

Monthly Report

What are the Consequences of the Iranian Sanctions Relief?

**Firm Growth and Financing Constraints –
a Comparative Analysis**

Financing Constraints in CESEE and FSU Countries

**Effects of Financing Constraints on M&E-Investment-Based
Innovation Strategies**



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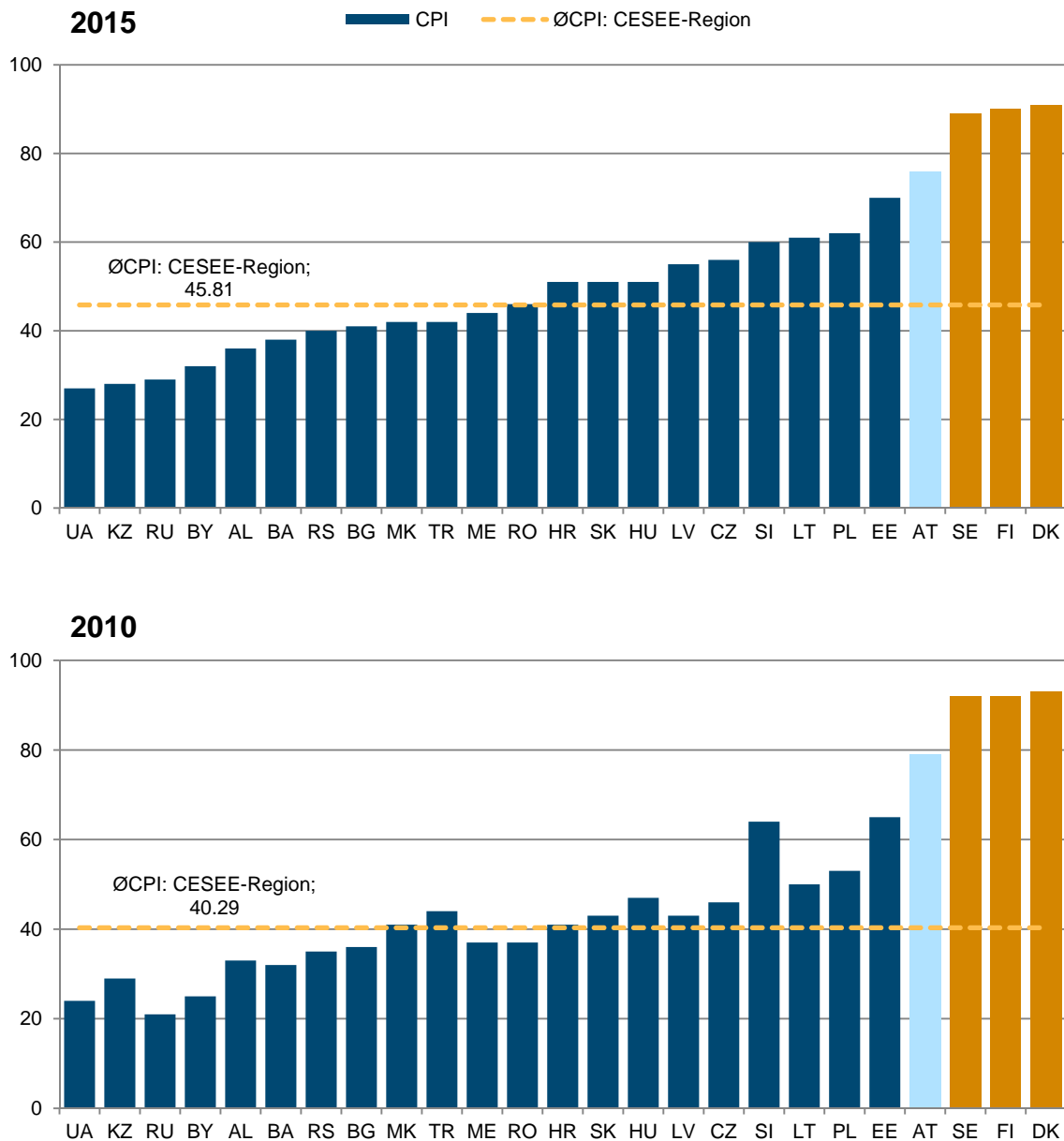
**Effects of Financing Constraints on M&E-Investment-
Based Innovation Strategies**

MAHDI GHODSI
MICHAEL LANDESMANN
SANDRA M. LEITNER
ROBERT STEHRER

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Corruption Perceptions Index (CPI), 2015 and 2010 in comparison



Note: Adaption of scaling for CPI 2010.

Source: Transparency International (<http://www.transparency.org/cpi2015>), wiiw calculations.

Countries are sorted by their CPI in 2015. Denmark, Finland and Sweden show the lowest level in perceived corruption, i.e. the highest scores, in a global ranking of 167 countries. Austria was ranked 16th in 2015, ex aequo with the USA. In 2015, the 21 CESEE countries in the sample show scores between 70 (rank 23) for Estonia and 27 (rank 130) for Ukraine.

Opinion Corner: What are the consequences of the Iranian sanctions relief?

ANSWERED BY WIIW EXPERT MAHDI GHODSI

With the Joint Comprehensive Plan of Action (JCPOA) implemented on 16 January 2016, Iran indicated its willingness to start a trustworthy relationship with the West. As a result, it has received significant economic and financial sanctions relief.

This may mean the beginning of a new era of diplomatic ties between Iran and the West, which will lead to a new economic environment for Iran, giving hope for a better and more peaceful Middle East. Since initiating the JCPOA on 14 July 2015 in Vienna, Iran has already been establishing tighter economic relationships with the West, in particular with the EU. During the last six months, the Austrian president visited Iran as the first of the EU heads of states, accompanied by a team of more than 300 delegates including 130 delegates from Austrian companies, according to the Iranian media. The Czech Republic, Denmark, Finland, Germany, Poland, Slovakia, Slovenia and Spain are among the EU Member States sending economic teams to Iran. This was an ambitious start marking the beginning of new era of the relationship between the EU and Iran.

Assessing the impact of sanctions

After the Islamic Revolution in 1979, Iran's economy became an isolated economy lacking foreign direct investment (FDI). In spite of efforts during the presidency of former president Rafsanjani to attract FDI for building up the post-war economy, foreign investors did not consider Iran a secure and stable environment for investment projects. The oil and gas industries, transport and vehicle industries, and the mining sectors had been the branches of the economy attracting FDI. However, investors left the Iranian industry after the imposition of the sanctions hurting them heavily. Moreover, the sanctions against these major industries reduced their capacities as production was lacking intermediates (e.g. spare parts, tools and devices) and could not be maintained.

Recently, Iranian officials have announced their desire for Iran to again become an attractive place for FDI after the abolishment of the sanctions. However, despite manifold opportunities for investment, which are to enhance the Iranian capacities and technology in the manufacturing industries, Iran still needs to achieve more stability in its economy, e.g. by reducing two-digit inflation that erupted during the past years, in addition to offering tax credits and loan plans.

After the Iran nuclear deal framework had been announced in Lausanne, Switzerland, on 2 April 2015, the Iranian Oil Minister Bijan Zanganeh reiterated that Iran would increase its oil exports after the easing of sanctions by 500,000 barrels per day (bpd)¹, which could potentially lead to a further downward pressure on oil prices. Before reaching the Iran nuclear deal, amid the two-week negotiation marathon,

¹ <http://www.bloomberg.com/news/articles/2015-08-02/iran-s-oil-minister-says-output-to-rise-one-week-after-sanctions>.

oil prices had already been gradually dropping by a few percentages. Despite the lack of maintenance in petroleum exploitation due to the sanctions, Iran still has the capacity to increase its exports to more than 4 million bpd. The easing of the sanctions will additionally release an estimated USD 107 billion of Iranian assets overseas, of which USD 29 billion may be released immediately.² These new flows of income and assets could bring an extraordinary opportunity for Iran to develop its economy.

Appropriate management of the economy and putting safeguards against corruption will be the necessary conditions enhancing growth after the removal of sanctions. The achievements of reducing inflation from 40% to 15.5% and bringing back the economy to positive growth from a previously 6% recession during the first two years of Rouhani's presidency already indicate a better economic management. By the end of the current Iranian calendar year (19 March 2016), the economy is expected to reach 3% growth. However, this development is accompanied by monetary tightening in order to bring down inflation to a one-digit figure in the next Iranian calendar year. This strategy should prepare the economy to reach sustainable growth, providing a stable environment which is attractive for foreign investors.

In 2008, total EU exports to Iran stood at USD 15.8 billion (at their peak). On 23 March 2012, the EU implemented the EU Council Regulation No. 267/2012 regarding Iran's nuclear programmes, which tightened previous sanctions and embargoes and targeted the central bank of Iran and other financial institutions. Consequently, all Iranian banks were disconnected from SWIFT transactions, which severely paralysed Iranian international trade, and in 2012 and 2013, EU exports to Iran dropped dramatically to USD 9 and USD 7 billion, respectively. Austrian total exports to Iran were at their peak level in 2009 with USD 0.44 billion, but dropped by more than 50% to USD 0.21 billion in 2013.

Despite the strict regulations and sanctions, total trade to Iran has never been halted completely. Iran has employed its overseas delegates to reroute trade through the United Arab Emirates (UAE), China, India and Turkey. This however increased trade costs. Particularly imports to Iran became more expensive, which – due to a lack of currency reserves and frozen international assets – resulted in a devaluation of the Iranian rial by more than 200%.

The depreciated currency, the absence of manufacturing maintenance by the pre-sanction Western partners, and economic mismanagement led to economic stagnation in Iran, characterised by increasing unemployment and high inflation. As a result the economy could no longer satisfy consumers' demand. Therefore, import structures became more consumer-oriented. In 2007, the share of consumption goods in total exports to Iran (f.o.b.) was 12%; by 2014 that share had gradually increased to 22%. Intermediates and capital goods imports were losing shares, as the sanctions hit those most. Thus, agricultural and low-tech³ manufacturing exports to Iran significantly gained in importance. US low-tech exports to Iran, at USD 6.7 billion (13% of total exports) in 2008, increased to USD 13.3 billion (24% of total exports to Iran) in 2014. On the other hand, medium-low-tech and medium-high-tech exports to Iran shrank dramatically during this period. These sectors are mostly related to intermediate inputs of Iranian industries such as petroleum. Moreover, the lack of intermediate inputs resulted in stagnation of many other industries as well, such as the pharmaceutical and the automotive industries. Consequently, Iran

² For further information on assets refer to: S. Devarajan and L. Mottaghi (2015), 'Economic Implications of Lifting Sanctions on Iran', *Middle East and North Africa Quarterly Economic Brief*, (July), World Bank, Washington DC.

³ OECD definition of technology intensity of industries: <http://www.oecd.org/sti/ind/48350231.pdf>

was obliged to import high-tech manufacturing products such as medicines and pharmaceuticals, yet through rerouting as mentioned above.

The Iranian trade structure was mainly suffering from its pre-sanctions EU partners' exits. Total EU imports from Iran amounted to USD 24.1 billion in 2011 (before the financial sanctions), but dropped to USD 7.2 and USD 1 billion in 2012 and 2013, respectively. 94% to 98% of the EU imports from Iran were intermediates imports until 2012, with 83% to 93% of total EU imports from Iran constituting mining and quarrying products such as petroleum and steel. According to COMTRADE data, EU imports of intermediates from Iran shrank from USD 23.6 billion in 2011 to USD 0.6 and USD 1.1 billion in 2013 and 2014, respectively.

Trade relations with Austria

Austria ranked 12th among the largest exporters to Iran in the years 2007 and 2011, and 19th in 2014. While in 1996 more than 3% of Austrian extra-EU exports went to the Iranian market, this share fell gradually but continuously to less than 1.7% and 1% in 2009 and 2014, respectively.

Before the EU sanctions against Iran intensified in 2012, the majority of Austrian exports to Iran had comprised capital and intermediate goods with shares of around 40% and 50% in total exports, respectively. Before 2005, a major share of Austrian high-tech products exported to Iran consisted of radios, TV sets and communication equipment. Shifting to more domestic production of these high-tech equipment and diversion to Chinese imports reduced the share of Iranian imports of these products from Austria. Instead, pharmaceuticals (medicine), medical and optical equipment became the major high-tech imports from Austria: Since 2011, 73% to 84% of Austrian high-tech exports to Iran comprise pharmaceuticals. Austria thus became a dominant supplier of medicine to Iran during the time of severe sanctions. However, it is important to note that a big portion of pharmaceuticals in Iran was imported through Chinese and Indian channels with lower products quality.

What to expect?

According to Iran's Central Bank Governor, Valiollah Seif, the newly released funds after the sanctions removal will be used for necessary and primary goods imports. Hence, a higher inflow of consumption goods to Iran is expected in the short run to balance the market and counteract inflationary pressures. This is being accompanied by tighter monetary policies that have raised conservatives' concerns as a bad strategy for recovering from the recession. However, the Iranian government's economic strategies are expected to be effective in the longer run as these are not mainly focused on the demand side but mostly on the supply side.

In an interview in May 2015⁴ Governor Seif reported that Iran would elaborate strategies to channel the released funds in order to accelerate the development in key sectors. This will become easier in a few days, when the Iranian banking system will be reconnected to the SWIFT system and the foreign branches of its banks will restart activities. In addition to the oil and gas industries – traditionally in the focus of economic plans – tourism and IT will be new sectors addressed by the development strategies, says Seif. Consecutive EU Member States' meetings with Iranian representatives, and already signed

⁴ Financial Times: <http://www.ft.com/intl/cms/s/2/b4addeb4-f975-11e4-ae65-001444feab7de.html#axzz3xpJtbpGS>

cooperative contracts with European companies⁵, point towards new inflows of investment and capital goods to Iran. These contracts are expected to lead to investment and technology transfers to Iran. The majority of contracts are related to the expansion of infrastructure, such as the enlargement of airports in Tehran and major cities, high-speed electrical railway connections between Tehran and major cities, as well as metro establishments and enlargements. Thus, all these contracts will provide a new environment to attract FDI and inflows of capital goods in the near future. It can therefore be expected that trade volumes with Iran will again reach levels comparable to those before the start of intensified sanctions in 2009. Furthermore, the new relationship between Iran and the West – a unique opportunity after the Islamic Revolution in 1979 – is hoped to change the structure of trade towards more capital- and high-tech-intensive products, enabling quick economic recovery and a sustainable growth path.

