of funding the budget of the EU.

The study contributes to the discussion on the new European tax or fee, which would be based on taxing end consumption (taxing the products and not the production) according to how much CO<sub>2</sub> is emitted during the production of particular commodities, irrespective of whether all or a part of this process takes place inside or outside the EU. In line with the principle of fiscal neutrality, consumption in the form of reduction of labour costs should be taken into account. Due to this principle, the prices for products with relatively high CO<sub>2</sub> content will increase whereas prices for products with lower CO<sub>2</sub> content will

decrease and as a result the environmentally friendly behaviour of consumers can be supported.

- the current own resources system is too complex and lacking in transparency, especially regarding contributions from gross national income and harmonised value added tax.
- own resources do not originate with the EU, but are in fact contributions from national budgets that account for as much as 83 % of the European budget in the year 2013.
- national fiscal deficits also lead to more contributions making late payments into the budget, as the Commission has noted
- reforming the own resources system requires the agreement of all Member States.

One proposal of the EESC is to tax energy consumption and/or CO<sub>2</sub> emissions generated through the entire production chain. End use of goods and services on the European Market will be taxed. Exported goods and services will not be taxed in order not to burden domestic producers when exporting to third countries.

The introduction of an EU environmental tax along these lines will lead – through cost push effects – to changes of relative prices in favour of environmentally friendly produced goods and services and in this way to increasing environmental protection. The following question arises: having data on emissions generated – directly and indirectly – by the production of particular products, how to estimate the charge for one tonne of CO<sub>2</sub> in order to generate revenue for the EU budget in the amount of 1 % GNI?

Taking into account the requirement of fiscal neutrality e.g. by reducing the labour cost, the next question is coming up: which reduction of labour cost is needed in order to compensate the higher cost caused by introducing a product-specific CO<sub>2</sub> tax? Depending on the availability of data different possibilities of the combination of energy and CO<sub>2</sub> tax and of the reduction of other taxes, charges and other costs can be considered.

## ***2. Methodology***

Competitiveness of an economy is not given by simple adding of the activities of the particular industries, but by the complex relationships between them is argued in the study of the European Commission in 2005. In order to analyse the relationships between the industries in the economy we need data on their outputs (goods and services) and intermediate outputs (goods and services from other industries) as well as about primary inputs (imports, labour and capital and production taxes net). Such data is collected in the account-system of the national accounting – make and use system – as a system of interlinked commodity and production accounts.

### 2.1 Input-Output modelling of environmental impact

Using data from NAMEA system and the input-output tables the total emission coefficients (CO<sub>2</sub> multipliers) can be estimated:

$$r_e = a_e(I - A)^{-1} \quad \text{where } (I - A)^{-1}$$

is the Leontief matrix.

They describe the CO<sub>2</sub> emissions generated by production of one unit of particular commodity delivering for final demand.

Knowing the total CO<sub>2</sub> requirements per unit of commodity and the amount of final demand the CO<sub>2</sub> emissions can be estimated:

$$e(CO_2) = \underline{r}^e \underline{y}_D$$

where  $\underline{y}_D$  denotes final demand excluding exports, according to the requirements on the EU tax (no taxation of goods and services exported from the EU).

The CO<sub>2</sub> tax rate bringing 1 % of GNI of EU can be calculated from the following equation:

$$1\% \text{ of GNI} = t \times e(CO_2)$$

$$t = \frac{1\% \text{ of GNI}}{e(CO_2)}$$

### 2.2 The Leontief price model

Denoting the base year index prices by  $p_j$  and  $p' = (p_1, p_2, \dots, p_n)$  the Leontief price model (cost-push) can be written as:

$$p' = p'A + a'_w$$

For given value added coefficients  $a_w$  the index prices for products can be estimated:

$$p' = a'_w(I - A)^{-1}$$

The logic is that changes in the prices of a primary factors of production lead to changes in unit costs and therefore output prices via the fixed production recipes in  $A$ .

### 2.3 Compensation mechanism

Let us denote the vector of compensation of employees which is made up of the following components (ESA 2010, 402)

- a) wages and salaries
- b) employers' social contributions

by  $\underline{w} = (w_1, w_2, \dots, w_n)$ ,  $w_j = (j = 1, 2, \dots, n)$  denotes the compensation of employees needed for the production of commodity  $j$  in a given year. The total amount of the compensation is given by

$$w = \sum_{j=1}^n w_j$$

The following question arises: how the compensation of employees should be changed such that the total amount of fiscal revenue generated by reducing of labour cost is equal to the fiscal revenue generated by CO<sub>2</sub> taxes (or 1 % of GNI)?

$$1\% \text{ GNI} = t_w w$$

$$t_w = \frac{1\% \text{ GNI}}{w}$$

where  $t_w$  is the rate of reducing the compensation of employees.

A reduction of labour cost – e.g. by lowering employers' social contributions – increases the competitiveness of firms and consequently can promote labour demand and increase employment. The reduction of the labour cost by reducing taxes on labour increases the net income of employees and stimulates consumer demand and subsequently promotes the economic growth.

The condition on fiscal neutrality on a European tax as an EU own resource can be described by the following equation:

$$t_e \underline{r}^e \underline{y}_D = t_w \underline{r}^w \underline{y}$$

where  $\underline{y}_D$  is the final demand excluding exports (as required in the conditions for the determination of the CO<sub>2</sub> tax rate). The rate  $t_w$  by which the total amount of fiscal revenue generated by the imposing CO<sub>2</sub> tax  $t_e$  will be compensated can be estimated as:

$$t_w = t_e \frac{\underline{r}^e \underline{y}_D}{\underline{r}^w \underline{y}}$$

As can be seen the reduction rate must be higher with a higher ratio of final demand excluding export and with higher total emission coefficients.

### 3. Empirical analysis

We use the symmetric input-output table for EU-27 for the year 2011 and the matrix of input coefficients in the dimension commodity  $\times$  commodity including imports (as required for the production of commodities it is irrelevant whether all or part of this process takes place inside or outside the EU) and the direct emission coefficients provided by Eurostat.

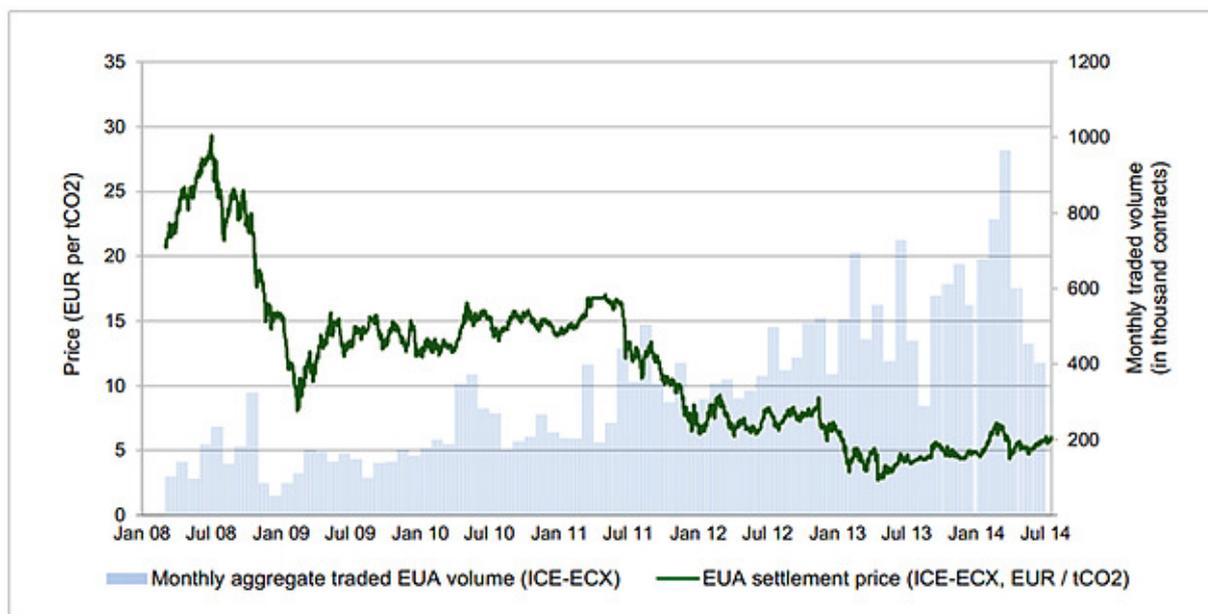
The highest CO<sub>2</sub> emission show *electricity, gas, steam and air conditioning, air transport services, other non-metallic mineral products* with more than 1 kg of CO<sub>2</sub> emission per euro of production.

### 3.1 Estimation of the CO<sub>2</sub> tax rate

Using the input-output table for EU-27 (Version A – including imports) for the year 2011 the tax rate yielding 1 % of GDP (using as proxy for GNI) is given as follows:

Total CO <sub>2</sub> emissions generated through final use including imports (excl. exports) (in 1000 tonnes)	GDP of EU-27 in million euros	1% of GDP in million euros	price per tonne CO <sub>2</sub> in euros
3.112.995	12.667.016	126.670	40,69

*The change of the price of emission certificates (2008-2014)*



Source: KfW & ZRW (2014) using Thomson Reuter Datastream

### 3.2 Cost push effect of the new CO<sub>2</sub> taxes

According to the Leontief price model in Section 2.2:

$$\Delta \underline{p} = \Delta \underline{k} (I - A)^{-1}$$

where  $\Delta \underline{k}$  denotes the change in the cost of primary inputs caused by introducing of CO<sub>2</sub> tax:

$$\Delta \underline{k} = t_e(CO_2) \hat{x}^{-1}$$

where  $\hat{x}$  is the diagonal matrix of the commodity outputs and  $\Delta \underline{p}$  describes the changes of the commodity prices:

$$\Delta \underline{p} = t \underline{a}^e (I - A)^{-1} = t \underline{r}^e$$

In accordance with economic intuition the price changes are determined by the total CO<sub>2</sub> coefficients (or requirements). Consequently, the highest cost-push effect can be observed for the products *electricity, gas, steam and air conditioning* (10,58 %), *other non-metal mineral products* (6,21 %), and *air transport services* with more than 5 %. Summarising the introduction of CO<sub>2</sub> taxes will lead to significant changes of the relative prices.

### 3.1 Fiscal neutrality of the new European CO<sub>2</sub> tax

The condition on fiscal neutrality on a European tax as an EU own resource has been formulated by the following equation:

$$1\% \text{ GDP (EU27)} = t_e \underline{r}^e \underline{y}_D = t_w \underline{r}^w \underline{y}$$

where  $\underline{y}_D$  is the final demand excluding exports (as required in the conditions for the determination of the CO<sub>2</sub> tax rate). The rate  $t_w$  by which the total amount of fiscal revenue generated by the imposing CO<sub>2</sub> tax  $t_e$  will be compensated can be estimated as:

$$t_w = t_e \frac{\underline{r}^e \underline{y}_D}{\underline{r}^w \underline{y}}$$

Using the input-output data for EU-27 for the year 2011 the reduction of the labour costs by -2,03 % will compensate the tax revenue generated by the CO<sub>2</sub> tax of 40,69 euros per tonne of CO<sub>2</sub> with a positive effect for the environment and the labour market.

$$t_w = \frac{1\% \text{ GDP}}{6.226.336} = \frac{126.670}{6.226.326} = 0,0203$$

Using the input-output data for EU-27 for the year 2011 the reduction of the labour costs by -2,03 % will compensate the tax revenue generated by the CO<sub>2</sub> tax of 40,69 euros per tonne of CO<sub>2</sub> with a positive effect for the environment and the labour market.

$$t_w = \frac{1\% \text{ GDP}}{6.226.336} = \frac{126.670}{6.226.326} = 0,0203$$

The **labour cost** (compensation of employees) **should be reduced by -2,03 %** in order to **match** the imposing of a **CO<sub>2</sub> tax of 40,69 euros** per tonne of CO<sub>2</sub>. This result is related to the average of all 27 countries of European Union and to the proportional reduction of wages and salaries as well as employers' social contributions by the same rate of -2,03 %.

The results of model computation show the decreasing prices for labour intensive products like *education services* (-1,64 %), *residential care services*;

*social work services without accommodation* (-1,58 %), *postal and courier services* (-1,53 %) and for the most products approximately by -1,0 %. In this way the price increasing effect of introducing the new CO<sub>2</sub> tax can be mitigated.

Due to lack of appropriate data and the time given for our disposal, we were not able to simulate the different scenario of this compensation mechanism. In any case, the decreasing labour costs would stimulate the demand for labour and contribute to decreasing unemployment rate, which with imposing of CO<sub>2</sub> tax supporting the improvement of environmental quality will result in “double dividend” (see the result by Conrad & Schmidt (1998)).

. The overall price taking into account simultaneously the introduction of CO<sub>2</sub> tax and the reduction of labour cost is described as follows:

$$\begin{aligned}\Delta \underline{p} &= (\underline{t}a^e - t_w \underline{a}^w)(I - A)^{-1} = \underline{t}a^e(I - A)^{-1} - t_w \underline{a}^w(I - A)^{-1} \\ &= \underline{t}r^e - t_w \underline{r}^w\end{aligned}$$

The results for the overall price effect show the decreasing prices for the labour intensive services like *education services* (-1,25 %), *employment services* (-1,19 %) and *residential care services*; *social work services without accommodation* (-1,10 %) and increasing prices of CO<sub>2</sub> intensive products like *electricity, gas, steam and air conditioning* (9,80 %), *other non-metal mineral products* (5,14 %) and *air transport services* (4,53 %). In this way the compensating effect of labour cost reduction is demonstrated.

The results show the mitigating effect of the compensation mechanism for the product prices, but the overall effect for the CO<sub>2</sub> emission intensive products is still significant. These are the products with higher labour productivity and lower compensation of employees compared to the above mentioned product and services with higher labour intensity and lower CO<sub>2</sub> emission content.

### ***Conclusions and recommendations***

- A tax rate of 40,69 euros per tonne of CO<sub>2</sub> emissions could have generated fiscal revenue in the amount of 1 % of EU GDP in the year 2011.
- A reduction of the labour costs by -2,03 % could compensate the introduction of a CO<sub>2</sub> tax by the amount of 40,69 euros per tonne of CO<sub>2</sub>.
- The reduction of labour costs leads to decreasing prices of labour intensive commodities and services and in this way mitigates the price effects generated by introducing the new CO<sub>2</sub> tax.
- Although such a change in the tax system would be neutral on the overall European level, the prices of the various products will be affected in quite different ways.
- The introducing of the new CO<sub>2</sub> tax and the simultaneous reduction of labour costs would lead to significant changes in commodity prices

between +9,80 % (*electricity, gas, steam and air conditioning*) and -1,25 % (*education services*) as results of this compensation mechanism.

