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Car plants get centre-staged

Macroeconomic forecast for 2015-2019

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The Slovak economy will reach a solid growth rate of 3.2 per cent this year, despite the worsening outlook of the external environment. The structure of growth will be more balanced than in the previous year, when domestic demand and public investment predominated. The acceleration of growth of real wages together with strong job creation will support the private consumption. By the end of the medium-term horizon the economic growth will accelerate towards 4.6 per cent thanks to new production capacities in the automotive industry. New macroeconomic forecast has a positive impact on the tax bases throughout the forecast horizon.

Polarization of monetary policies will deepen this year

After seven years the Fed has undertaken the long awaited interest rate hike. Fed plans to continue in gradual monetary policy tightening, although the expectations regarding the pace of further monetary restriction have eased off at the start of the year due to a stock market slump. **At the December meeting the ECB** has lowered the deposit rate to -0.30%, **prolonged the QE program until March 2017** keeping the monthly volume unchanged, and decided to reinvest the principal repayments of securities purchased under QE when they mature. The ECB action disappointed the markets, which have speculated about the QE increase since the summer based on lowering inflation and growth forecasts. The impact of QE on Slovak bonds' yield curve is quantified in Box 1.

Nervous start of the year on the stock markets

Global stock markets have started the new year in red, the S&P being the worst since 1928. The contagion has spread predominantly from the Chinese stock market. Even after this correction the stocks remain on aggregate fundamentally overvalued. Overleveraged private sector remains a problem. Rising volatility across all markets (commodities, stocks, bonds) is signaling an unstable period as does the positive correlation of commodities and stocks.

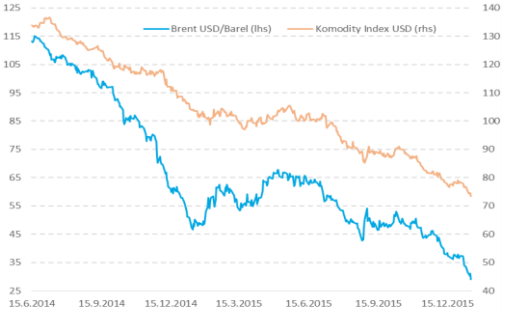
Oil price falls more due to demand factors compared to last year

The oil price has reached a 12 year minimum (28.6 USD/bl), therefore we lower our forecast by almost 16 dollars per barrel over the entire horizon. Factors influencing the supply have not significantly changed since September. On the other hand, worsening outlook of global growth confirms fears that the current drop in price is a signal of lacking demand. The same applies to other commodities.

Chart 1: Fall of stock indices

Source: Bloomberg

Chart 2: Brent oil and other commodities



Source: Bloomberg

Growth in advanced countries remains stable, in developing countries disappears

Developed countries fared well in the last year despite economic and political challenges. The condition of the US economy is satisfactory enough the Fed has after seven years decided to end the zero interest rate policy. Continued problems related to the legacy of the debt crisis, macroeconomic imbalances and the influx of immigrants have not significantly impacted the Eurozone growth dynamic. Similarly the slowdown in China and continuing recession in Russia and Brazil have not yet been transmitted into the global economy.

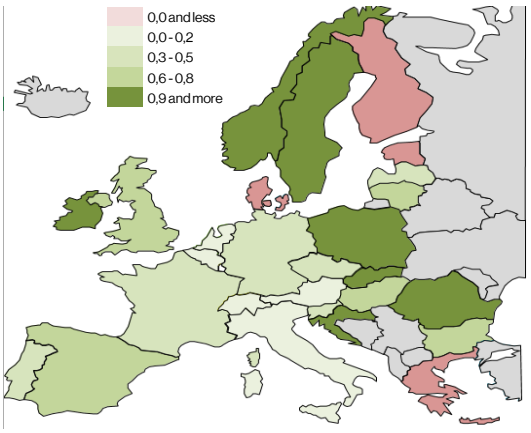
Eurozone growth driven by domestic demand

The Eurozone has posted the best economic result since 2011. However, the scope for further growth acceleration has been exhausted. A positive fact is the shift of the driver of growth from foreign trade towards domestic demand. As a result the Eurozone is less vulnerable to the global developments compared to the past. However, the unsolved macroeconomic and structural issues together with continuing political uncertainty remain a main obstacle to the growth acceleration.