Iran has not yet liberalised its trade in order to protect its domestic industries, e.g. with tariffs up to above 100% on imported automobiles. Nevertheless, Iran has been an observer government to join the World Trade Organisation (WTO), and in 2005 its working party was established, but the chairman has not yet been elected. Despite Iran's memorandum to the WTO on its foreign regime in 2009 and 2011, Iran's accession to the WTO was opposed by major stakeholders in the WTO such as the United States, due to the disputes over Iran's nuclear programmes. Now, after implementation of the JCPOA, Iran's accession to the WTO is expected in the near future. Following the WTO commitments, Iran will then no longer be able to protect its domestic industries easily. Therefore, in order to be able to compete in a liberalised market, Iran still needs to develop its industries with the help of various technology transfers and investment strategies. In fact, the investment partnerships that have been intensively negotiated recently can be identified as one of the key strategies not only to revive the domestic industries but also to keep them competitive after the accession to the WTO.

⁵ Total S.A., OMV, Eni, Siemens, Airbus, Daimler AG, and PSA Peugeot Citroën are among the largest European companies meeting with Iranian delegates.

Firm Growth and financing constraints – a comparative analysis *

BY SANDRA M. LEITNER

Alarming, empirical evidence is quickly mounting that financing constraints severely obstruct firm performance and greatly curb firm growth.

In theory, the presence of financing constraints is ascribed to capital market imperfections such as non-negligible information asymmetries between entrepreneurs and uninformed outside investors. For instance, in the model of credit rationing developed by Stiglitz and Weiss (1981), imperfect information induces banks to resort to rationing credits instead of increasing the interest rate to maximise profits. In particular, since the interest rate banks charge for credits also affects the riskiness of their pool of loans through an adverse selection effect and a negative incentive effect, higher interest rates would both attract riskier projects (and therefore result in a 'lemons problem'¹ according to Akerlof, 1970) as well as induce debtors to realise projects with a generally lower probability of success but higher returns when being successful (moral hazard). Hence, the on average higher riskiness of potential borrowers lowers overall profits for the banks and induces profit-maximising banks to restrict the number of credits they grant.

Empirically, a quickly growing body of literature finds strong evidence of financing constraints but also stresses that the prevalence and extent of such constraints strongly depend on very specific firm characteristics such as firm size, age or ownership structure.

Furthermore, the role of financial systems in fostering growth and the consequences of obstacles and barriers to finance for retarding or altogether stopping economic growth have received much attention. In general, economists tend to hold different views regarding the exact role of the financial sector for growth. While some argue that financial systems play a crucial role in stimulating technological innovation and economic development by mobilising savings, evaluating projects, managing risk, monitoring managers, and facilitating transactions (see Schumpeter, 1912), others highlight that financial development responds to and therefore follows economic developments (e.g., Robinson, 1952 or Lucas, 1988). Empirical evidence is mounting, corroborating that countries with better developed financial systems also experience faster economic growth (see, e.g., Goldsmith, 1969; King and Levine, 1993; Levine and Zervos, 1998; for a thorough discussion and overview of theoretical arguments and empirical findings see Levine, 1997 and 2005). Hence, 'finance matters' for growth.

* This article is a brief preview and summary of the forthcoming wiiw Working Paper of the same title.

¹ The lemons problem refers to a situation where information asymmetries result in the selection of riskier, 'lower-quality' projects.

In this context, our analysis² focuses on emerging economies in Europe and sheds light on the role of financing constraints on firm growth, before and after the onset of the global financial crisis. It uses data from the Business Environment and Enterprise Performance Survey (BEEPS) for a large group of emerging economies, comprising all NMS-10 economies³, Turkey and the group of economically and financially lagging Western Balkan countries⁴. Our analysis sheds light on the effects of financing constraints on firm growth and seeks to evaluate whether financially constrained firms located in the economically less developed Western Balkans face stronger financing constraints and, as a consequence, also experience worse performances than those located in the more advanced NMS-10. In the analysis we make use of two different measures of firm growth, namely sales and employment growth, in order to point to differences in determinants across measures but, more importantly, to also identify the labour market effects of prevailing funding constraints. Moreover, in our analysis we look at three different types of financing constraints to determine whether the effects on firms' performance differ by the relative strictness of prevailing constraints. In particular, it distinguishes '*rejected*', for establishments that applied for a bank loan but whose credit application was rejected, and '*constrained*' for firms that would have needed external funds but did not apply for loans or lines of credits for different reasons. It also uses *Financial Constraint* as a composite financing constraint indicator for firms that either faced rejections or felt constrained and therefore abstained from applying for bank loans in the first place.

Our results demonstrate the following:

- › Financing constraints significantly obstruct growth of firms in terms of sales and employment. Yet, they affect growth of sales more strongly than growth of employment: financially constrained firms showed between six and eight percentage points lower sales growth rates but only around four percentage points lower employment growth rates than unconstrained firms.
- › Firms located in the Western Balkans had significantly higher employment growth rates. This result is, however, driven by developments and employment changes of firms located in Macedonia and Kosovo, which both avoided recessions during the crisis and post-crisis stress and where average annual employment growth rates were among the highest during the post-crisis period, starting from very low employment levels, however.
- › During the pre-crisis period only, financial constraints were more harmful to employment growth of firms located in the economically less advanced Western Balkan countries than to firms located in the group of economically more advanced NMS-10 (plus Turkey). This suggests that prior to the crisis employment growth in the Western Balkan countries was severely hampered by financing constraints.

Summing up, our analysis demonstrates that financing constraints are harmful to firm growth, both in terms of sales and employment. The effect tends to be stronger for sales growth though. The detrimental growth effect of financing constraints differs across countries and is stronger for financially constrained firms in the Western Balkans whose employment growth was significantly lower in the run-up to the

² See Leitner (2016) for a more thorough discussion.

³ The NMS-10 comprise all new Member States except Malta and Cyprus, and excluding Croatia (which joined in 2013), i.e. Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

⁴ The EU Candidate Countries, comprising the former Yugoslav Republic of Macedonia, Montenegro, Serbia as well as Albania, Bosnia and Herzegovina, Croatia and Kosovo.

crisis. Hence, our results stress the need for policy intervention in the Western Balkan countries to reduce financing obstacles in order to ensure and accelerate job-rich growth and catching-up with more developed economies.

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Financing constraints in CESEE and FSU countries

BY MICHAEL LANDESMANN, SANDRA M. LEITNER AND ROBERT STEHRER

Financing constraints are a major concern, severely affecting firms around the globe. As a result of financing constraints, firms invest less in R&D and the acquisition of machinery and equipment which is relevant for technology upgrading. Financially constrained firms are also less likely to penetrate new markets and export, pursue innovative activities, import or invest in capital goods or offer formal training programmes to their employees¹, and they grow more slowly.² Financing constraints are therefore of particular concern in economically lagging economies, where unhindered access to financial markets is crucial for a swift and smooth catching-up process with more advanced economies.

In this context, Figure 1 depicts the prevalence of financing constraints for a large set of Central, East and Southeast European (CESEE) as well as Former Soviet Union (FSU) countries.³ Two types of financing constraints are distinguished: *credit constraints* (labelled 'Applied but rejected'), which result from the rejection of credit or loan applications by a bank; and *other funding constraints* (labelled 'Need but not applied'), stemming from overly complex procedures, unfavourable terms and conditions or the need for informal payments which keep financially weak enterprises from applying for credits or loans in the first place.

Figure 1 also differentiates between three economic phases since 2000. First, the phase of '*financial normalcy*' (between 2000 and 2004), which was characterised by a brief period of rapid economic growth, sizeable FDI inflows, growing capital market and trade integration with (the rest of) the European Union as well as increasingly attractive housing markets in several economies which started to pull in non-negligible investments. Second, the phase of the '*housing bubble*' (between 2005 and 2008), characterised by a rapidly developing financial sector – dominated by foreign banks – that provided easy access to affordable loans, thereby helping fuel an unprecedented credit boom which brought about a sharp rise in private sector debt and culminated in an unprecedented housing bubble in several CESEE countries. Third, the '*crisis phase*' (between 2009 and 2011), which was initiated by the global financial

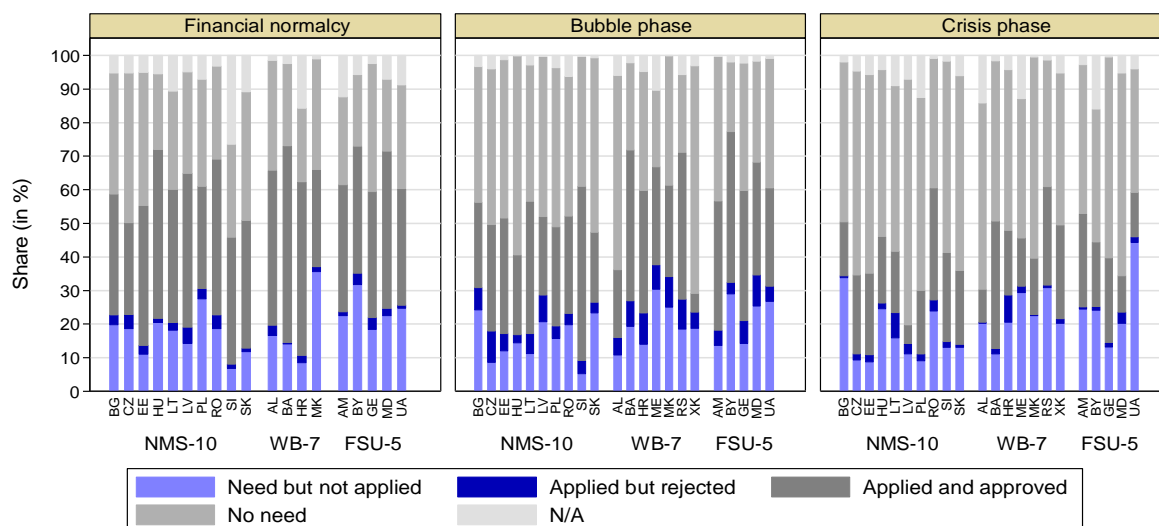
¹ See, e.g., Tiwari et al. (2007) or Mancusi and Vezzulli (2010) for evidence on R&D investment levels, Landesmann et al. (2016) on M&E investment levels, Minetti and Zhu (2011) for evidence on the probability of entering new markets and exporting, Mancusi and Vezzulli (2010), Mohnen et al. (2008), Männasoo and Meriküll (2011), Hajivassilou and Savignac (2008), Álvarez and Crespi (2011) on the probability of pursuing R&D activities, Hasan (2013) or Landesmann et al. (2016) on the probability of investing in capital goods, Fauceglia (2013) on the probability of importing capital goods or Popov (2013) on the probability of offering formal training programmes to employees.

² See, e.g., Ayyagari et al. (2008), Beck et al. (2005), Demircuc-Kunt and Maksimovic (1998), Hashi (2001), Hashi and Krasniqi (2011) or Leitner (2016).

³ Albania, Armenia, Bosnia and Herzegovina, Bulgaria, Belarus, Croatia, the Czech Republic, Estonia, FYR Macedonia, Georgia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovenia, the Slovak Republic and Ukraine. The data were collected as part of the Eastern European component of the Business Environment and Enterprise Performance Survey (BEEPS) which is a joint initiative of the World Bank Group (WB) and the European Bank for Reconstruction and Development (EBRD).

and economic crisis that hit the region particularly hard. The crisis put an end to the pre-crisis credit frenzy, burst the housing bubble and eventually sent the housing market into meltdown. Consequently, banks experienced strong increases in non-performing loans and suffered sizeable profit losses as a large number of outstanding loans proved irrevocable.

Figure 1 / Prevalence of different types of financing constraints



Source: BEEPS, own calculations

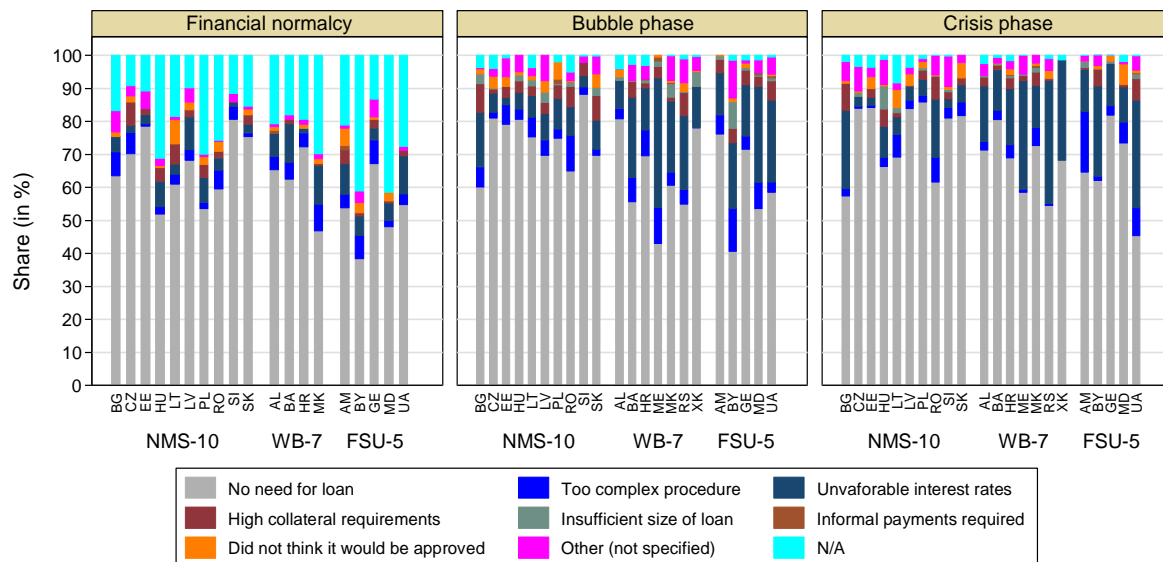
Note: NMS-10 comprises all 2004 and 2007 new Member States (but Cyprus and Malta), WB-7 comprises all Western Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Montenegro, FYR Macedonia, Serbia and Kosovo) and FSU-5 comprises Armenia, Belarus, Georgia, Moldova and Ukraine.

