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Monthly Report

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Globalisation and the 'Race to the Bottom': Intended and Unintended Consequences

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The Vienna Institute for International Economic Studies
Wiener Institut für Internationale Wirtschaftsvergleiche

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LEON PODKAMINER
CODRINA RADA

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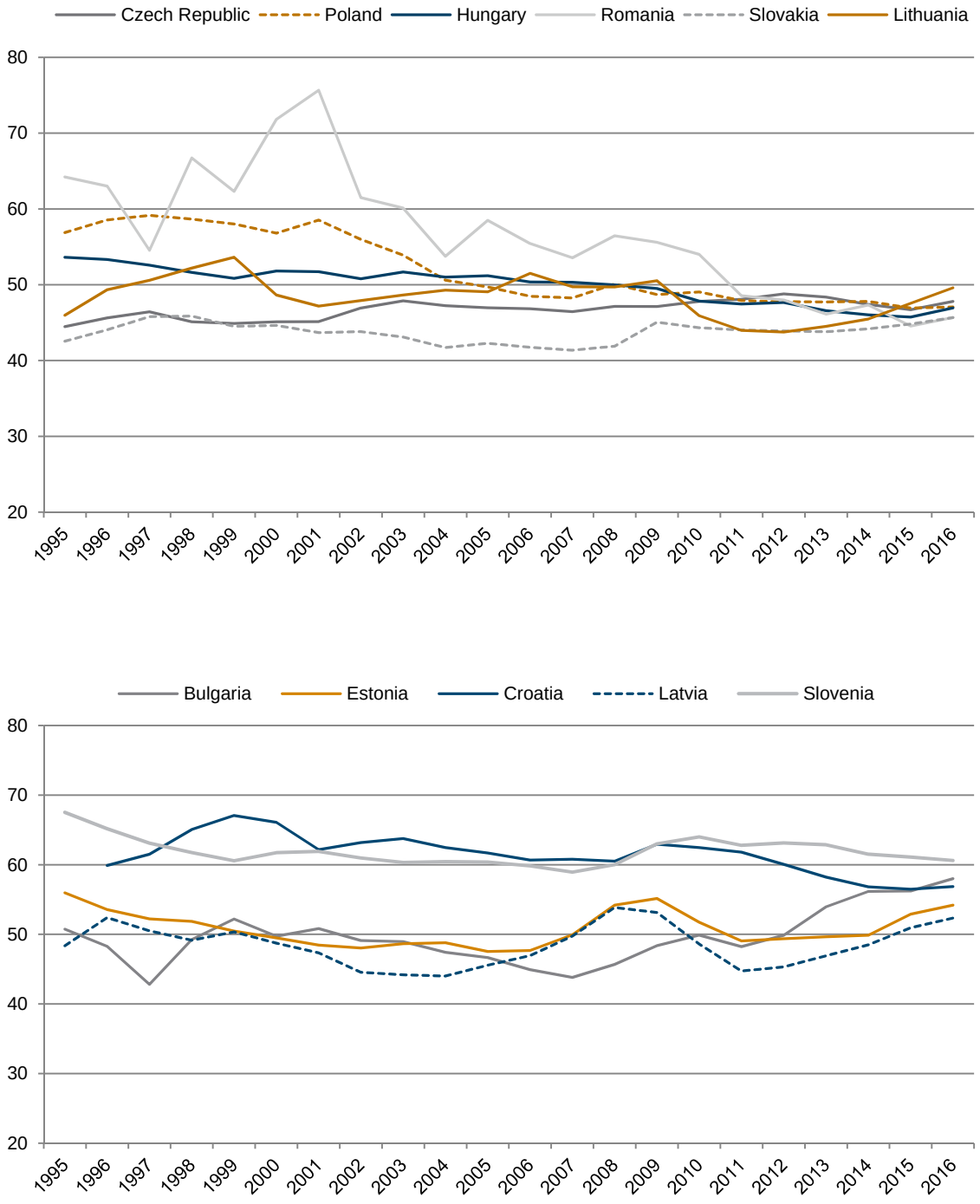
Adjusted wage share in EU-CEE countries in 1995-2016, as % of GDP*



Note: *Adjusted wage share is compensation per employee as percentage of GDP at market prices per person employed, adjusted for the incomes of self-employed.
Source: AMECO Database.

Opinion Corner: Is the falling wage share in most EU-CEE countries a symptom of the 'race to the bottom'?

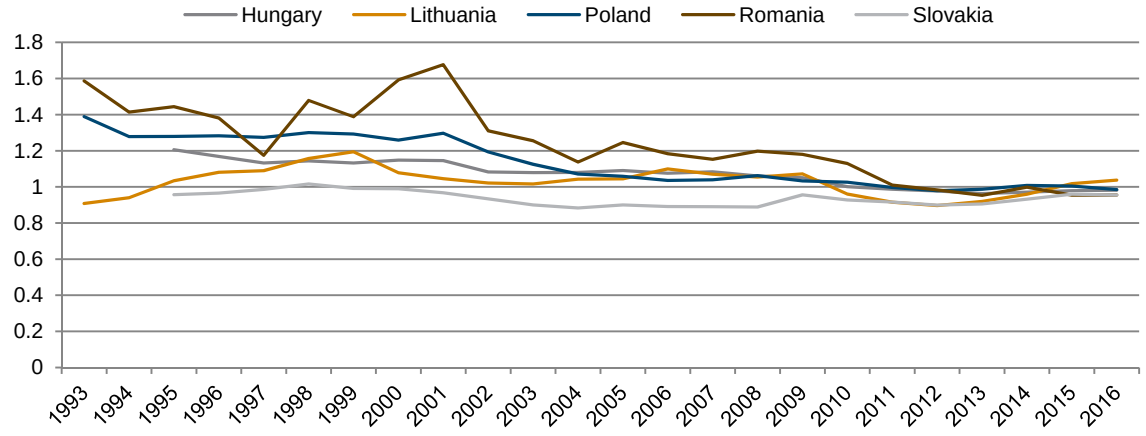
ANSWERED BY LEON PODKAMINER

Throughout the developed world the adjusted GDP wage share has been falling secularly over the past decades. Output produced by a working person has been rising faster than the average working person's compensation (i.e. wage and non-wage benefits). For example, the wage share for the euro area (EA-12) fell from 59.9% in 1992 to 55.9% in 2016. This tendency can be attributed to many developments such as, for instance, the technological change rendering labour relatively less productive as compared to the new capital goods installed. However, the growing significance of foreign direct investment and/or production being outsourced from technologically advanced high-wage countries to the much less advanced lower-wage countries indicates that human labour continues to be an important factor of production withstanding competitive pressures from the advancing technological progress. In effect it is legitimate to ascribe, at least partly, the tendency of the wage share to fall to the deepening internationalisation of production and trade – i.e. to globalisation.

Most EU-CEE countries entered the transition with fairly high wage shares. The Czech Republic and Slovakia were exceptions: by 1995 the wage share in the Czech Republic stood at 44.5% and in Slovakia at 42.6%. In Poland the wage share was 56.9%, in Hungary 53.6%, in Romania 64.2%, in Bulgaria 50.8%, in Estonia 56%, in Slovenia 67.5%, in Latvia 48.3% and in Lithuania 46% correspondingly. In Croatia the wage share was 59.9% in 1996. For comparison, the 1995 German share was 59.3% in 1995.Essentially the Czech Republic and Slovakia constituted 'the bottom' in terms of the wage shares (i.e. in terms of the wage costs per unit of output), at least in the European context. Both countries have retained that distinction since. By 2016 the Czech wage share stood at 47.8% and the Slovak at 45.6% (for comparison, the 2016 German wage share was 56.2%).

Interestingly, the wage shares of the industrial 'core' EU-CEE countries have been adjusting to the Czech level. The process of this adjustment has been quite monotonic in Poland and Hungary all along (and in Romania since 2001, Lithuania since 1999). Slovakia has always been close to the Czech Republic and is now converging to it in terms of wage shares. Since 2012 the differences between the Czech and other 'core' EU-CEE countries' wages shares have been very low. Effectively the latter countries seem to have 'raced to the bottom' – even if the 'bottom' has moved upwards somewhat (Figure 1).

Figure 1 / Wage shares of the 'core' EU-CEE countries in relation to the Czech wage share



Source: AMECO database.

Slovenian and Croatian wage shares have also been declining in the long run. However, the process has been much slower than in the core EU-CEE. Compared to the Czech Republic both countries' relative wage shares are still quite high (1.27 and 1.19 respectively). Both countries are successors to Yugoslavia where the employees had a say in the management of 'their' firms. The slow fall in the wage shares may be a part of the inherited institutional environment there. Otherwise, the structures of production (and employment) in these two countries may make them less dependent on cuts in labour costs as competitiveness-preserving measures.

In the three 'peripheral' EU-CEE countries (Estonia, Latvia and Bulgaria, not displayed in Figure 1) the wage shares have behaved unstably since the late 1990s. There is no visible tendency for these countries' wage shares to converge to Czech levels. Instead one observes cycle-like movements of their relative wage shares with peaks in 2002-2003 and 2016 in Bulgaria and in 2008-2009 and 2015 2016 in Estonia and Latvia. The earlier peaks may have coincided with consumption and investment booms (supported by runaway current account deficits). The current 'peaks' may augur renewed cyclical trouble for these countries in the near future.

For each individual country (be it highly or moderately developed) the active participation in the globalising world economy necessitates taking part in the 'race to the bottom' in terms of wage shares (but also in terms of business taxation). Clearly, only the technology leaders may afford putting less effort in this race, without yet ignoring it altogether. But for the core EU-CEE countries active participation may have been of vital importance.

For the international economy as a whole the inter-country wage and tax competition is not really productive. Falling wage shares signify rising aggregate saving propensities (via differences in propensity to save out of wage and non-wage incomes). As such they are likely to depress the growth of private consumption – without necessarily speeding up fixed capital formation. In effect the 'race to the bottom' may have been responsible for secular growth stagnation – e.g. in the entire EU. Otherwise, the falling wage share seems to correlate with growing income inequalities. Arguably, both developments have been central to the growing 'populist', 'nationalist' and 'protectionist' tendencies in the EU and elsewhere. Checking these tendencies without tackling their root causes may be rather difficult.

Globalisation and the 'race to the bottom': intended and unintended consequences

BY CODRINA RADA AND DAVID KIEFER[1]

INCOME INEQUALITY AND THE WAGE SHARE

Income inequality has been rising for the past four decades in many countries across the world including in many European countries. But, it is the great crisis of 2008 and its ongoing impact on economies and on the political discourse that have pushed rising income inequality to the forefront of policy and academic debates. Over time, economics as a science has provided different theories on what drives income inequality. These have ranged from Kuznets' (1955) contention that income inequality is a normal feature of dynamic economies that undergo deep structural changes in the process of development, to microeconomic-oriented explanations that identify skill-biased technical change and differential returns to education as the main factors driving inequality among wage earners in mature economies.

Searching for more timely explanations, policy-makers, researchers and pundits alike have more recently begun talking about the decline in union coverage, offshoring of jobs and globalisation in general as possible reasons for why wage and income inequality has risen so much. In connection with these debates has been the acknowledgement that changes in the functional distribution of income – the distribution of national income between wages and profits – and, specifically, the decline in the wage share could be a contributing factor to rising income inequality in many countries around the world.

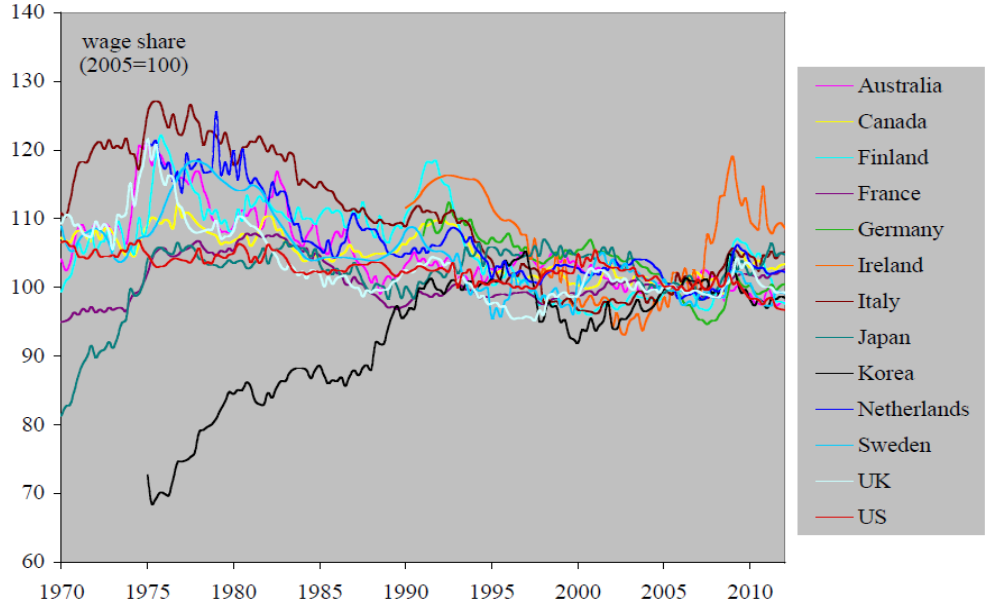
For most countries the average wage share index has been on a downward trend over the past four decades (see Figure 1). This is in stark contrast with Kaldor's stylised fact that factor income shares remain constant over long periods of time (Kaldor, 1961).

Different narratives about the observed downward trend in the wage share have been put forth. One such narrative suggests that firms have substituted capital for labour as a result of declining relative prices of capital goods. Others have suggested that accelerating globalisation and the quest for competitiveness on global markets has led to wage suppression.

Our findings, which we summarise in this article, suggest that the OECD countries may be in a 'race to the bottom' in terms of real unit labour costs. We begin with the following speculation: the race to the bottom has arisen from a need to be competitive in globalised markets. Lower real unit labour costs are achieved by suppressing real wages and result in the observed downward trend in the wage share. We explore this hypothesis in a business cycles framework that is extended to capture changes in the long-run trajectory of the economy.

[1] Codrina Rada and David Kiefer are Associate Professor and Professor, respectively, in the Department of Economics at the University of Utah, USA.

Figure 1 / The wage share or real unit labour cost observed across OECD countries, 1970-2012



Source: OECD iLibrary, Economic Outlook 90, extracted on 28 Oct 2012.

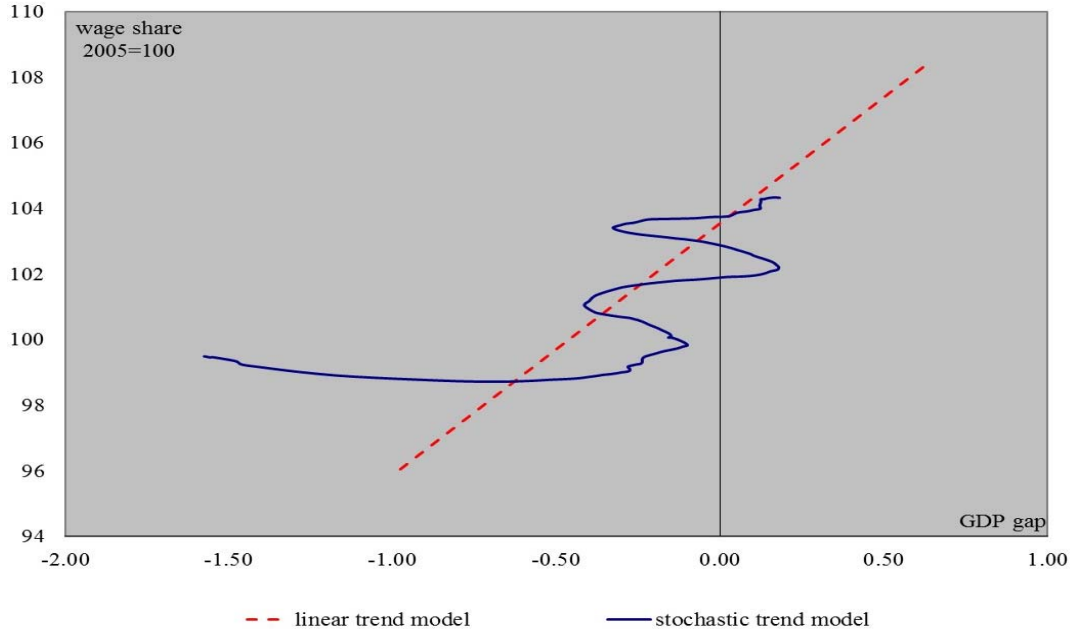
Our starting point is a model by Richard Goodwin (1967). This model adopts a predator-prey framework to study cyclical dynamics between income distribution measured in terms of the wage share, and economic activity measured in terms of the gap between actual and potential output. Over the medium run the wage share is the predator that chases economic activity, the prey: a rise in economic activity leads to a decline in unemployment which gives more bargaining power to workers. As a result, the wage share increases. But, a higher wage share decreases profitability which depresses economic activity and employment and eventually the wage share itself. In the long run there may or may not be a relationship between income distribution and economic activity. The long-run equilibrium values of wage share and economic activity can certainly be subject to changes induced by policy, globalisation or institutions. In our research we explore both business cycles and long-run fluctuations in the wage share and economic activity, but this article presents findings pertaining only to the long run.