- All the results are based on calculations for “Europe as a whole”. The results for different Member States might differ significantly from the “European average”.
- The introduction of a uniform tax rate in Europe will affect the Member States in a different manner.
- Compensation in the form of reducing the labour cost stimulates the demand for labour and increases employment. Positive effects for the environment as well as for the employment can be expected (“double dividend”).
- The key-factor for the intensity of the cost-push effect is the emission content of particular products. The way to mitigate the negative effect of introducing the CO<sub>2</sub> tax for the product prices is to promote technological innovations leading to decreasing emission intensity.
- The current study can be seen as a “feasibility study” which illustrates the high potential of input-output analysis to address such policy questions. The results provide orders of magnitude primary but show that more detailed analyses could contribute significantly to evidence based policy making.
- The study offers insight into some of the implications of moving towards a new European tax aiming at reducing negative environmental effects and lowering labour costs at the same time. The focus was on the very relevant “first round effects” of such a change. The effects induced by a reaction of producers and consumers to the changes in relative prices are not covered and require the development of more complex models, dealing with the economic effect of introducing a CO<sub>2</sub> emission tax.
- The study had to be carried out on the basis of not fully adequate statistical material. The following annex therefore contains a few proposals for future research.
- The analyses should be carried out on the basis of a data set:
  - A more up-to-date reference year
  - More disaggregated input-output tables taking into account different technologies for producing particular products with emphasis on product groups like electricity and specific products – with respect to environmental impact – like sugar, cement and others.
  - Symmetric tables derived on the basis of the product technology assumption.

## Macroeconomic performance of the Slovak economy in 2015 and its forecast for 2016

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*INFOSTAT Bratislava*

The paper contains a brief analysis of macroeconomic efficiency of the Slovak economy in 2015 (measured by real GDP growth), which is the basis for a forecast of its performance in 2016. The presented outlook considers the development of new orders in January 2016, the results of business tendency and consumer surveys (BTCS) from January to March 2016 and takes into account the current forecast of development in relevant external economic environment, i.e. in the euro area, Germany and the Czech Republic, which are the main trading partners of the Slovak Republic (SR). Development in this area should be within the forecast horizon a source of growth impulses for the Slovak economy, but probably weaker than last year.<sup>4</sup>

### *Performance of the Slovak economy in 2015*

The decline in optimism of economic subjects in the second half of 2015, reflected in the BTCS results, did not reverse the trend in the growth of Slovak economy. On the contrary, performance of economy increased in 2015 even more than was generally expected. Given that a significant factor of economic growth was drawing from EU funds, which in the Q3 and Q4 of the last year extensively accelerated, a significant increase in the dynamics of economic growth is not surprising. It can be assumed that the decline in optimism will be reflected in the growth of the Slovak economy with a certain time lag - mainly because the decline of economic sentiment indicator has continued in January and February this year.

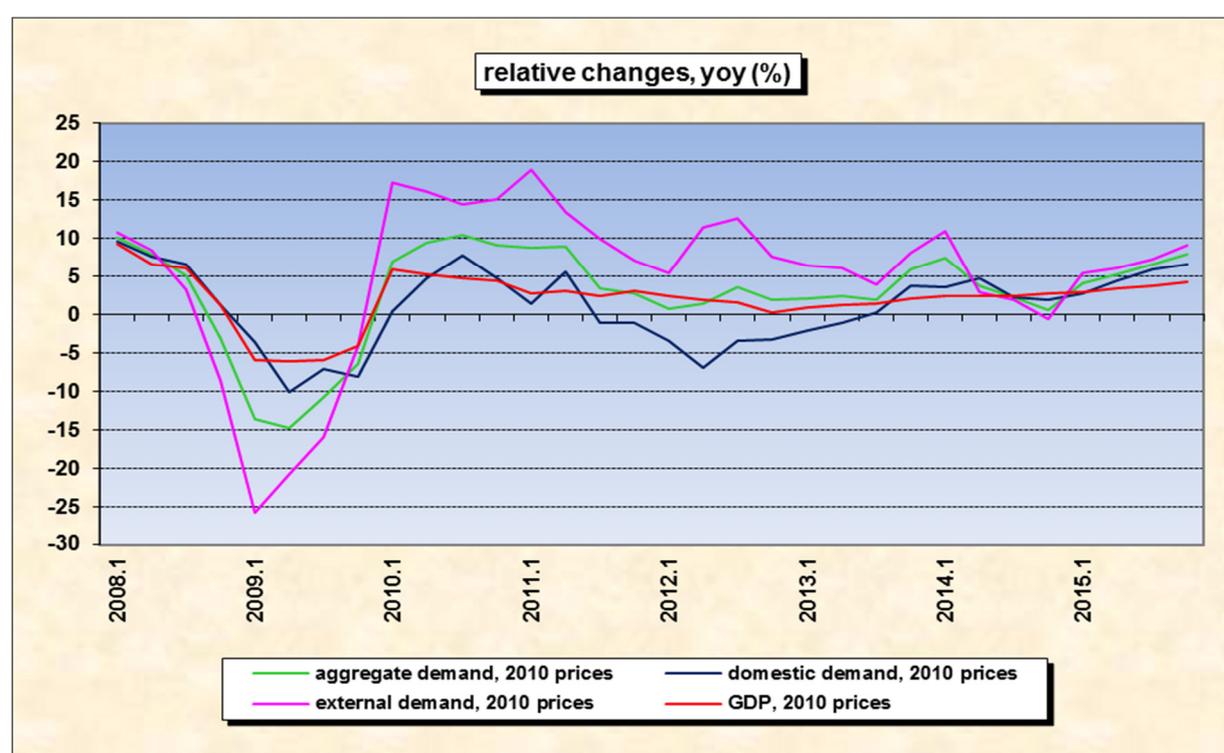
The real GDP increased by 3.6% in 2015, which is by 1.1 percentage point (pp.) more than in 2014. The acceleration of economic growth occurred for two

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<sup>4</sup> Monthly *Ifo* indicator (assesses business climate in Germany) shows a decline since December 2015 and in February 2016 it reached the lowest level since January 2015. The reason for this decline in last three months is mainly the deterioration of expectations for the next six months. Also ZEW index (assesses German analysts' expectations for the next six months) continued to drop in February. In the euro area index PMI (assesses the current state of the economy) and the economic sentiment indicator continued to decline. These signals correspond with the deteriorating outlook of the global economy seen in the quarterly *Ifo* indicator (assesses the economic climate in the world). Its decline has begun in the Q3 2015 and continued in the Q1 of this year which was also due to the impact of a deterioration of expectations. Deutsche Bank (DB) macro forecast, which was updated in March 2016, revised estimate of growth in the euro area economy and the German economy in 2016 downwards - in the euro area from 1.5% to 1.4% and for Germany from 1.9% to 1.7%. The latest version of the forecast EECF (Eastern Europe Consensus Forecast) from February 2016 shows that growth of the Czech economy is expected to slow down from 4.3% in 2015 to 2.6% in 2016.

consecutive years in a deflationary environment, which is a consequence of the continuing decline in the prices of industrial producers, consumer prices and the prices of exports and imports. The decline in export and import prices, which lasted for three years, slowed down on yearly basis (yoy) last year. On the contrary, the drop in both production prices in the industry and the consumer prices deepened. Ultimately, this also led to a deepening decline in the overall price level in the economy (measured by the GDP deflator) from 0.2% in 2014 to 0.3% in 2015 (on average). Thus the nominal GDP increased by 3.3% in 2015.

Premises for the growth of the economy have been created by aggregate demand whose growth accelerated during last year from 4.1% in Q1 to 7.9% in the Q4. Overall it increased by 6.0% (on average if compared to 2014), which is almost double comparing to its increase in 2014. It is also the highest increase of aggregate demand since 2010. This was due to the acceleration in the growth of foreign and domestic demand over the past year (Figure 1).



Source: Statistical Office of the SR

Figure 1

Acceleration of growth of external demand is reflected by the fact that growth in the volume of exports of goods and services increased from 3.6% in 2014 to 7.0% in 2015. This was mainly due to strong recovery of demand for new passenger cars in euro area and in countries outside the euro area in Q3 and Q4 2015. On the other hand, growth of domestic demand has increased from 3.0% in 2014 to 4.9% in 2015. As a result domestic demand got beyond the

level reached just before the crisis in 2008. However, it took seven years until it was exceeded, but only by about 2%. The volume of exported goods and services outperformed (due to growth of external demand) the 2008 level already in 2011, while it was exceeded by almost 40% in 2015<sup>5</sup>.

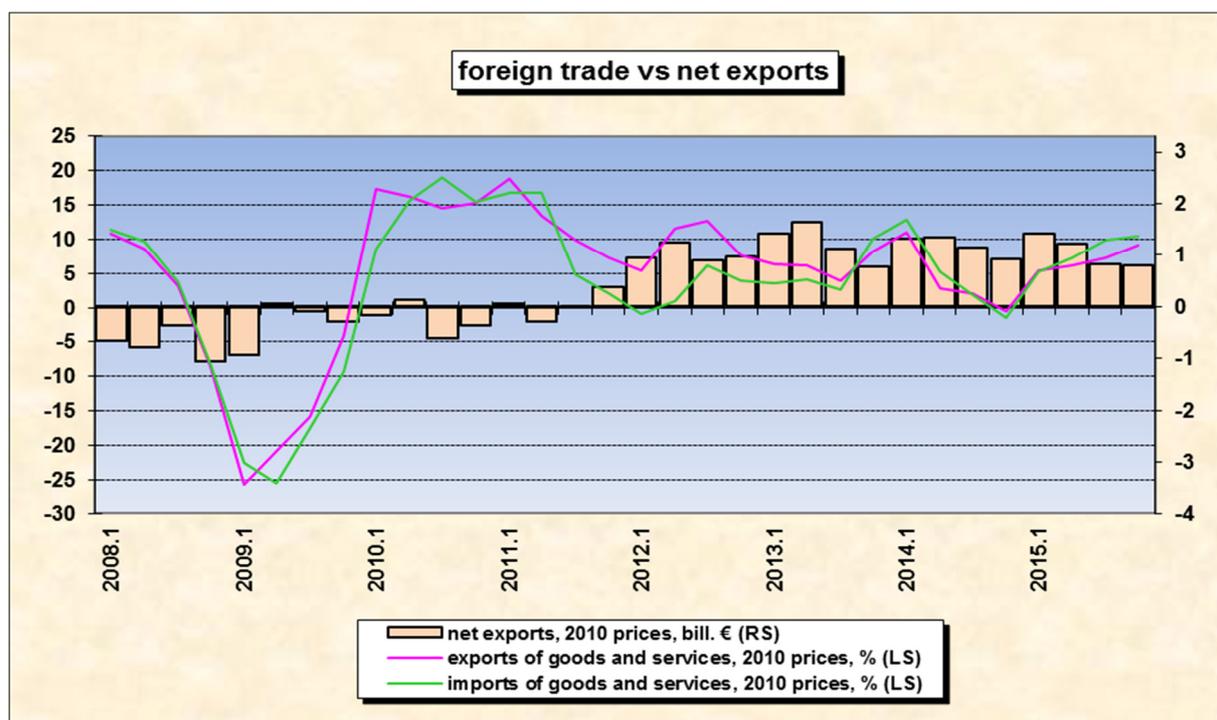
The increase of domestic demand by 4.9% in 2015 was the highest since 2008. The acceleration of its growth (if compared to 2014) was caused only by investment demand. Growth in consumer demand has not changed on yearly basis and the growth in demand of the public sector has slowed down. Investment demand grew by 14.0%, mainly due to its double-digit gain in the Q3 and Q4 of 2015 (17.3% and 19.4%, respectively). This growth is related to the drawings of EU funds for various infrastructure projects. Thanks to these financial sources the investment demand reached the second highest increase in the history of Slovakia. The highest increase of investment demand was recorded in 2005 (16.5%), i.e. in the second year of Slovakia's membership in the EU.

While investment demand increased much more than it was generally expected growth in consumers demand lagged behind expectations. Its growth increased from 1.5% in Q1 to 2.9% in Q4, but its average increase by 2.4% means that the growth in consumer demand has not accelerated. Therefore it appears to be relatively low, especially in terms of purchasing power, which grew significantly due to real wage and employment growth on the macro level. It seems to be low also in terms of consumer confidence indicator, which was higher above the level of its long-term average than in 2014. The slowing down of demand of the public sector (from 5.9% in 2014 to 3.4% in 2015) is not surprising, because it has to be considered in the context of the government's intention to reduce the public deficit deeper below the 3% of nominal GDP than in 2014.

The growth of the Slovak economy was entirely based on domestic demand. The contribution of net exports to real GDP growth was negative, i.e. it had a dampening effect to the real GDP growth. In practice, this model affected the real GDP growth in the Q2 and also worked in the Q3 and Q4 of 2015. It resulted from the fact that the overall surplus in the trade balance and balance of services at constant prices declined in the three quarters on yoy basis (Figure 2). This was primarily related to the trade balance, which had been positive in each quarter of the previous year, but its surplus declined in Q2 to Q4 on yearly basis.

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<sup>5</sup> The share of domestic demand in the structure of aggregate demand declined from 56.8% in 2008 to 49.1% in 2015, obviously at the expense of the growing share of external demand. However, the share of domestic demand in aggregate demand has fallen below 50% already in 2013.



Source: Statistical Office of the SR

Figure 2

### *Forecast of economic performance in 2016*

Seasonally adjusted foreign new orders for industry indicate that the growth in the Q4 2015 slowed down (compared to Q3 2015). This was the result of slower growth in new orders from the euro area and the decline in new orders from countries outside euro area. On the other hand, according to seasonally adjusted domestic new orders for industry the growth in the Q4 2015 accelerated slightly. This suggests that in the short-term prediction horizon aggregate demand growth will continue very likely, but its increase will be reduced from 6.0% in 2015 to 4.2% in 2016.

A dampening effect on aggregate demand growth should stem not only from the slower growing foreign demand but also domestic demand. As for the structure of domestic demand, it should accelerate just growth in consumer demand (due to the continuing growth in consumer purchasing power). The slowdown in domestic demand growth should come primarily from investment demand, which growth should significantly slowdown, due to expected slowdown in public investment. It is questionable whether and to what extent will this impact be offset by new investments in the automotive industry (VW, JLR, PSA). Given the ambitious target of reducing the public deficit below 2% of nominal GDP in 2016, laid down in the Stability Pact, the demand of the public sector should be expected to significantly slow down. However, the possibility that it will fall cannot be excluded.

The growth of the purchasing power of the population should be also this year based on the growth of real wages and overall employment in the economy. While growth in total employment will very likely slow down, real wage growth may accelerate. Deflation, which will probably remain as phenomenon accompanying the development of the Slovak economy also in this year, should contribute to the real income growth. Moreover, there should continue the decline in the unemployment rate, but milder than last year. It should be reduced by 1.2 pp. on yoy basis to the level of 10.3% on average (LFS methodology).