Figure 1 also highlights that credit constraints were of little importance, irrespective of country and economic phase, compared to funding constraints, i.e. constraints of firms that would have needed external funds but refrained from applying for bank loans or credits. As shown in Figure 2, this was primarily due to unfavourable interest rates, complex procedures and high collateral requirements that discouraged entrepreneurs from applying for bank loans in the first place. Interestingly, during the bubble phase credit constraints became more frequent in all countries but Romania and Belarus. This increase in pre-crisis credit constraints may have been the result of the pre-crisis credit frenzy and the associated increase in riskier and less viable credit applications that banks rejected on the grounds of higher default risks. This increase in credit constraints was most dramatic in Bosnia and Herzegovina, Macedonia, Moldova, Ukraine and Croatia but smallest in Poland and Latvia.

Furthermore, the prevalence and extent of financing constraints (as the sum of credit and funding constraints) varied across countries and economic phases. For instance, during the financial normalcy phase, financing constraints were lowest in Slovenia and Croatia, where only around every 10th firm encountered financing constraints. In contrast, it was highest in Macedonia, followed by Belarus and Poland, where every 3rd firm encountered financing constraints. The extent and range of financing constraints were similar during the bubble phase and ranged between nine per cent in Slovenia and 37 per cent in Montenegro. During the crisis phase, however, the extent and range of financing constraints were considerably higher. Crisis-related financing constraints were lowest in Estonia, Poland and the Czech Republic, where only every 10th firm encountered difficulties accessing external funds. By contrast, financing constraints were highest in Ukraine, where almost every 2nd firm encountered

financing constraints, followed by Bulgaria, Serbia and Montenegro, where every 3rd firm faced financing constraints.

Figure 2 / Different reasons for not applying for banks loans



Note: NMS-10 comprises all 2004 and 2007 new Member States (but Cyprus and Malta), WB-7 comprises all Western Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Montenegro, FYR Macedonia, Serbia and Kosovo) and FSU-5 comprises Armenia, Belarus, Georgia, Moldova and Ukraine.

Source: BEEPS, own calculations.

Finally, important and interesting crisis effects are apparent from Figure 1. Firstly, during the crisis phase, bank loan applications dropped significantly which points to the strong discouragement effect of the crisis. Secondly, as a consequence of soaring non-performing loans and the substantial drops in banks' profits, approval rates declined significantly in all countries as banks had to reapply more prudential and conservative credit approval practices that had partly been lifted during the pre-crisis credit frenzy. Thirdly, the share of firms which had no need for external funds increased considerably, which may have resulted from the substantial shake-out of economically and financially less viable establishments during the crisis that left financially relatively healthier establishments with lower or no need for external funds.

In summary, firms located in Central, East and Southeast European as well as Former Soviet Union countries face non-negligible financing constraints. Given the negative consequences of financing constraints, there is a need for policy intervention to reduce or altogether eliminate those restrictions in order to foster growth and accelerate the catching-up process with more advanced economies. Interestingly, credit constraints resulting from rejections of credit applications are not the key obstacle. Instead, other funding constraints that predominantly result from unfavourable interest rates, complex procedures and high collateral requirements dominate, discouraging firms from applying for bank loans in the first place. Furthermore, the crisis has left its mark, since credit applications as well as approval rates of bank loan applications dropped substantially, depriving entrepreneurs of vital external funds.

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Effects of financing constraints on M&E-investment-based innovation strategies

BY MICHAEL LANDESMANN, SANDRA M. LEITNER AND ROBERT STEHRER

Innovations are key to economic outcomes, both as an engine of economic growth and the development of economies as well as for the survival and growth of individual firms (Schumpeter, 1934). However, innovative activities are costly and, in the absence of sufficient own internal resources, entrepreneurs often have to resort to capital markets to raise the necessary funds in order to finance their projects. In doing so, they often face sizeable and insurmountable financing constraints as a result of strong information asymmetries, which subsequently discourages them from starting new, or from continuing ongoing, innovation projects. This not only undermines their own future innovation potentials and growth prospects but also negatively affects the economy as a whole, rendering catching-up an unnecessarily long and arduous process for developing and emerging countries.

In this context, our analysis¹ studies the role of binding financing constraints (i) in an entrepreneur's decision to engage in innovative activities in the first place, as well as (ii) in his or her subsequent decision on how much to spend on such activities. It uses a self-reported funding constraint indicator which considers establishments to be financially constrained if (i) entrepreneurs in need of loans constrain themselves from applying for bank loans due to generally unfavourable terms and conditions, or if (ii) entrepreneurs apply for loans but receive a rejection from the bank. We use data from the Business Environment and Enterprise Performance Survey (BEEPS) for a large set of Central, East and Southeast European (CESEE) as well as Former Soviet Union (FSU) countries.² Our analysis studies three different economic phases that characterised the region from the turn of the century, namely (1) the phase of '*financial normalcy*' between 2000 and 2004, (2) the '*bubble phase*' between 2004 and 2008, and (3) the '*crisis phase*' following the global financial crisis of 2008, between 2009 and 2011.

Following Veugelers and Cassiman (1999), three different innovation strategies are distinguished: (i) the 'make only' strategy for establishments that invest in R&D only (referred to as *innovators only*); (ii) the 'buy only' strategy for establishments that buy technology and know-how embodied in machinery and equipment only (referred to as *M&E investors only*); and (iii) 'both' for establishments that pursue a mix of both strategies and invest in both R&D and M&E acquisition (referred to as *both*).

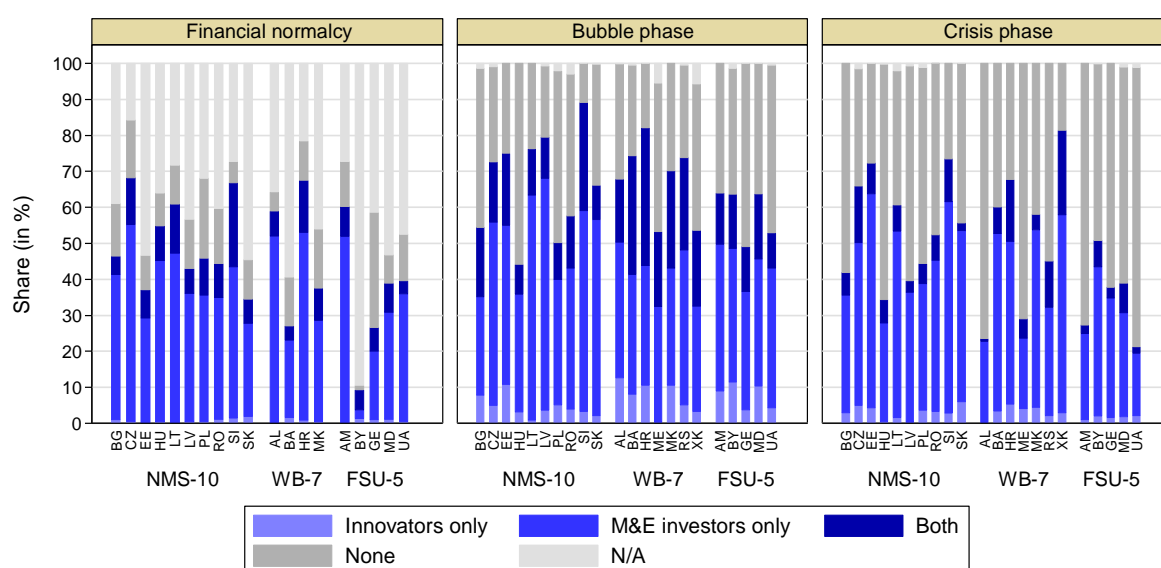
The frequency of these three different innovation strategies is depicted in Figure 1, which highlights that the prevalence of innovators varies across economic phases. During the bubble phase, the majority of firms pursued innovation strategies (except for those located in either Hungary or Georgia). During the crisis phase, the frequency of innovators declined, falling below 50 per cent in half of all countries

¹ See Landesmann et al. (2016).

² The set of countries comprises Albania, Armenia, Bosnia and Herzegovina, Bulgaria, Belarus, Croatia, the Czech Republic, Estonia, FYR Macedonia, Georgia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine.

analysed. Furthermore, as concerns the different types of innovation strategies, irrespective of the economic phase considered, *M&E investors only* dominated, rendering the ‘buy only’ strategy the dominant innovation strategy in the region. By contrast, *innovators only* were rarely observed. The frequency of *innovators only* was particularly high in the run-up to the global financial crisis: with more than 10 per cent, the share of *innovators only* was highest in Albania, Belarus, Estonia, Macedonia, Croatia and Moldova and with less than 1 per cent it was lowest in Montenegro and Lithuania. In the aftermath of the crisis, however, the share of *innovators only* dropped again in all but three countries, namely Montenegro, Slovakia and Lithuania.

Figure 1 / Different types of innovation strategies



Note: NMS-10 comprises all 2004 and 2007 new Member States (but Cyprus and Malta), WB-7 comprises all Western Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Montenegro, FYR Macedonia, Serbia and Kosovo) and FSU-5 comprises Armenia, Belarus, Georgia, Moldova and Ukraine.

Source: BEEPS, own calculations

Hence, given that the firms in the sample predominantly pursue the M&E-based innovation strategy, we focused on the role of financing constraints for this particular innovation strategy. Our findings demonstrate the following:

- › **Financial constraints are detrimental to an entrepreneur’s decision to invest in M&E.** The effect, however, differs slightly across economic phases: During the financial normalcy phase, financially constrained establishments were around 31 percentage points less likely to invest in M&E. This figure decreased to 28 percentage points during the bubble phase and increased again to 34 percentage points during the recent financial and economic crisis.³
- › **Financial constraints are also detrimental to the size of M&E investments;** the exact effects, again, differ by phase. In particular, financial constraints were most detrimental during the crisis phase, when financially constrained entrepreneurs spent on average around nine per cent less on the

³ Pairwise t-tests, however, reveal that these differences are not statistically significant.

acquisition of M&E. With only around four per cent lower M&E investments for financially constrained companies, the effect was more muted during the financial normalcy and bubble phases though.

Hence, given the dominance of the M&E-based innovation strategy among CESEE and FSU countries, this result calls for a quick and effective policy intervention to reduce existing funding constraints in order to help innovators increase their participation in innovative activities as well as to uphold ongoing innovation efforts.

References

Landesmann, M., Leitner S. M., and Stehrer R., (2016), 'Changing Patterns in M&E-Investment-Based Innovation Strategies in CESEE and FSU Countries – from Financial Normalcy to the Global Financial Crisis', *wiiw Working Papers*, No. 123 (forthcoming).

Veugelers, R. and Cassiman B., (1999), 'Make and buy in innovation strategies: evidence from Belgian manufacturing firms', *Research Policy*, Vol. 28, No. 1, pp. 63–80.

The editors recommend for further reading*

On Russia

and the 'West': Four essays (so far) by Lilia Shevtsova in a series on how the West misjudged Russia: <http://www.the-american-interest.com/byline/shevtsova/>

and Ukraine: Risks for Ukrainian democracy: http://carnegieendowment.org/2016/02/03/decisive-turn-risks-for-ukrainian-democracy-after-euromaidan/itf4?mkt_tok=3RkMMJWWfF9wsRovugXJZKXonjHpfsX66%2BosUaKq38431UFwdcjKPmjr1YoBTct0aPyQAgobGp5I5FEIQ7XYTLB2t60MWA%3D%3D

EU-Ukraine-Russia trade negotiations failing: <http://www.wsj.com/articles/russia-penalizes-ukraine-because-of-its-imminent-trade-deal-with-eu-1450725567>

and Turkey: A historical view on rising tensions between Russia and Turkey: <http://www.the-american-interest.com/2015/12/16/turkey-and-russia-enemies-again/>

and the US: Henry A. Kissinger, who served as national security advisor and secretary of state under US President Nixon and US President Ford, on US-Russia relations: <http://nationalinterest.org/feature/kissingers-vision-us-russia-relations-15111?page=2>

Responses to the European migration crisis

by EBRD: The European Bank for Reconstruction and Development aims for a *refugee crisis response package of EUR 900 million*: <http://www.ebrd.com/news/2016/-ebrd-aiming-for-refugee-crisis-response-package-of-900-million.html>

by the IMF: A staff discussion note on the economic challenges of the refugee surge in Europe: <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1602.pdf>

by the V4 group: Joint Statement of the Visegrad Group on the migration crisis: <http://www.visegradgroup.eu/calendar/2016/joint-declaration-of>

On the capacity of the migration crisis in undermining mainstream EU politics: <http://www.voxeu.org/article/europe-s-migration-crisis-2016>

* Recommendation is not necessarily endorsement. The editors are grateful to Amat Adarov, Vladimir Gligorov, Peter Havlik and Olga Pindyuk for their valuable contributions.