WHAT WE HAVE FOUND

First, we confirm that there has been a trend towards a lower wage share across OECD countries. Moreover, there is weaker evidence associated with the 2008 crisis of a decline of economic activity in the long run that appears to push OECD economies below their potential output. Figure 2 presents these findings. It shows estimates of long-run values in the wage share and economic activity modelled as a deterministic linear trend and as a stochastic trend. The wage share in the average OECD economy has been declining throughout the period analysed, but economic activity also seems to have suffered as actual output has fallen sharply below potential output in the aftermath of the 2008 crisis.[2]

[2] A long-run decline in economic activity, as measured by the output gap, is difficult to assess econometrically since by construction the output gap should, in the long run, be zero. Keeping this in mind, our estimation of the long-run output gap shows a structural break associated with the 2008 recession when economic activity declined sharply. In other

Figure 2 / Comparison of estimates of the long-run equilibrium



Source: Own estimates.

Next, we look at a variety of factors that could explain these findings. The race-to-the-bottom hypothesis suggests that a decline in the wage share in a particular country in the current period is associated with a decline in the wage share in the rest of the sample in the previous period. Our empirical results published in Kiefer and Rada (2014) confirm this hypothesis. Given the race-to-the-bottom hypothesis we further argue that the wage share has shifted as a result of public policy and global integration. We report evidence that globalisation has a negative long-run effect on the wage share (see Rada and Kiefer, 2016). We also find that other factors have been important as well: unionisation has been pro-labour, while contractionary monetary policy and financialisation have been anti-labour. Overall, the main conclusion is that the continuing trend toward greater globalisation may have increased long-run economic output slightly, but has reduced the wage share dramatically, thus contributing to the rapid rise in inequality in the OECD countries.

WHAT ARE THE IMPLICATIONS OF RISING INEQUALITY? WHAT TO DO ABOUT IT?

Today, few would argue that the current political environment, and events such as the Brexit or the coming to power in the US of an avowedly protectionist administration, have nothing to do with the rapid rise of income inequality and stagnating real wages for many workers in OECD countries over the past decades. Indeed, Stiglitz (2012) makes the case that inequality has led to 'an economic system that is less stable and less efficient, with less growth, and a democracy that has been put into peril'. Besides its

words, the linear downward trend in the output gap in Figure 2 is to an extent driven by the sharp move to the left following the 2008 recession. This point is underscored by the stochastic trend which captures the effect of the recession.

social and political implications, others have argued that a worsening inequality will induce a long-term weakening of the economy and financial instability.

So, what is the way forward? Some such as Lawrence Summers (2016) have advocated for fiscal expansion and policies to stimulate external demand. Others have cautioned that these will be insufficient without policies to correct distributional imbalances. By implication the tight fiscal policies of the kind implemented in recent years in several EU countries should be avoided. Public sector austerity only intensifies the lack of demand and delays economic recovery. As for global economic integration, it is unreasonable to believe that it can, or should, be reversed. According to Stiglitz (2012), the 'problem … is not that globalization is bad or wrong but that governments are managing it so poorly – largely for the benefit of special interests'. The gains from globalisation ought to be spread more widely. In their quest to increase domestic competitiveness on global markets, policy-makers should introduce measures that enhance labour productivity growth in place of the emphasis on reducing wage costs. Overall, correcting income distribution imbalances should be a priority that merits institutional changes and a new social contract.

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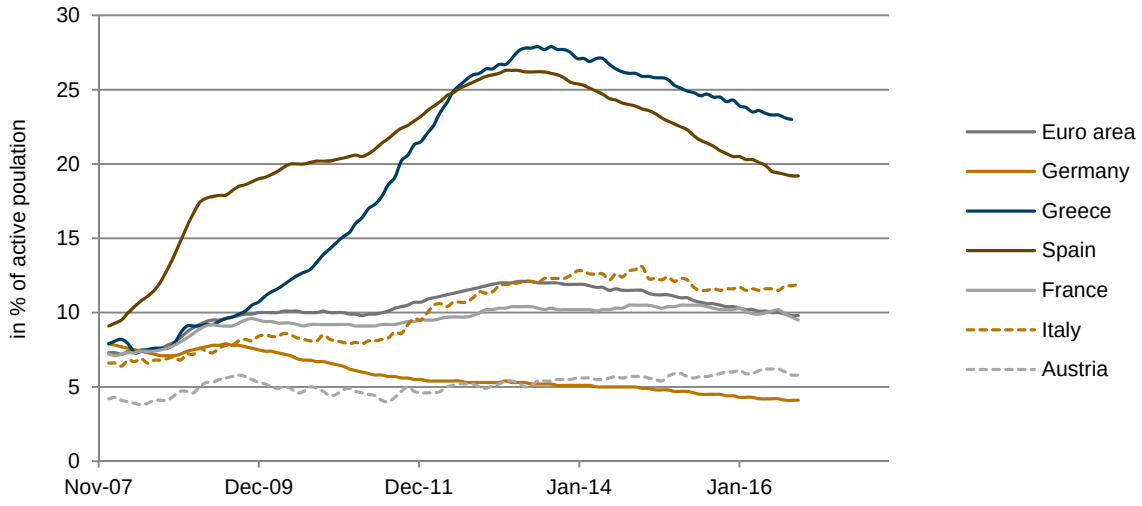
Reducing unemployment in the euro area: What is the appropriate fiscal policy stance?

BY PHILIPP HEIMBERGER

MONETARY POLICY REACHING ITS LIMITS

The euro area remains mired in crisis. The unemployment rate is still at 9.8%, way above its pre-crisis level (see Figure 1). The European Commission expects economic growth to remain relatively low in 2017 and 2018 at 1.5% and 1.7%, respectively. At such growth rates, the prospects for substantial reductions in unemployment are bleak. In the periphery countries of the euro area, the problem of mass unemployment is most acute. According to the most recent Eurostat data, the unemployment rate in Greece currently stands at 23.0%; in Spain, at 19.2%; and in France and Italy – the two largest euro area economies behind Germany – at 9.5% and 11.9%, respectively. However, some so-called 'core countries' of the euro area – such as Austria – lately also recorded unemployment rates that are high in comparison to historical national standards. Germany is an exception, as unemployment has been falling for several years to a low of 4.1%.

Figure 1 / Unemployment rates in the euro area



Source: Eurostat (23 January 2016).

Against this background of persisting macroeconomic troubles in large parts of the euro area, the question is what economic policy can do to promote a stronger economic recovery. In this context, it has to be recognised that the European Central Bank (ECB) already cut interest rates to zero, while – from the beginning of 2015 onwards – it has also been pursuing aggressive Quantitative Easing (QE) policies that aim at lowering long-term interest rates and lifting low inflation rates. Over the course of the last

years, however, the ECB has incrementally run out of ammunition. Given the modest results since the start of QE in 2015 – the deflationary pressures in the euro area continue, while unemployment is still high – it is doubtful whether an even more aggressive use of unconventional monetary policy measures will be effective in promoting a more robust euro area economy. Furthermore, policy-makers have to consider that an intense and long-lasting use of QE policies comes with the risk of unintended side effects that might increase financial instability (e.g. Koo, 2015).

FISCAL POLICY TO THE RESCUE?

Monetary policy has been overburdened with the task of supporting the economy, while the economic environment remains problematic; as a consequence, the policy debate has incrementally shifted towards discussing the role that fiscal policy should play in actively improving (prospective) economic conditions (e.g. Furman, 2016). Both the IMF and the OECD, which had recommended and pushed for substantial fiscal consolidation measures in earlier phases of the Euro Crisis, changed their mind, arguing that more expansionary fiscal policies would be beneficial for the euro area as a whole (IMF, 2014; OECD, 2016).

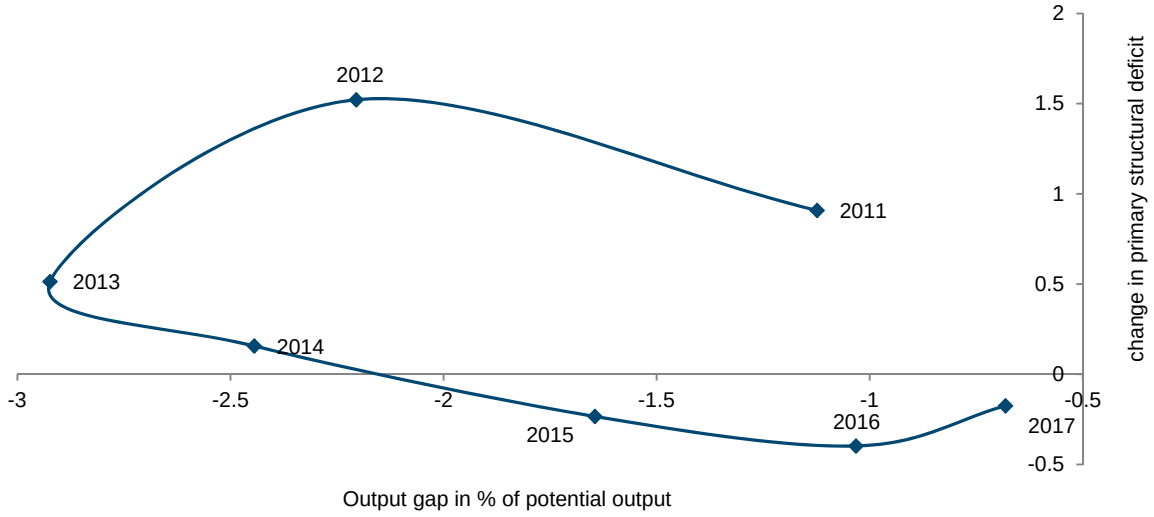
With some time lag, the European Commission has recently followed up on the IMF's and the OECD's recommendation for a more active and expansionary role of fiscal policy. In November 2016, the Commission published a communication note based on the draft budgetary plans of the euro area's member states and the interactions between these national plans. The main point put forward by the document is that 'there is a case for a moderately expansionary fiscal stance for the euro area at this point in time. Based on estimates from the Commission services, a fiscal expansion of up to 0.5% of GDP at the level of the euro area as a whole is considered desirable for 2017 in the present circumstances.' (European Commission, 2016, p. 6) In particular, the Commission argues that the 'moderate fiscal expansion' should be based on increasing public investment, as targeted infrastructure investment would have the largest positive growth and employment effects.

THE FISCAL STANCE IN THE EURO AREA: THE COMMISSION'S VIEW

How is the European Commission's shift towards recommending a positive fiscal stance in the euro area to be assessed? The main macroeconomic argument put forward by the Commission in favour of a modest fiscal expansion of about 0.5% of GDP is 'that an expansionary fiscal stance such as the one advocated by the Communication would leave the Eurozone economy closer to its potential growth in 2017' (Buti and Rodriguez Munoz, 2016). This point can be illustrated by looking at Figure 2. The horizontal axis shows the Commission's estimates of the euro area output gap – the difference between actual GDP and potential output – from 2011 to 2017. On the vertical axis, one finds the change in the primary structural deficit,[1] the Commission's preferred measure for the discretionary fiscal effort. According to this measure, the fiscal stance between 2011 and 2014 was restrictive, which indicates fiscal consolidation efforts across the euro area; and in 2015 and 2016, the fiscal stance was neutral or slightly expansionary. According to the Commission's estimates, the euro area is characterised by a slight underutilisation of economic resources in 2016, signified by an output gap of about -1% of potential output.

[1] The structural deficit corrects the headline fiscal deficit for the effects of the business cycle and for one-off measures on the budget (Mourre et al., 2014). The primary structural deficit also excludes interest payments on government debt.

Figure 2 / Fiscal stance in the euro area



Note: A negative output gap indicates underutilisation of economic resources. A positive sign regarding the change in the primary structural deficit indicates fiscal consolidation, while a negative sign hints at fiscal expansion.
Source: AMECO (9 November 2016); own calculations.

Buti, the European Commission's Director-General for Economic and Financial Affairs, and Rodriguez Munoz (2016) argue that it would be possible to completely close the euro area's output gap if public investment increased by 0.8% of GDP. There are strong arguments, however, that the European Commission markedly underestimates the stabilisation needs in the euro area judged in terms of the output gap, leading to a call for an insufficient amount of fiscal expansion.

First, it is crucial to understand that the measure of the output gap is not a 'hard number', as it relies on the European Commission's model estimates of potential output, defined as the maximal level of output at which inflation remains stable (Havik et al., 2014). Second, model estimates of potential output are highly revision-prone in a pro-cyclical way (e.g. Klär, 2013; Tereanu et al., 2014): in bad economic times, potential output is revised downwards, which is mainly due to severe estimation problems (Heimberger and Kapeller, 2016). These pro-cyclical revisions lead to lower estimates of the (negative) output gap, i.e. they trigger the risk of severely underestimating the underutilisation of economic resources and the corresponding macroeconomic stabilisation needs.

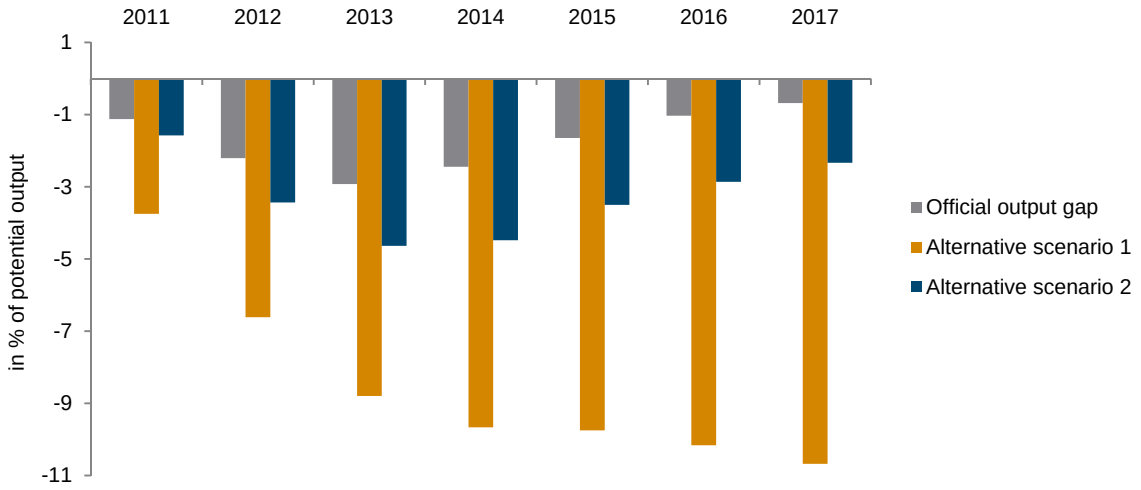
How would the assessment of the euro area's fiscal stance change if the massive downward revisions in potential output were assumed not to have happened? Consider the alternative scenario 1 in Figure 3. Following Ball (2014), one can examine the path for potential output that the euro area was following before the global financial crisis in 2007 and compare it with recent potential output estimates from November 2016. This calculation yields much larger (negative) output gaps than the official Commission numbers; the output gap in 2016 would be -10.2% instead of -1.0% (see Figure 3).

It might be argued, however, that downward revisions in potential output were justified to some extent due to hysteresis effects of the crisis. The concept of hysteresis postulates that a crisis which is caused by insufficient demand may also have long-lasting effects on the supply side of an economy, e.g. through skill losses of the long-term unemployed or through the devaluation of idle machines that reduce

potential output growth (e.g. DeLong and Summers, 2012). Alternative scenario 2 assumes that the potential growth rate has more than halved from an average pre-crisis growth rate of 2.1% to 1.0% from 2010 onwards, which means that this scenario includes substantial hysteresis effects of the crisis. Even under this scenario, however, the (negative) output gap in 2016 would be -2.9%. This estimate is nearly three times as large as the EC's estimate of -1%.

The official output gap estimate seems to be economically implausible: the unemployment rate in the euro area is still far above its pre-crisis level (see Figure 1), while growth remains weak and inflation is way below the ECB's target. All of this suggests that there is still substantial slack in the euro area economy that is caused by insufficient demand, so that the alternative output gap from scenario 2 is capable of claiming more economic plausibility than the Commission's official estimate.

Figure 3 / Output gaps of the euro area in alternative scenarios



Note: Alternative scenario 1 basically assumes that potential output between 2010 and 2017 has continued to grow at the constant average pre-crisis annual growth rate of 2000–2009, which was about 2.1%. Scenario 2 assumes that potential output between 2010 and 2017 has grown by only 1% per year (due to hysteresis effects).
Source: AMECO (Autumn 2007 and Autumn 2016); own calculations.