Based on these assumptions, we expect that the growth of the Slovak economy will slow down this year. We estimate that the creation of real GDP will grow by 3.1% in real terms and by 3.0% in nominal terms. The overall price level in the economy should therefore fall by 0.1% on yoy basis. The growth of the economy should be based just on domestic demand, while the contribution of net export should reduce its growth. In other words, the change in the pattern of growth of GDP that occurred in 2015 is not very likely to happen in this year. The transition to a model where growth of the economy will be driven by both domestic demand and net exports is not considered to occur until the end of this year.

Forecasts of the growth of the Slovak economy and development of the overall price level in the economy, stated above, should be seen in the context of both-sided risks. They may of course have an impact on the development of external and domestic demand (including price developments). The main negative risks are further slowdown of the global economy, which may significantly affect the economic growth of most important trading partner of the SR - Germany. Such possibilities are signaled by recent development of its business climate indicators (IFO, PMI, ZEW). Another negative risk is the migration crisis in the EU and the threat of possible limitation of the Schengen area, respectively its disintegration. The main positive risk is further quantitative easing of ECB, in order to maintain the trend of (yet only moderate) economic recovery in the EU. Based on the current development of leading indicators in the SR and abroad it may be considered that the negative risks prevail.

## **References**

The Statistical Report on basic development tendencies in economy of the SR in the 4th quarter of 2015. The Statistical Office of the SR, March 2016.

**Medium-term forecast of the National Bank of Slovakia***Ján Beka, NBS*

The euro area's quarter-on-quarter GDP growth rate was 0.3 % in the fourth quarter of 2015, the same as in the previous quarter. Among the larger national economies in the euro area, the highest growth rates were reported by Spain (0.8%), Germany (0.3%), France (0.3%) and the Netherlands (0.3%). At the same time, both the Greek and Estonian economies grew in the fourth quarter after contracting in the previous quarter. Leading indicators are at present sending out less favourable signals, and do not as yet point to a pick-up in economic growth. The annual HICP inflation rate in February was -0.2% (after registering 0.3% in January). Energy price inflation became markedly more negative, while both the food and services components posted lower positive rates.

Slovakia's economy maintained stable growth of 1.0% in the fourth quarter of 2015. The growth 1 For further details, see the "Report on the Slovak Economy – March 2016" was driven mainly by the domestic economy, which was boosted by the elevated absorption of outstanding EU funds available from the previous programming period. Private consumption continued to increase steadily, supported by the favourable labour market situation. Export growth also picked up notably towards the yearend. Labour market developments were in line with projections. There was net job creation, and employment increased by 0.4%. The unemployment rate declined significantly below 11%. Nominal wage growth was strong and, together with falling prices, had an upward impact on households' real disposable income and also their savings. Consumer prices continued to decline in the last quarter of 2015. This was largely attributable to falling oil prices that translated almost immediately into reductions in automotive fuel prices. In addition, food prices fell further. Prices of consumption goods and services increased marginally, but not enough to counterbalance the impact of decreases in other components.

***Medium-term forecast***

The rapid increase in exports in the last quarter of 2015 and first quarter of 2016 has laid the basis for strong export growth in 2016. Given the impact of financial turbulence and worse than expected hard indicators for emerging market economies, the projection for Slovakia's export growth in the first half of 2016 has been revised down slightly. In subsequent years, exports are expected to increase in line with foreign demand, and there should be moderate acquisition of market share. The outlook for 2018 incorporates the impact of the gradual roll out of new production in the car industry, which is expected to add

approximately 2.2 percentage point to export growth (and 0.7 percentage point to GDP growth).

After recording strong growth in 2015, investment demand is expected to remain flat in 2016. The drop-off in EU-funded public investment should be counterbalanced by an increase in private investment. Residential construction is expected to provide an additional impulse to investment, given that the number of flats under construction reached a four-year high in the second half of 2015 and that an increasing number of building permits were issued during the same period. Investment demand is expected to be supported by low interest rates and by favourable economic outlooks. New investment in the automotive industry should also begin to have an impact in 2016 and 2017, with investment demand growth touching 5%. The absorption of EU funds is projected to pick-up significantly again in 2018, with the absorption of outstanding EU funds in the second half of the new programming period.

Private consumption growth is expected to increase this year, with one-off administrative factors<sup>5</sup> projected to contribute around 0.4 percentage point to the growth rate. The growth outlook for households' real disposable income in 2016 reflects expectations of a marginal drop in consumer prices. Consumers are expected to channel the bulk of their increased income into consumption and the lesser part into savings. Private consumption growth is projected to moderate in 2017 and 2018, as rebounding inflation dampens disposable income growth.

Even after factoring in slower global economic growth at the beginning of 2016, foreign demand for Slovak goods and services is projected to increase moderately in the medium term. Foreign demand growth should also be supported by the easing of the ECB's monetary policy at the beginning of March. Slovakia's economic growth is expected to be balanced and its rate is projected to be 3.2% in 2016 and 3.3% in 2017 (both figures are unchanged from the MTF-2015Q4U forecast). GDP growth is assumed to accelerate to 4.2% in 2018, owing to the launch of production at a new car plant (its impact on GDP growth being estimated at 0.7 percentage point). On the assumption that real GDP growth will be moderately higher than potential growth, the output gap is expected to close in 2018.

Although economic growth will continue to support job creation, the rate of job growth is expected to be more moderate over the projection horizon than it was in the previous two years. Based on data for the first months of 2016, as well as on employers' expectations, the current upward trend is expected to continue in the short term. While accelerating activity growth is expected to boost demand for labour, it may also, in certain sectors, create labour shortages over the medium term. Firms may address such shortages by increasing hours worked per employee, employing older people, and by recruiting employees from abroad. The unemployment rate is expected to fall gradually over the projection horizon, down to around 8.5% by the end of the period.

The price level is expected to continue falling in 2016 due to declines in prices of energy, food and imports and to lower services price inflation. This outlook is supported by figures for the first two months of 2016, with services inflation coming in lower than projected and food prices falling more markedly. Low wholesale prices of energy commodities and electricity have created scope for further reductions in consumer energy prices. As a result, administered prices of gas, heat and electricity are expected to be further reduced in January 2017. On the other hand, headline inflation is expected to come under upward pressure from import prices (for example, an increase in euro area inflation) as well as from food prices. Services inflation is expected to increase amid rising consumer demand. The overall rate of inflation is therefore projected to increase to almost 2% by the end of the forecast period.

The risks to the outlook for the real economy over the medium term are on the downside. The main risk is that foreign demand growth may be weaker than expected owing to slower GDP growth in China and other emerging market economies.

The risks to the medium-term inflation projections are downward. If the negative scenario for the real economy materialises, inflation may be lower than expected owing to lower imported inflation.

**Midterm forecast of Slovak economy for the period 2016 - 2020<sup>6</sup>**

*Marek Radvanský, Ivan Lichner, Tomáš Miklošovič<sup>7</sup>*

**Abstract:** An actual macroeconomic forecast of Slovak economy by the Institute of Economic Research at Slovak Academy of Sciences (IER SAS) is presented in this paper. The forecast is based on econometric model IER\_ECM\_15q4 which represents most up to date version of error-correction macroeconomic model developed at IER SAS. Results of last mid-term forecast for years 2016-2020 are in detail discussed in the paper.

**Keywords:** macroeconomic forecast, GDP growth.

**Introduction**

The economy of Slovakia has achieved in 2015, one of the fastest growths within the European Union. This growth was result of a number of synergistically complementary factors at the domestic level, but also the impact of external development. For the most important of these factors should be included: continuing low world price of oil, a low price level with the deflation pressures throughout the year, significant finish of Euro-funds implementation within the programming period 2007-2013, and the favorable exchange rate of the euro against the US dollar. Negative factors include: complicated geopolitical situation in Ukraine, with continuing sanctions against Russia and the geopolitical instability closely related to the Middle East, which was manifested in the increase of migration into Europe. Slovakia as a small open economy is directly dependent on the development of the economic and social situation of its major trading partners. On the other hand, in addition to a significant increase in the volume of foreign trade on the export side, as well as on the import side, we have also seen a significant continued growth in domestic demand, which was caused by the growth of all its components. The end of the 2007-2013 programming period, and thus the use of the last available euro-funds in this budget period resulted in growth of a gross capital formation.

In the post crises period, econometric forecasting of macroeconomic indicators became to be the considerably difficult task. Nevertheless, in recent years, there has been a stabilization of the economic environment and an increase in the accuracy and robustness of projections of economic growth. Eastern Europe Consensus Forecasts publication (EECF) is an example of the complexity of the situation in the post-crisis forecasting. Chart 1 provides an overview of updated forecasts for each month for Slovakia based on EECF

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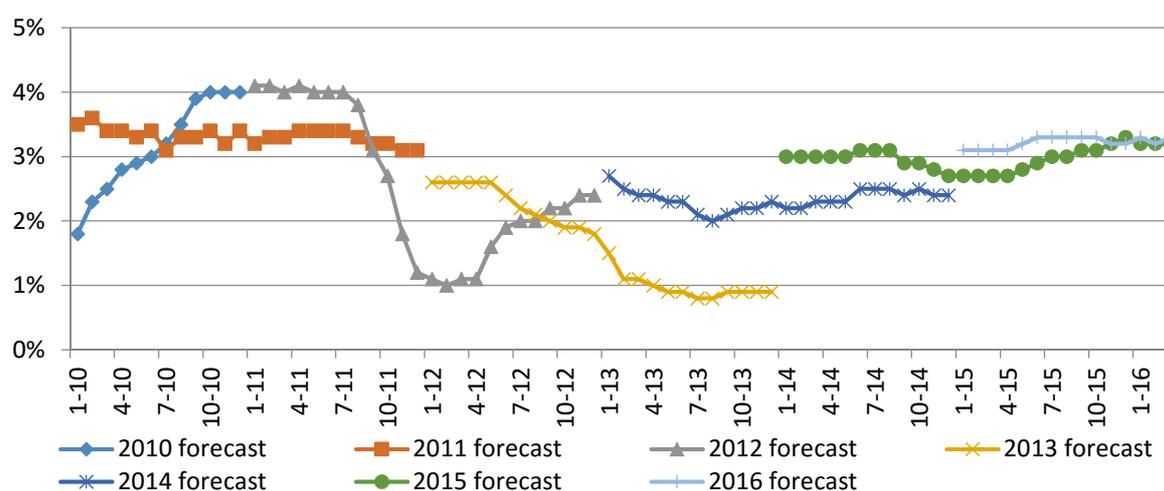
<sup>6</sup> This work was supported by VEGA 2/0181/15 and VEGA 2/0132/14.

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results. The main elements of instability in the last year have been mainly linked with the unclear external environment development resulting from the instability of the situation in Ukraine and the Middle East and migration crisis, along with the precarious economic-political situation in some euro-area countries (the most prominent risk factor in the form of Greece). Nevertheless, in the light of the development of forecasting the impact of unexpected external influences can be seen in the year 2015 as relatively stable, in which mentioned factors have resulted in a slight downward reviewed growth. On the contrary, it was not the case of the years 2010, 2012 and 2013 in which high uncertainty had resulted in significant revisions of forecasts.

When comparing forecasts from the past few years, we may observe, that forecasts for the years 2011, 2014, and 2015 were relatively stable throughout the whole period. The forecast for the year 2012 remained relatively stable until November 2011, but since December 2011 has reviewed growths towards the bottom. In August 2012 review of the growth forecast for the year 2012 has occurred increase in the expected speed of economic growth. The growth forecast for the year 2013 was also stable in the first months, but from September 2013 reviews of growth forecast to a very slight growth of around 1% has started. The prognosis for the year 2014 expected the acceleration of growth dynamics from the mid-2013 forecast reviews. The prognosis for the year 2015 was stable, while in the year 2015, there was a slight downwards correction compared to the forecast expectations from the year 2014. The forecast for the year 2016 is yet seen as relatively stable.

**Chart 1: Historical development of the forecasts of GDP growth in each month of forecasting**

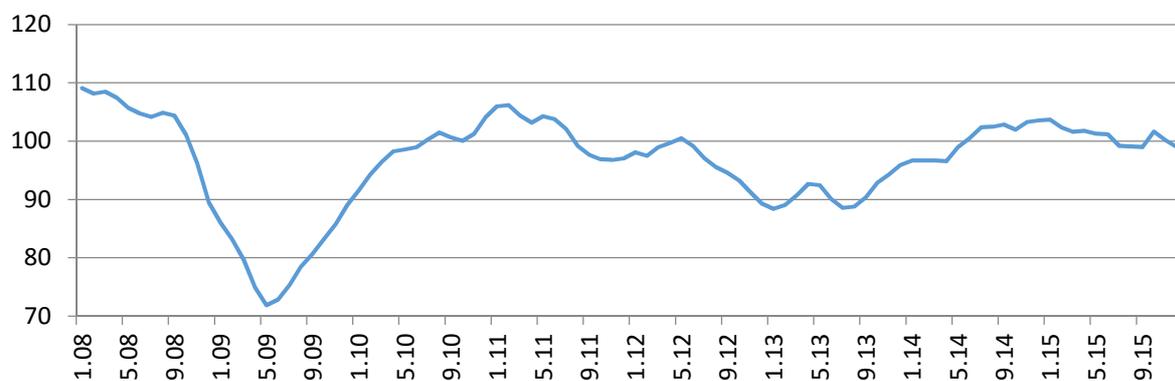


Source: EECF

The IER SAS forecast for year 2015, despite several negative factors affecting applied assumptions, which occurred both at home and abroad proved to be realistic. We can consider overall development of the Slovak economy in 2015 as positive. The annual growth of the gross domestic product reached a

level of 3.6%, with particularly sharp growth in total domestic demand at the level of 5.0% and stable development of foreign demand. The pace of growth of the economy helped to growth of employment which increased by 2.6%. The growth trajectory has been recorded in the case of final household consumption (2.4%), consumption expenditure of non-profit institutions (3.1%) and general government (3.4%) expenditures. The most significant growth, however, has reached the gross fixed capital formation (13.1%), which was determined primarily by intensive implementation of funds of ending EU funds programming period, better availability of credit resources and low energy prices. All of these factors have affected the expectations within the framework of the Slovak economy, which reflects the value of the indicator of economic sentiment, which on average were above the psychological threshold of 100 points for the year 2015, despite the slight decline in the last months (Chart 2).