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.

NEW: Starting from January 2016, the wiiw Monthly Database covers the following additional time series: quarterly data on GDP, current account in per cent of GDP, and general government budget (revenues, expenditures and balance) in per cent of GDP.

The corresponding graphs have been adjusted accordingly: data on budget balance are now presented in per cent of GDP instead of EUR million.

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



wiiw Monthly Database



wiiw FDI Database

The wiiw databases are accessible via a simple web interface, with only one password needed to access all databases (and all wiiw publications).

You may access the databases here: <http://data.wiiw.ac.at>.

If you have not yet registered, you can do so here: <http://wiiw.ac.at/register.html>.

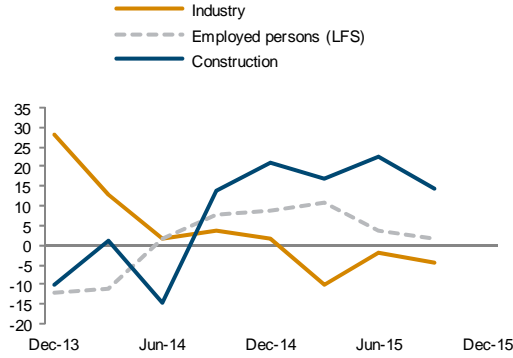
New service package available

Starting from January 2014, we offer an additional service package that allows you to access all databases – a Premium Membership, at a price of € 2,300 (instead of € 2,000 as for the Basic Membership). Your usual package will, of course, remain available as well.

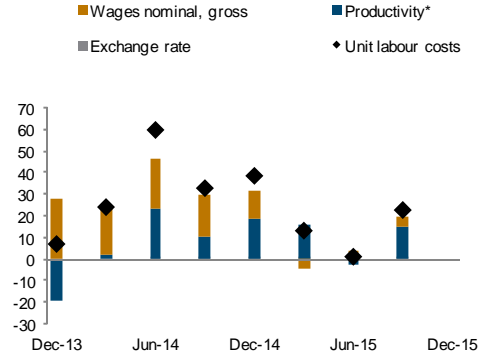
For more information on database access for Members and on Membership conditions, please contact Ms. Gabriele Stanek (stanek@wiiw.ac.at), phone: (+43-1) 533 66 10-10.

Albania

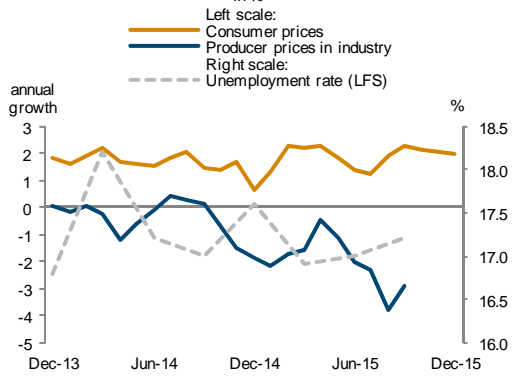
Real sector development
annual growth rate in %



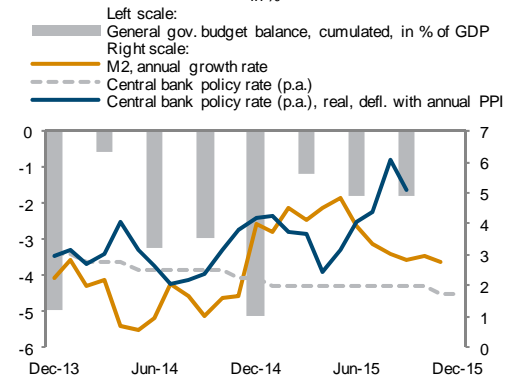
Unit labour costs in industry
annual growth rate in %



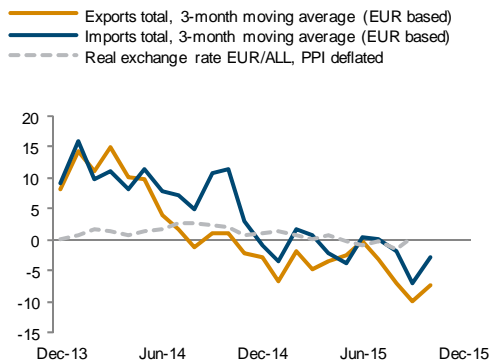
Inflation and unemployment
in %



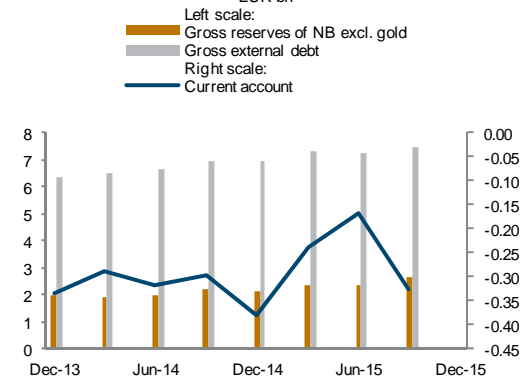
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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.

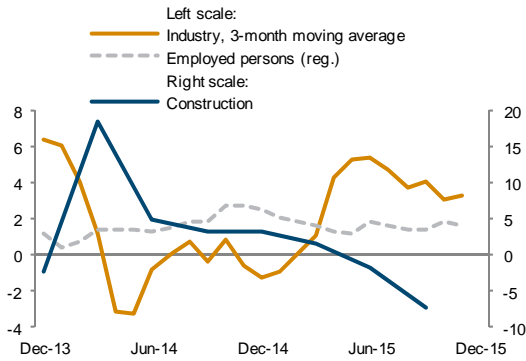
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<http://data.wiiw.ac.at/monthly-database.html>

Bosnia and Herzegovina

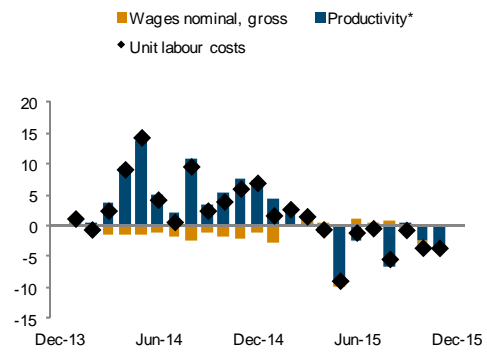
Real sector development

annual growth rate in %



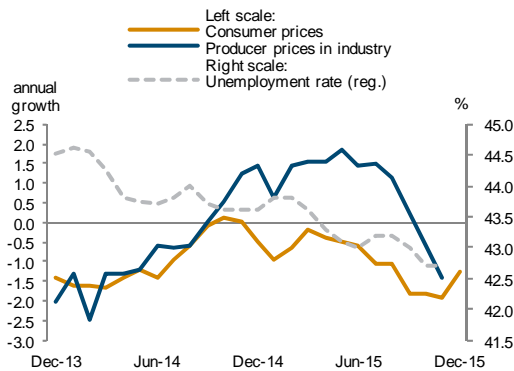
Unit labour costs in industry

annual growth rate in %



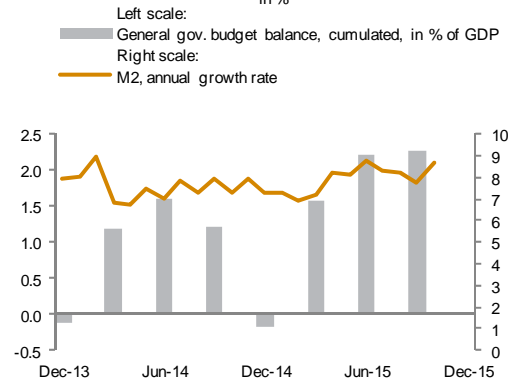
Inflation and unemployment

in %



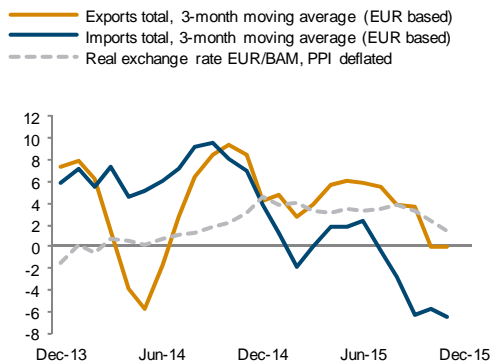
Fiscal and monetary policy

in %



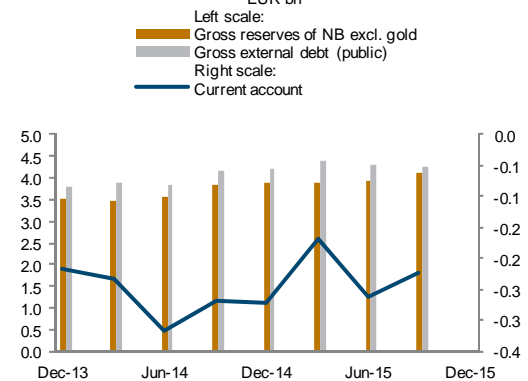
External sector development

annual growth rate in %



External finance

EUR bn



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

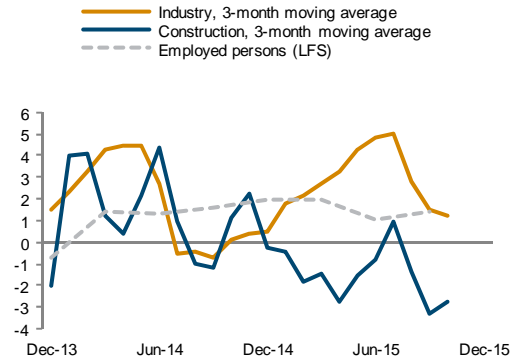
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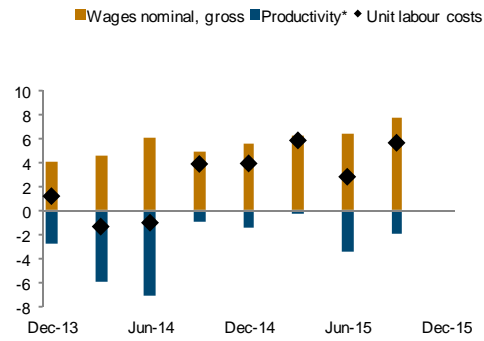
<http://data.wiiw.ac.at/monthly-database.html>

Bulgaria

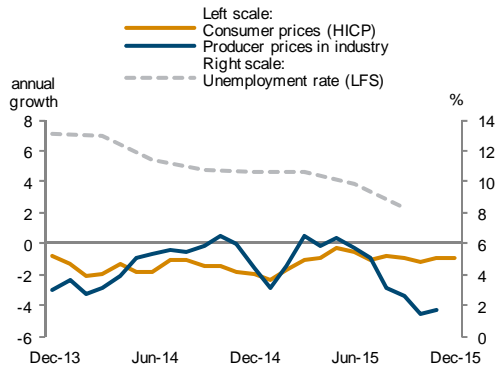
Real sector development
annual growth rate in %



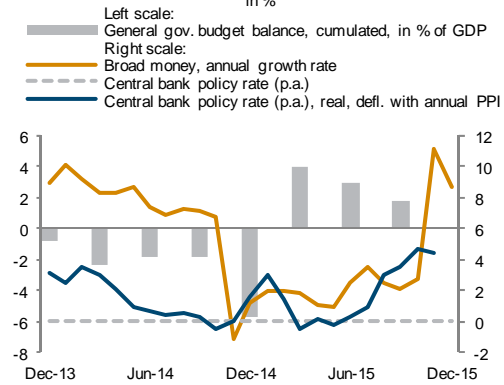
Unit labour costs in industry
annual growth rate in %



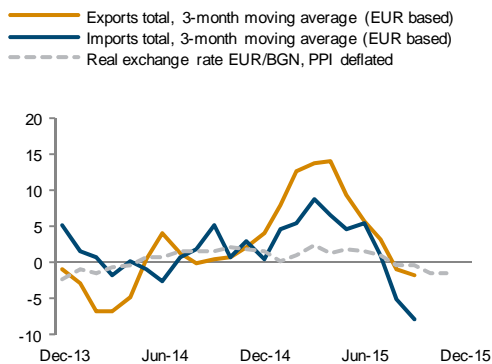
Inflation and unemployment
in %



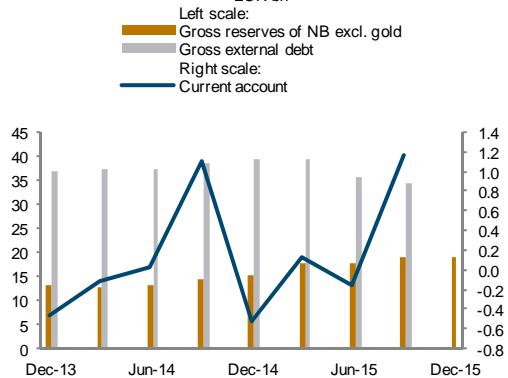
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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.