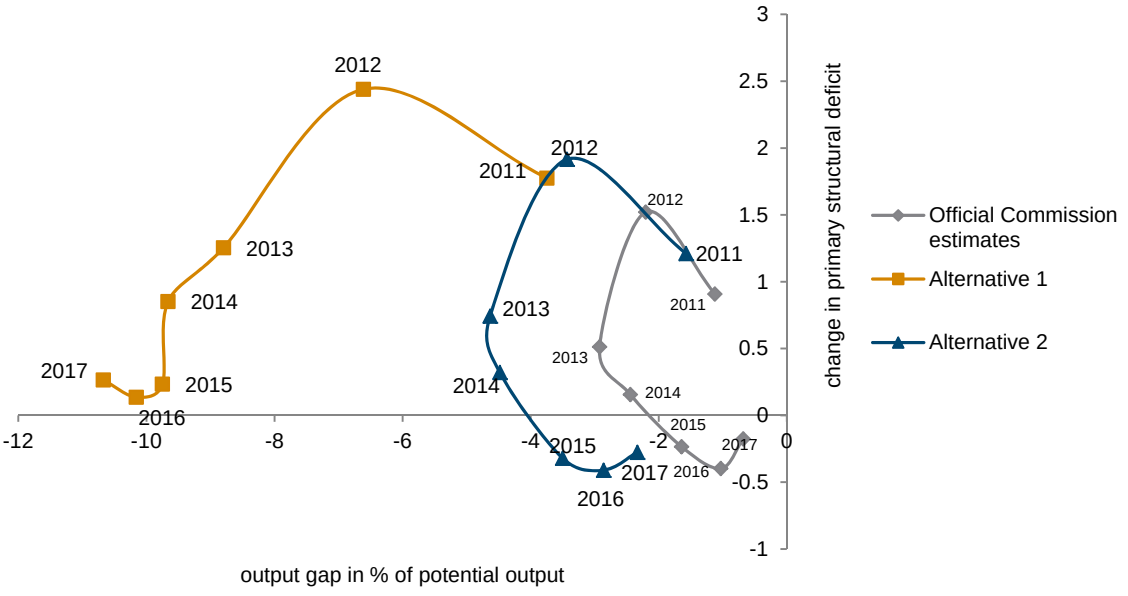
ALTERNATIVE FISCAL STANCE SCENARIOS FOR THE EURO AREA

The calculation exercises in Figure 3 have illustrated that a strong case can be made that the European Commission is currently underestimating the macroeconomic stabilisation needs in the euro area, which is due to the problems of correctly estimating the (unobservable) output gap in tough economic times. Against this background, it is essential to understand that the Commission's estimates of the output gap also have a direct impact on the primary structural budget deficit, which is used as the preferred indicator to assess the discretionary fiscal effort (European Commission, 2016). Why is that? The structural deficit corrects the headline fiscal deficit for the effects of the business cycle on the budget and for one-off effects, such as costs related to bailing out financial institutions (Mourre et al., 2014). Basically, if the (negative) output gap is assessed to be rather small – as is currently the case – only a small part of the headline deficit will be attributed to the (continuing) crisis, which has caused government revenues to fall and spending on unemployment benefits to increase (e.g. Heimberger and Kapeller, 2016).

As can be seen from Figure 4, the assessment of the euro area's fiscal stance changes drastically if one considers that the (negative) output gap is currently being underestimated. The official Commission estimates of the fiscal stance in Figure 4 are the same as in Figure 2, serving for the purpose of comparison. If one uses the output gap numbers from alternative scenario 1 (see Figure 3), the assessment of (the change in) structural deficits also changes, since a larger (negative) output gap means that the cyclical part of the headline deficit is judged to be larger. Hence, the discretionary fiscal consolidation effort during the years 2011–2014 under alternative scenario 1 is also much larger than according to the official numbers. At the same time, the output gap in 2016 and 2017 is projected to be about -10%, which means that a 'modest fiscal expansion' of about 0.5% of GDP would be far from sufficient to close the output gap.

The second alternative scenario then uses the calculations from Figure 3, which factored in hysteresis effects that have substantially lowered the growth rate in potential output from 2010 onwards. It can again be seen that the fiscal consolidation effort during the first years of the Euro Crisis is assessed to be much larger – although not as large as under alternative 1. Furthermore, although the fiscal policy stance assessed under alternative 2 was slightly expansionary in 2015 and 2016, the euro area is still three times further away from a neutral output gap than under the Commission's official estimates.

Figure 4 / Alternative fiscal stance in the euro area



Note: Alternative scenario 1 basically assumes that potential output between 2010 and 2017 has continued to grow at the constant average pre-crisis annual growth rate of 2000–2009, which was about 2.1%. Scenario 2 assumes that potential output between 2010 and 2017 has grown by only 1% per year (due to hysteresis effects).

A negative output gap indicates underutilisation of economic resources. A positive sign regarding the change in the primary structural deficit indicates fiscal consolidation, while a negative sign hints at fiscal expansion.
Source: AMECO (Autumn 2007 and Autumn 2016); own calculations.

CONCLUSIONS: A 'MODERATE FISCAL EXPANSION' WILL NOT SUFFICE

The above findings suggest that the European Commission's call for a moderate fiscal expansion of about 0.5% of GDP is insufficient to solve the continuing macroeconomic problems in the euro area. The Commission's recommendation points in the right direction, but there is a strong case that the need for macroeconomic stabilisation is markedly underrated. Clearly, the exact size of the output gap is unknown. However, as shown in alternative scenario 2 of Figure 3, even if one were willing to accept quite severe hysteresis effects due to the crisis, the output gap in 2016 would still be about -3%. Assuming a fiscal multiplier of 1.0 – which is quite conservative in the current economic context, as pointed out in IMF (2014) – a fiscal expansion of about 3% of euro area GDP would be required to close the existing output gap under this scenario.

It might be argued that those calculations neglect debt sustainability issues, given that public debt-to-GDP ratios in many euro area countries are quite high, which is mainly a result of the crisis (e.g. Lane, 2012). Would euro area economies risk a severe deterioration in debt sustainability if they pushed for debt-financed public investment? The point is that the aggregate fiscal stance in the euro area is the sum of the national fiscal policies of euro area countries. Currently, some periphery countries certainly do not have that much fiscal space for conventional fiscal policy within the existing institutional framework, as one needs to consider that their public debt-to-GDP ratios are high, while financial markets may demand higher interest rates on government bonds if fiscal deficits were to increase again.[2] Some 'core' euro area countries, on the other hand, do not only have much lower public debt-to-GDP ratios; they also run substantial current account surpluses, which do not simply reflect great export performance but also weak domestic demand and a corresponding import deficit.

Consider Germany, in particular, the largest euro area economy that represents about 28% of total euro area GDP. According to the European Commission estimates, Germany's current account surplus in 2016 reached 9% of GDP. Germany's extraordinarily high surpluses have destabilising effects both in the European as well as in the global context, as other countries necessarily have to run current account deficits that imply an increase in foreign debt, which leaves deficit countries vulnerable to financial market sentiments. Furthermore, Germany is currently even running headline fiscal surpluses, while the public debt-to-GDP ratio has been falling significantly over the last years, reaching 68.3% in 2016.

All of this provides Germany with ample fiscal space. A push for more public investment in Germany would not only promote a reduction in current account surpluses. Much-needed infrastructure investment would also increase the economy's long-run growth potential via the supply side (IMF, 2014; Fournier, 2016). Furthermore, in the current low interest rate environment more public investment in Germany would also trigger substantial positive spillover effects for countries in the euro area periphery (e.g. Blanchard et al., 2015; In't Veld, 2016) – in part by increasing demand for export products of periphery countries, but also by easing deflationary pressures in the euro area, which would make it easier for the crisis countries to promote macroeconomic adjustment. A strong increase in public investment in surplus countries might also improve the business mood of firms in larger parts of the euro area, thereby 'crowding in' private investment (e.g. IMF, 2014).

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[2] However, more unconventional measures – such as making the European Investment Bank issue bonds that could be bought by the ECB on the secondary markets and using those bonds to allow for deficit-financed investments – could give even periphery countries such as Greece or Portugal more room for fiscal manoeuvring and allow for more targeted investments in those regions that were hit hardest by the crisis.

It is not only Germany, but also other euro area countries such as Austria and the Netherlands that are currently running substantial current account surpluses. Those countries should clearly lead the way in the European quest for more public investment. Even if more deficit-financed public investment may lead to (small) increases in public debt in the short term, higher economic growth and lower unemployment would increase (future) government revenues, which in the long run might even allow for lower debt-to-GDP ratios than under a more restrictive fiscal policy stance (DeLong and Summers, 2012; IMF, 2014).

The conditions for more public investment in the euro area are still very favourable, as unemployment remains high while inflation and interest rates are very low, indicating that – as a result of insufficient demand – the euro area economy is still characterised by substantial slack. The European Commission's (2016) recent change of course towards advocating a modest fiscal expansion of about 0.5% of GDP in the euro area was an important step in the right direction. However, if the macroeconomic troubles in the euro area are to be overcome, a modestly positive fiscal stance will not suffice. There is a strong case for the Commission to think bigger in terms of expanding public investment. Given that the euro area lacks a common fiscal policy, those euro area countries that are currently running problematically high current account surpluses (especially Germany, but to a smaller extent also countries such as the Netherlands and Austria would have to deliver by going for strongly expansionary fiscal policies. However, more unconventional measures – such as making the European Investment Bank issue bonds that could be bought by the ECB on the secondary markets and using those bonds to allow for deficit-financed investments – could give the crisis-ridden periphery countries Greece, Portugal, Italy and Spain more room for fiscal manoeuvring, thereby allowing for more targeted investments in those parts of the euro area that have been hit hardest by the crisis.

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The economic role of railway networks – a historical perspective

BY STEFAN JESTL AND MARIO HOLZNER

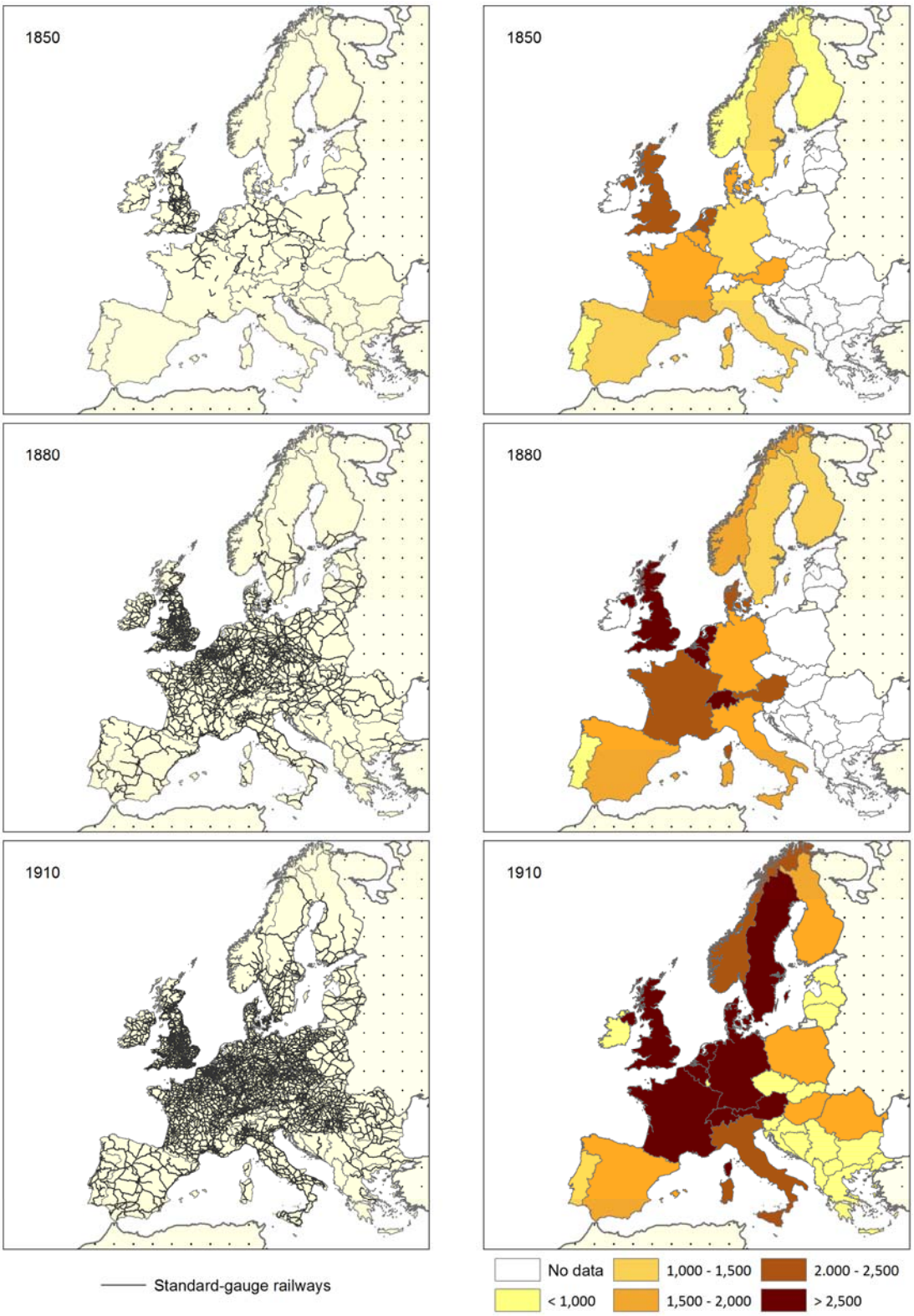
The nexus between infrastructure and economic development is a perennial hot topic in the economic debate. Infrastructure is, *inter alia*, regarded as a crucial input for any economy's production function (see Estache and Fay, 2007). Thereby, it may affect economic development directly as an input in the production process (see Arrow and Kurz, 2013; Barro, 1990) or indirectly by raising total factor productivity due to reduced transaction costs (see Hulten and Schwab, 1997). Transport networks can reduce the costs of the production of goods and services, can link markets and enlarge them which may result in a better division of labour and higher productivity (see Murphy et al., 1988). The spillover effects of infrastructure may reduce transaction costs (see Aghion and Schankerman, 1999) and may also lead to intensified competition, enhanced market selection of efficient firms and an incentive for the restructuring of markets as well as the entry in new markets. Furthermore, a highly diffused transport infrastructure seems to have a supportive impact on labour mobility (see Collins, 1999) and on the deepening and efficiency of capital markets (see Bogart, 2005). There might also be an influence on income inequality and poverty reduction, with infrastructure improving the access to productive opportunities, enhancing human capital and increasing the potential for the integration of low-income groups into social and economic life (see Calderon and Serven, 2014). Thus, the existing literature provides different concepts that connect economic development and infrastructure at the firm level as well as at the country level.

One of the oldest components of countries' infrastructures that has been used for a long time in Europe is railway transport. In the first half of the 19th century the invention of the railway introduced the Transportation Revolution, which was related to the First Globalisation and the Second Industrial Revolution, i.e. Technological Revolution. Therefore, it seems reasonable to investigate the evolution of railway networks and economic development through history.

THE DEVELOPMENT OF RAILWAY NETWORKS ACROSS EUROPEAN COUNTRIES

The first railway line operated in the United Kingdom. From there, railway lines continuously spread from Europe's Northwest to the Southeast as illustrated in Figure 1. Although railway lines were built in every European country, the railway density is still quite uneven across Europe. In most Western European countries railway construction reached its peak around 1950 (see Figure 2). Thereafter, only a few European countries launched new railway lines, whereas most of them have focused on the maintenance of existing railway lines or even close down some parts of their railway networks.

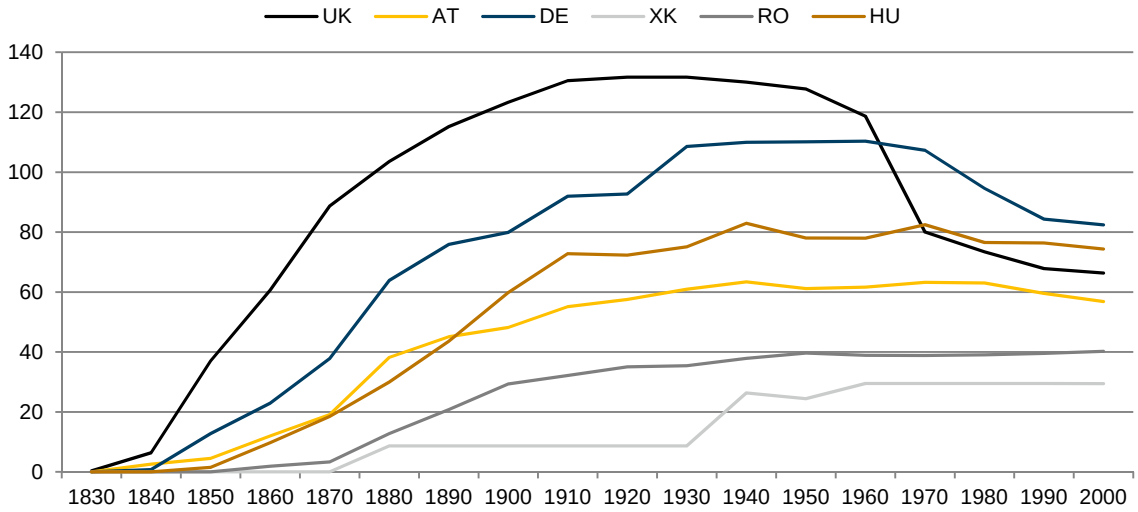
Figure 1 / Comparison between railway networks and GDP per capita (1990 Int. GK$)



Note: Current country borders are considered.
Source: The Maddison-Project (2013), HGISE Historical Geographic Information System of Europe (2015).