Eurozone growth remains stable but will not accelerate

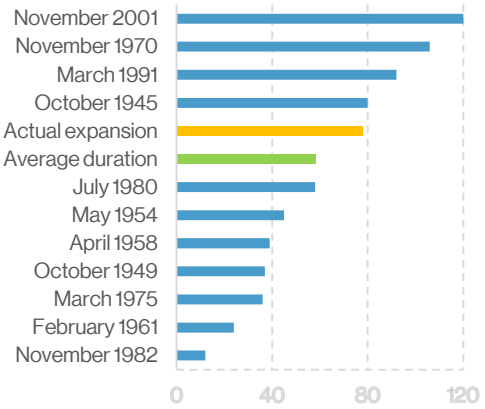
Soft indicators show that the Eurozone growth rate should remain unchanged this year. The Eurozone, as well as Germany, will grow by under 2%. After last year's abundant growth, the Czech Republic, Poland and Hungary will see a correction this year, although the average V3 growth should remain over 3%. However, downside risks to this scenario are increasing. These include particularly deteriorating outlook of China, Brazil and Russia, which might weigh more than expected on the Eurozone economy. The emerging markets as well as non-financial corporations might turn more vulnerable to the Fed's monetary policy tightening. An unexpected recession in the US is not unlikely given the average length of US business cycle.

Chart 3: Quarterly GDP growth in the EU countries



Source: Eurostat, IFP

Chart 4: Exceptionally long US expansion



Source: NBER, IFP

Worse foreign trade outlook due to development in the rest of the world

The estimate of the economic growth of Slovakia's main trading partners was lowered compared to the previous forecast. The forecast of foreign demand of our European partners has been lowered only slightly. The growth outlook of Russia and China is worsened on the top of foreign demand indicator, taking into account the deteriorating global growth forecasts. Assumptions related to the external demand are based on autumn Commission and IMF forecast adjusted for the third quarter of 2015[1] development and the very short forecast (nowcasting) of the Eurozone. Assumptions of

[1] For selected countries including the data for the fourt quarter of 2015.

the external environment, interest rates and commodities' prices are based in the information available as of mid-January 2016.

Table 1: External environment in 2015-2019

	GDP (% growth)					Diff. from September 2015					Import (% growth)					Diff. from September 2015				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Important trading partners of SR	2.0	2.2	2.1	2.0	1.9	0.0	-0.1	0.0	0.0	-	5.4	5.2	4.9	4.5	4.5	-0.4	-0.3	0.0	0.0	-
Eurozone*	1.6	1.8	1.7	-	-	0.1	0.0	-	-	-	4.5	4.0	4.4	-	-	0.3	-0.3	-	-	-
Germany	1.7	1.8	1.7	-	-	0.2	-0.1	-	-	-	5.3	5.1	5.0	-	-	0.6	-0.2	-	-	-
Czech Republic	4.2	2.7	2.8	-	-	0.1	-0.2	-	-	-	8.2	7.2	6.3	-	-	-1.1	-1.0	-	-	-
Poland	3.4	3.3	3.4	-	-	0.0	-0.1	-	-	-	4.9	6.9	6.7	-	-	-2.9	-0.3	-	-	-
Hungary	2.6	2.5	2.5	-	-	-0.2	0.2	-	-	-	6.9	5.2	4.7	-	-	1.0	0.0	-	-	-

*Eurozone weighted by volume of Slovak exports Foreign demand indicator includes Eurozone and Visegrád countries.

Source: OECD , Bloomberg, IFP

Investment dominated the economic growth in 2015

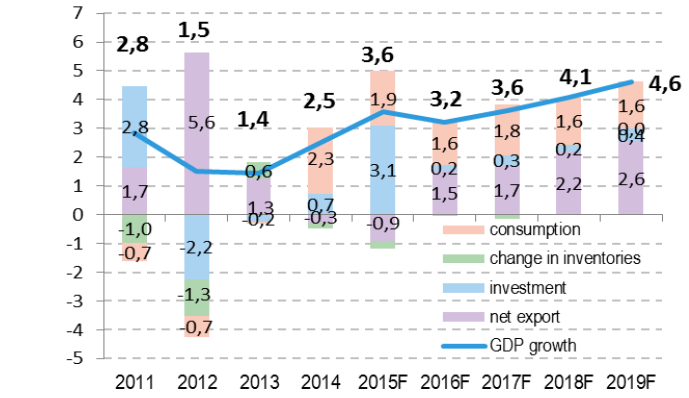
Slovak economy will have grown by 3.6 per cent in 2015, the second highest growth since the crisis. The main driver of growth has been the domestic demand for the second year in a row. The economy accelerated mainly in the end of the year due to exceptionally high EU funds absorption, resulting in an acceleration of growth of public consumption, but especially public investment. Investment growth of almost 15 per cent has been from two thirds driven by the public sector. The private sector thrived as well[2], driven mainly by investment in industry. Household consumption kept a solid pace last year, however its growth is lagging behind the growth of disposable income, resulting in the continued increase in the saving rate attacking the 15-year high. Export performance has exceeded the foreign demand indicator, with the car manufacturing industry faring exceptionally well. The rise of import-intensive investment from the EU funds led to increased imports, and as a result foreign trade contributed negatively to GDP growth.