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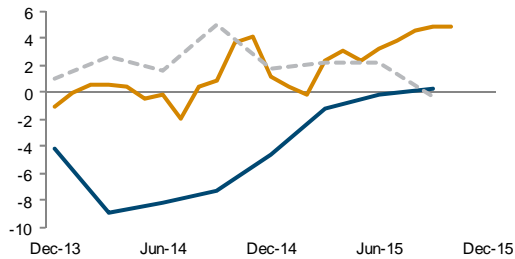
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Croatia

Real sector development

annual growth rate in %

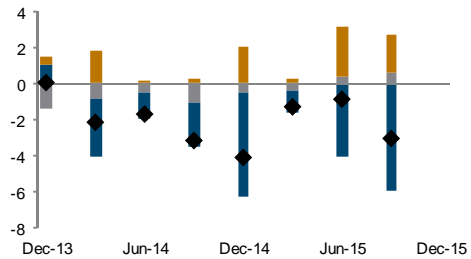
- Industry, 3-month moving average
- Construction, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

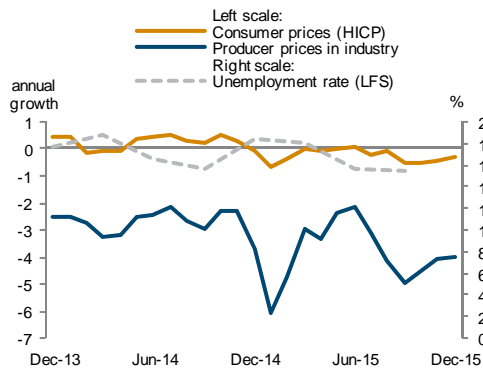
annual growth rate in %

- Wages nominal, gross
- Exchange rate
- Productivity*
- ◆ Unit labour costs



Inflation and unemployment

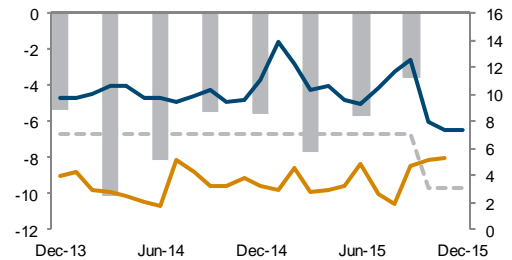
in %



Fiscal and monetary policy

in %

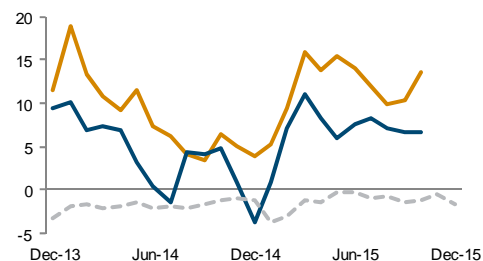
- Left scale: General gov. budget balance, cumulated, in % of GDP
- Right scale: Broad money, annual growth rate
- Central bank policy rate (p.a.)
- Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

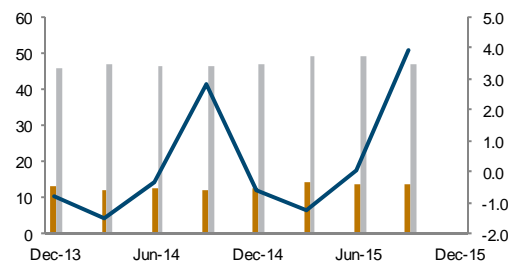
- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/HRK, PPI deflated



External finance

EUR bn

- Left scale: Gross reserves of NB excl. gold
- Gross external debt
- Right scale: Current account



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

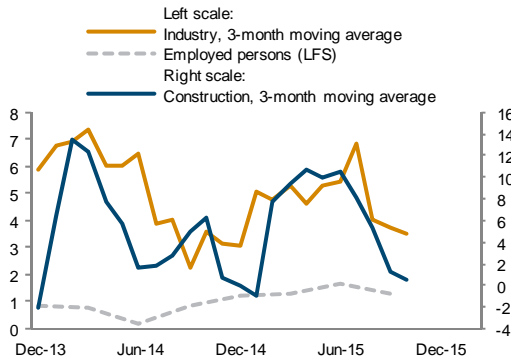
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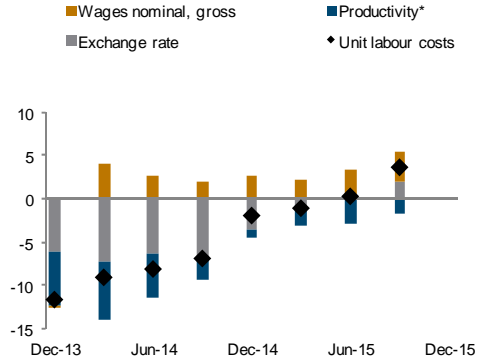
<http://data.wiiw.ac.at/monthly-database.html>

Czech Republic

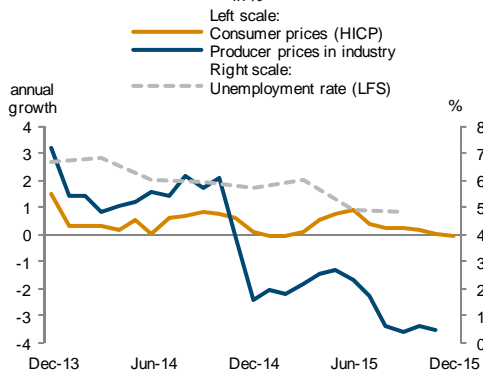
Real sector development
annual growth rate in %



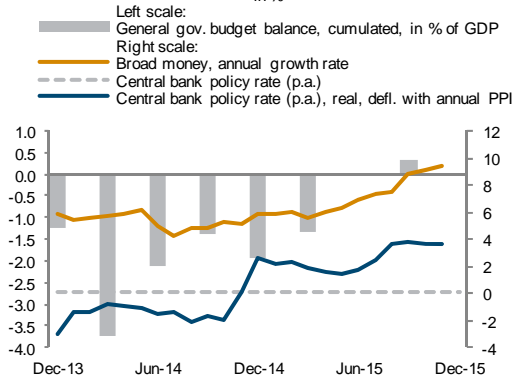
Unit labour costs in industry
annual growth rate in %



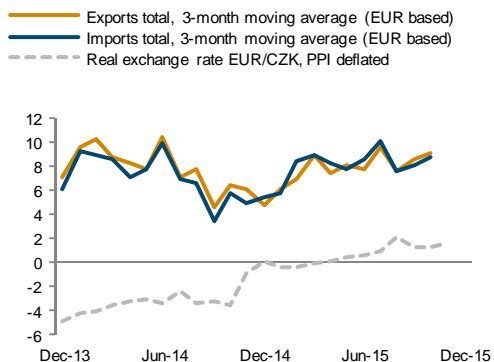
Inflation and unemployment
in %



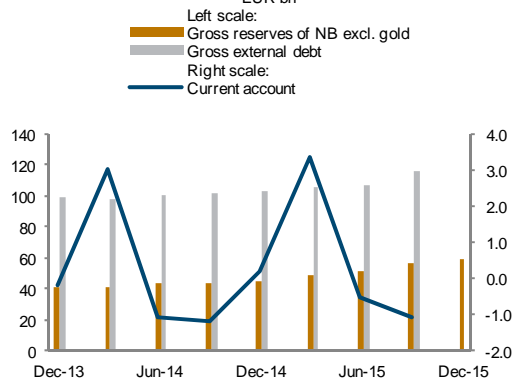
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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:

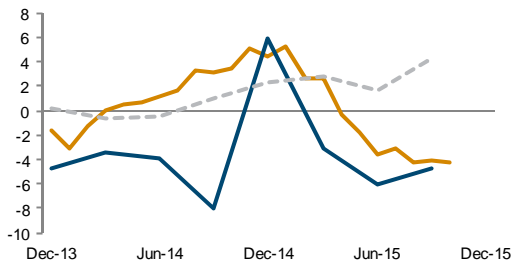
<http://data.wiiw.ac.at/monthly-database.html>

Estonia

Real sector development

annual growth rate in %

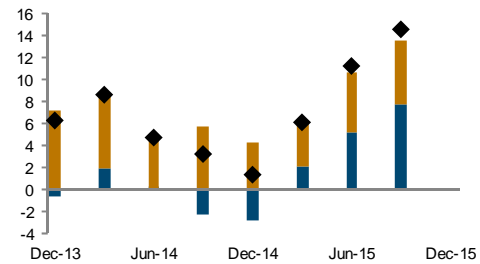
— Industry, 3-month moving average
— Construction
- - - Employed persons (LFS)



Unit labour costs in industry

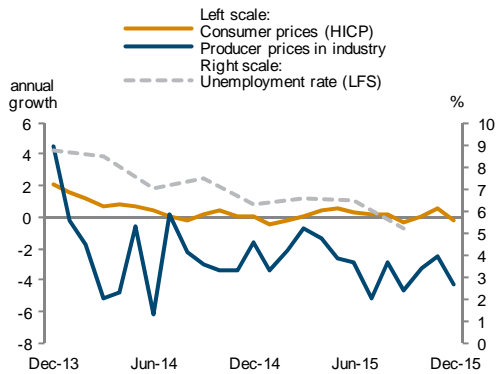
annual growth rate in %

■ Wages nominal, gross ■ Productivity*
◆ Unit labour costs



Inflation and unemployment

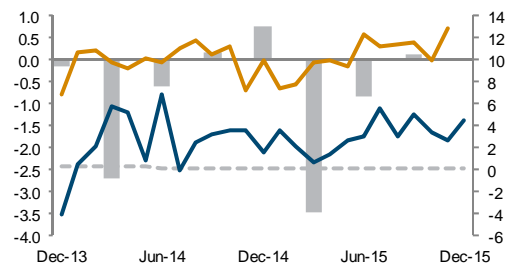
in %



Fiscal and monetary policy

in %

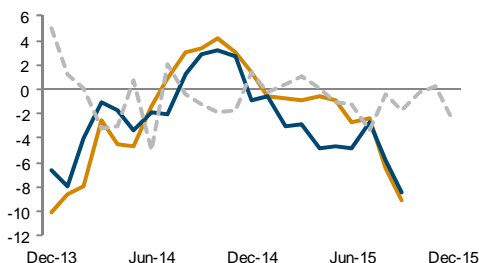
Left scale:
■ General gov. budget balance, cumulated, in % of GDP
Right scale:
— Broad money, annual growth rate
- - - Central bank policy rate (p.a.)
— Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

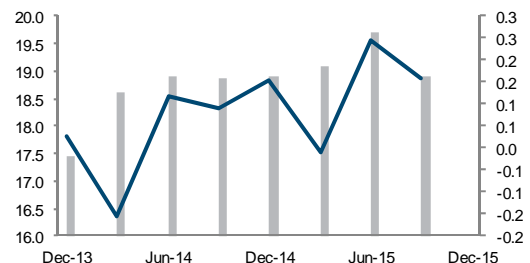
— Exports total, 3-month moving average (EUR based)
— Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/EUR, PPI deflated



External finance

EUR bn

Left scale:
■ Gross external debt
Right scale:
— Current account



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

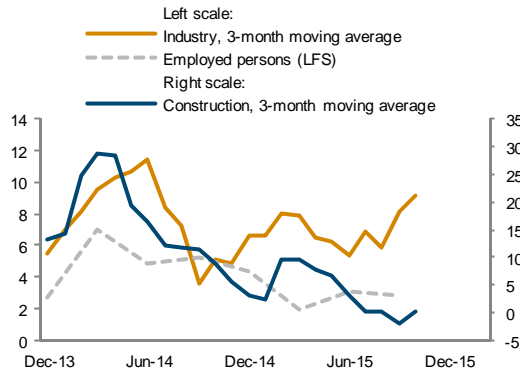
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

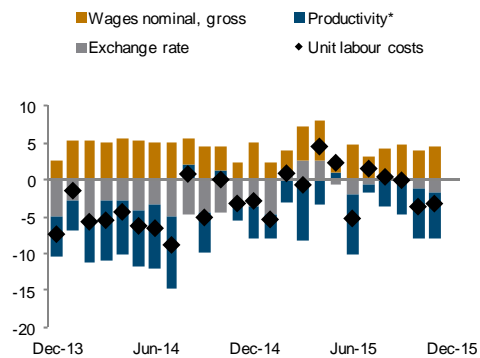
<http://data.wiiw.ac.at/monthly-database.html>

Hungary

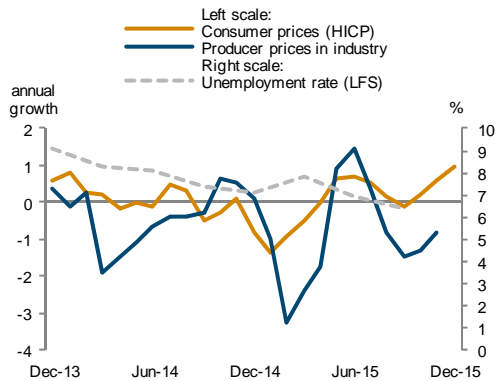
Real sector development
annual growth rate in %



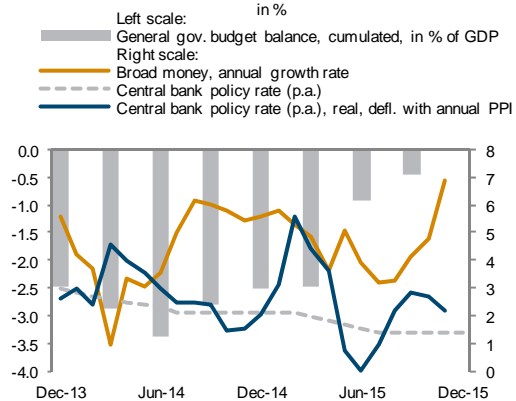
Unit labour costs in industry
annual growth rate in %



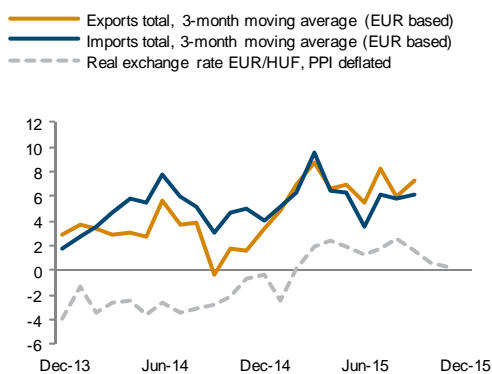
Inflation and unemployment
in %



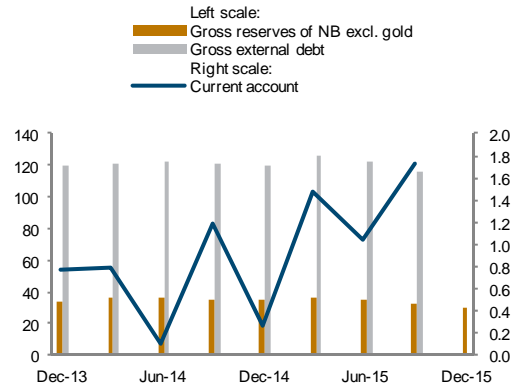
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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:

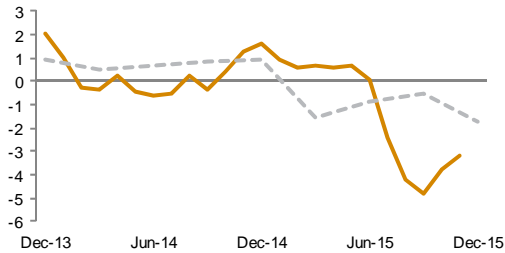
<http://data.wiiw.ac.at/monthly-database.html>

Kazakhstan

Real sector development

annual growth rate in %

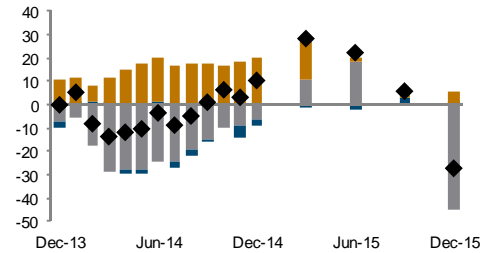
— Industry, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

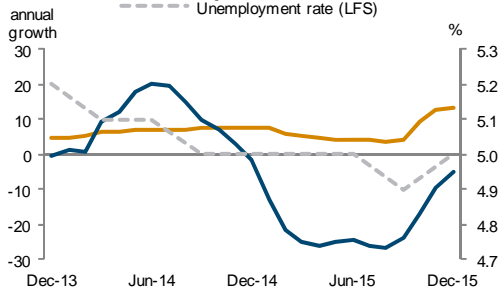
■ Wages nominal, gross ■ Productivity*
■ Exchange rate ◆ Unit labour costs



Inflation and unemployment

in %

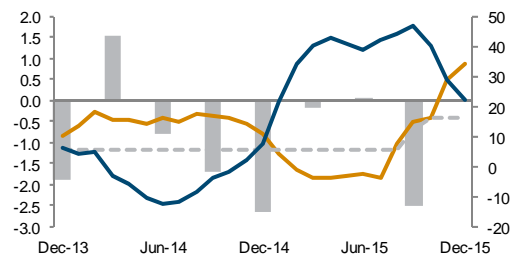
Left scale:
— Consumer prices
— Producer prices in industry
Right scale:
- - - Unemployment rate (LFS)



Fiscal and monetary policy

in %

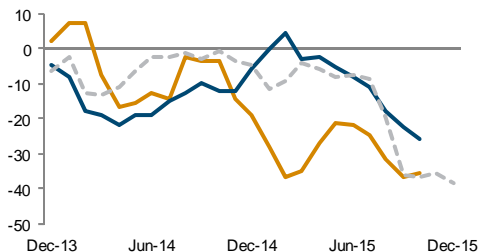
Left scale:
■ General gov. budget balance, cumulated, in % of GDP
Right scale:
— Broad money, annual growth rate
- - - Central bank policy rate (p.a.)
— Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

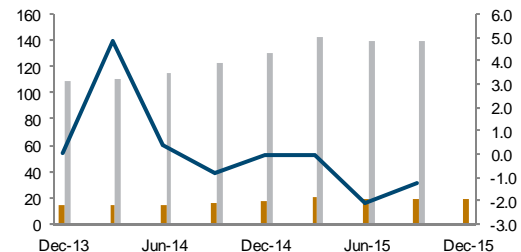
— Exports total, 3-month moving average (EUR based)
— Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/KZT, PPI deflated



External finance

EUR bn

Left scale:
■ Gross reserves of NB excl. gold
■ Gross external debt
Right scale:
— Current account



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

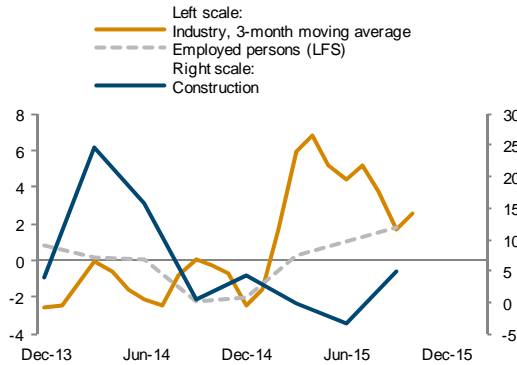
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

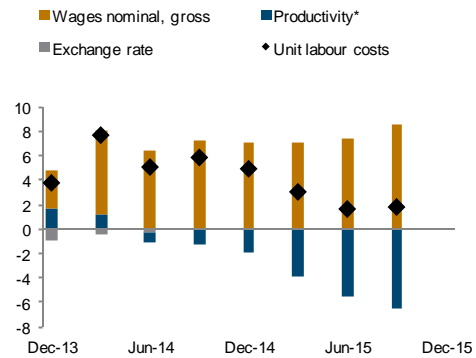
<http://data.wiiw.ac.at/monthly-database.html>

Latvia

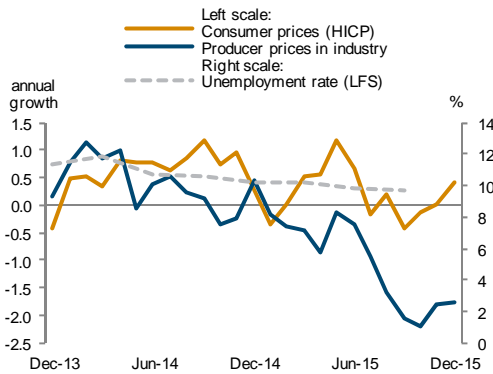
Real sector development
annual growth rate in %



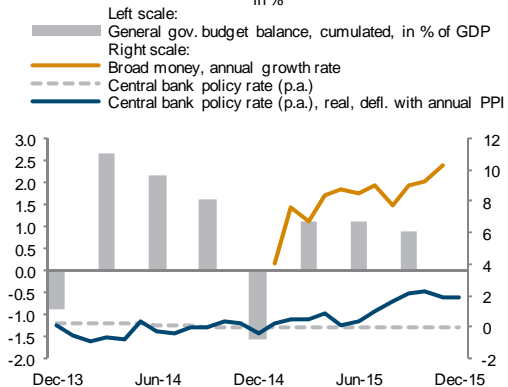
Unit labour costs in industry
annual growth rate in %



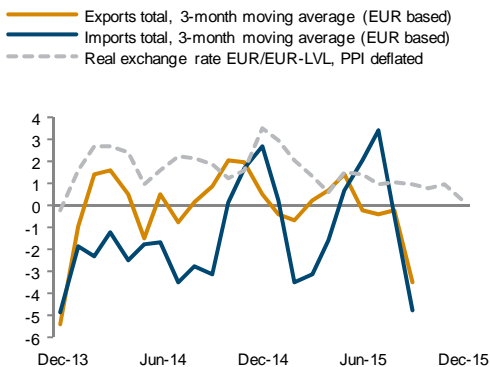
Inflation and unemployment
in %



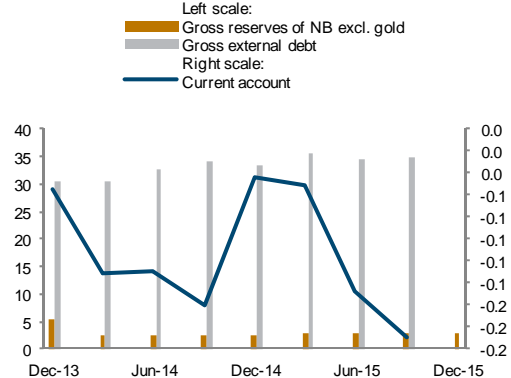
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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.

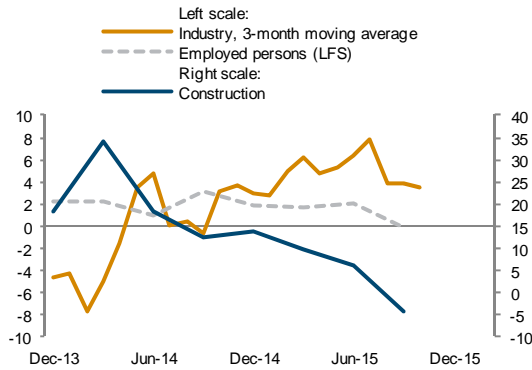
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<http://data.wiiw.ac.at/monthly-database.html>

Lithuania

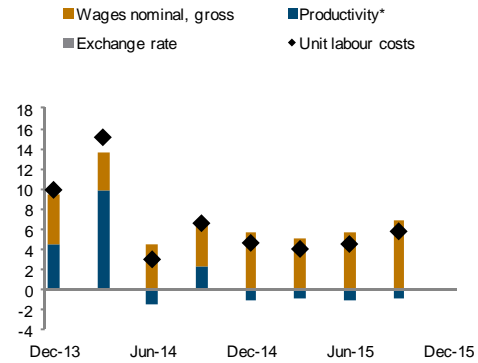
Real sector development

annual growth rate in %



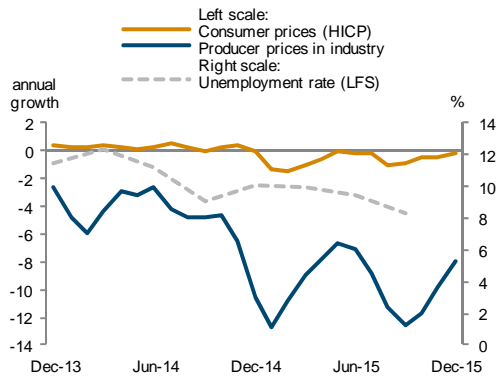
Unit labour costs in industry

annual growth rate in %



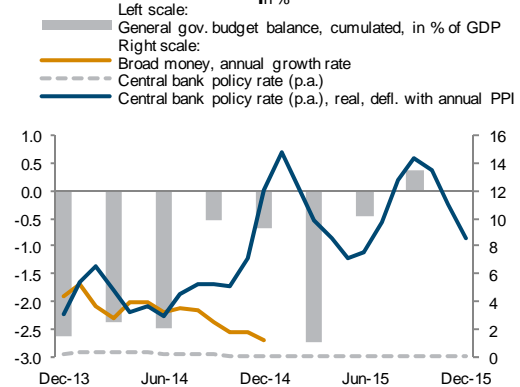
Inflation and unemployment

in %



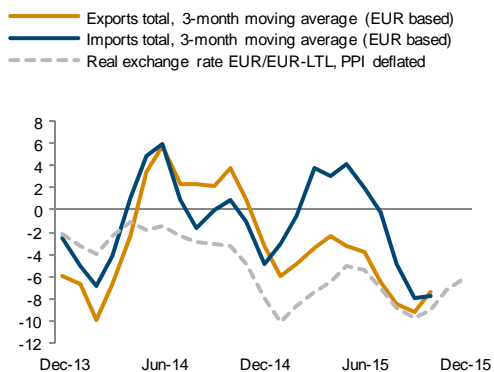
Fiscal and monetary policy

in %



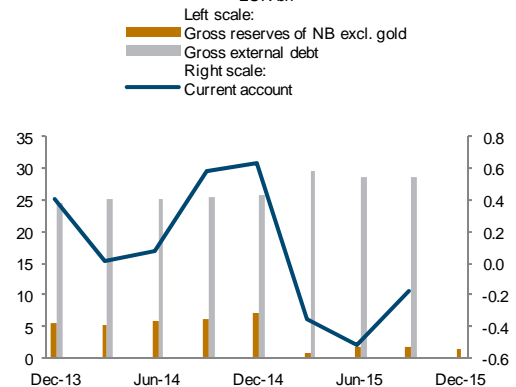
External sector development

annual growth rate in %



External finance

EUR bn



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

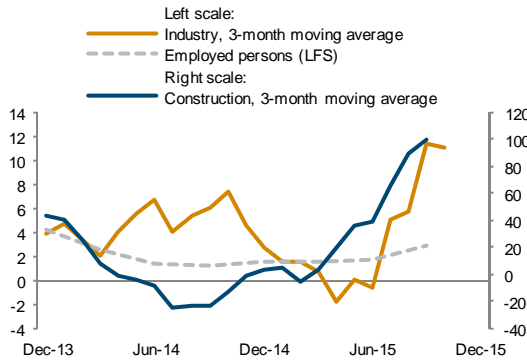
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

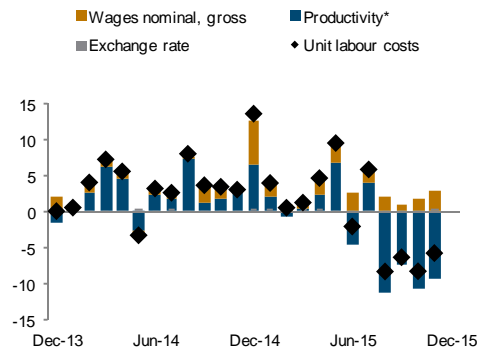
<http://data.wiiw.ac.at/monthly-database.html>