**Chart 2: Indicator of economic sentiment - IES (3-month moving average) since 2008**



Source: SO SR

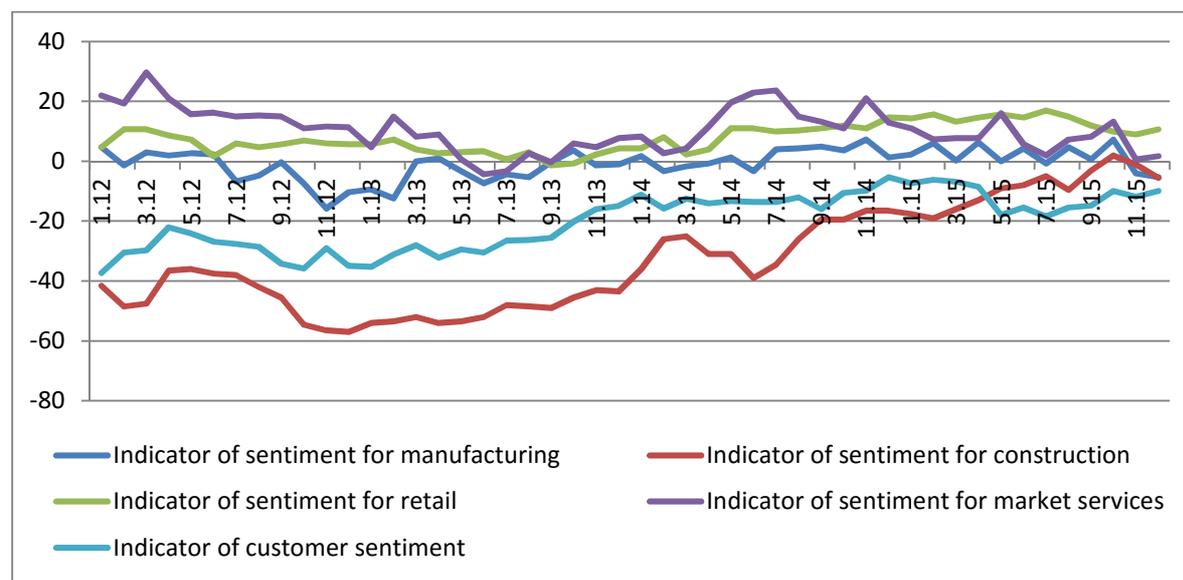
It is possible to better illustrate the confidence indicators of market sentiment by looking at development of individual sectors. Those indicators should help to identify potential development trends into the future. Development in the individual sectors can be divided into two categories. The first group includes indicators of confidence that stagnated during the year 2015 and includes industry, retail and services, together with the consumer sector. Confidence indicator in construction sector has experienced significant growth during the past year (Chart 3), which can be largely attributed to the implementation of the infrastructure projects supported by the Cohesion and Structural funds of the EU.

#### **Applied methodology (Model B\_IER\_ECM\_15q4)**

Presented forecast is based on the version of macroeconomic econometric model for Slovakia (econometric model SAS\_IER\_ECM\_15q4), which is developed and updated by the Institute of Economic Research, Slovak Academy of Sciences. Applied version of the model was completed in March 2016. The model is based on quarterly data, from the first quarter of 1997 until the last

quarter of the year 2015, i.e. 76 observations. The forecast is medium-term with an outlook to the year 2020. Sources of applied data were the Statistical Office of the Slovak Republic (SO SR), the National Bank of Slovakia (NBS), the Head Office of Labor, Social Affairs and Family, the Ministry of Finance of the SR and Eurostat. The model has macroeconomic foundations, is primarily a demand driven and is divided into 5 blocks (the budget block, block of prices, block of the labor market, foreign trade and GDP blocks). The blocks are primarily estimated in current prices of the various components of GDP and are subsequently deflated. Exception is the block that estimates the foreign trade in real terms due to the extreme sensitivity of the open economy on the development of its development. Model contains of 56 equations, from which are 36 stochastic and 20 identities. Stochastic equations are of ECM (error-correction) functional form. In each equation integrated time-series of the same order on the basis of unit-root test were used and long-term equilibrium was expressed in equations by cointegration relations. More information about the model can be found, for example in work (Radvanský, 2008).

**Chart 3: Indicators of economic sentiment for different sectors, from the year 2012**



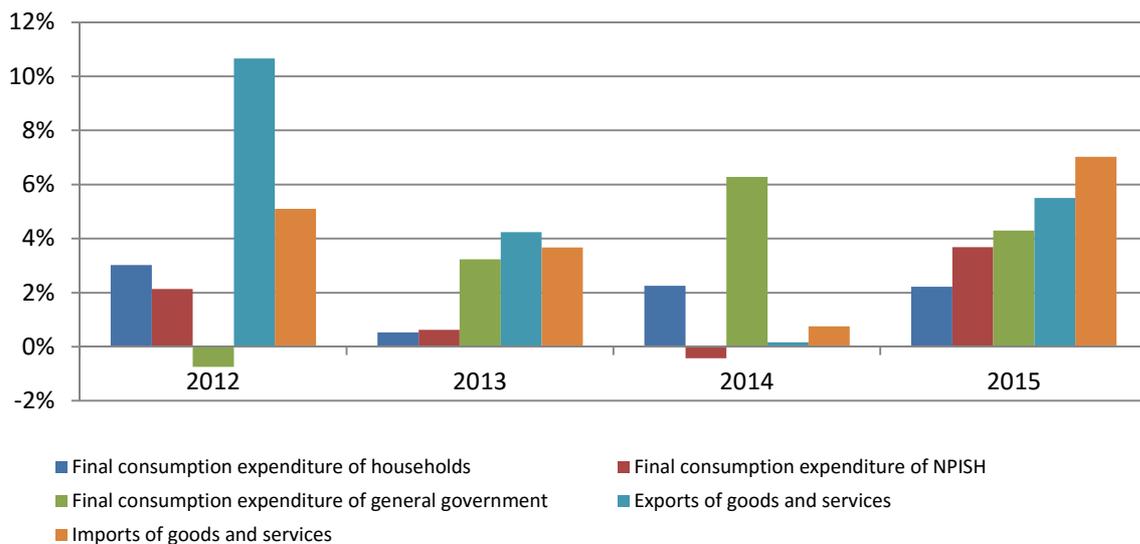
Source: SO SR

**Development in the year 2015 and forecast assumptions – internal factors**

In 2015, the Slovak economy achieved growth in all the main components of gross national product expenditures (Figure 4). Final household consumption continued to grow during the last four years. Final consumption of non-profit institutions represents the relatively small absolute share of gross national product, but in 2015 recorded the highest growth for a period of last four years. And government expenditures reached a very high annual growth, and only in

2014 was the growth of this component higher. Increased consumption of these institutional sectors resulted in the growth of imports of goods and services, which recorded the highest growth observed since 2012. On the other hand, the component of exports of goods and services has picked up on the pace of growth up to level of 7%, after years of slowing down. As already mentioned above, the strongest growth was recorded in gross capital formation, which reached record levels and also contributed to high growth of imports. Combination of these trends resulted in that the Slovakia even in 2015 was one of the EU countries that have achieved above-average growth of GDP. The good news supports the fact that high employment growth in 2015 creates conditions for the further positive development of final household consumption in the future. The high level of investments in year 2015 creates a presumption of higher sales in industry and services, but a similar level of annual growth in the near future is not expected.

**Chart 4: Annual growth of individual components of gross national product from 2012, constant prices**

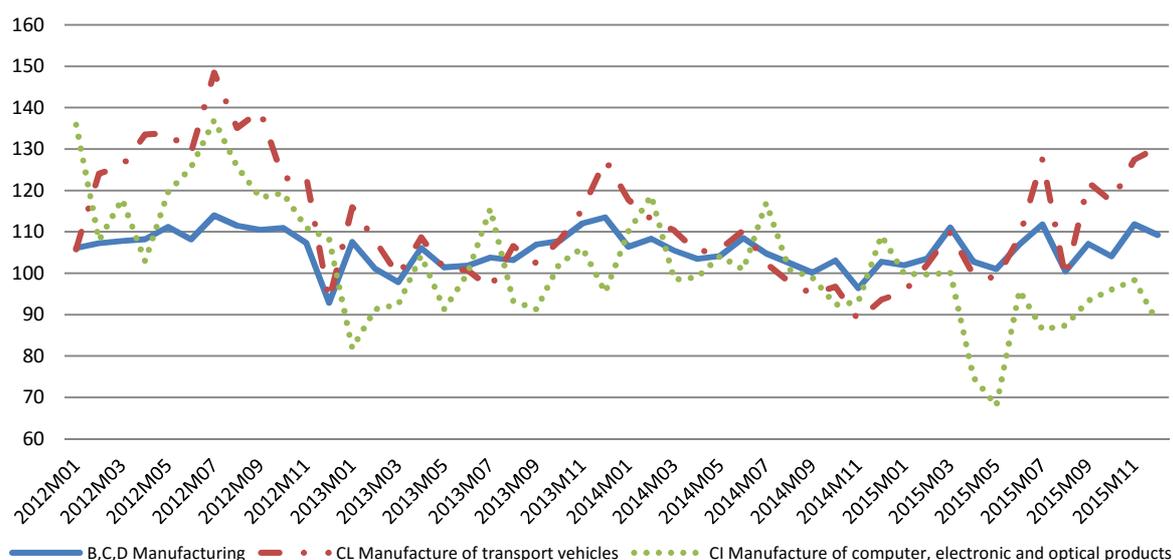


Source: SO SR

When looking at the development of industrial production (Chart 5) we can see an upward trend in industrial production during the year 2015. If we look at individual sectors in more detail, we can observe unbalanced character of development in selected sectors. Manufacture of transport vehicles recorded some of the highest growth rates of production during the year 2015. Even summer break in production did not mean a decline in production of this sector. Due to the fact that automotive industry is a key sector of Slovak economy and its production accounts for a relatively large share of GDP, this sector thus represents also a risk factor for GDP growth in the future, especially in the event

of a major decline in foreign demand for production of this segment. The importance of this sector will grow even more after the launch of a new foreign investment of Jaguar - Land Rover, which plans to start production of motor vehicles in Slovakia in 2018. During next two years in connection with this investment a significant demand for the construction sector services is expected. The already strong concentration of industrial production in the automotive industry will be further strengthened mainly in car manufacturing and its subcontractors. The manufacture of computer, electronic and optical products sector, on the other hand, recorded a year on year decline in production during the year 2015. This is clearly a visible result of shifting part of the production capacities of some foreign investors in other countries, in particular, to reduce production costs. Orientation of economy on a specific sector production possess a relatively high risk of decline in production, in the case of transfer of the activities abroad or a fall in foreign demand.

**Chart 5 Industrial production index by category and special aggregates industries Classification of Economic Activities (NACE Rev. 2), y-o-y, from 2012**

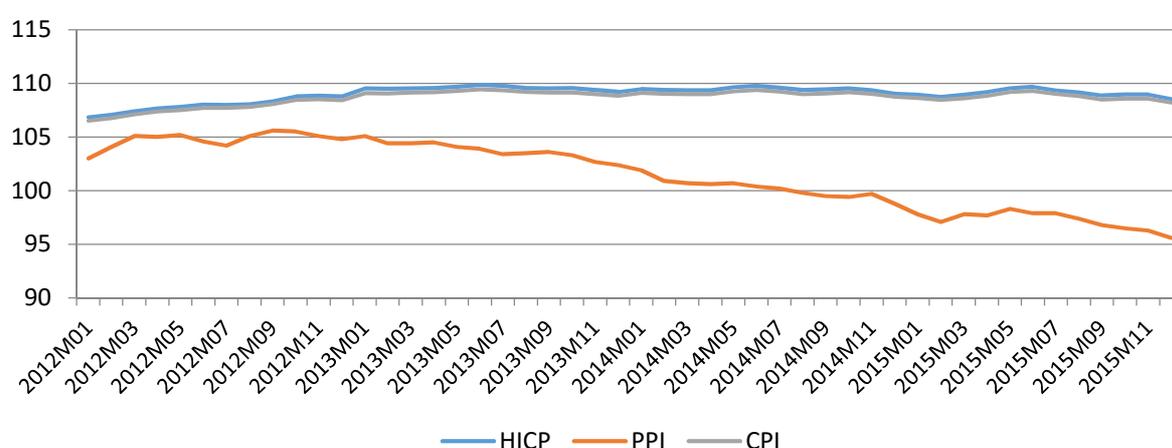


Source: SO SR

Price development in Slovakia for most of the last year recorded stagnation or a slight decline in the price level measured by either the consumer price index (CPI) or the harmonized index of consumer prices (HICP). In case of the price index of industrial production (PPI) a significant decrease over the period of 2015 was recorded. The main items in which a decline of prices was concentrated were: continued drop in the already low world prices of crude oil, petroleum products, and hence fuel prices, overproduction of metal and fabricated metal products except machinery and equipment, and imports of

cheap (subsidized) Chinese steel, and drop in prices of electricity, gas and steam. A slight decline of industrial production prices was recorded also in the food and non-alcoholic beverages, manufacture of electrical equipment and manufacture of transport vehicles. During the year 2015, mortgage interest rates continued in their downward trend, which has generated an increase in demand for real estates and a slight increase in their prices. Based on the current development low level of prices can be expected over the year 2016, in case that the ECB fails to achieve effective action against the persistent low level of prices.

**Chart 6: Monthly development of HICP, industrial producer price index (PPI) and consumer price index (CPI) in 2012-2015 (2010 = 100)**



Source: SO SR and authors

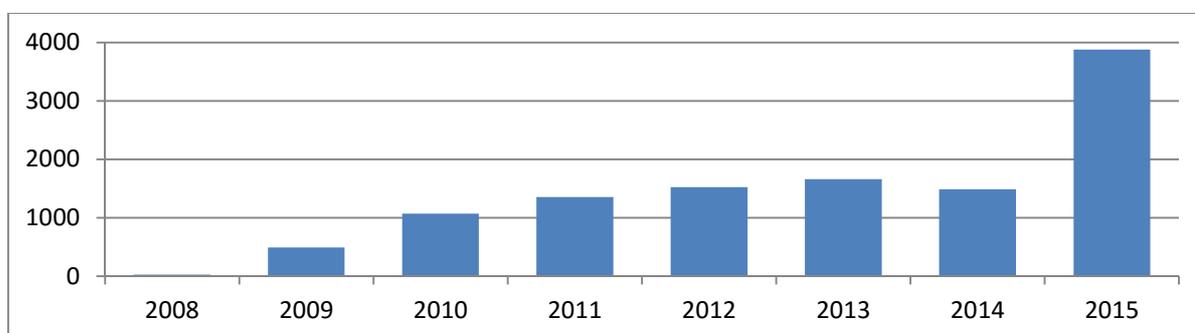
### Development in the year 2015 and forecast assumptions – external factors

Year 2015 represented a continuation of recovery of the European economies, which were experiencing continued efforts of application of consolidation measures and growth of geopolitical and economic instability. This development triggered the continuation of sanctions against Russia, which led to a decline in the volume of trade between the EU and Russia, and the migration crisis, which hit Europe significantly in 2015.