Balanced structure of growth this year

The economy will expand by 3.2 per cent with a balanced growth structure in this year. Export growth will lag slightly behind the foreign demand on the back of PSA's production line preparation for the expansion of capacities. More realistic EU funds absorption from the new programming period will return the public investment back towards the long-term potential. The buoyant investment growth is expected in the car industry: the construction of Jaguar Land Rover (JLR) plant, new VW assembly hall and the preparation for the new model production in PSA. Household spending will be supported by continued improvement of labor market conditions and low inflation. **Consumption growth should therefore accelerate to a new post-crisis high of 3.2%.** The fall of investment with high import intensity will slow down the pace of import and as a result the net foreign trade will return back to a positive contribution to GDP growth after a two years pause.

[2] Private investment data were significantly influenced by a December national accounts revision.

Chart 5: Contributions of individual components to GDP growth (p. p.)

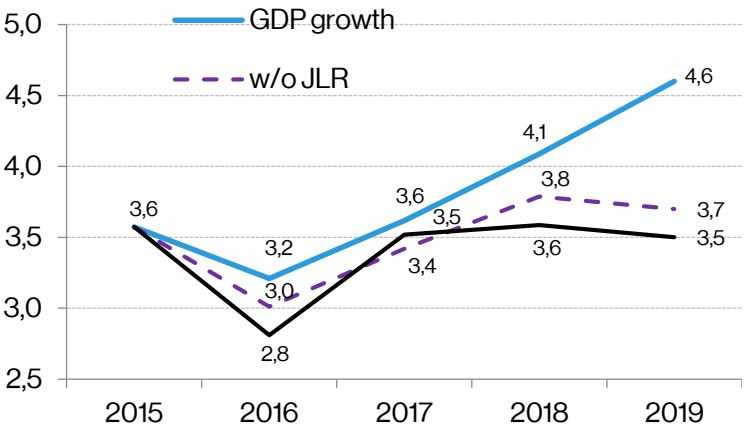


Source: SÚ SR, IFP

New production in the automotive industry will boost growth in 2018 and 2019

The economic growth will increase to 3.6 per cent 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 per cent 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.

Chart 6: Impact of major FDI in automotive industry on economic growth forecast (% YoY)



Source: IFP

MF SR FORECAST – MAIN ECONOMIC INDICATORS (February 2016)

indicator (growth in % unless otherwise noted)	actual									
	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018
Gross domestic product										
GDP, real	2.5	3.6	3.2	3.6	4.1	4.6	0.4	0.1	0.0	0.5
GDP, nominal (bn €)	75.6	78.0	80.6	84.8	90.2	96.4	0.5	0.0	-0.3	0.3
Private consumption, real	2.4	2.3	3.2	2.6	2.7	2.9	0.2	0.5	-0.1	-0.1
Private consumption, nominal	2.3	2.1	3.3	4.3	4.8	5.2	0.0	-0.2	-0.2	0.0
Public consumption	5.9	3.6	-0.6	2.1	1.3	0.8	0.2	0.1	0.6	-0.2
Fixed investment	3.5	14.6	0.9	1.4	0.9	2.0	7.0	1.6	-0.6	-2.3
Export of goods and services	3.6	6.7	4.9	6.1	7.5	8.5	0.6	-0.7	-0.2	1.9
Import of goods and services	4.3	8.3	3.6	4.6	5.8	6.6	1.2	-0.3	-0.3	0.8
Labor market										
Employment (registered)	1.3	2.1	1.3	0.9	1.1	0.9	0.2	0.3	0.2	0.3
Wages, nominal	4.1	2.8	3.3	4.5	4.7	5.1	0.4	0.2	-0.1	0.0
Wages, real	4.2	3.2	3.1	2.9	2.5	2.9	0.7	0.9	0.2	-0.2
Unemployment rate	13.2	11.5	10.4	9.5	8.3	7.3	0.0	-0.2	-0.3	-0.7
Inflation										
CPI	-0.1	-0.3	0.2	1.6	2.1	2.2	-0.1	-0.7	-0.2	0.1