Comparing this pattern to the path of economic development across European countries, we can identify some similarities. The right panel in Figure 1 reveals the pattern of economic development measured by GDP per capita (1990 Int. GK$). The United Kingdom showed the fastest economic development, followed by Central European countries. The regions recording the weakest growth are represented by Southern and Eastern European countries. In general, railway construction and economic development exhibit a similar geographical dispersion, although railways' geographical diffusion was faster. Based on these historical facts, it appears that there has been a correlation between railway construction and economic development of countries. However, since it can be expected that there have been as well reverse impacts from economic development on railway construction, the direction of a potential impact is unclear. In this vein, a flourishing economic development might require the construction of a railway line in order to get access to the railway network and manage supply and demand of resources more appropriately.

Figure 2 / Evolution of railway density for selected European countries (km per 1000 km^2)



Notes: UK, United Kingdom; AT, Austria; DE, Germany; XK, Kosovo; RO, Romania; HU, Hungary. Current country borders are considered.
Source: HGISE (2015).

EMPIRICAL FINDINGS

The major part of the literature that conducts empirical analysis focuses mainly on the impact of transport infrastructure on economic development. In general, empirical findings are not unambiguous. Some articles find positive impacts in their econometric analysis, whereas others observe insignificant or even negative impacts. Melo et al. (2013) provide a meta-analysis of the empirical evidence of the impact of transport infrastructure on economic output. They argue that the findings are influenced, *inter alia*, by the mode of infrastructure, the composition of the sample (countries/regions and period of time) as well as the choice of the econometric approach. Most of the empirical works listed in Melo et al. (2013) apply only data for the 20th and 21st centuries.

In a recent empirical analysis we explored the impact of railway density[1] on the GDP per capita growth rate in an econometric framework, using unbalanced panel data for decades of European countries from 1830–2010 (see Jestl et al., 2016). A panel fixed-effects regression suggests a small significantly positive overall effect for the entire period. However, in general the magnitude of the effect seems to depend on the already existing railway network and on the general stage of economic development. Moreover, it seems to have changed over centuries. Railway transport appears to have largely lost relevance, especially in economically more advanced countries, from the middle of the 20th century onwards. This might be related to technological innovations such as cars and airplanes. Contrary to this, railway density exhibits a positive effect on economic growth for countries in Southeast Europe also after the Second World War.

To conclude, historical data allow an assessment of the role of railway infrastructure from its invention up to the present days. Although there seems to be a long-lasting nexus, it appears to have been fading over time and to have been partly substituted by other technological innovations in the transport sector.

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[1] We apply railway density levels instead of its changes in order to explore the impact of network effects.

The editors recommend for further reading*

Trade

US-Mexico: http://jwmason.org/slackwire/what-exactly-does-the-us-buy-from-mexico/

Krugman on VAT versus trade subsidy: http://krugman.blogs.nytimes.com/2017/01/27/border-tax-two-step-wonkish/?smid=tw-nytimeskrugman&smtyp=cur

Rodrik criticising DeLong:
http://rodrik.typepad.com/dani_rodriks_weblog/2017/01/what-did-nafta-really-do.html

DeLong's answer:
http://equitablegrowth.org/equitablog/must-read-dani-rodrik-what-did-nafta-really-do/

Boz, Gopinath and Plagborg-Moller on global trade and the dollar:
http://scholar.harvard.edu/files/gopinath/files/er_trade_20170123_01.pdf

Why the left falls for the 'trade is killing jobs' story: https://www.project-syndicate.org/commentary/trump-trade-deals-manufacturing-by-j--bradford-delong-2017-02

On trade policy: https://www.nytimes.com/2017/01/30/opinion/building-a-wall-of-ignorance.html?smid=tw-share

Brexit

Brexit White Paper:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/588948/The_United_Kingdoms_exit_from_and_partnership_with_the_EU_Web.pdf

Brexit and the EU budget: http://www.cer.org.uk/publications/archive/policy-brief/2017/%E2%82%AC60-billion-brexit-bill-how-disentangle-britain-eu-budget

Russia

The changing shape of the Russian regime:
http://carnegie.ru/2017/01/16/going-to-people-and-back-again-changing-shape-of-russian-regime

Russia, the 'catalyst of change':
http://www.kennan-russiafile.org/2017/01/30/russia-the-catalyst-of-change/

Amy Knight on intelligence crisis in Russia:
http://www.nybooks.com/daily/2017/02/03/putin-intelligence-crisis-trump-dossier-fsb/

* Recommendation is not necessarily endorsement. The editors are grateful to Vladimir Gligorov for his valuable contribution to this section.

Monthly and quarterly statistics for Central, East and Southeast Europe

The monthly and quarterly statistics cover **20 countries** of the CESEE region. The graphical form of presenting statistical data is intended to facilitate the **analysis of short-term macroeconomic developments**. The set of indicators captures tendencies in the real sector, pictures the situation in the labour market and inflation, reflects fiscal and monetary policy changes, and depicts external sector development.

Baseline data and a variety of other monthly and quarterly statistics, **country-specific** definitions of indicators and **methodological information** on particular time series are **available in the wiiw Monthly Database** under: **http://data.wiiw.ac.at/monthly-database.html**. Users regularly interested in a certain set of indicators may create a personalised query which can then be quickly downloaded for updates each month.

Conventional signs and abbreviations used

%	per cent
GDP	Gross Domestic Product
LFS	Labour Force Survey
HICP	Harmonized Index of Consumer Prices (for new EU Member States)
PPI	Producer Price Index
M1	Currency outside banks + demand deposits / narrow money (ECB definition)
M2	M1 + quasi-money / intermediate money (ECB definition)
p.a.	per annum
mn	million (10^6)
bn	billion (10^9)

The following national currencies are used:

ALL	Albanian lek	HUF	Hungarian forint	RSD	Serbian dinar
BAM	Bosnian convertible mark	KZT	Kazakh tenge	RUB	Russian rouble
BGN	Bulgarian lev	MKD	Macedonian denar	TRY	Turkish lira
CZK	Czech koruna	PLN	Polish zloty	UAH	Ukrainian hryvnia
HRK	Croatian kuna	RON	Romanian leu		

EUR euro – national currency for Montenegro and for the euro-area countries Estonia (from January 2011, euro-fixed before), Latvia (from January 2014, euro-fixed before), Lithuania (from January 2015, euro-fixed before), Slovakia (from January 2009, euro-fixed before) and Slovenia (from January 2007, euro-fixed before).

Sources of statistical data: Eurostat, National Statistical Offices, Central Banks and Public Employment Services; wiiw estimates.

Online database access

wiiw Annual Database

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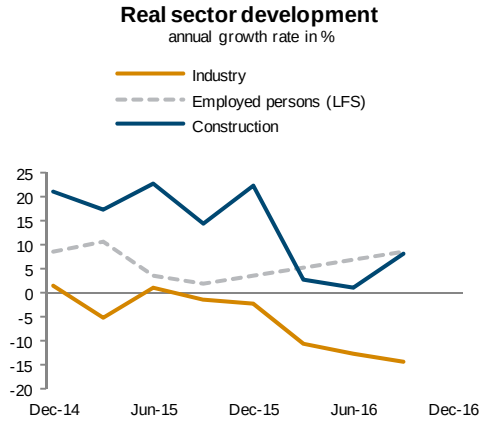
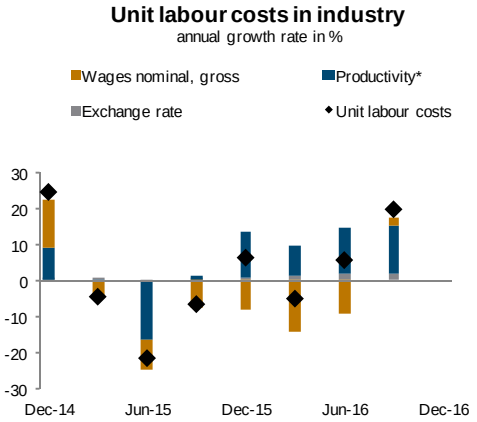
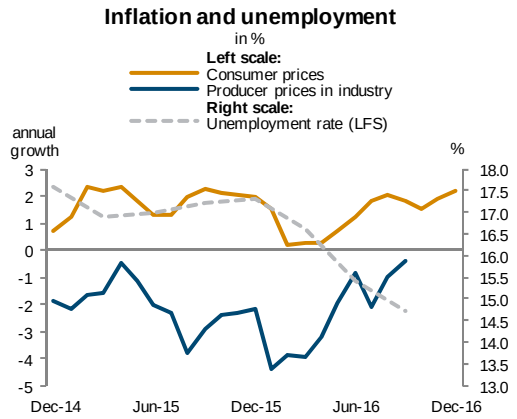
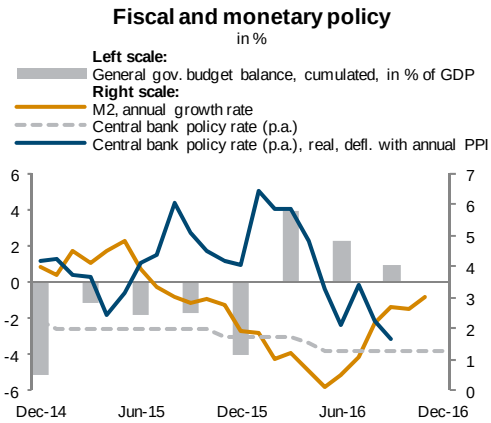
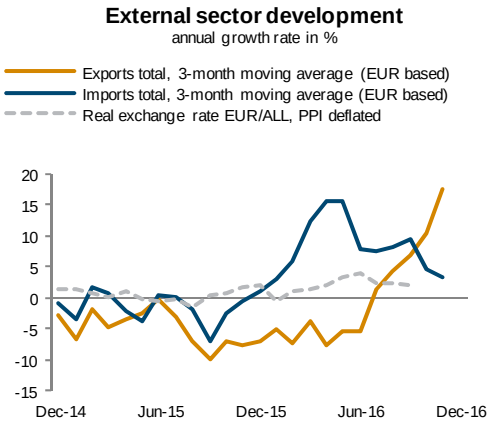
Albania

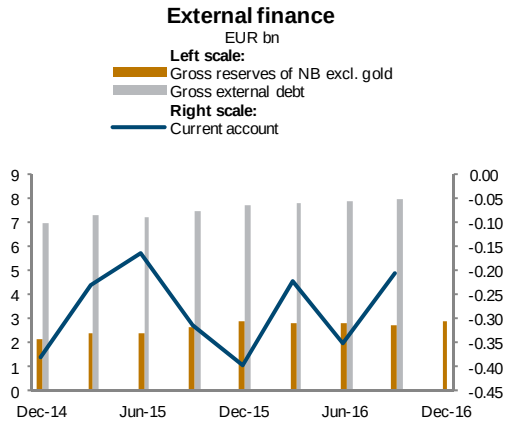












*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.

Source: wiiw Monthly Database incorporating Eurostat and national statistics.
Baseline data, country-specific definitions and methodological breaks in time series are available under:
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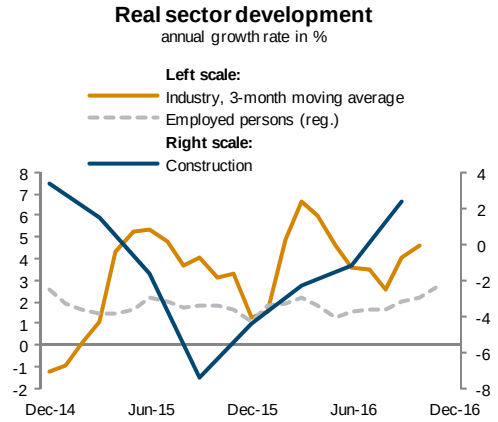
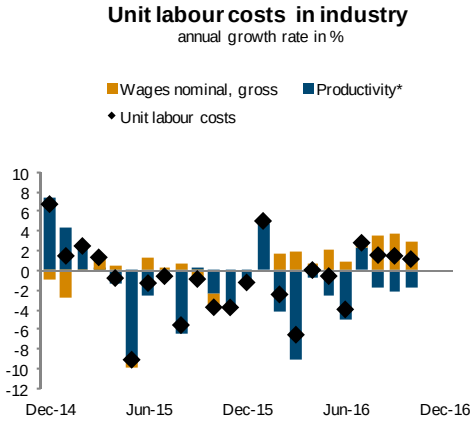
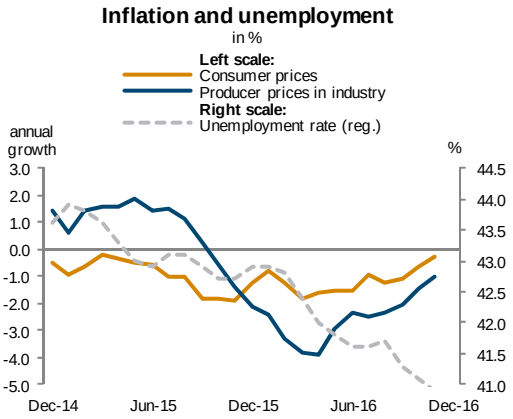
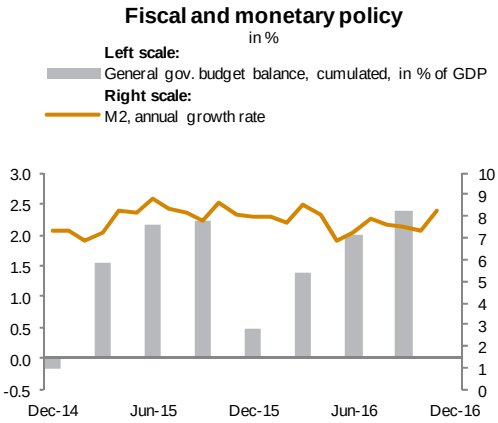
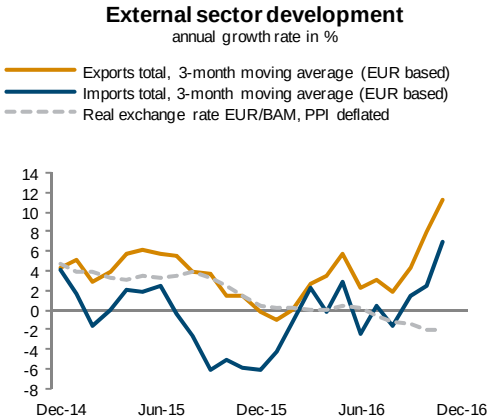
Bosnia and Herzegovina

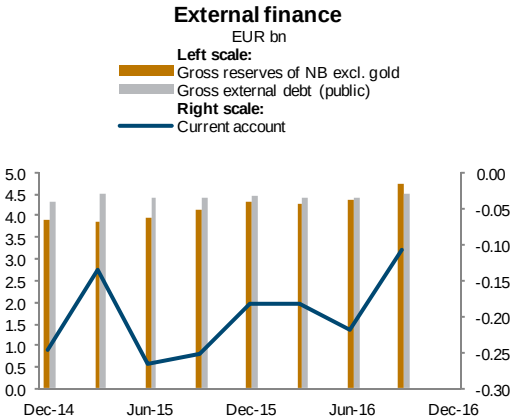












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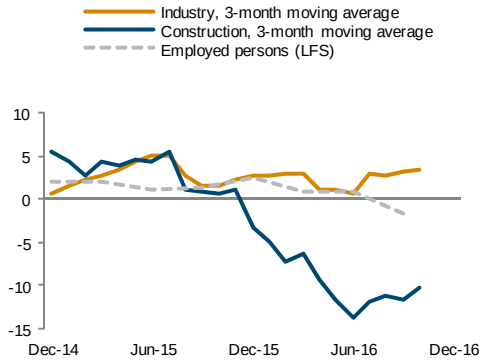
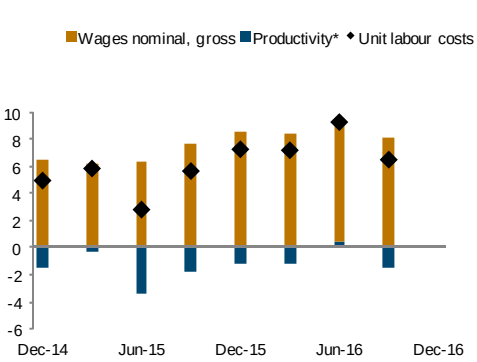
Bulgaria

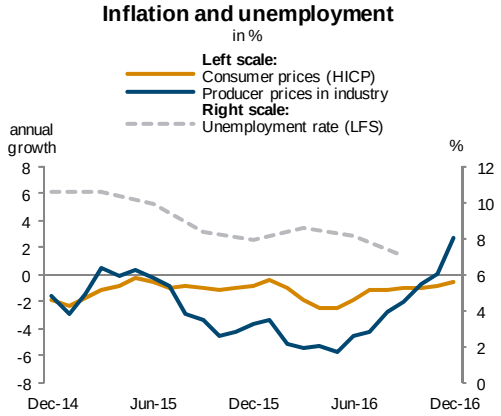
Real sector development
annual growth rate in %



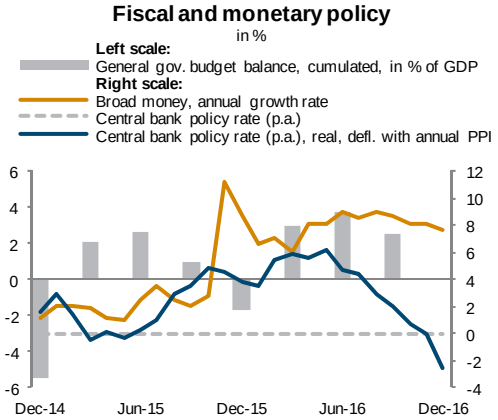
Unit labour costs in industry
annual growth rate in %