Economic development in 2015 was influenced by several external factors. Despite the continuing geopolitical instability and uncertainty in the markets, mainly due to the complicated evolution of the situation in Greece during the first half of the year and slowing economic growth in China, the European economies managed to significantly increase their growth when the European economy year on year increased by almost 2% at constant prices. Significant contributions to this were provided by persistent record low oil prices, which were last year also reflected in the low prices of inputs. Low-interest rates in the European area, together with an extended program of asset purchases by ECB provided investment growth and the purchasing power to households. These

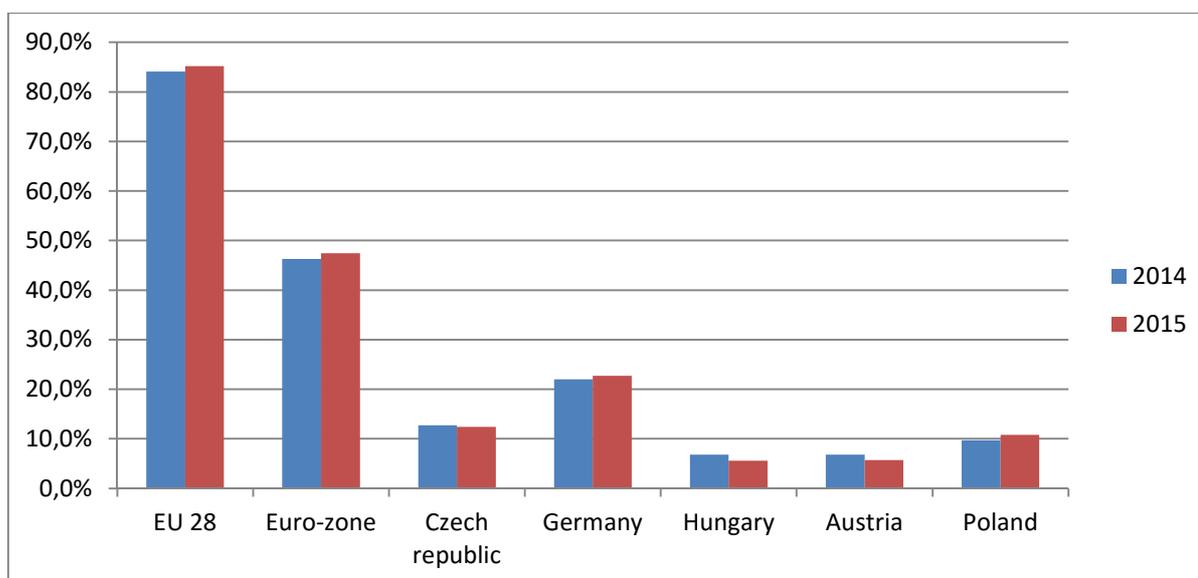
factors together with low inflation increased households' real disposable income. Low input prices, low-interest rates and the end of the European Funds programming period 2007-2013 have led to the growth of investment activity in Slovakia, mainly public.

**Chart 7: Development of using structural and cohesion funds, million EUR**



Source: ITMS

**Chart 8: The share of Slovak exports to selected countries between 2014 and 2015**

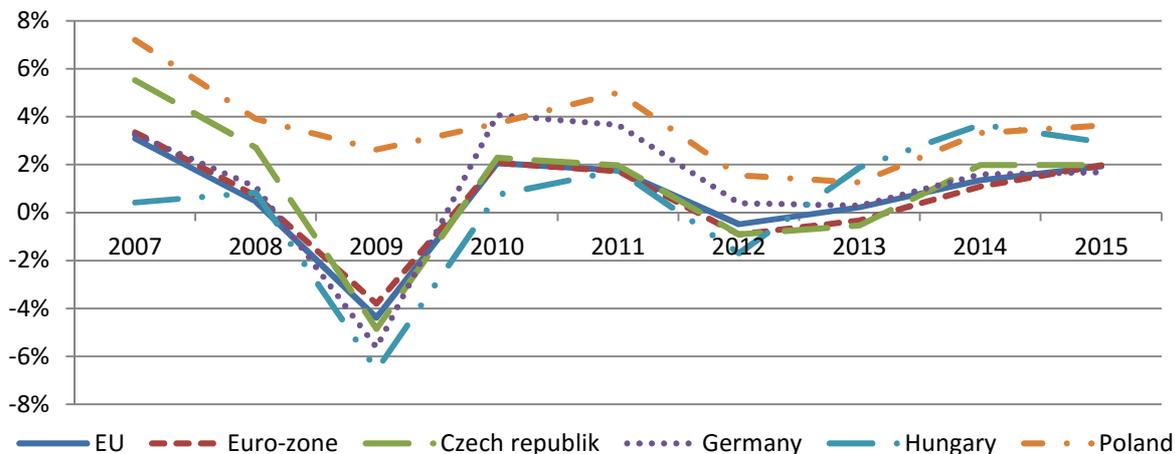


Source: SO SR and NBS

Development in 2015 was significantly affected by implementation of available resources from the Structural and Cohesion Funds of the EU for the 2007-2013 programming period. Development in the coming years will be significantly affected by the ability of the Slovak economy to effectively use the funds available from the current programming period 2014-2020. Assumption of relatively favorable development, heavily relying on the expected rate of change listed in the forecast of IFP<sup>8</sup> was used as assumption underlying this forecast.

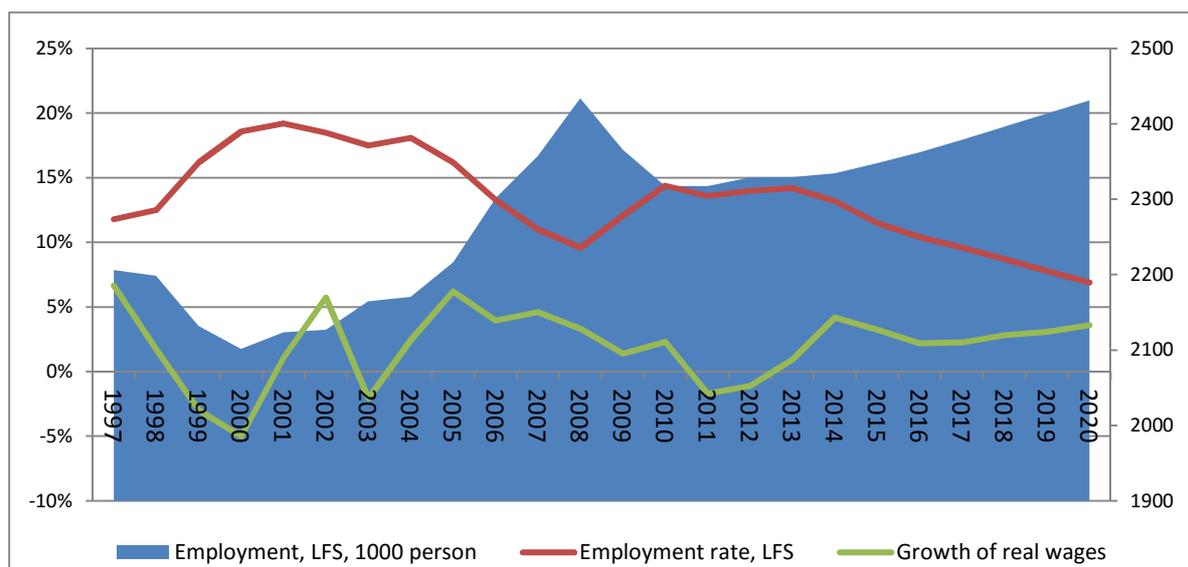
<sup>8</sup>[www.finance.gov.sk/Components/CategoryDocuments/s\\_LoadDocument.aspx?categoryId=10608&documentId=14239](http://www.finance.gov.sk/Components/CategoryDocuments/s_LoadDocument.aspx?categoryId=10608&documentId=14239)

**Chart 9: Annual growth of GDP at constant prices (2010) in selected countries, EU-28, and euro-zone, national currencies (ESA 2010)**



Source: Eurostat

**Chart 10 - Development of basic labor market indicators**



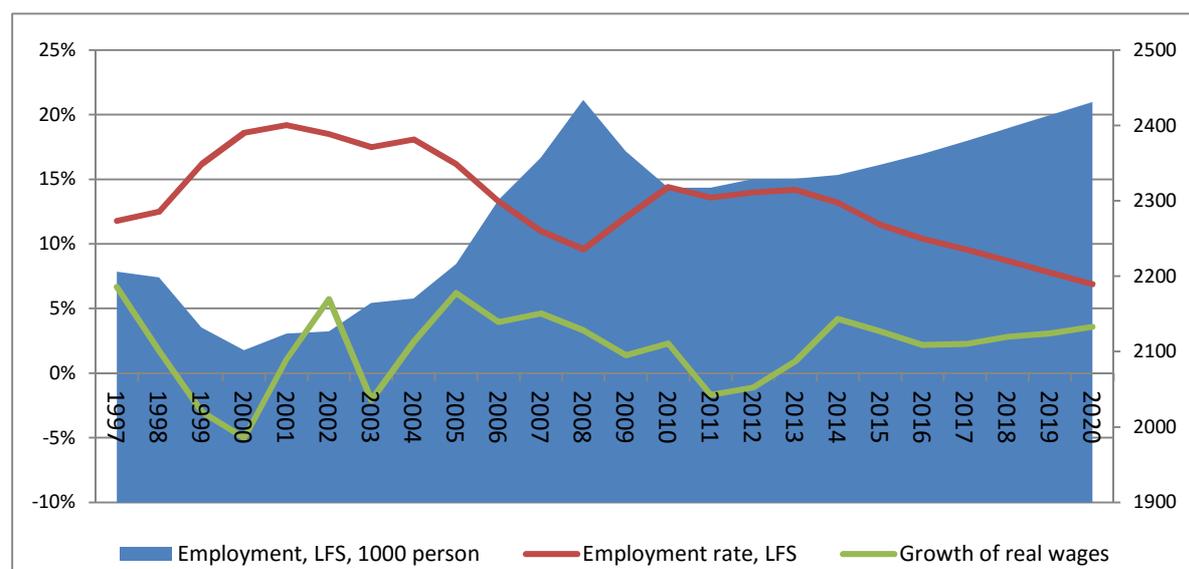
Source: SO SR and authors

Export of Slovak goods and services in 2015 focused mainly on the European markets, and share of these markets on total export went up to 85.2%. The slight increase in the share was recorded in year on year exports to the euro area (+1.4 p. p.), this increase was mainly driven by a higher share of exports to Germany and France. For partners from V4, the share of Czech Republic only declined slightly (-0.3 p. p.), while the share of exports to Poland grew by 1.1 p. p., development of the share of exports to Hungary experienced the opposite trend with a decline of 1.2 p. p.

If we look at year-on-year gross domestic product growth of our major trading partners, so we can see that Germany and Poland slightly increased the pace of their GDP growth and in the case of the Czech Republic stagnation occurred. Hungary only slightly decreased its year on year growth in 2015, compared to

2014, to level of 2.9%. The expected moderate recovery in economic growth in our major trading partners related to the further growth of global economy and stable expectations in the domestic economy are key factors favorable for economic development in Slovakia during 2016. However, a strong focus of Slovak export primarily oriented on European markets may represent potential threats in the event of a slowdown of the European economy, the ineffectiveness of monetary and fiscal policy of the ECB, and negative development on the financial markets. Continued migration crisis may be the key risk of pro-growth trend over the coming year.

**Chart 11 - Development of basic labor market indicators**



Source: SO SR and authors

**Macroeconomic forecast for years 2016-2020**

Macroeconomic development in the coming years will be strongly dependent on several factors that will determine the economic performance of Slovakia over the projection horizon. These factors include the development of foreign demand, in case of which we expect a positive impact on pro-export trend, as a result of growth of labor productivity and competitiveness of Slovak production. The current positive impact of low input prices and energy prices, as a result of lower oil prices is likely to persist in the short-term. In general, we can expect continued recovery in domestic demand, as a result of low inflation in the past and the current year, which would contribute to higher growth in real wages and the growth of purchasing power of the households. The strong growth of investment in 2015, which was largely generated by increased spending of EU funds from the 2007-2013 programming period, will not materialize in case of year 2016. It is likely to slow down somewhat in 2016 despite loosening credit policy and continuing low-interest rates. Another major determinant of growth would be the development of public finances, this in particular would reflect

development in streamlining the level of certain types of expenses and ways of consolidating public finances, which were carried out mainly on the revenue side of public budget in the recent years. Despite the government efforts to reduce its deficits, a slight increase in total spending, as well as an additional negative impact of so called "Social Packages" are expected. Overall positive macroeconomic development would have positive impact on the labor market and employment. It is expected that unemployment will be in the coming years gradually decreasing. Expected economic development has potential to reduce the unemployment rate to single-digit levels during 2017. This development is expected due to the development of the economy and also ongoing demographic changes that will have an increasing impact on labor market.

The main factors influencing the number of economically active population will be: slight increase in participation rate and a medium-term decline in the population of working age. Based on these assumptions, in the next few years the number of economically active population will grow slightly with the anticipated start of a downward trend during 2018. In the coming years, we also expect continued moderate growth in foreign demand and the continued increase of domestic purchasing power.

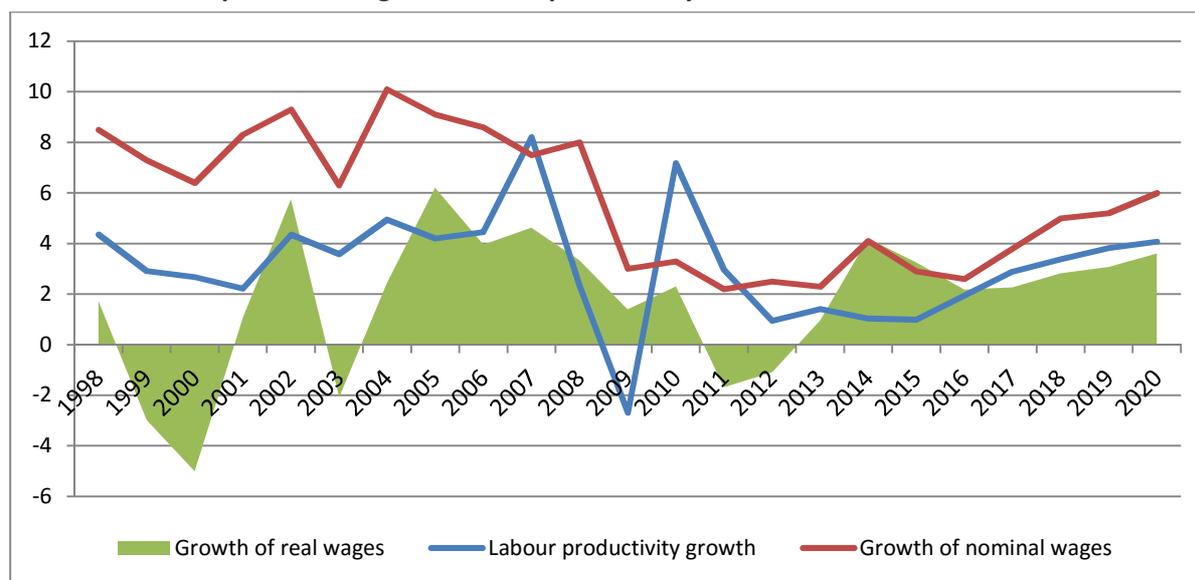
Based on the forecast results, the average employment according to the Labour Force Survey methodology will continue to grow during 2016. This development after a positive trend recorded during years 2014 and 2015 would promote faster growth of domestic demand. Taking into account the assumptions about the number of economically active population, the unemployment rate would reach a level of 10.3% at the end of 2016 (see Chart 10). A downward trend in the number of unemployed is expected to continue throughout the forecasted period.