Source: ŠÚ SR, IFP

The unemployment rate decreases to 10.4 % this year

This year, the labor market will continue in a robust growth, adding 30,000 jobs in the economy. Employment will grow mainly in market services and industry. On contrary stagnation is expected in the construction and even decline in the public sector employment. In subsequent years, improving labor market conditions are forecasted, with a peak in 2018 due to new capacities in the automotive industry. The unemployment rate will fall to 10.4% this year and the labor market will be slightly overheating (see Box 2). In the next year it will decrease further to a one-digit level.

Real wages will record the second fastest growth since crisis

Real wages will rise again at a high pace of over 3%, mainly due to the low-inflation environment. The wage dynamics will outperform productivity until 2018[3]. The start of a new automobile production at VW and JLR should provide a positive productivity shock that is only partially reflected in wage dynamics, similar to 2006 and 2007. At the sectoral level, the highest growth of wages in the actual year is expected in the public sector (through the increase of tariffs) and in construction (due to strong productivity growth in the previous year). The average nominal wage in the economy should reach € 911 in 2016.

Inflation will pick up only gradually this year

Inflation will remain close to zero this year. The fall of oil prices has a dampening effect on inflation throughout the Eurozone. Imported inflation will gradually recover as QE

[3] In the last three years Slovakia has experienced the highest labour productivity growth (per hour worked) in the Visegrad region

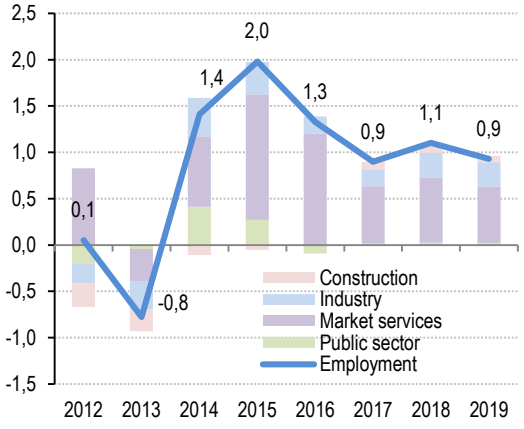
transmission will continue in supporting private consumption. Regulatory body cut gas and electricity prices in January. Food prices are influenced by the fall of commodities' prices on the global markets, although they should start recovering throughout the year. A cut of VAT rate on selected basic foodstuff influenced food prices at the beginning of the year. Demand-driven inflation will gradually start picking up over the course of the year as overheating labor market will partly exert pressure on wage increase.

In 2017 we expect an acceleration of inflation, as the output gap gradually closes. Prices of market services will increase the most on the back of solid household consumption. Oil prices will recover and the dampening effect of cost factors on inflation will gradually dissipate. Secondary demand stimulus from the expansion of car production will result in slightly widening positive output gap, bringing the headline inflation rate above the 2 per cent inflation target.

Risks of the macroeconomic forecast are balanced

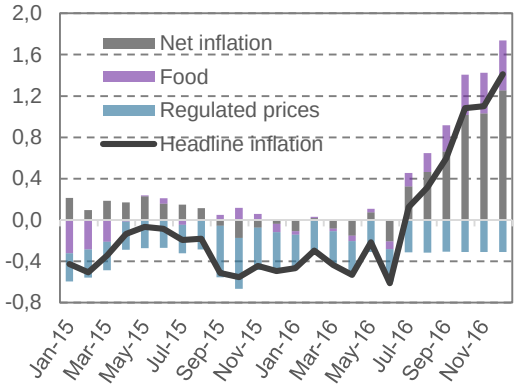
The risks of the macroeconomic forecast are balanced. In the external environment, similarly to the previous forecast, negative risks linked to the slowdown of global growth due to the adjustment of several large economies (China, Russia, Brazil) predominate. A newly appearing **negative risk** is a reaction of emerging economies to monetary policy tightening in the US. New lows of commodities' prices might deepen problems for mining and metallurgy industries and, oil exporting economies. **A positive risk** is a delayed, but strengthened effect of the QE on investment and private consumption in the Eurozone. Lower oil prices may also bring an additional stimulus to the economic growth in the Eurozone or the neighboring countries. In the domestic economy, the closure of the gap between wages and consumer expenditures represents a positive risk. The overheating of the labor market may bring additional pressure on wage growth in the private sector.