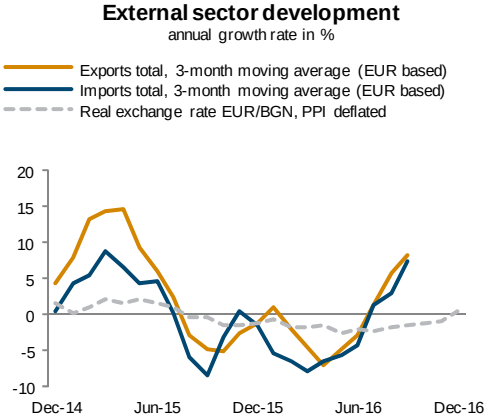
Inflation and unemployment
in %



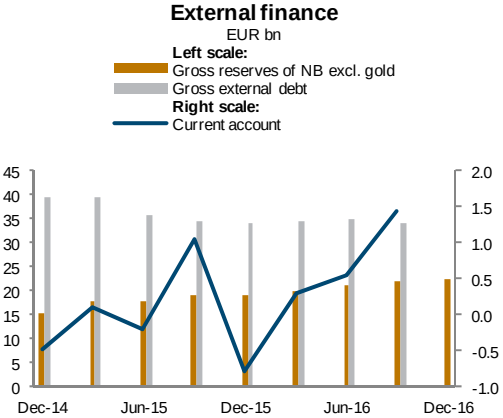
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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Source: wiiw Monthly Database incorporating Eurostat and national statistics.
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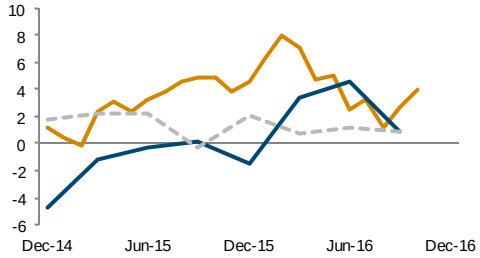
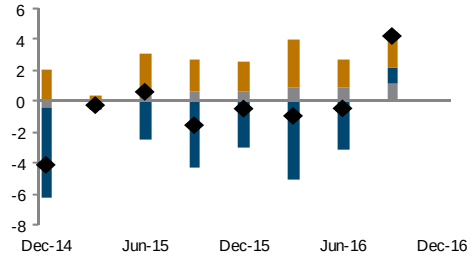
Croatia

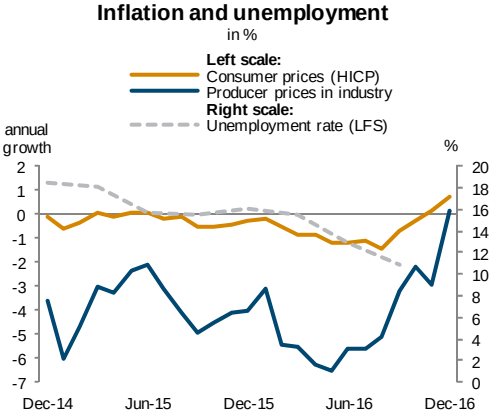
Real sector development
annual growth rate in %



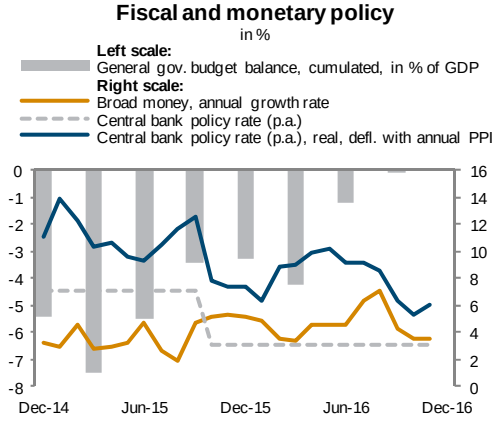
Unit labour costs in industry
annual growth rate in %



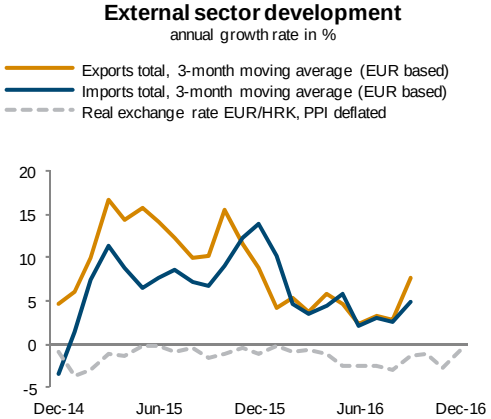
Inflation and unemployment
in %



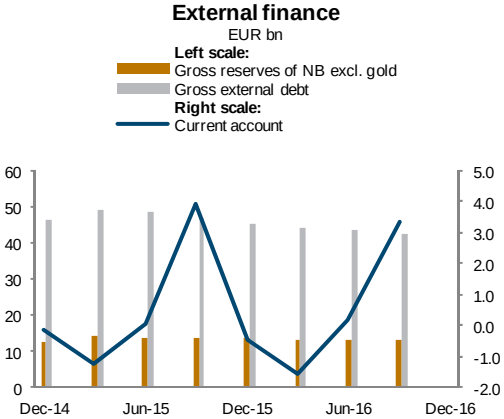
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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Source: wiiw Monthly Database incorporating Eurostat and national statistics.
Baseline data, country-specific definitions and methodological breaks in time series are available under:
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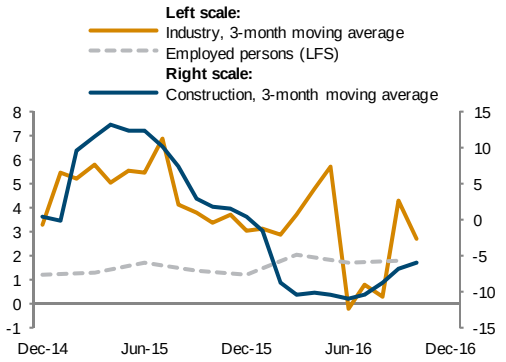
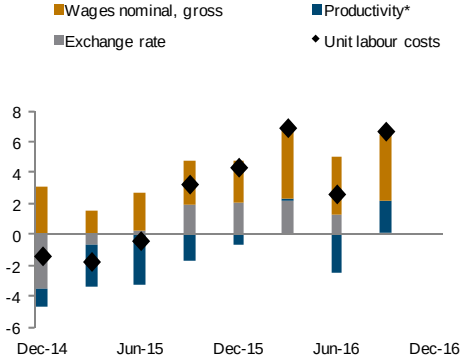
Czech Republic

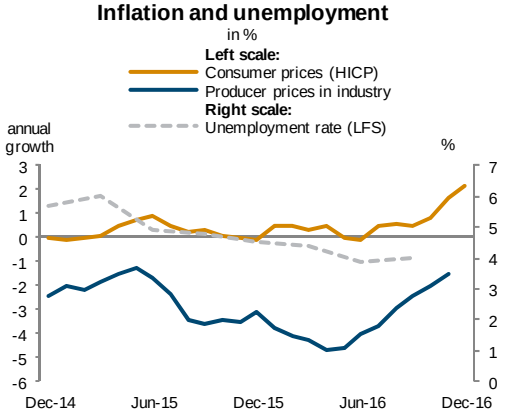
Real sector development
annual growth rate in %



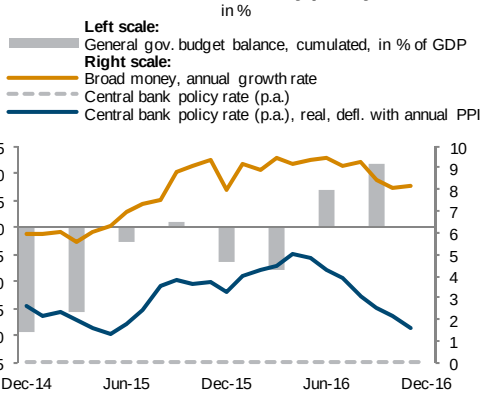
Unit labour costs in industry
annual growth rate in %



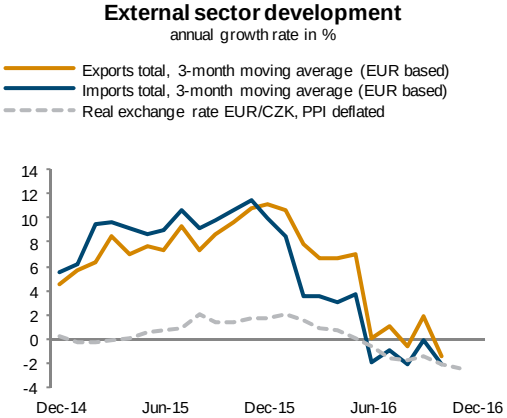
Inflation and unemployment
in %



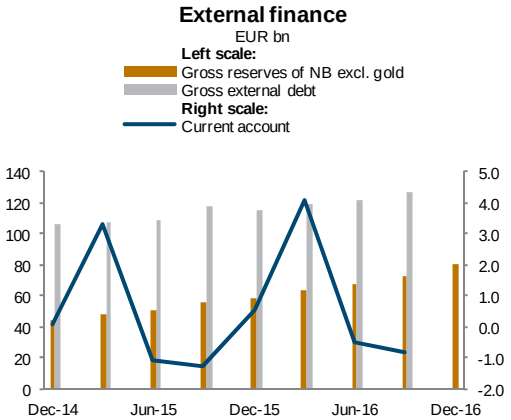
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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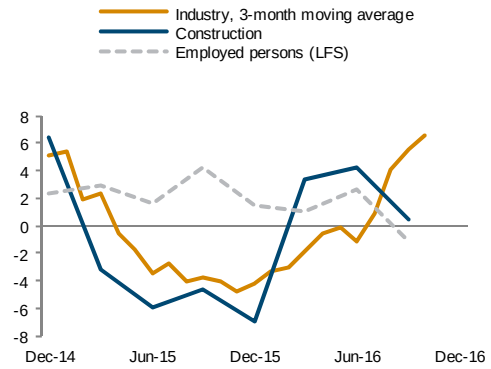
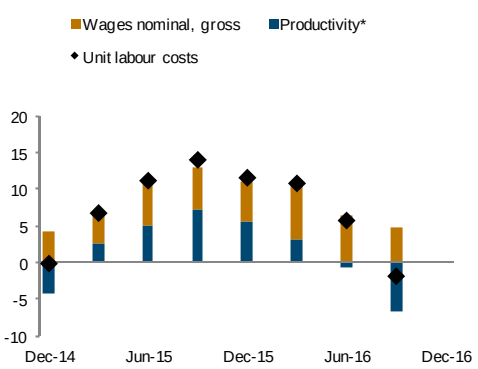
Estonia

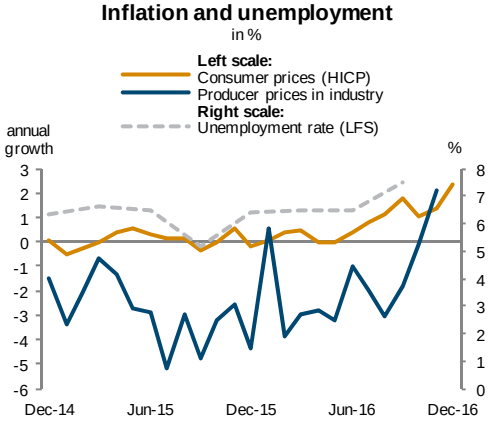
Real sector development
annual growth rate in %



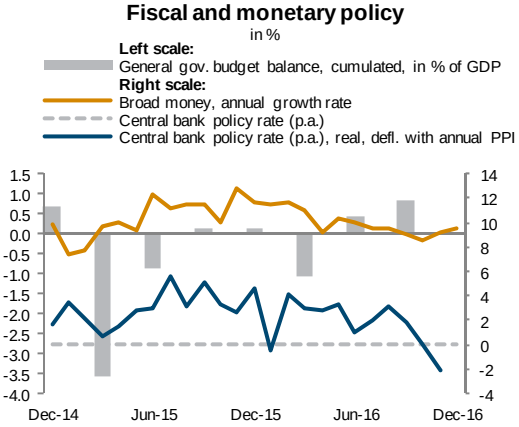
Unit labour costs in industry
annual growth rate in %



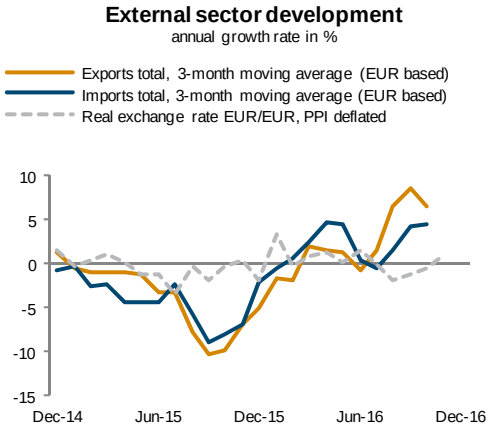
Inflation and unemployment
in %



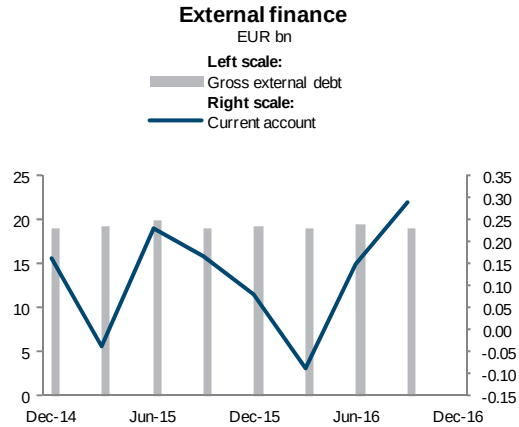
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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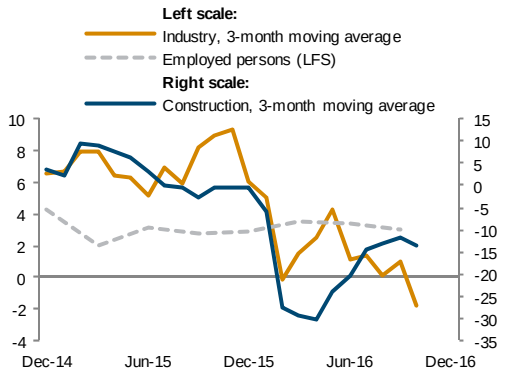
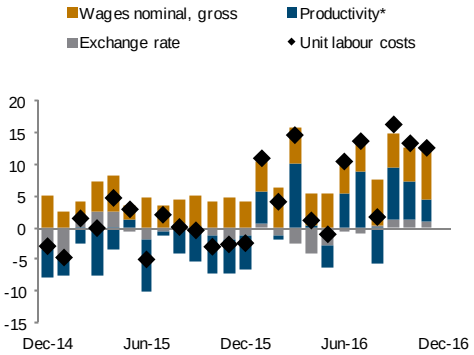
Hungary

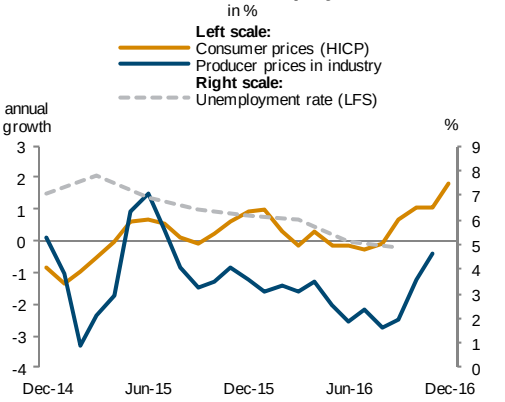
Real sector development
annual growth rate in %



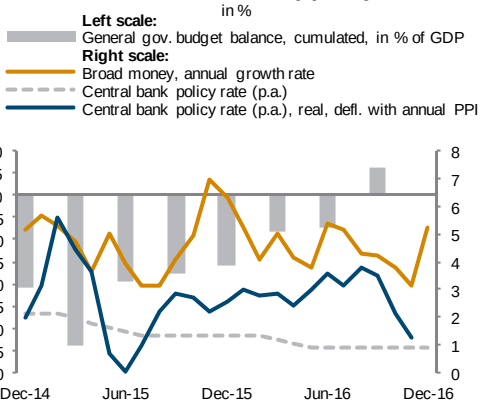
Unit labour costs in industry
annual growth rate in %