In 2015, real GDP growth reached 3.6% level, which significantly boosted job creation, and the consequent increase in employment. Despite the positive development in the labor market and the rapid growth of real GDP compared to 2014, further moderate slowdown in the growth rate of real labor productivity to level below 1% occurred in the past year. Based on the assumption of the continued economic recovery with gradual employment growth, we can expect acceleration in labor productivity growth in the coming years (see Chart 11). Real wages in 2015 recorded an increase by 2.2%. This development was partially supported by the administrative measures, e.g. further increases of the minimum wage. We expect that the growing trend will remain also over the next few years, and real wages will grow at a rate in the range of 2.3 - 3.6% p.a. Real

wage growth should be in the coming years more supported by the growth in labor productivity than by administrative changes.

Forecasted development of household consumption will continue to record positive development, mainly due to the expected positive development in the labor market. During the forecasted period, we expect real growth in consumer demand at the level of 3.2 - 4.0% p.a.

**Chart 11 - Development of wages and labor productivity, LFS, %**



Source: SO SR and authors

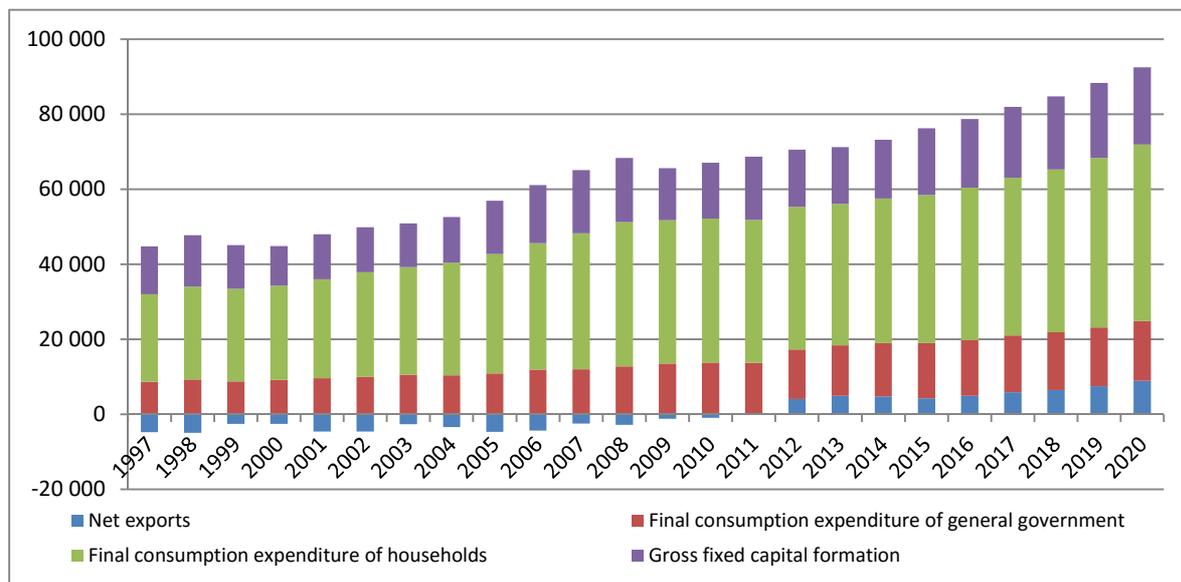
Final consumption of general government will be significantly affected by the consolidation efforts and efforts to achieve a balanced budget in 2018, so in the coming years we do not expect significant growth of this component, as it has been the case in recent years due to the electoral cycle. In 2016 we expect a real increase in government final consumption at around 0.8% and in the coming years its level should grow at a moderate pace in order to achieve balanced budget of public finances. Real growth of government expenditures is expected throughout the forecasted period.

In 2015, there was a significant increase in gross fixed capital formation, mainly due to growth in domestic demand, positive development in external demand and the significant efforts to implement the resources available within the National Strategic and Reference Framework. In 2016, we expect a favorable development of investment demand as a result of boosting domestic demand and foreign demand growth. On the contrary, decline in the level of resources implemented from the current programming period 2014-2020 should have negative impact on the investment activity. The expected increase in investment demand will be more moderate than in the previous year, and its level in 2016 will reach around 2.5%. Continued growth would result from

positive outlook of external environment development, low-interest rates and the level of input prices. On the other hand, mixed expectations for external demand provide index of economic sentiment for Germany, which indicates favorable prospects in business and the automotive industry, but on the other hand expect deterioration in the case of banking and insurance for the period of next 6 months. The dynamics of investment demand for the coming years should remain near the level of 3% p.a. over the projection horizon and its decline below 2.5% p.a. is not expected. The investments would contribute positively to the growth of the Slovak economy in the near future. This forecast expects more conservative development of fixed investments.

Foreign trade is expected to contribute positively to GDP growth, even in case of continued revival in domestic demand. Growth in foreign demand is expected to persist as a result of expected decline of the euro exchange rate and the structure of foreign trade. For this reason, we expect surpluses of net exports in the following years. The structure of foreign demand is associated with various risks, both on the supply and the demand side.

**Chart 12 - Gross domestic product and its components, bill. EUR (ESA 2010)**



*Source: SO SR and authors*

A closer look at the development of the GDP expenditure components is shown in Chart 12. Gross domestic product would grow at a more moderate pace in 2016 (around 3.4%) after its 3.6% increase in 2015. In 2017, we expect GDP growth at level of 3.8% and in the coming years we expect growth of GDP at around 4.5 - 5% per annum. Average GDP growth during the years 2016-

2020 is forecasted at around 4.3%. The detailed forecast results are shown in Annex 1.

Results of current forecast can be significantly affected by variations of the real development of the assumptions applied, in both directions (upwards and/or downwards). Important factors influencing the macroeconomic environment on the external side of economy are: level foreign demand, global oil prices, exchange rate of the euro, development in financial markets, migration crisis, and geopolitical instability in the world. One of the key factors that can significantly affect the accuracy of the forecast will be the development of domestic economic policy in the coming years. Assumptions about government deficits reduction, increased effectiveness of public administration and transparency of financial flows within the social system are key factors for long-term sustainability of public finances. Given the current demographic projections and increasing overall public debt, however, it will be inevitable to implement number of consolidation measures on both the expenditure, as well as revenue side of the budget.

## **Conclusions**

This paper discusses the forecast of GDP, its components and the main macroeconomic indicators for the current year with an outlook up to 2020. In 2016, we expect a continued GDP growth at level of 3.4%. In 2017, we expect increased growth rate at 3.8%. Such growth could contribute to the creation of new jobs and the labor market should also continue to experience positive development. However, this positive development will be accompanied by shortages of skilled labor force. Outlook forecasts are currently relatively highly dependent on the development and stability of external demand, as well as adherence to the aims of economic policy. As recent development shown preservation of the monetary union and a stable monetary policy are one of the priorities of the EU and potential complications in those areas are likely to be resolved. An important factor of economic development will be stability in the financial markets and the effectiveness of quantitative easing by the ECB.

The aforementioned forecast risks pointed to possible deviations of forecasted indicators in both directions. The dynamics of the external economic environment should be in 2016 less determining factor for economic growth in Slovakia, but in the medium term plays an important role. Since, foreign demand is virtually unaffected by domestic economic policy, Slovakia as open economy is in its development critically dependent on it. Restrictive fiscal policy and changes in tax policy had the potential to address the current problems of post-crisis development in Slovakia. In the near future it will be

necessary also to look for measures capable of business environment stimulation and competitiveness of the Slovak economy in terms of quality level. Development during the past year had shown the absorption capacity of EU funds in Slovakia. Although the level of transparency and efficiency of implementation process is unclear, and need to be improved in the current programming period 2014-2020.

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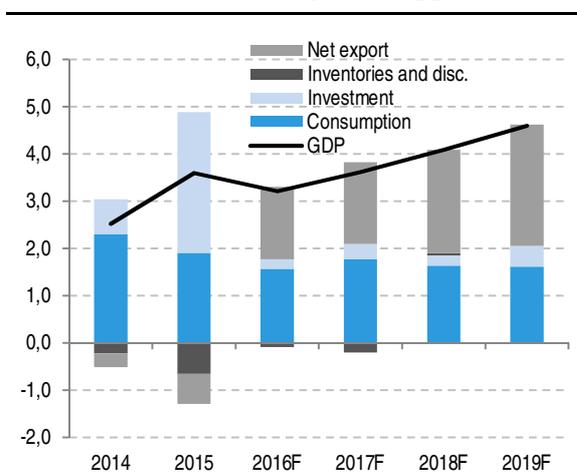
Slovak economic forecast for 2016-2019

Ján Šilan

The latest forecast of the MoF SR from February 2016 expect a solid economic growth of 3.2% this year. The structure of growth will be more balanced than in 2015. Acceleration of the real wage growth coupled with the increase in the number of jobs will drive the growth of private consumption. Public investment will fall back closer to the level from 2014. In the private sector, investment will accelerate particularly in the automotive industry, supported by the construction of the Jaguar Land Rover manufacturing plant. The slowdown of external demand will lead to a slightly slower export growth. The drop in import-intensive investments will contribute to the slowdown of import, leading again to the positive contribution of net export to GDP growth.

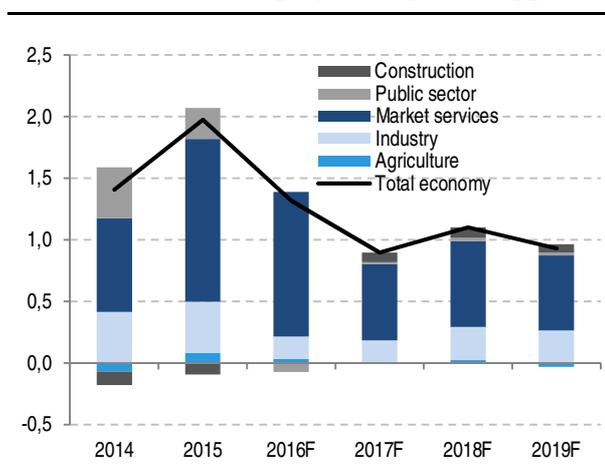
The economic growth will increase to 3.6% in 2017. The export performance as well as investment activity will accelerate. Investment will be driven by continued construction and technology installations for the new car manufacturing plants. Real wage growth will slow down due to an expected return of inflation, and together with the slower pace of employment growth will result in a moderate growth of household consumption. In 2018 and 2019 new export capacities will support the growth, reaching 4.1% and 4.6% respectively. The launch of new production in JLR and VW will increase the growth of export to 8.5% in 2019. The easing of investment growth reflects the end of the investment phase of both projects. Private consumption growth will slightly exceed the disposable income growth on an assumption of a gradual decline of the saving rate. Therefore even with such a high growth the economy will be only moderately overheated

Contributions to GDP growth (pp)



Source: ŠÚ SR, MF SR

Contributions to employment growth (pp)



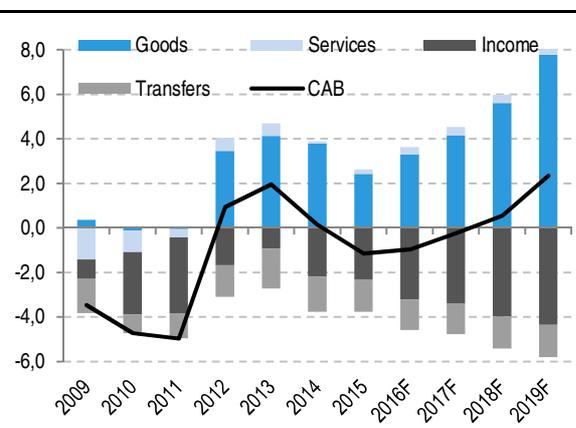
Source: ŠÚ SR, MF SR

The positive development of the labor market will continue in 2016. The economic growth will lead to a solid growth of employment by 1.3%, remaining close to 1% in the following years as well (according to ESA 2010). In 2016, about 30 thousand new jobs will be created, in particular in the services sector. Thanks to this development, the unemployment rate will drop to 10.3 % (labor force survey - LFS). Already in 2017, it can overcome the historical minimum from 2008 and reach a single-digit level.

Real wages will rise considerably in 2016, too, increasing by 3.1%. They will exceed the growth of real productivity as well as a 3% threshold for the third year in a row. Their growth is again supported by the stagnating inflation which will be only partially reflected in wage negotiations. The growth of wages will also be supported by a significant increase of the minimum wage and partially also by the overheating of the labor market. Wages should increase evenly across all sectors, however, thanks to across the board 4% increase of tariff salaries, the highest increase should be recorded by the public sector. The growth of real wages and labor productivity will reach equilibrium only at the end of 2017.

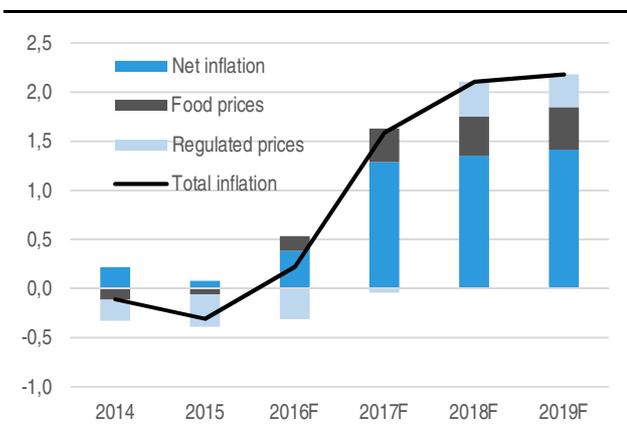
In 2016, inflation will remain at a very low level. The average year-on-year inflation will reach 0.2%. At the beginning of the year, the reduced energy prices as well as the reduction in VAT rate for selected kinds of food contributed to even bigger drop in consumer prices. The domestic demand pressures are expected to strengthen and will support gradual acceleration of prices of goods and services in the second half of the year. The latest measures of the ECB should also contribute to the price level increase. In the medium-term horizon, the growth of consumer prices will gradually accelerate and it will reach the desired level of 2% in 2018.