Chart 7: Contributions to employment growth (in p.p.)



Source: SO SR, IFP

Chart 8: Inflation and contribution of individual components (p.p.)

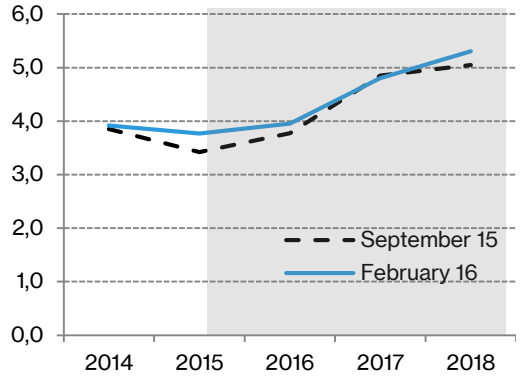


Source: ŠÚSR, IFP

Tax bases are higher throughout the forecast horizon

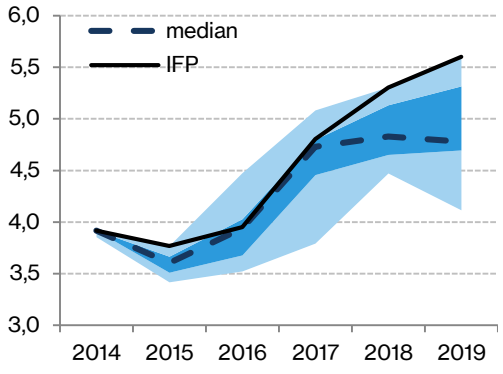
The overall effect of the update of the macroeconomic forecast on the tax bases in the past year is positive compared to September, mainly due to public investment and improved labor market outlook. The positive impact on tax base growth due to stronger wage base growth will continue throughout the medium-term horizon with the exception of 2017. The cumulative **impact of the macroeconomic forecast on the estimate of taxes and social security contributions is positive on the entire forecast horizon** and will be subject to discussion on the Tax Forecast Committee on February 11, 2016.

Chart 9: Macroeconomic tax bases growth compared to September forecast



Source: IFP

Chart 10: Comparison of forecasts of macroeconomic bases[4] with the members of the Committee



Source: IFP

The medium-term forecast prepared by the MF SR was discussed at a session of the Macroeconomic Forecasts Committee on February 3, 2016. The medium-term **forecast was evaluated as realistic by all members of the Committee** (NBS, ČSOB, Infostat, SLSP, Tatrabanka, Unicredit, VÚB a Sberbank). The detailed macroeconomic forecast, as well as the minutes from the meeting and supporting materials are available on the IFP website.

[4] Macroeconomic basis for the budget revenues (weight of indicators depends on the proportional share of the particular tax on the total tax revenues); Wage base (employment x nominal wage) – 51,1%; Nominal private consumption – 25,7%; Real private consumption – 6.6%; Nominal GDP growth – 9.9%; Real GDP growth – 6.7%.

BOX 1 – Historically cheapest public debt financing

Using the synthetic control method, we estimate that the quantitative easing (QE) has reduced the Slovak 10 year government bond yield by 60 b.p.. Given the supply on the primary market, suppressed yields should persist throughout this year.

We estimate the effect of ECB's QE using the synthetic control method (SCM).[5] We created the counterfactual development of the Slovak bond yield if the QE did not take place. Following SCM we search for a weighted combination of non-euro area yields such that the newly combined yield would match the Slovak yield the closest during the pre-QE period, i.e. before September 4 2014 when the QE was publicly announced for the first time. Then, the newly combined yield is used as an indicator of the counterfactual development of the Slovak yield after September 2014.