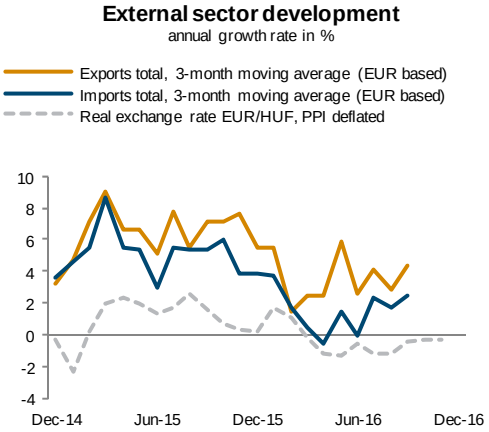
Inflation and unemployment
in %



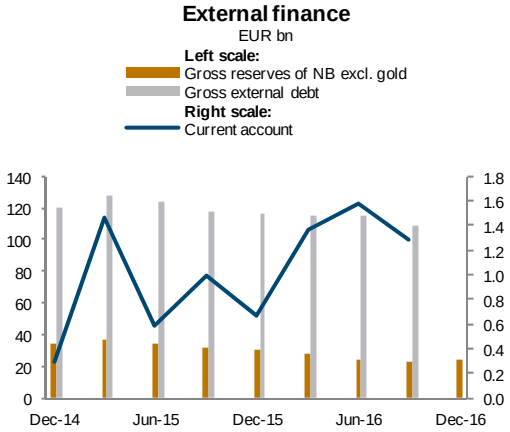
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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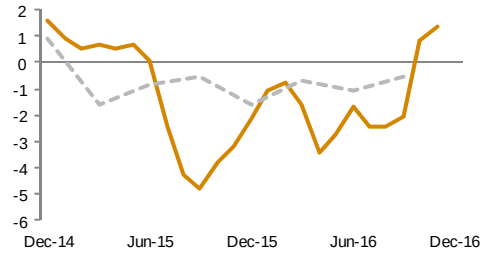
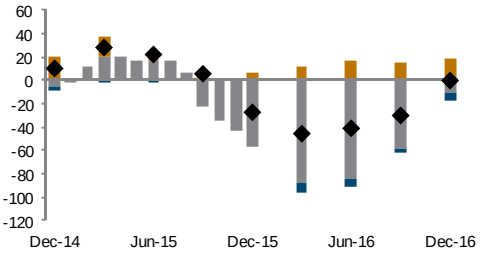
Kazakhstan

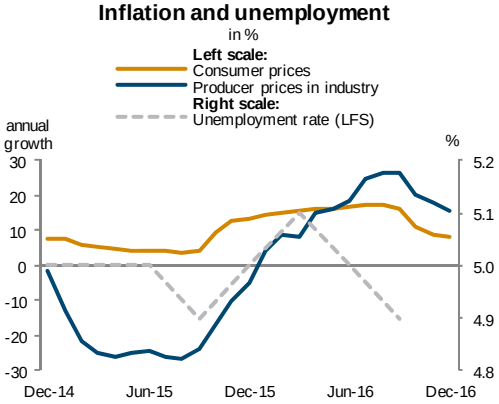
Real sector development
annual growth rate in %



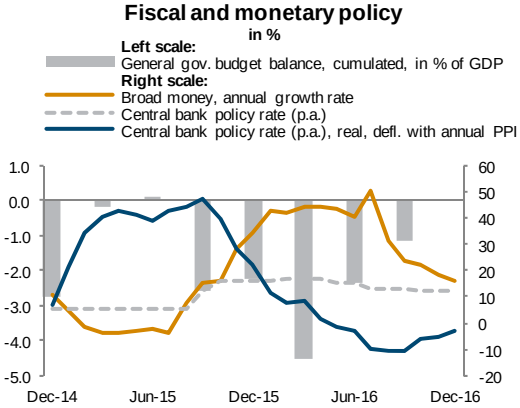
Unit labour costs in industry
annual growth rate in %



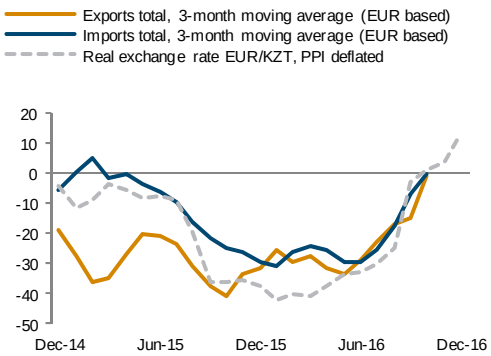
Inflation and unemployment
in %



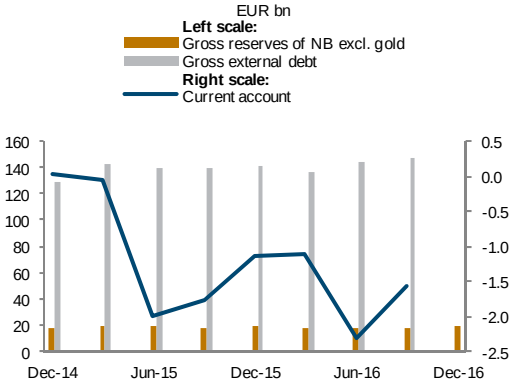
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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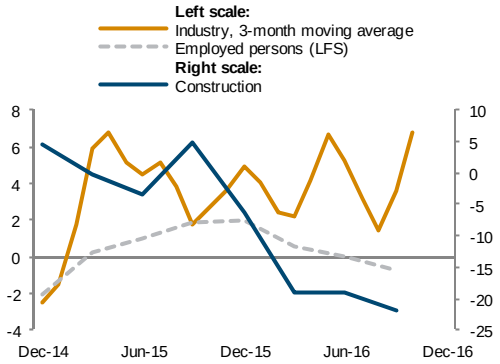
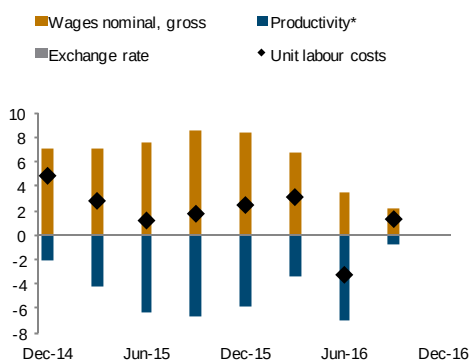
Latvia

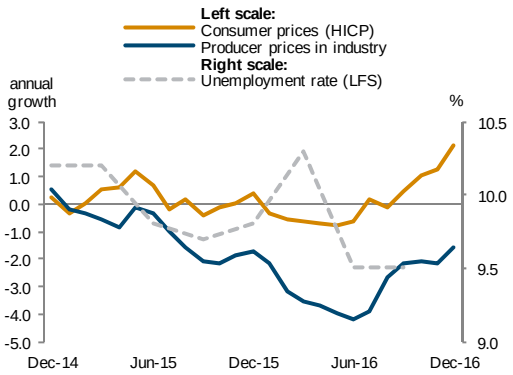
Real sector development
annual growth rate in %



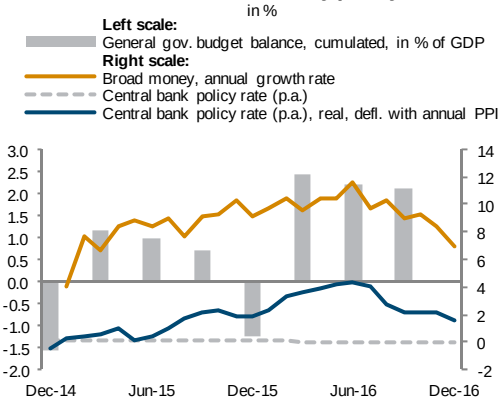
Unit labour costs in industry
annual growth rate in %



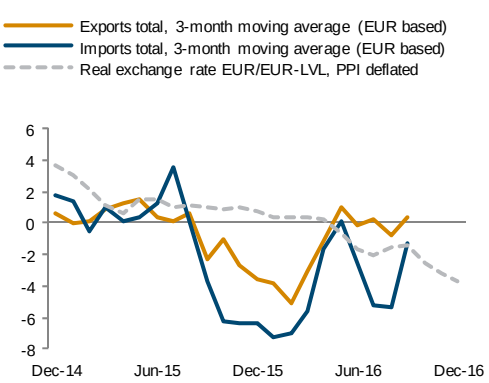
Inflation and unemployment
in %



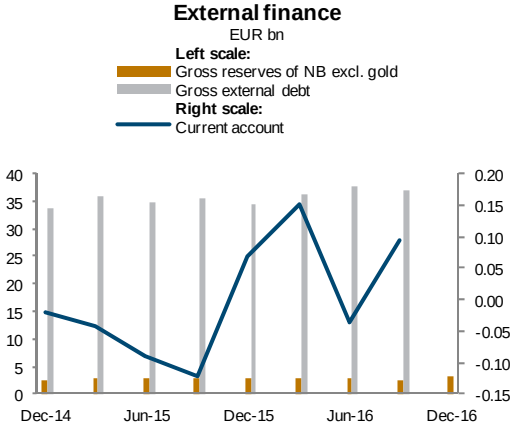
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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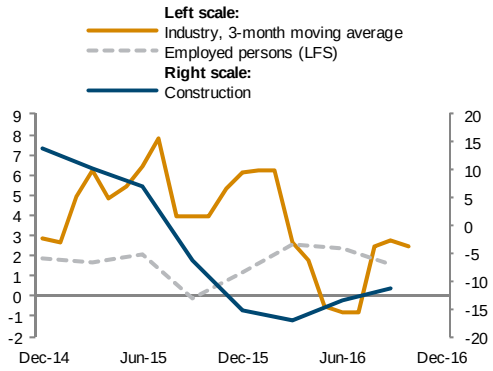
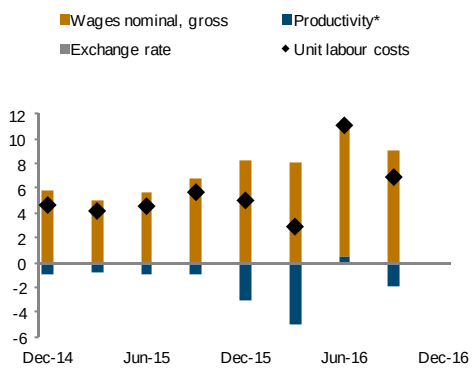
Lithuania

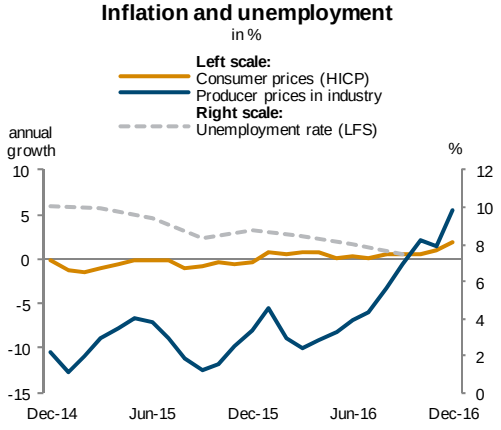
Real sector development
annual growth rate in %



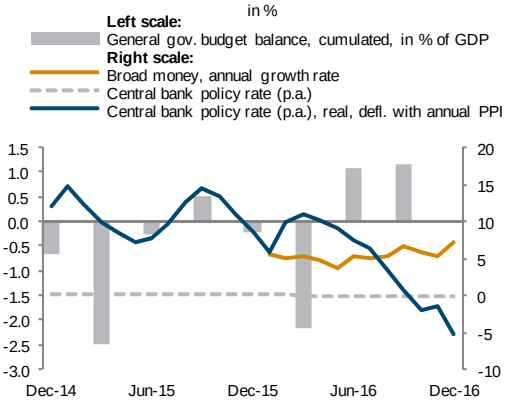
Unit labour costs in industry
annual growth rate in %



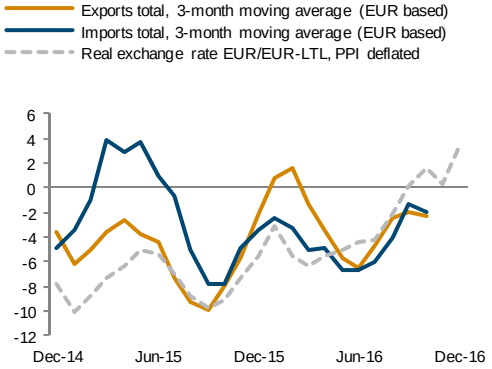
Inflation and unemployment
in %



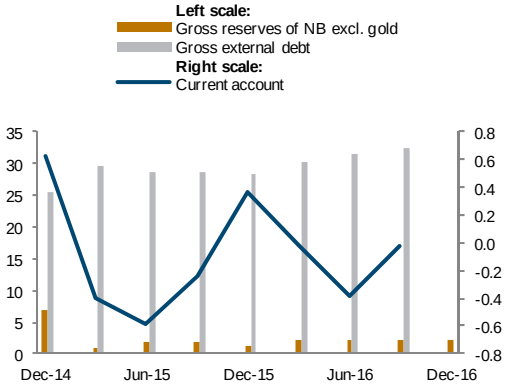
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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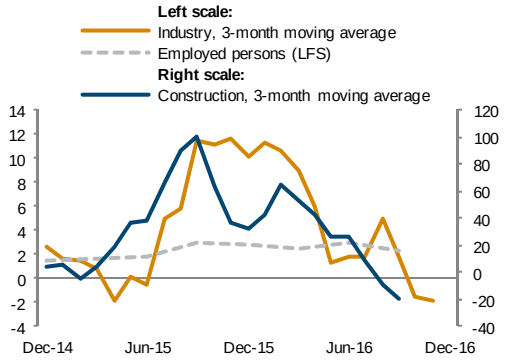
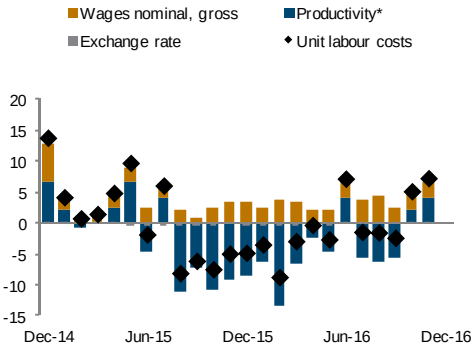
Macedonia

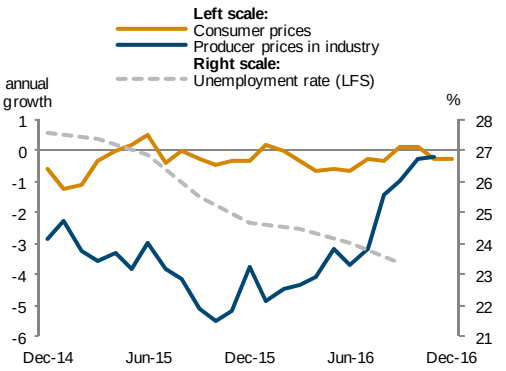
Real sector development
annual growth rate in %



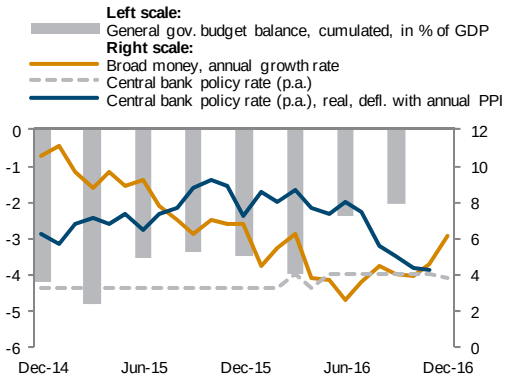
Unit labour costs in industry
annual growth rate in %



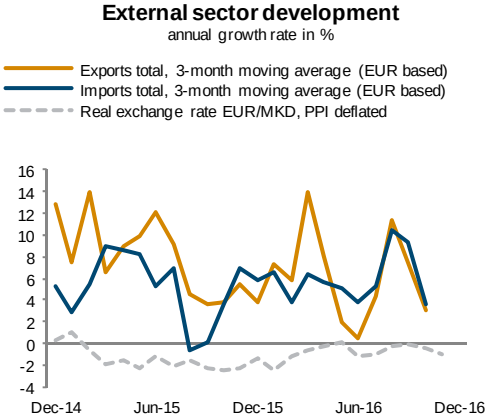
Inflation and unemployment
in %



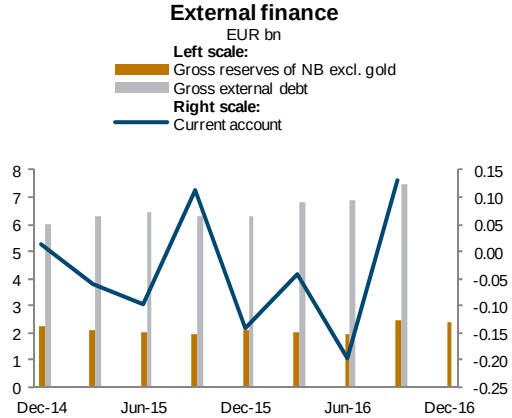
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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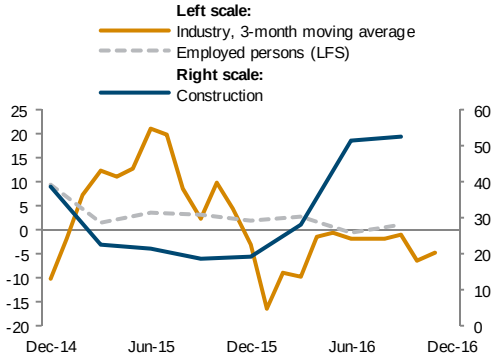
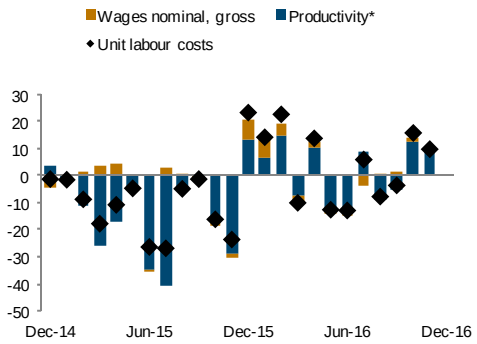
Montenegro