BoP and its components (% of GDP)



Source: NBS, MF SR

Contributions to inflation (pp)



Source: ŠÚ SR, MF SR

During the year 2016, the deficit of the balance of payments will gradually decrease. Next year, a more realistic growth of imports will return the trade balance to a more significant surplus. Starting from 2018, the growth of the trade balance will be mainly caused by a higher export of the new car manufacturer Jaguar Land Rover. Repatriation of profit of foreign investments will further deepen the deficit of primary income, however, it will not compensate the increase in the positive balance of goods. The balance of services and secondary income will remain stable in the long term.

The risks to the macroeconomic forecast are balanced. Negative risks tied to the global growth slowdown under the burden of problems of several large economies (China, Russia, Brazil) dominate in the external environment. The response of the developing economies and corporations to the tightening of the monetary policy in the USA is a new negative risk. Low commodity prices predict problems for mining and metallurgy branches at a global level. After the ECB's step in March, a stronger influence of QE on investments and consumption of households in the Eurozone means a positive risk in the external environment. The ongoing low oil prices may bring an additional stimulus of economic growth in the Eurozone or neighboring countries. Internally, the change of consumer behavior supported by the continuing positive labor market development represents a positive risk. Labor market overheating may also bring an additional pressure of wage growth in the private sector.

**Untaxed volume of Gross domestic product (GDP),  
Gross domestic product and Value added tax (VAT)  
of Slovak republic (the years 1996-2015)**

*Jozef Chajdiak*

We investigated the size of gross domestic product at current prices (GDP), the tax rate for value added tax and the volume of value added tax (VAT) for the period since 1996. Due to the fact, that the author did not have the access to the breakdown rate of VAT on basic and other rates, in the following analysis he used only the basic rate.

Tab.1 Gross domestic product (GDP), tax rate, untaxed residue (untaxed GDP), value added tax (billion €), taxed GDP without VAT, the share of VAT to GDP

year	GDP	VAT	tax rate	Taxed GDP without VAT	Taxed GDP with VAT	Untaxed GDP	Untaxed GDP /GDP%
1996	21,95	1,613	1,23	7,013	8,626	13,324	60,701
1997	24,41	1,822	1,23	7,922	9,744	14,666	60,083
1998	26,66	1,834	1,23	7,974	9,808	16,852	63,211
1999	28,54	1,956	1,23	8,504	10,460	18,080	63,348
2000	31,60	2,343	1,23	10,187	12,530	19,070	60,348
2001	34,31	2,442	1,23	10,617	13,059	21,251	61,937
2002	37,34	2,730	1,23	11,870	14,600	22,740	60,901
2003	41,47	2,781	1,23	12,091	14,872	26,598	64,137
2004	46,17	3,305	1,19	17,395	20,700	25,470	55,166
2005	50,40	4,064	1,19	21,389	25,453	24,947	49,497
2006	56,16	4,264	1,19	22,442	26,706	29,454	52,446
2007	62,85	4,514	1,19	23,758	28,272	34,578	55,017
2008	68,16	4,632	1,19	24,379	29,011	39,149	57,437
2009	63,80	3,846	1,19	20,242	24,088	39,712	62,244
2010	67,20	4,432	1,19	23,326	27,758	39,442	58,693
2011	70,16	4,753	1,20	23,765	28,518	41,642	59,353
2012	72,78	4,307	1,20	21,535	25,842	46,938	64,493
2013	73,89	4,735	1,20	23,675	28,410	45,480	61,551
2014	75,21	4,919	1,20	24,595	29,514	45,696	60,758
2015	78,06	5,510	1,20	27,550	33,060	45,000	57,648

Note: The resulting calculations from Excel presented in rounded shape.

Source: [www.statistics.sk](http://www.statistics.sk); [www.finance.gov.sk](http://www.finance.gov.sk) (to 26/02/2016 + author's archive)

The task is to present the development of the tax burden by the development of GDP volume uncovered with value added tax. Based on the relationship:

$$\text{GDP (total)} = (\text{untaxed GDP}) + (\text{taxed GDP net VAT}) + \text{VAT}.$$

The task is to calculate the estimate of untaxed GDP as the difference of GDP in total (reported by the SR Statistical Office) minus estimated volume of taxed GDP calculated via tax rates (approved by the SR National Council) and the volume of VAT (reported by Monetary fund of SR):

$$\text{taxed GDP including VAT} = (\text{VAT} / (\text{tax rate} - 1))$$

(basic rate of VAT in individual years was 1.19, 1.20 or 1.23; 1.20 or 1.23 were used).

$$\begin{aligned} \text{(taxed GDP without VAT)} &= \text{taxed GDP including VAT} - \text{VAT} \\ &= (\text{taxed GDP without VAT} * \text{basic rate of VAT}). \end{aligned}$$

The calculation of the untaxed volume of GDP:

$$\text{Untaxed GDP} = \text{GDP total} - \text{taxed GDP including VAT}$$

Check calculation of GDP will be implemented according the initial relationship.

The lower VAT tariff rates we did not take into the account due to the inaccessibility of data.

Untaxed share of GDP to GDP total:

$$(\text{Untaxed GDP} / \text{GDP total}) [ \cdot 100\% ]$$

The calculations are implemented in Table 1 and the development of untaxed GDP to GDP total is in Fig.1

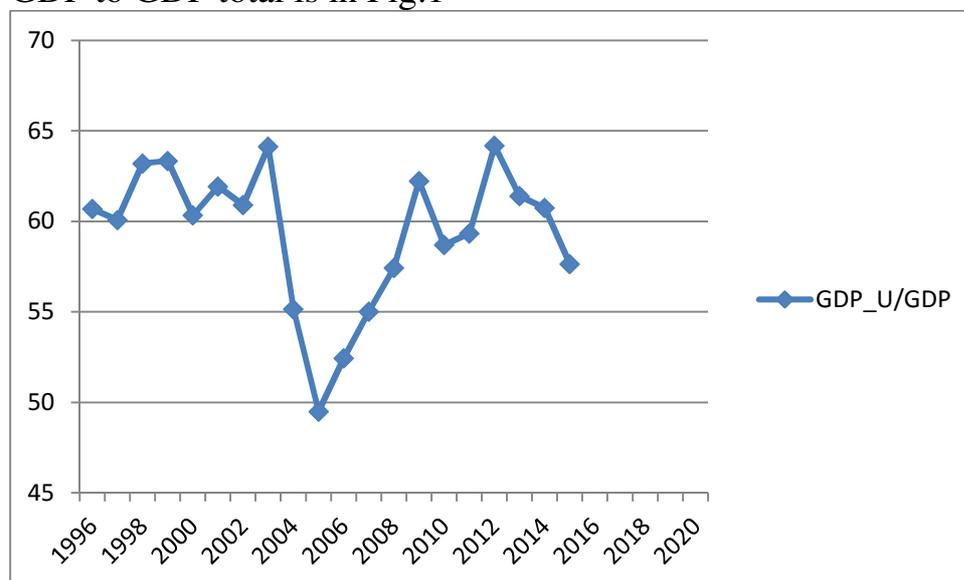


Fig.1 Development of untaxed GDP share to GDP (in %)

The share of volume of untaxed GDP to the total volume of GDP in stated period is ranging from 50 to 65 percent. During this period there was a significant decrease in the period from 2003 to 2005 from the value of 64.13% to 49.50% and after with the ten-years shift again follows decline from the value of 64.49% to 57.65% in the years 2012-2015.

Desirable development of indicator of untaxed share of gross domestic product to total volume of gross domestic product is decline. If we look at the values of relative indicator, we can count the number of increases and decreases in development, and thus confirm the thesis of the overall identity in the development of the share of untaxed GDP to total volume of GDP. Development in the recent period, in its doubtfulness in prospects, may lead to the growth and also to decline of the concerned indicator.

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Institute of Management of STU in Bratislava

**Views of the conferences VIEWS OF THE SLOVAK ECONOMY 2016**

*RNDr. Ján Luha, CSc., Doc. Ing. Jozef Chajdiak, CSc.*

*Slovak Statistical and Demographic Society*

The first annual conference VIEWS OF THE SLOVAK ECONOMY was held in 2001. Due to the positive response of participants in 2002 organized the second annual conference. It turned out that the focus of the conference as well as the concept are very interesting and so the desire to have this conference in a permanent program of activities of Slovak Statistical and Demographic society occurred. The view of the previous annual conference is presented. The first four conferences were held at the Forum, the fifth annual conference was moved to the congress hall of the Union of Women in Slovakia due to technical reasons. The sixth annual conference was held at the Congress Centre of Technopol. The seventh conference was hosted by the Statistical Office at the Congress Hall on Hanulova Street 5 / c. The eighth conference was held in Bratislava in the hotel Borik. The 9th-14th conference were held in the Auditorium of the University of Economics in Bratislava. The 15-th and 16-th conferences took place in the meeting room at the Rector's Office at University of Economics in Bratislava - Petržalka.

The Conference is governed by the specific model, authored by J. Chajdiak. At the beginning of the conference the results of expert assessment of state and development of macro-economic, the information about the development of macroeconomic indicators are announced. Before the conference the individual speakers draw the order of their presentations. Finally is discussion where participants have the opportunity to ask questions as well as the speakers may react to the presentations of their colleagues.

Participants - traditionally consist of representatives of state and local governments, deputies of National Committee of Slovak republic, representatives of employers and trade union representatives, representatives of the business sector, universities and research institutes, students, press representatives and other experts.

Conference is organized by Program and organizing committee, which in recent years has consistent composition. The first and the second year were organized by Jozef Chajdiak - Chairman, Ján Luha - Secretary, Peter Mach, Michal Olexa, Viliam Páleník and Juraj Kvetko. During the third, the fourth and the fifth annual conference the Programme and organizing committee worked. The members of committee were Joseph Chajdiak - chairman, John Luha - secretary, Peter Mach, Michal Olexa, and Viliam Páleník. From the sixth annual conference the members of committee were Joseph Chajdiak - chairman, John

Luha - secretary, Peter Mach, Michal Olexa, Viliam Páleník, Magdaléna Šipková.

Conference proceedings from individual conferences are compiled by J. Chajdiak and J. Luha.

Review of proceedings provides J. Chajdiak, P. Mach and J. Luha. In the first year J. Kvetko was also among reviewers.

The tenth annual conference was prepared by the Program and organizing committee composed of Doc. Ing. Jozef Chajdiak, CSc. - chairman, RNDr. Ján Luha, CSc. - secretary, RNDr. Peter Mach, Prof. Ing. Rudolf Sivák, PhD., Doc. Ing. Eva Sodomová, PhD., Ing. František Bernadič, Ing. Michal Olexa, PhD., Doc. RNDr. Viliam Páleník, PhD.

The eleventh annual conference was prepared by the Program and organizing committee composed by Doc. Ing. Jozef Chajdiak, CSc. – chairman, RNDr. Ján Luha, CSc. – secretary, RNDr. Peter Mach, Prof. Ing. Rudolf Sivák, PhD., Ing. Marek Radvanský, PhD., Ing. František Bernadič, Ing. Michal Olexa, PhD. and Doc. RNDr. Viliam Páleník, PhD.

The proceedings of the tenth and eleventh annual conference were compiled by: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Ján Luha, CSc. and Ing. František Bernadič. The reviewers were: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

The twelfth annual conference was prepared by the Program and organizing committee composed by: Doc. Ing. Jozef Chajdiak, CSc. – chairman, RNDr. Ján Luha, CSc. – secretary, RNDr. Peter Mach, Prof. Ing. Rudolf Sivák, PhD., Ing. Ján Onda, Doc. Ing. Eva Sodomová, PhD. Ing. Marek Radvanský, Ing. František Bernadič, Ing. Michal Olexa, PhD. and Doc. RNDr. Viliam Páleník, PhD.

The reviewers were: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

The thirteenth annual conference prepares the program and organizing committee composed Doc. Ing. Jozef Chajdiak, PhD. - Chairman, Ing. John Luha, PhD. - secretary, Mgr. Peter Mach, Prof. Ing. Rudolf Sivák, PhD., Ing. John Onda, Doc. Ing. Eva Sodomová, PhD. Ing. Radvanský Marek, Ing. Francis Bernadič, Ing. Michal Olexa, PhD., Doc. Mgr. Viliam Páleník, PhD.

Reviewers were: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

The fourteenth annual conference was prepared by the Program and organizing committee composed by Doc. Ing. Jozef Chajdiak, CSc. – chairman, RNDr. Ján Luha, CSc. – secretary, RNDr. Peter Mach, Prof. Ing. Rudolf Sivák, PhD., Ing.

Ján Onda, Doc. Ing. Eva Sodomová, PhD. Ing. Marek Radvanský, Ing. František Bernadič, Ing. Michal Olexa, PhD., Doc. RNDr. Viliam Páleník, PhD., Doc. Ing. Mária Vojtková, PhD. and Ing. Helena Kuchyňková.

Reviewers were: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

The fifteenth annual conference was prepared by the Program and organizing committee composed by Doc. Ing. Jozef Chajdiak, CSc. – chairman, RNDr. Ján Luha, CSc. – secretary, RNDr. Peter Mach, Doc. Ing. Eva Sodomová, PhD. Ing. Marek Radvanský, Ing. František Bernadič, Doc. RNDr. Viliam Páleník, PhD., Doc. Ing. Mária Vojtková, PhD., Ing. Helena Kuchyňková.

Reviewers were : Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

The sixteenth annual conference was prepared the Program and organizing committee composed by Doc. Ing. Jozef Chajdiak, CSc. – chairman, RNDr. Ján Luha, CSc. – secretary, RNDr. Peter Mach, Doc. Ing. Eva Sodomová, PhD. Ing. Marek Radvanský, PhD., Ing. František Bernadič, Doc. RNDr. Viliam Páleník, PhD., Doc. Ing. Mária Vojtková, PhD., Ing. Helena Kuchyňková.

Reviewers were: Doc. Ing. Jozef Chajdiak, CSc., RNDr. Peter Mach, RNDr. Ján Luha, CSc., Ing. František Bernadič.

Proceedings of all annual conferences are available at: <http://www.ssds.sk/> in a folder other publications.