Results show that QE reduced Slovak 10-year government bond yield by approx. 60 b.p. (Chart 1)[6]. The effect of the QE intensifies after January 22nd when ECB announced details of the new unconventional monetary policy measure. Weights of the non-euro area yields are proportional with the Swiss bond weight amounting for 24 per cent (Tab 1). Interestingly, the *spread* against the German Bund narrowed during the same period by approx. 60 b.p. as well. The exception was the crisis in Greece during summer 2015 (Chart 2). This indicates that QE might have affected German Bunds only moderately, while the Slovak yield has been decreasing because of the liquidity premium and segmentation of the Slovak bond market. Currently, the Slovak yield is the third lowest among the euro area countries, while having only A+/A2 ratings.[7]

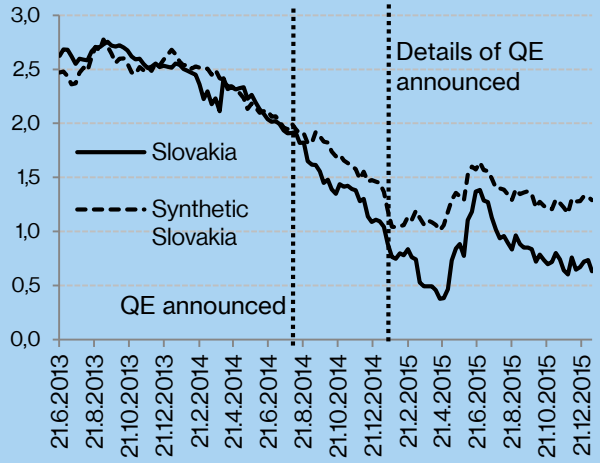
Tab 1: Countries' bond-yields weights

Treated Country:	Slovakia
Control country	Weights (per cent)
Switzerland	24
Denmark	13
Czech Republic	12
Sweden	12
Norway	10
Malaysia	8
Bulgaria	8
Poland	7
Hungary	5

Source: IFP

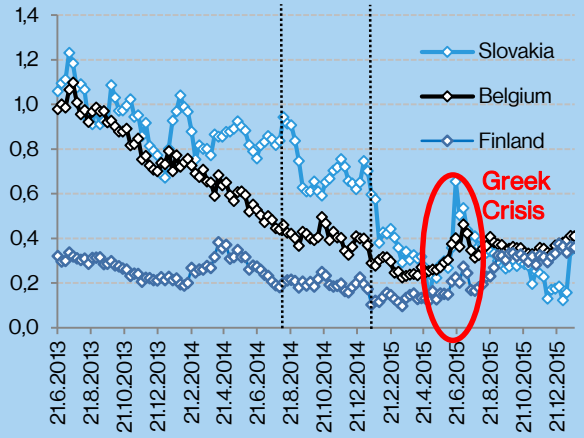
[5] Details of the SCM can be found in Abadie and Gardeazabal (2003), "The Economic Costs of Conflict: A Case Study of the Basque Country," *American Economic Review*, vol. 93(1).
[6] Results did not alter when we use other combinations of countries outside of the euro area. This underscores the robustness of our results.
[7] https://www.ecb.europa.eu/stats/money/long/html/index.en.html

Chart 1: Ten year gov. bond yield (%)



Source: IFP and Bloomberg

Chart 2: *Spread* against German bund (100 b.p.)



Source: IFP a Bloomberg, note: zero coupon bonds

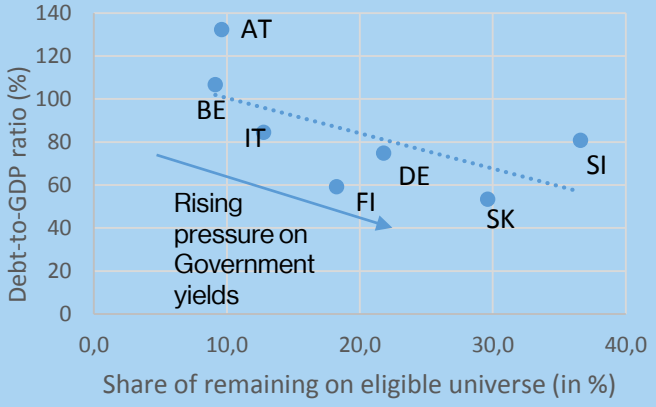
This deepened impact on Slovak government bond yields could be explained by the small ´size´ of Slovak government securities universe eligible to the asset purchase program. **Estimated remaining asset purchases by ECB will reach almost 30 per cent of nominal outstanding amount of 12 issues eligible for the program by March 2017 (Tab. 2).** The cross-country comparison suggest that only Slovenian bond market has potentially worse ECB demand absorption (Tab. 2, Chart 3). This market conditions should prevail throughout the upcoming year. Given the 25% rule for maximum purchase in each bond issue, new supply of bonds eligible to the program will amount only to Eur1.9bn.