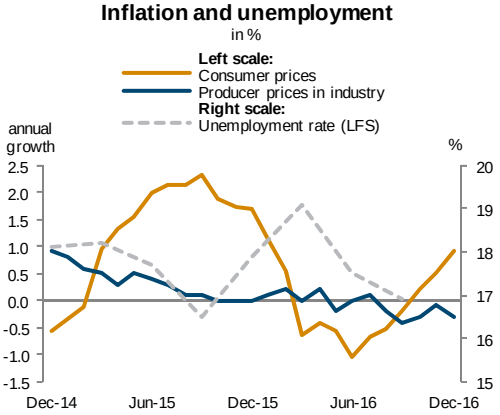
Real sector development
annual growth rate in %



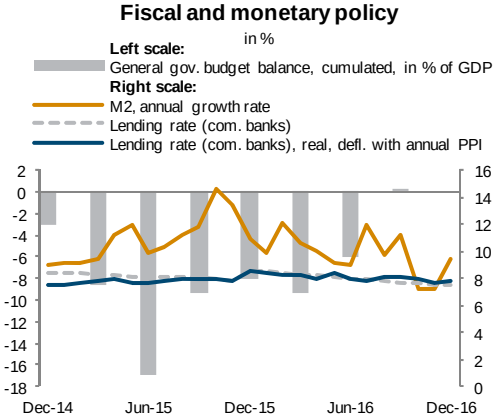
Unit labour costs in industry
annual growth rate in %



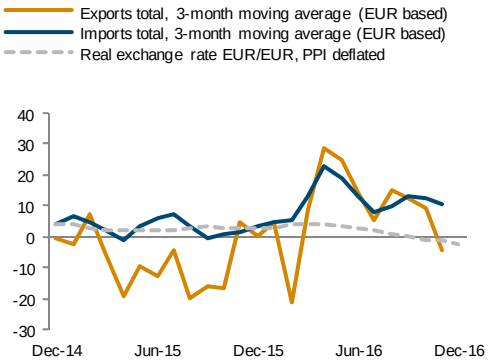
Inflation and unemployment
in %



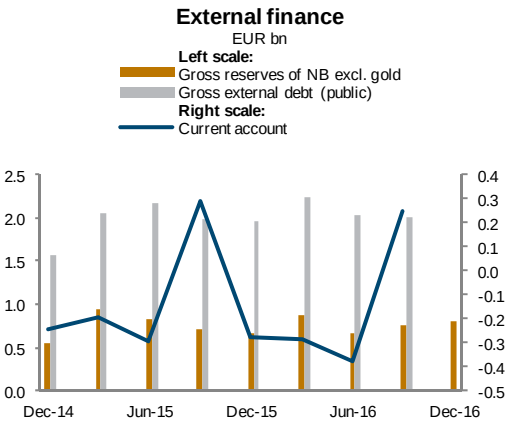
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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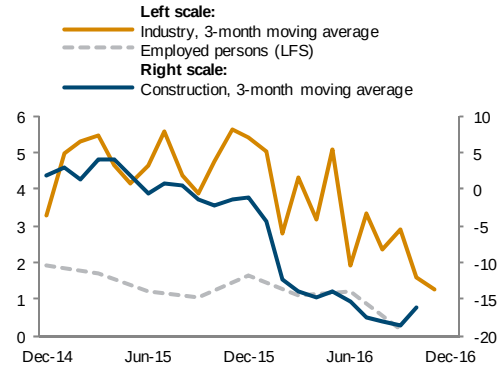
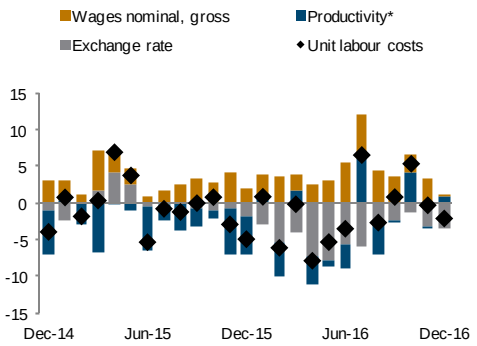
Poland

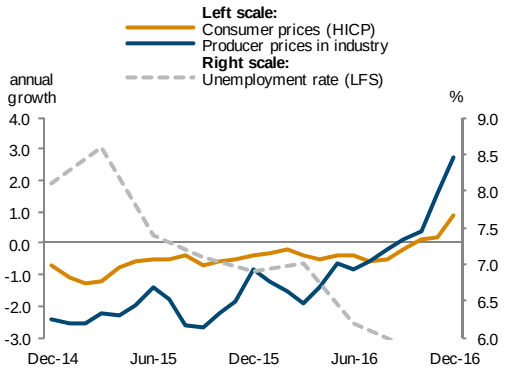
Real sector development
annual growth rate in %



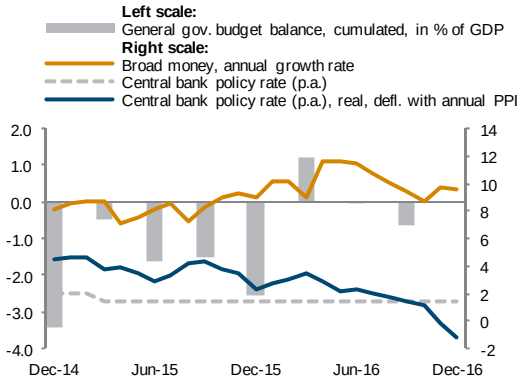
Unit labour costs in industry
annual growth rate in %



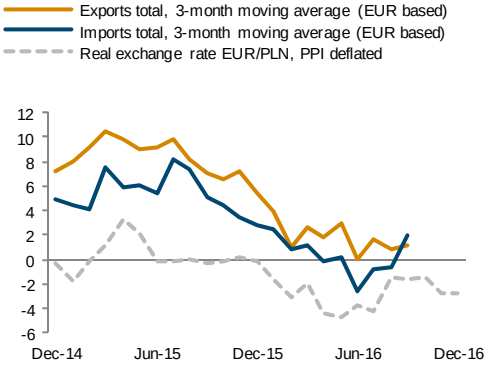
Inflation and unemployment
in %



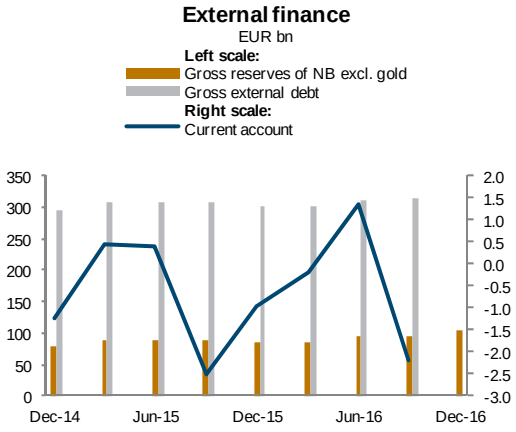
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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Source: wiiw Monthly Database incorporating Eurostat and national statistics.
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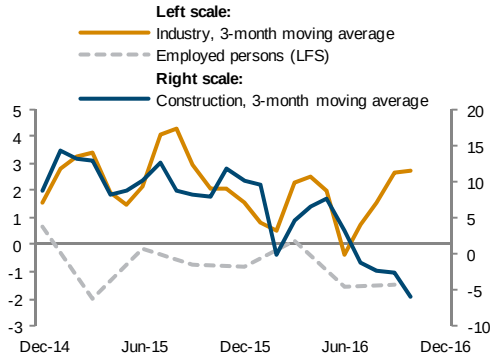
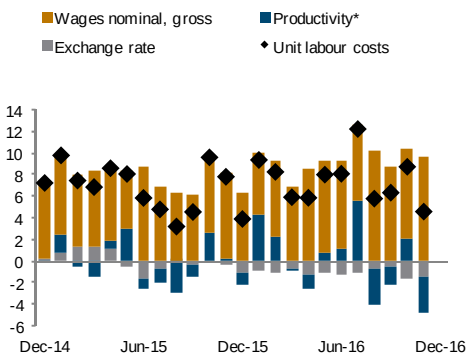
Romania

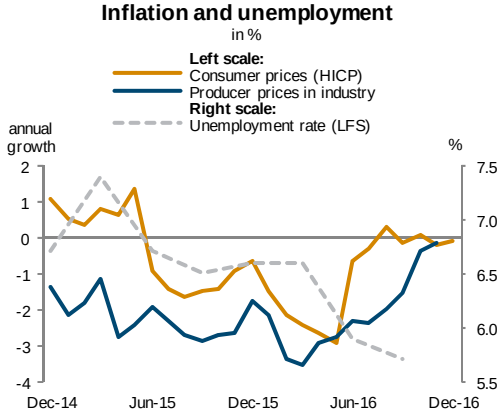
Real sector development
annual growth rate in %



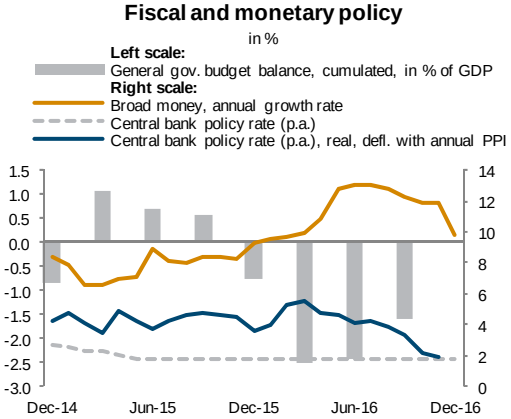
Unit labour costs in industry
annual growth rate in %



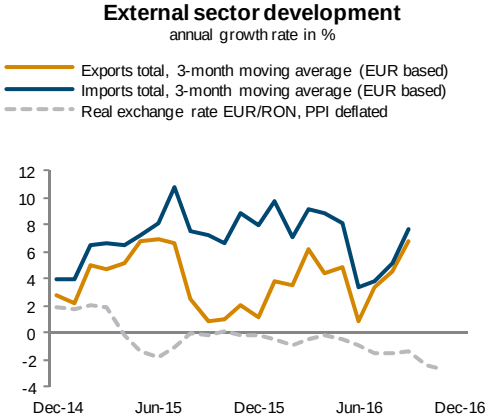
Inflation and unemployment
in %



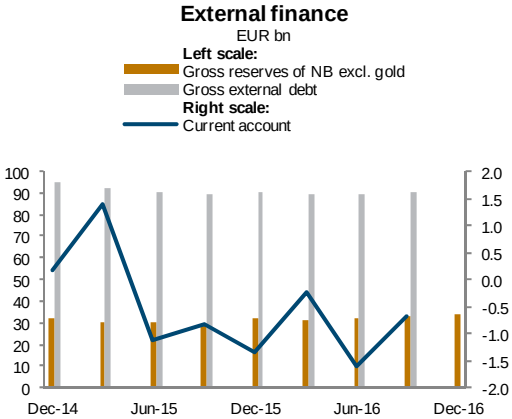
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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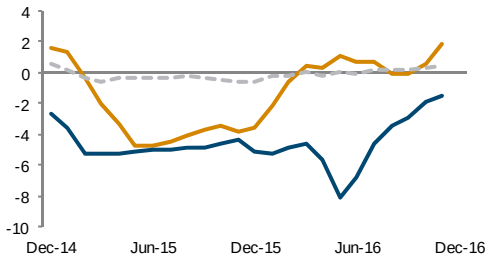
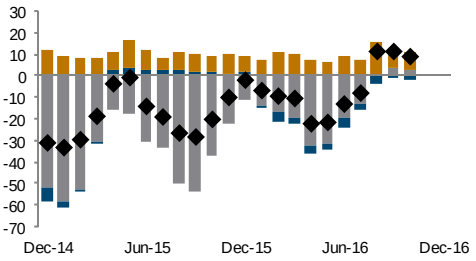
Russia

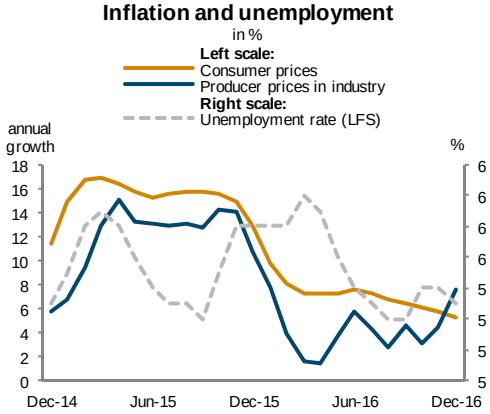
Real sector development
annual growth rate in %



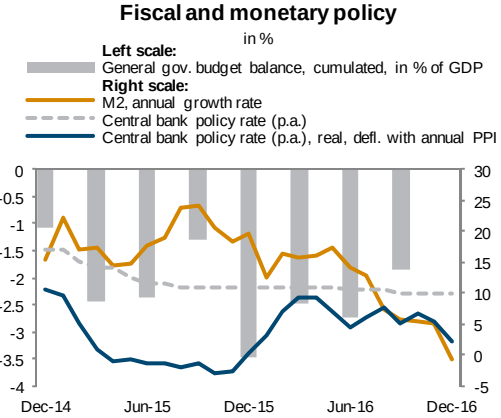
Unit labour costs in industry
annual growth rate in %



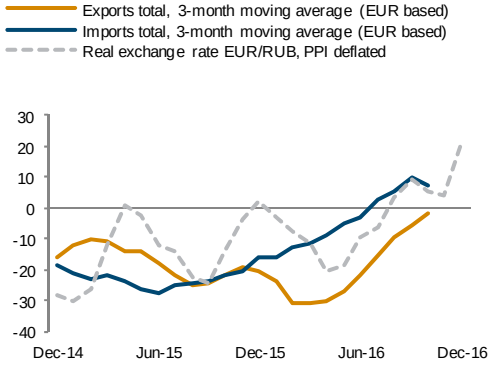
Inflation and unemployment
in %



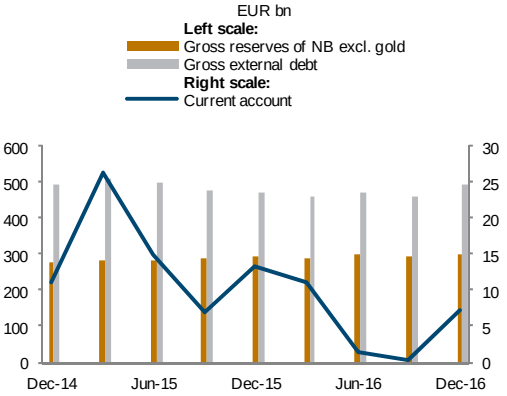
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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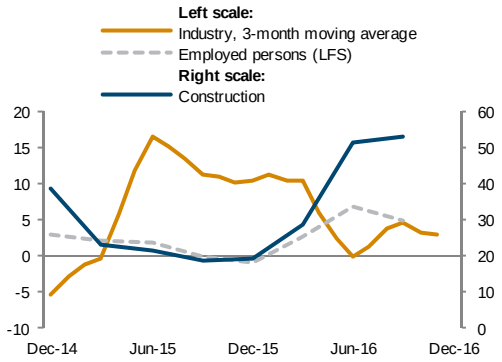
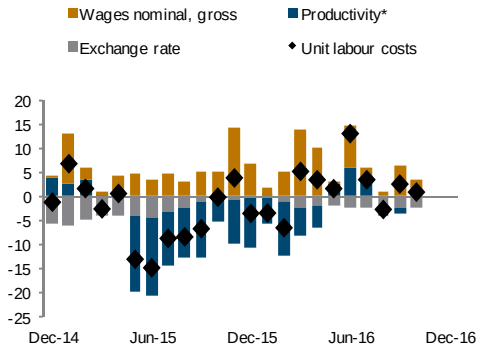
Serbia

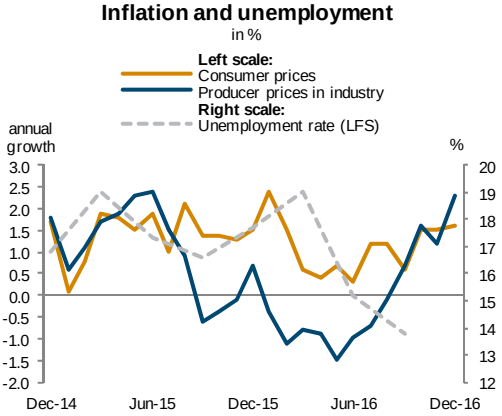
Real sector development
annual growth rate in %



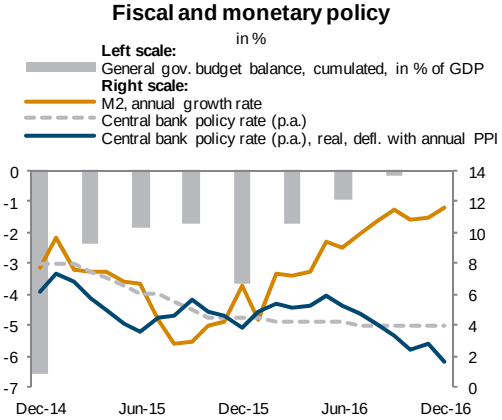
Unit labour costs in industry
annual growth rate in %