Due to the increasing extent of the contribution we have decided to show only the information about each annual conference in the tables below:

<b>VIEWS OF THE SLOVAK ECONOMY IN 2001</b>	
Date:	22 February 2001
Place:	Bratislava, Hotel Fórum
Topics:	<ul style="list-style-type: none"> <li>• prognosis of GDP and proposals for its growth,</li> <li>• prognosis of development of unemployment and suggestions to ensure its decline.</li> <li>• the accession process to Euro - problems and suggestions.</li> </ul>
Auspices:	Ivan Mikloš, Deputy Prime Minister of SR government
Presenters:	M. Olexa, J. Haluška (Infostat), V. Páleník, V. Kvetan The Institute of Slovak and World Economy of Slovak Academy of Science (ÚSSE SAV)), P. Karas (Prognosis Institute of SAV (PÚ SAV)), I. Šujan (ÚSSE SAV), J. Chajdiak (University of Economics EU)), P. Ševcovic (National Bank of Slovakia

	(NBS)), M. Barto (Slovak Savings Bank (SISp)), P. Dufek, Ľ. Odór (Czechoslovak Commercial Bank (ČSOB)), J. Tóth (ING Bank), M. Bohatá – Chair of Czech Statistical Office
Proceedings	<b>ISBN 80-88946-12-3</b>

	<b>VIEWS OF THE SLOVAK ECONOMY IN 2002</b>
Date:	11 April 2002
Place:	Bratislava, Hotel Fórum
Topics:	<ul style="list-style-type: none"> <li>• prognosis of GDP and proposals for its growth,</li> <li>• prognosis of the development of current account balance of payments and measures to improve its condition</li> </ul>
Auspices:	Ivan Mikloš, Deputy Prime Minister of SR government
Presenters:	M. Olexa, J. Haluška (Infostat), M. Barto (SLSP), S. Kozlík (RHRS), J. Tóth (ING Bank), M. Gabriš (ČSOB), K. Morvay (MESA10), J. Chajdiak (FHI EU), V. Páleník (ÚSSE SAV)
Proceedings	<b>ISBN 80-88946-17-4</b>
	<b>VIEWS OF THE SLOVAK ECONOMY IN 2003</b>
Date:	8 April 2003
Place:	Bratislava, Hotel Fórum
Topics:	<ul style="list-style-type: none"> <li>•GDP GROWTH – prognosis and suggestions</li> <li>•IMPROVEMET OF THE STATE OF GOVERNMENT BUDGET BALANCE – prognosis and suggestions</li> </ul>
Auspices:	Ivan Mikloš, Deputy prime Minister of SR Government and Minister of Finance
<b>Presenters:</b>	J. Chajdiak (University of Economics), J. Haluška (INFOSTAT), S. Kozlík (RHRS), V. Páleník (The Institute of Slovak and World Economy of Slovak Academy of Science), P. Ševčovic (NBS), J. Tóth (ING Bank N.V.) a M. Gábriš (ČSOB)
Proceedings	<b>ISBN 80-88946-26-3</b>

	<b>VIEWS OF THE SLOVAK ECONOMY IN 2004</b>
Date:	6 April 2004
Place:	Bratislava, Hotel Fórum
Topics:	<ul style="list-style-type: none"> <li>• GDP GROWTH – prognosis and suggestions</li> <li>• IMPROVEMET OF THE STATE OF GOVERNMENT BUDGET BALANCE– prognosis and suggestions</li> </ul>

Auspices:	Ivan Mikloš, Deputy prime Minister of SR Government and Minister of Finance
<b>Presenters:</b>	On behalf of the sponsor of the conference of the Deputy Prime Minister and Minister of Finance of the Slovak Republic presented a State Secretary of Monetary Fund Vladimir Tvaroška. Viliam Páleník (Institute of Slovak and World economy SAV), Ján Tóth (ING Bank N.V.), Jozef Chajdiak (University of Economics), Marek Gábriš (ČSOB), Ján Haluška a Michal Olexa (INFOSTAT)
Proceedings	<b>80-88946-33-6</b>

	<b>VIEWS OF THE SLOVAK ECONOMY IN 2005</b>
Date:	19 April 2005
Place:	Bratislava, Congress hall of the Union of Women in Slovakia
Topics:	<ul style="list-style-type: none"> <li>• GDP GROWTH – prognosis and suggestions</li> <li>• Euro introduction – prognosis and suggestions</li> </ul>
Auspices:	Ivan Mikloš, Deputy of prime Minister of SR Government and Minister of Finance
Presenters:	On behalf of the sponsor of the conference of the Deputy Prime Minister and Minister of Finance of the Slovak Republic presented Ľudovít Ódor. Jozef Chajdiak (University of Economics), Ján Tóth (ING Bank N.V.), Ľudovít Ódor (IFP MF SR), Ján Haluška a Michal Olexa (INFOSTAT), Viliam Páleník a Ján Ďuraš (Institute of Slovak and World economy SAV), Peter Ševčovič (NBS
	Before discussions, the NBS Governor Ivan Šramko presented the information about the management courses in the Euro zone, the monetary program and the introduction of Euro on 1 January, 2009.
Proceedings	<b>80-88946-41-7</b>

	<b>VIEWS OF THE SLOVAK ECONOMY IN 2006</b>
Date:	4 April 2006
Place:	Bratislava, Congress Centre of Technopol
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis of GDP and VAT development in Slovakia by selected prognosis groups</li> <li>• propose measures to ensure GDP growth and the issue of VAT in Slovakia</li> </ul>

Auspices:	Ivan Mikloš, Deputy of prime Minister of SR Government and Minister of Finance
Presenters:	Before presentation of prognosticators, the contribution of the Deputy of Tax Directorate of SR J. Janáčková was held. The topic was Value Added Tax. Ján Tóth (ING Bank N.V.), Viliam Páleník (Institute of Economic Research SAV), Marek Gábriš (ČSOB), Ján Haluška (INFOSTAT), Joseph Chajdiak (University of Economics Ján Tóth (ING Bank N.V.), Viliam Páleník (Institute of Economic Research), Marek Gábriš (ČSOB), John Haluska (INFOSTAT), Joseph Chajdiak (University of Economics)
	Ján Tóth (ING Bank N.V.), Viliam Páleník (Institute of Economic Research SAV), Marek Gábriš (ČSOB), Ján Haluška (INFOSTAT), Joseph Chajdiak (University of Economics Ján Tóth (ING Bank N.V.), Viliam Páleník (Institute of Economic Research), Marek Gábriš (ČSOB), John Haluska (INFOSTAT), Joseph Chajdiak (University of Economics)
Proceedings	<b>80-88946-42-7</b>

	<b>VIEWS OF THE SLOVAK ECONOMY 2007</b>
Date:	27 March 2007
Place:	Bratislava - Dúbravka, Congress Hall ŠÚ SR
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis of GDP and VAT development in Slovakia by selected prognosis groups</li> <li>• propose measures to ensure GDP growth and employment in Slovakia</li> </ul>
Auspices:	Dušan Čaplovič, Deputy Prime Minister
Presenters:	Sergej Kozlík (Europarlamentarian for SR), Ján Tóth (ING Bank N.V.), Viliam Páleník (Institute of economics SAV), Marek Gábriš (ČSOB), Ján Haluška, Michal Olexa (INFOSTAT), Jozef Chajdiak (Statis), Peter Ševčovic (NBS)
Proceedings	80-88946-46-5

	<b>VIEWS OF THE SLOVAK ECONOMY 2008</b>
Date:	15 April 2008
Place:	Bratislava – Hotel Bôrik
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis od GDP development and long-term unemployment in Slovakia by selected prognosis groups</li> <li>• propose measures to ensure GDP growth and decline of long-term unemployment in Slovakia</li> </ul>

Auspices:	Dušan Čaplovič, Deputy Prime Minister
Presenters:	Ján Tóth (ING Bank N.V.), Viliam Páleník, Kvetan Vladimír, Radvanský Marek (Institute of Economics SAV), Ján Haluška, Michal Olexa (INFOSTAT), Jozef Chajdiak (ÚM STU), Renáta Konečná (NBS)
Proceedings	<b>80-88946-47-2</b>

	<b>IEWS OF THE SLOVAK ECONOMY 2009</b>
Date:	7 April 2009
Place:	Bratislava – Assembly hall of University of Economics
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis of GDP development and long-term unemployment in Slovakia by selected prognosis groups</li> <li>• propose measures to ensure GDP growth and the effective development of transport demands of GDP in Slovakia</li> </ul>
Auspices:	Dušan Čaplovič, Deputy Prime Minister, Ľubomír Vážny, Minister of Transport and Communication of SR
Presenters:	Ján Haluška, Michal Olexa (Infostat), Viliam Páleník, Vladimír Kvetan, Marek Radvanský (EÚ SAV), Peter Ševčovic (NBS), Ján Tóth (UniCredit Bank), Jozef Chajdiak (UM STU), Ľubomír Palčák (VÚD)
Proceedings	<b>ISBN 978-80-88946-48-9</b>

	<b>IEWS OF THE SLOVAK ECONOMY 2010</b>
Date:	13 April 2010
Place:	Bratislava – Assembly hall of University of Economics
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis of GDP development and private investment in Slovakia by selected prognostic groups</li> <li>• propose measures to ensure GDP growth and effective development of private investments in Slovakia</li> </ul>
Auspices:	Dušan Čaplovič, Deputy prime Minister of SR
Presenters:	Sergej Kozlík (deputy of EP), Rudolf Sivák (rector of EU), Ján Haluška, Michal Olexa (Infostat), Viliam Páleník, Vladimír Kvetan, Marek Radvanský (EÚ SAV), Peter Ševčovic (NBS), Ján Tóth (UniCredit Bank), Jozef Chajdiak (UM STU),
Proceedings	<b>ISBN 978 - 80 - 88946 - 49 - 6</b>

<b>VIEWS OF THE SLOVAK ECONOMY 2011</b>	
Date:	12 April 2011
Place:	Bratislava – Assembly hall of University of Economics
Topics:	<ul style="list-style-type: none"> <li>• the results of current prognosis of GDP development and private investment in Slovakia by selected prognostic groups</li> <li>• propose measures to ensure GDP growth and effective development of inclusive growth in Slovakia</li> </ul>
Auspices:	Iveta Radičová, Slovak prime Minister
Presenters:	Sergej Kozlák (deputy of EP), I. Mikloš (Deputy Prime Minister and Minister of Finance), Rudolf Sivák (rector of EU), Ján Beka (NBS), František Bernadič (ŠÚ SR), Ján Haluška, Michal Olexa (Infostat), Viliam Páleník, Marek Radvanský (EÚ SAV), Peter Ševčovic, Jozef Chajdiak (UM STU), Lucia Šrámková (IFP MF SR), Dávid Dereník (UniCredit Bank), Juraj Valachy (Tatra BANKA ).
Proceedings	<b>ISBN 978 - 80 - 88946 - 56 – 4</b>

<b>VIEWS OF THE SLOVAK ECONOMY 2012</b>	
Date:	17 April 2012
Place:	Bratislava – Assembly hall of University of Economics
Topics:	<ul style="list-style-type: none"> <li>• Present the results of current prognosis of GDP and the implementation of the second priority-strategy of Europe 2020 - Sustainable growth, i.e promotion of more ecological and more competitive economy which more effectively uses resource of selected prognostic groups in Slovakia</li> <li>• Present proposals for measures to ensure GDP growth and effective development of sustainable growth in Slovakia</li> </ul>
Auspices:	Peter Kažimír, Deputy prime Minister of SR and Minister of Finance
Presenters:	Sergej Kozlák (deputy of EP), Peter Pellegrini (state secretary of MF), Rudolf Sivák (rector of EU), Ján Beka (NBS), Ján Haluška, Viliam Páleník, Marek Radvanský (EÚ SAV), Jozef Chajdiak (UM STU), Zdenko Krajčír, Monika Pécsyová (IFP MF SR), Juraj Valachy (Tatra banka).
Zborník	<b>ISBN 978 - 80 - 88946 - 58 – 8</b>

	<b>IEWS OF THE SLOVAK ECONOMY 2013</b>
Date:	16 April 2013
Place:	Bratislava – Assembly hall of University of Economics
Topics:	Present the results of current prognosis of GDP development and the fulfilment of the first of the three priorities of Europe 2020 strategy - - the <b>Smart growth</b> , i.e. creating an economy based on knowledge and innovation by selected prognostic groups
Auspices:	Peter Kažimír, Deputy Prime Minister of SR and Minister of Finance
Presenters:	Peter Mach (SSDS), Rudolf Sivák (rector of EU), František Barnadič (ŠÚ SR), Marian Zajko (ÚM STU), Branislav Reľovský (NBS), Jana Júriová (Infostat), Brian König (EÚ SAV), Jozef Chajdiak (UM STU), Vladimír Vaňo (SBERBANK), Juraj Valachy (Tatra banka), Dávid Dereník
Proceedings	<b>ISBN 978 - 80 - 88946 - 62 – 5</b>

	<b>IEWS OF THE SLOVAK ECONOMY 2014</b>
Date:	8 April 2014
Place:	Bratislava – Assembly hall of University of Economics
Topics:	<ul style="list-style-type: none"> <li>• Results of current prognosis of demographic development and development of GDP by selected prognostic groups</li> <li>• Propose measures to ensure GDP growth and the impact of demographic changes in the environment</li> </ul>
Aispices:	Peter Kažimír, Deputy Prime Minister of SR and Minister of Finance
Presenters:	Peter Mach (SSDS), Rudolf Sivák (rector of EU), Boris Vaňo (Infostat), Ivan Lichner (EÚ SAV), Jozef Chajdiak (UM STU), Ján Beka (NBS), Vladimír Vaňo (SBERBANK), Brian König (EÚ SAV),
Proceedings	<b>ISBN 978 - 80 - 88946 - 65 – 6</b>

	<b>IEWS OF THE SLOVAK ECONOMY 2015</b>
Date:	14 April 2015
Place:	Bratislava – University of Economics
Topics:	<ul style="list-style-type: none"> <li>• Results of current prognosis of GDP development by selected prognostic groups</li> <li>• Proposals to ensure GDP growth</li> <li>• Measurement of GDP in terms of ESA 2010</li> <li>• Gray, black economy</li> </ul>

Presenters:	Peter Mach (SSDS), Rudolf Sivák, František Bernadič, Marek Radvanský, Jozef Chajdiak, Ján Beka, Vladimír Vaňo.
Proceedings	<b>ISBN 978 - 80 - 88946 - 67 - 0</b>

	<b>VIEWS OF THE SLOVAK ECONOMY 2016</b>
Date	4 April 2016
Place:	Bratislava – University of Economics
Aispices:	Ivan Korčok, State Secretary of the Ministry of Foreign and European Affairs of the Slovak Republic
Topics:	Discuss about: the impact of European economic policy in Slovakia in the context of the Slovak Presidency of the EU Council Results of current prognosis of GDP development by selected prognostic groups Propose measures to ensure GDP growth
Presenters:	Peter Mach (SSDS), D. Čiderová, Vladimír Maňka, Ivan Štefanec, Viliam Páleník, Mikuláš Luptáčik, František Bernadič, Rudolf Sivák, Jozef Chajdiak, Ján Beka, Ján Haluška, Marek Radvanský, Ján Šilan, Vladimír Vaňo.
Proceedings	<b>ISBN 978 - 80 - 88946 - 70 - 0</b>

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