Tab. 2: Asset Purchase Program vis-à-vis the size of bond market (cross country comparison)

	AT	BE	FI	DE	IT	SK	SI
Estimated remaining APP by March 2017 (Eur bn)	19.0	23.9	12.1	173.4	118.8	6.9	3.3
Eligible Universe (nominal outstanding amount, Eur bn)	148.8	261.6	66.5	796.5	1237.2	23.4	9.1
No. of Issues	17	22	13	48	69	12	10
Share of expected APP on Eligible Universe (row 1 / row 2, in %)	12.7	9.1	18.2	21.8	9.6	29.6	36.6
Debt-to-GDP ratio (2014, % of GDP)	84.6	106.7	59.3	74.9	132.3	53.5	80.8

Source: Bloomberg, IFP

Chart 3: Public Debt Parameters amplifies the squeeze on Government Bond yields



Zdroj: IFP a Bloomberg

BOX 2 – The labour market was overheating throughout the past year

According to the current estimate of structural unemployment defined by NAIRU concept, the labour market was overheating throughout the last year. The NAIRU hovering slightly above 12% corresponds to a decline of long-term unemployment rate. In addition, according to the soft indicators the number of employers facing a shortage of skilled labour force increased in 2015. A minor shortcoming of the current estimating methodology is its pro-cyclicality.

In the actual macroeconomic forecast we have changed the methodology of estimating structural unemployment defined by NAIRU[8]. The new methodology based on the OECD approach[9] will be discussed in detail in the forthcoming IFP study. The estimate is based on a multivariate Kalman filter applied on the Phillips curve with adaptive expectations[10].

The system of equations for NAIRU estimation consists of two measurement equations, of which one defines the decomposition of unemployment rate on NAIRU and unemployment gap (1). The second measurement equation is represented by the Phillips curve (2) in which the modeled core inflation π_t is determined by demand (unemployment gap) and supply shocks (oil π_t^o, imported inflation π_t^f). For the course of unobserved variables NAIRU and unemployment gap, standard stochastic processes, i.e. random walk (3) and AR(2) process (4) are projected.

(1) $U_t = NAIRU_t + Ugap_t$

(2) $\Delta\pi_t = \alpha_1\Delta\pi_{t-1} + \alpha_2(\pi_t^f - \pi_t) + \alpha_2(\pi_{t-1}^f - \pi_{t-1}) + \alpha_2(\pi_t^o - \pi_t) + \alpha_2(\pi_{t-1}^o - \pi_{t-1}) + c_2 Ugap_t + c_3 Ugap_{t-1} + \eta_t$

(3) $NAIRU_t = NAIRU_{t-1} + v_t$

(4) $Ugap_t = c_{12}Ugap_{t-1} + c_{22}Ugap_{t-2} + \varepsilon_t$

Slovak NAIRU hovered between 12 and 14 per cent since 2000, with an exception of 2008 when it is estimated reaching historical lows at 11.5 per cent. Our estimate is slightly pro-cyclical as overall unemployment affects the NAIRU by through the long-term unemployment. The new estimate shows that the Slovak unemployment rate reached the level of NAIRU already at the end of 2014. Since the beginning of 2015 the labor market has been overheating, which is in line with the old IFP methodology.