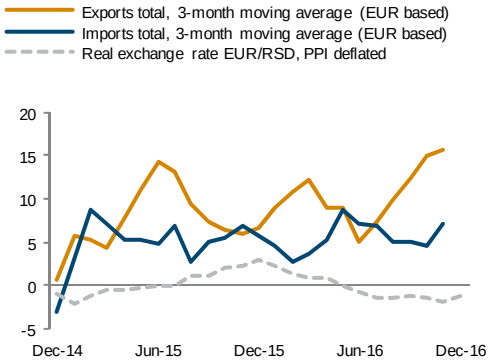
Inflation and unemployment
in %



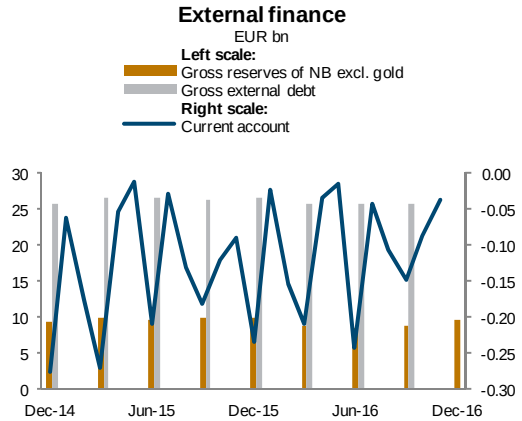
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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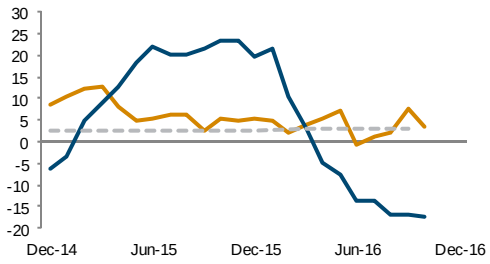
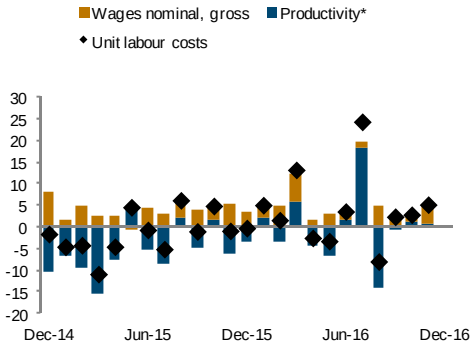
Slovakia

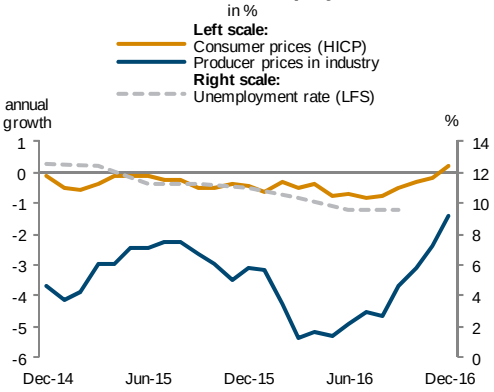
Real sector development
annual growth rate in %



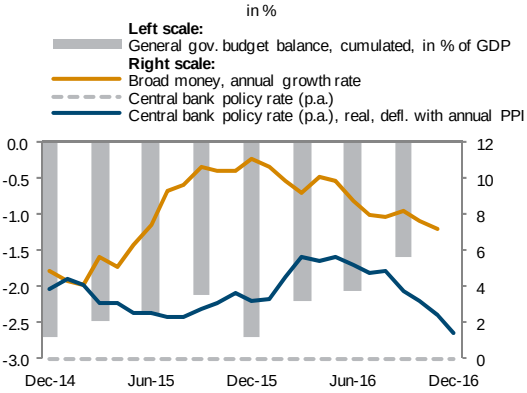
Unit labour costs in industry
annual growth rate in %



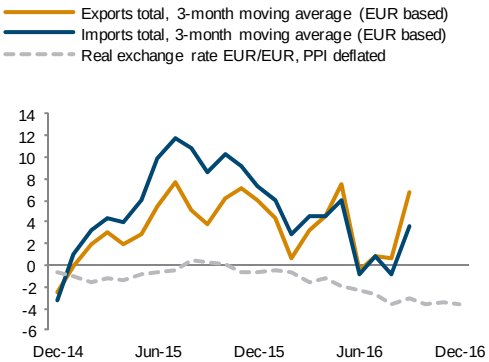
Inflation and unemployment
in %



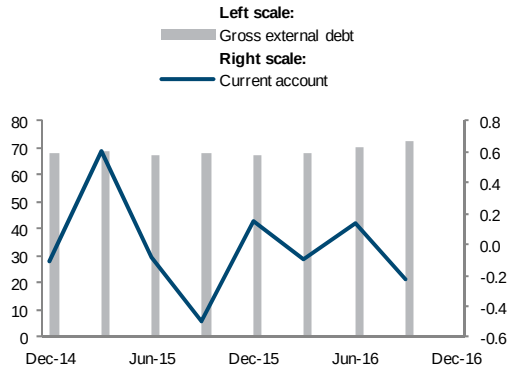
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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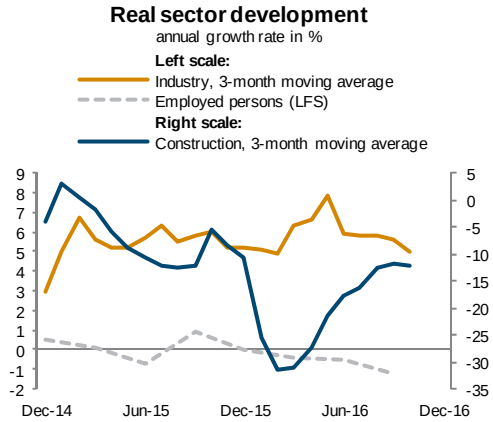
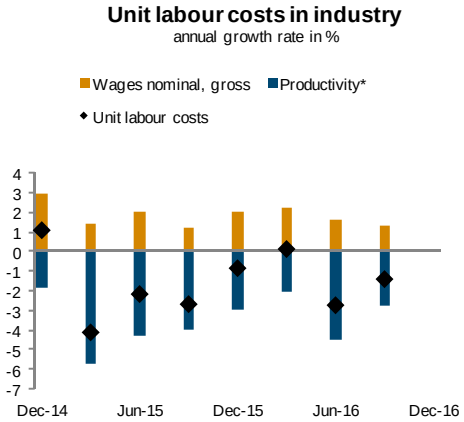
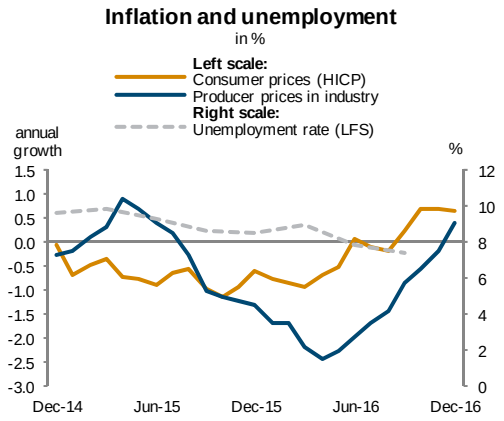
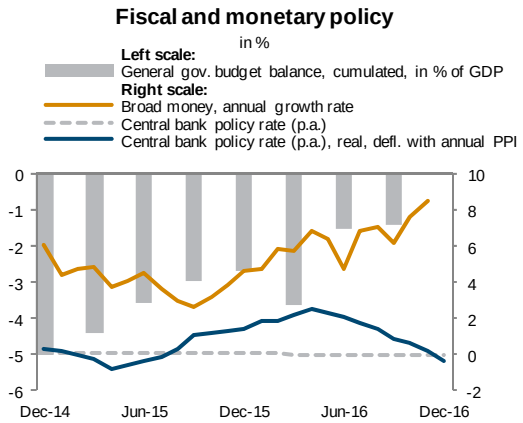
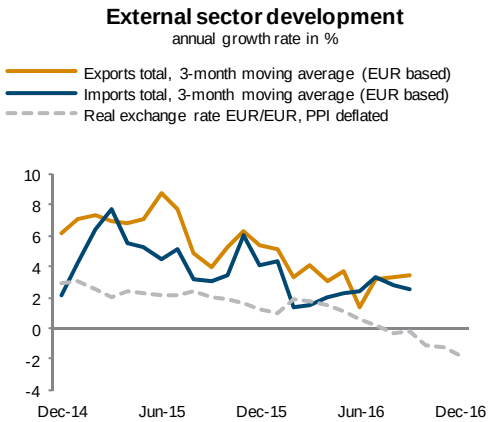
Slovenia

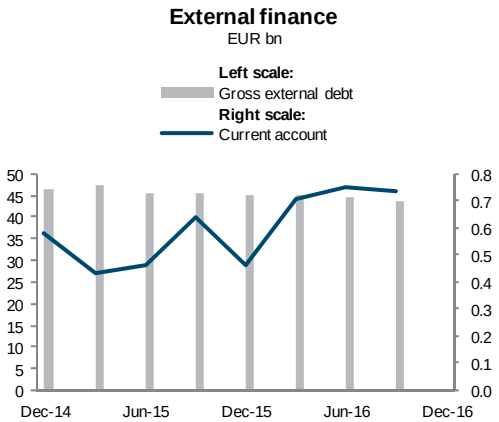












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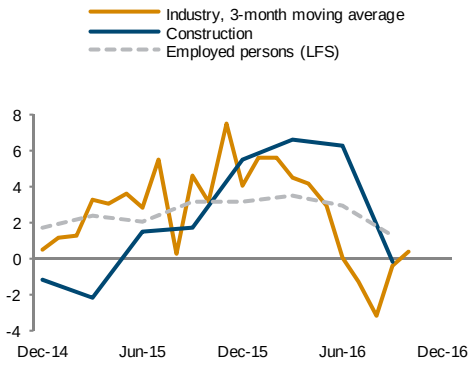
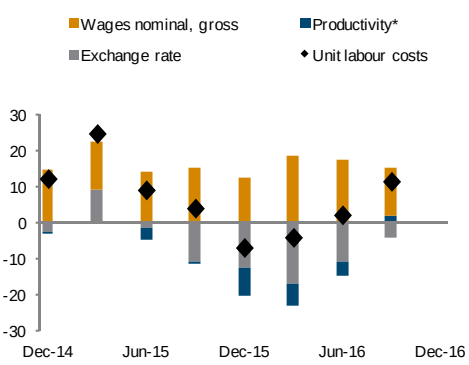
Turkey

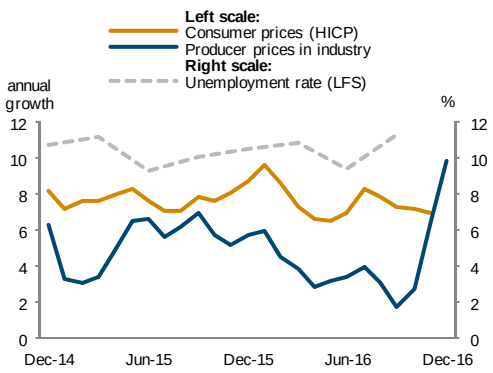
Real sector development
annual growth rate in %



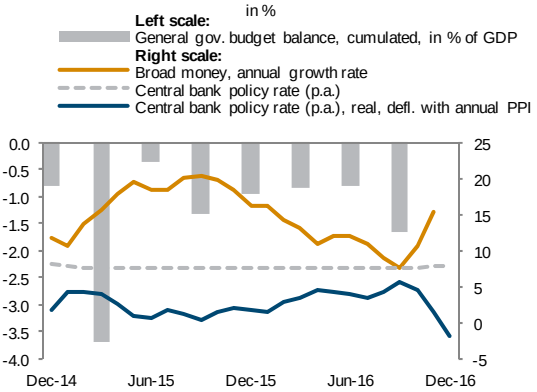
Unit labour costs in industry
annual growth rate in %



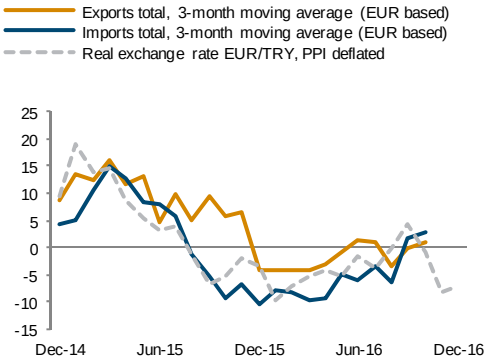
Inflation and unemployment
in %



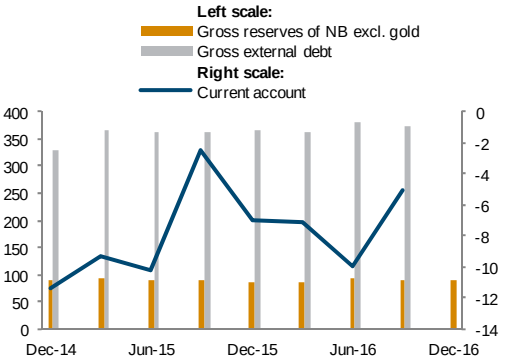
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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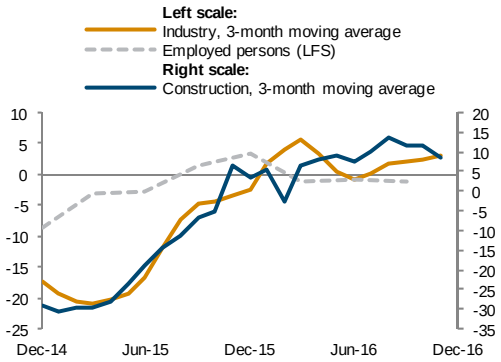
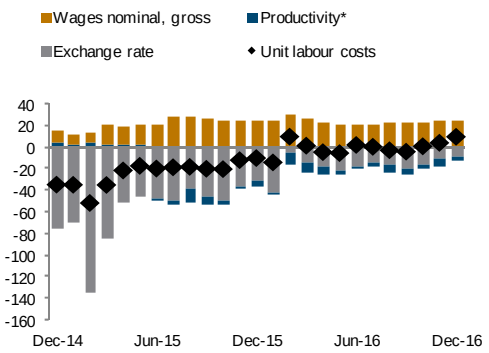
Ukraine

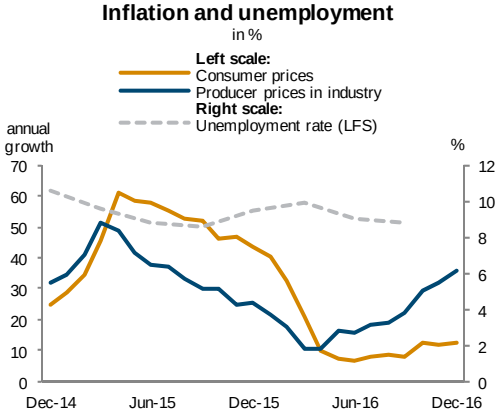
Real sector development
annual growth rate in %



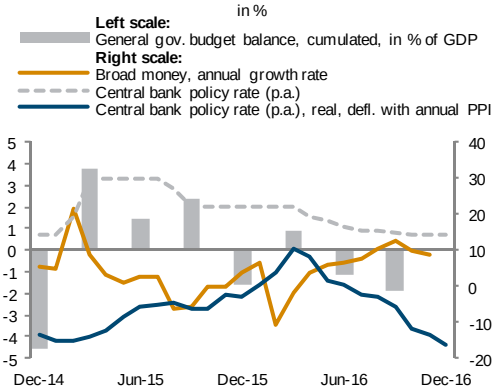
Unit labour costs in industry
annual growth rate in %



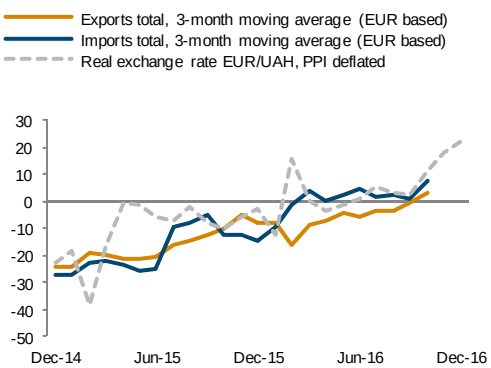
Inflation and unemployment
in %



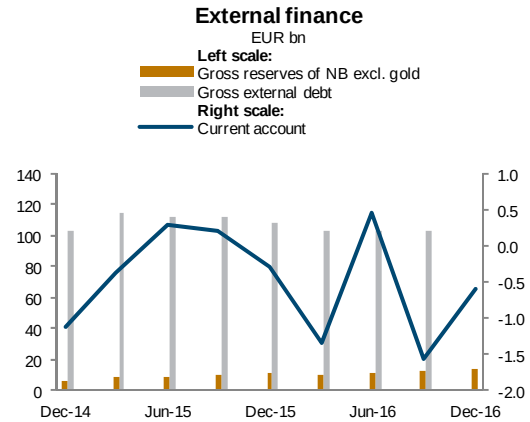
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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continued on the next page

Economics editors: Vasily Astrov, Sándor Richter

IMPRESSUM

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Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.

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