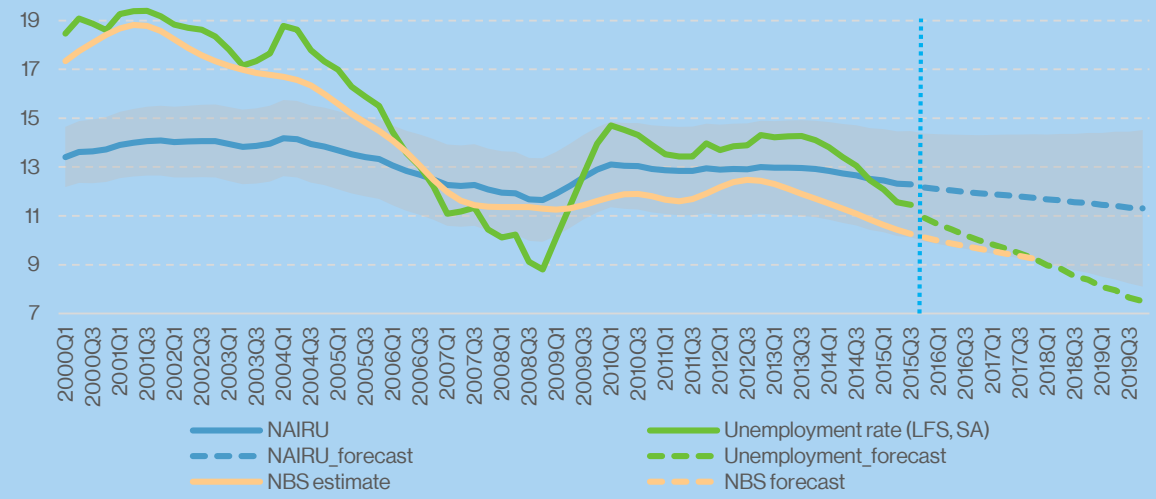
[8] For the purpose of this box, the estimated NAIRU refers to the LFS concept (i.e. national methodology) but for the purpose of medium-term forecasts we utilise the NAIRU estimate based on ESA concept (i.e. domestic methodology). This has been done to ensure capturing the impact of labour market imbalances on wage pressures properly. The ESA estimate is slightly higher than the level by LFS methodology but the profile and the turning points are very similar.

[9] Gianella, Ch., I. Koske, E. Rusticelli and O. Chatal (2008) "What Drives the NAIRU? Evidence from a Panel of OECD Countries," OECD Economics Department Working Papers 649, OECD Publishing.

[10] The initial value of NAIRU was initially set according to OECD estimates but later expertly adjusted upwards as we consider the OECD estimate counterintuitive. The initial variance for the NAIRU and the unemployment gap (which reflects high uncertainty of the initial values for state variables) has been set equal to 1. The initial parameters were determined by a simple OLS regression in which the unobserved variables (NAIRU and the unemployment gap) were derived by the HP filter (lambda = 1600). Since the Kalman filter is an iterative procedure, these parameters converge to the true coefficients. We limited the variability of the NAIRU by fixing the ratio of variances $\sigma_\eta/\sigma_v = 1/0{,}15$

In contrast, the estimate of National Bank of Slovakia suggests that the labour market has not started overheating yet.

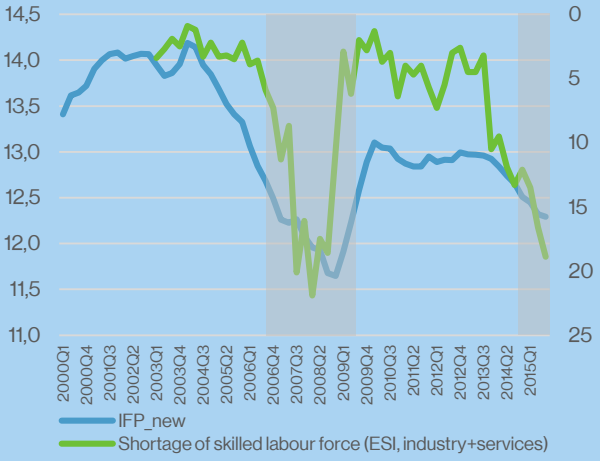
Chart 1: Unemployment rate, NAIRU and the 95% confidence interval



Source: IFP, NBS

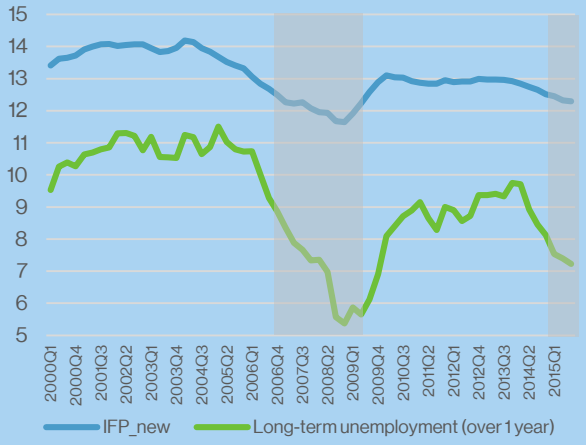
The estimated period of overheating labour market fits with the period of a shortage of skilled labour force in the private sector (Figure 2). Overheated labor market is also properly associated with a significant decrease in the number of long-term unemployed (Figure 3).

Chart 2: Shortage of skilled labour force correlates with NAIRU development



Source: IFP

Chart 3: Fall in the long-term unemployment is present only in periods of overheated labor market



Source: IFP