Macedonia

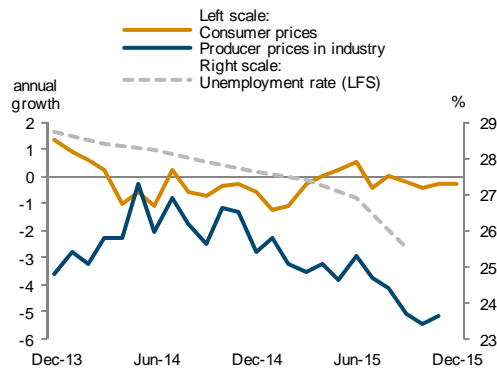
Real sector development
annual growth rate in %



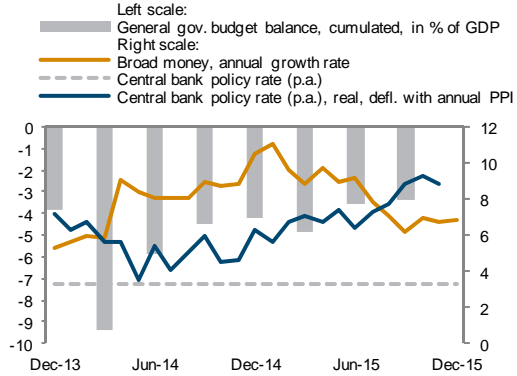
Unit labour costs in industry
annual growth rate in %



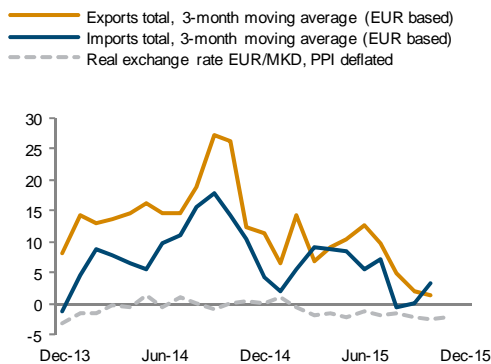
Inflation and unemployment
in %



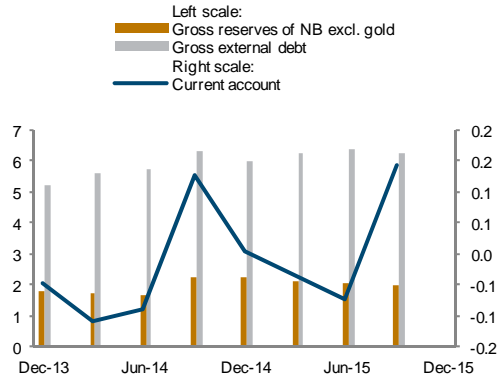
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



*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.

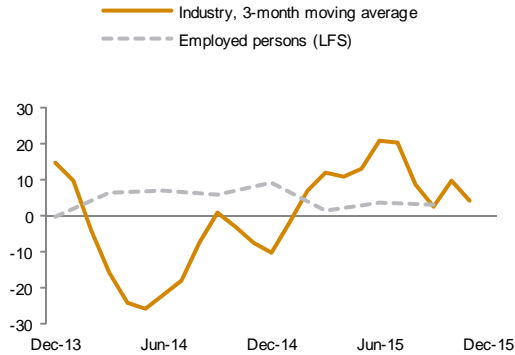
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<http://data.wiiw.ac.at/monthly-database.html>

Montenegro

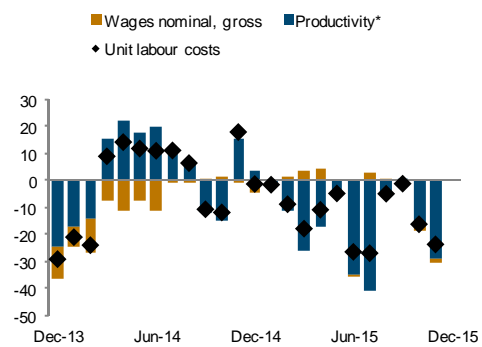
Real sector development

annual growth rate in %



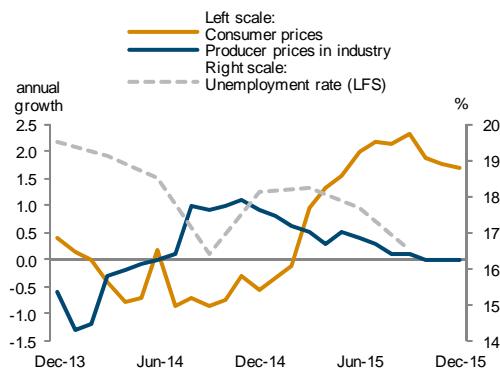
Unit labour costs in industry

annual growth rate in %



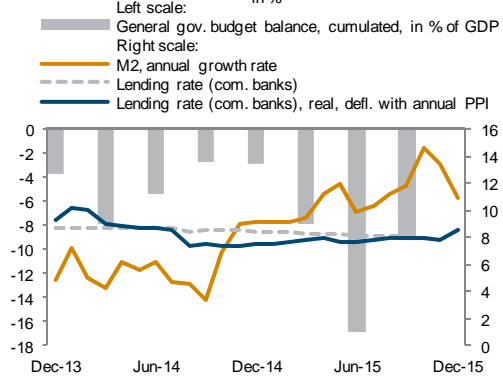
Inflation and unemployment

in %



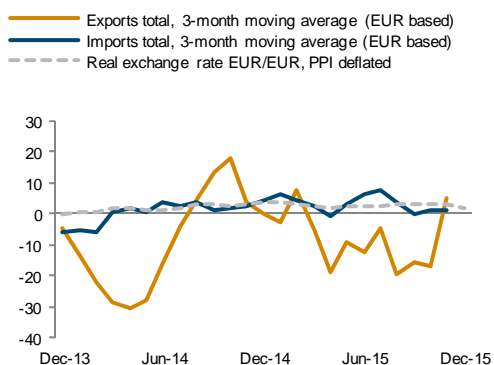
Fiscal and monetary policy

in %



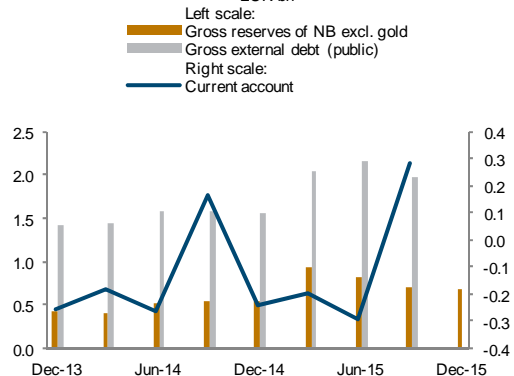
External sector development

annual growth rate in %



External finance

EUR bn



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

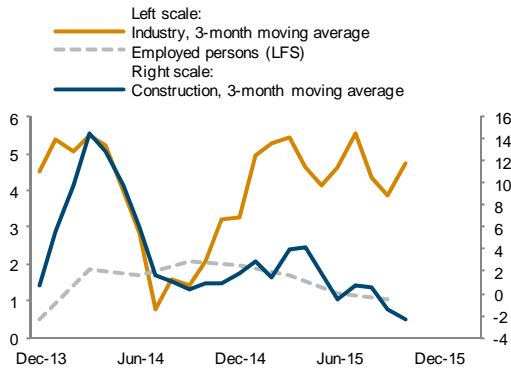
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

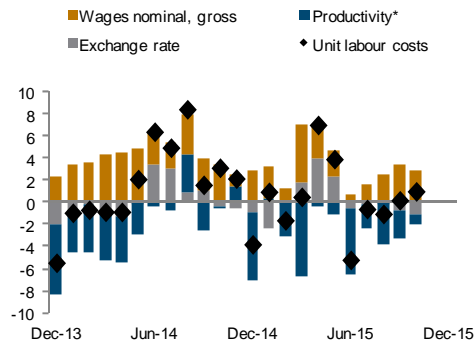
<http://data.wiiw.ac.at/monthly-database.html>

Poland

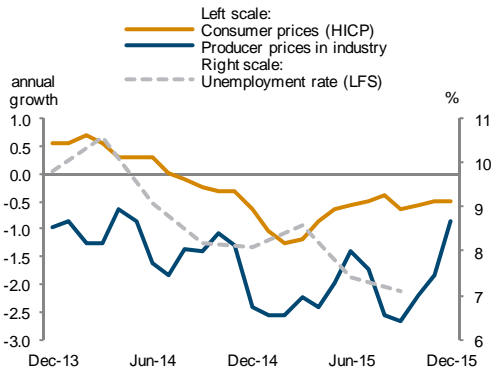
Real sector development
annual growth rate in %



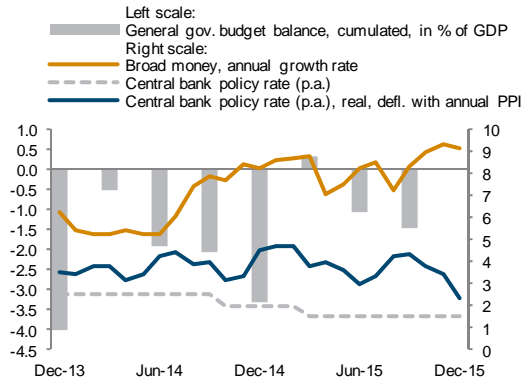
Unit labour costs in industry
annual growth rate in %



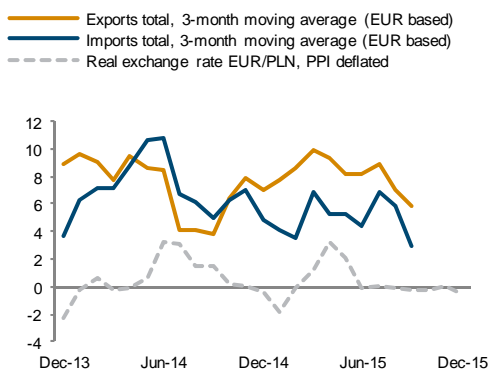
Inflation and unemployment
in %



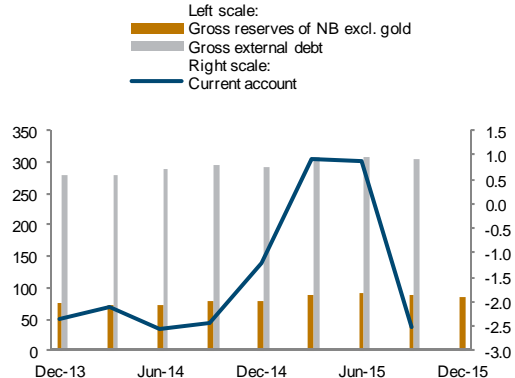
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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

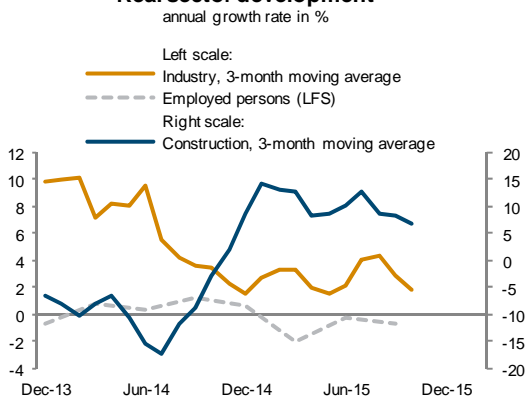
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

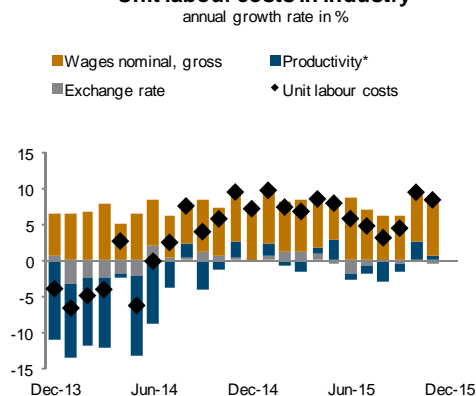
<http://data.wiiw.ac.at/monthly-database.html>

Romania

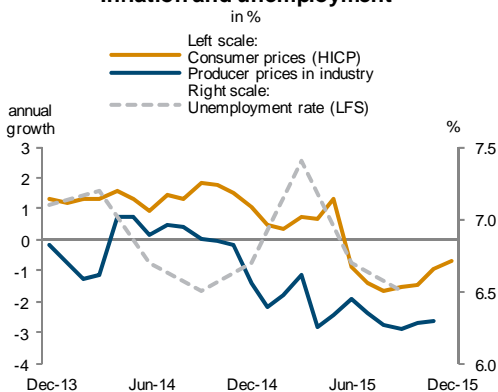
Real sector development



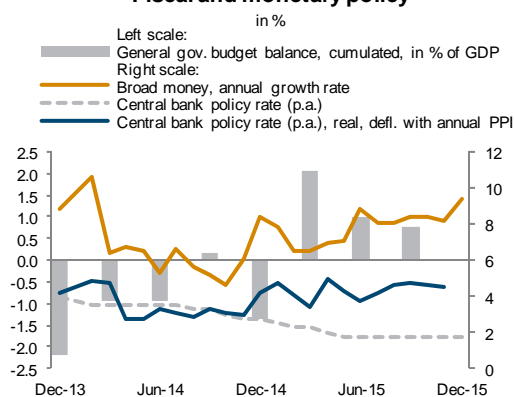
Unit labour costs in industry



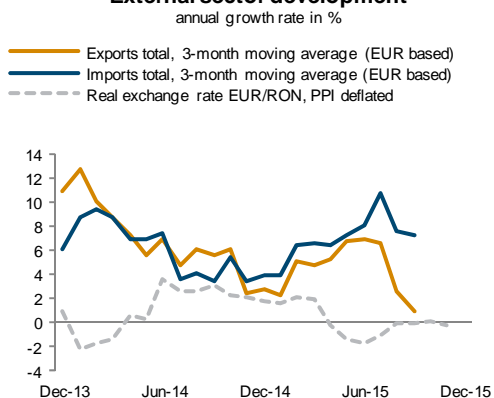
Inflation and unemployment



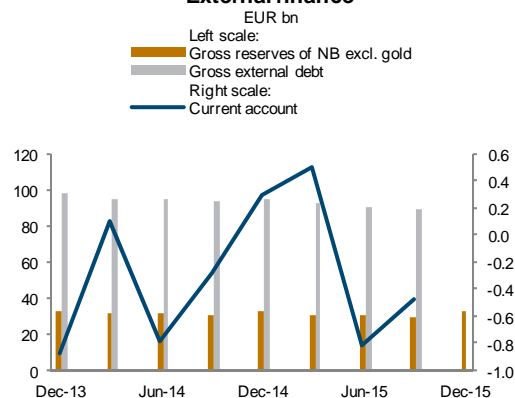
Fiscal and monetary policy



External sector development



External finance



*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:

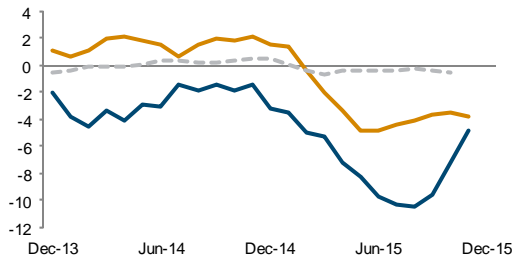
<http://data.wiiw.ac.at/monthly-database.html>

Russia

Real sector development

annual growth rate in %

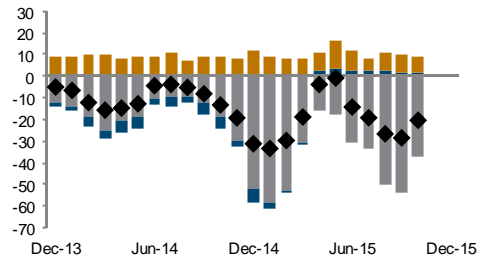
- Industry, 3-month moving average
- Construction, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

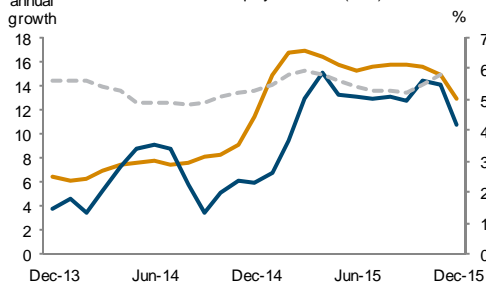
- Wages nominal, manuf., gross
- Exchange rate
- Productivity*
- ◆ Unit labour costs



Inflation and unemployment

in %

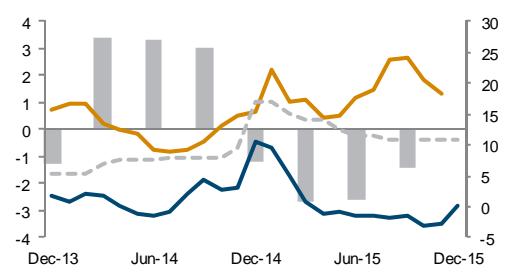
- Left scale: Consumer prices
- Producer prices in industry
- Right scale: Unemployment rate (LFS)



Fiscal and monetary policy

in %

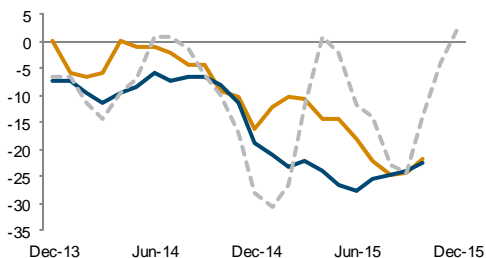
- Left scale: General gov. budget balance, cumulated, in % of GDP
- Right scale: M2, annual growth rate
- Central bank policy rate (p.a.)
- Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

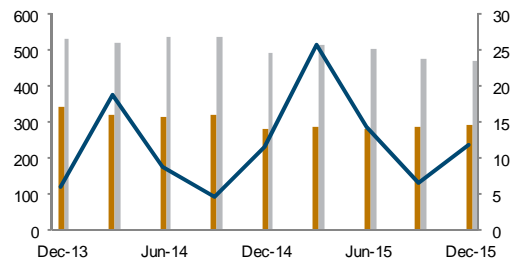
- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/RUB, PPI deflated



External finance

EUR bn

- Left scale: Gross reserves of NB excl. gold
- Gross external debt
- Right scale: Current account



*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.

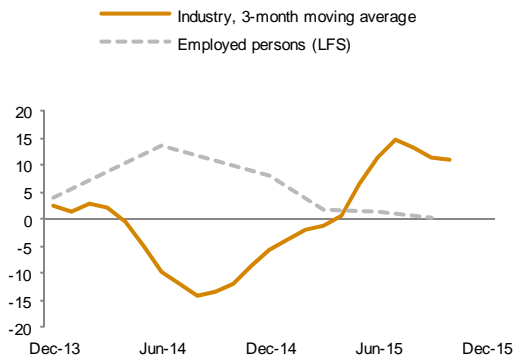
Baseline data, country-specific definitions and methodological breaks in time series are available under:

<http://data.wiiw.ac.at/monthly-database.html>

Serbia

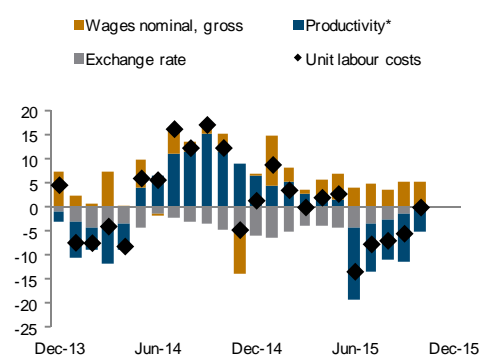
Real sector development

annual growth rate in %



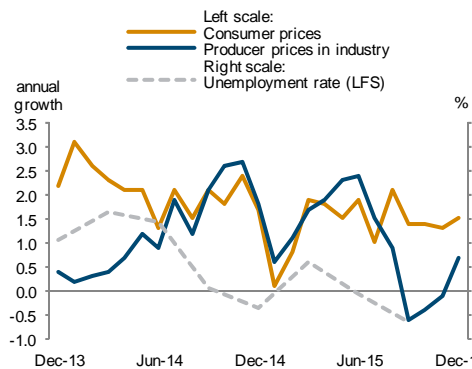
Unit labour costs in industry

annual growth rate in %



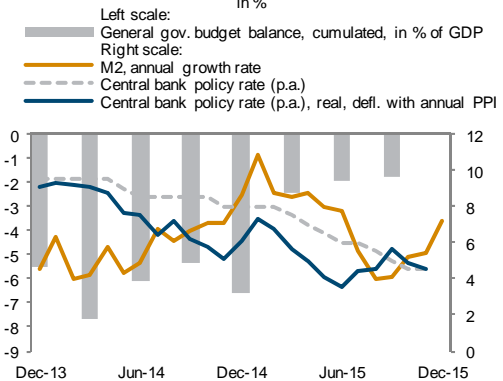
Inflation and unemployment

in %



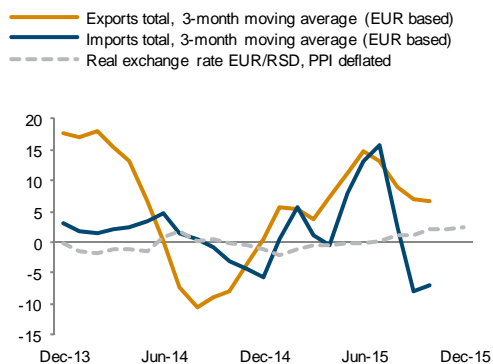
Fiscal and monetary policy

in %



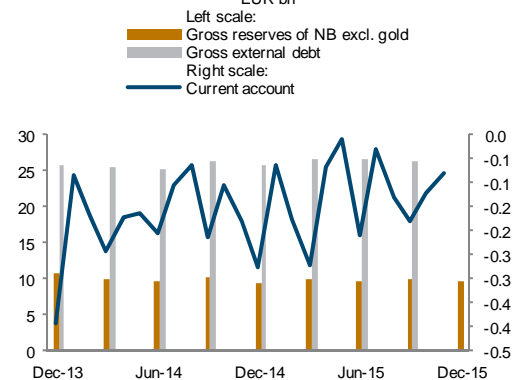
External sector development

annual growth rate in %



External finance

EUR bn



*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:

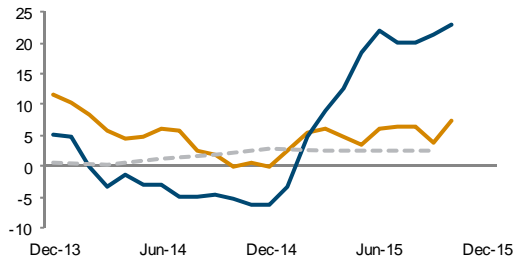
<http://data.wiiw.ac.at/monthly-database.html>

Slovakia

Real sector development

annual growth rate in %

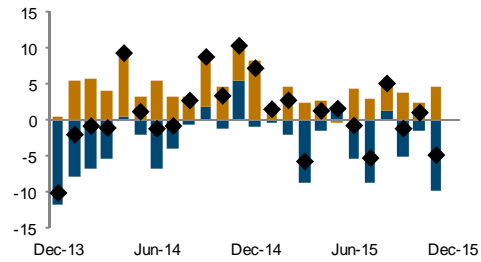
- Industry, 3-month moving average
- Construction, 3-month moving average
- - - Employed persons (LFS)



Unit labour costs in industry

annual growth rate in %

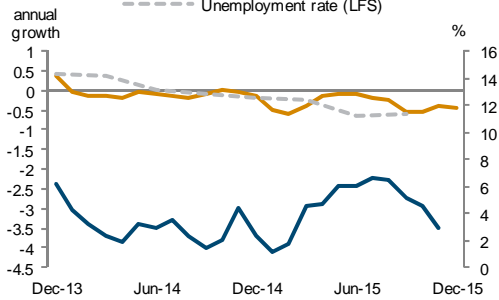
- Wages nominal, gross
- Productivity*
- ◆ Unit labour costs



Inflation and unemployment

in %

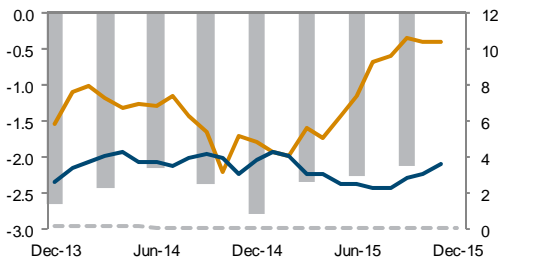
- Left scale: Consumer prices (HICP)
- Producer prices in industry
- Right scale: Unemployment rate (LFS)



Fiscal and monetary policy

in %

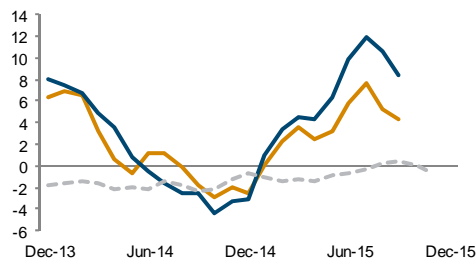
- Left scale: General gov. budget balance, cumulated, in % of GDP
- Right scale: Broad money, annual growth rate
- Central bank policy rate (p.a.)
- Central bank policy rate (p.a.), real, defl. with annual PPI



External sector development

annual growth rate in %

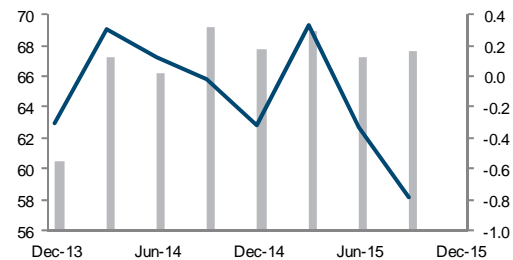
- Exports total, 3-month moving average (EUR based)
- Imports total, 3-month moving average (EUR based)
- - - Real exchange rate EUR/EUR, PPI deflated



External finance

EUR bn

- Left scale: Gross external debt
- Right scale: Current account



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

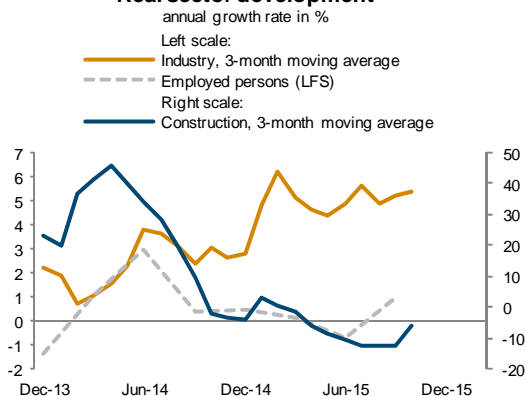
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

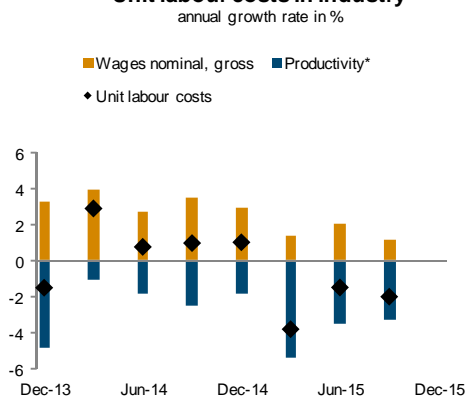
<http://data.wiiw.ac.at/monthly-database.html>

Slovenia

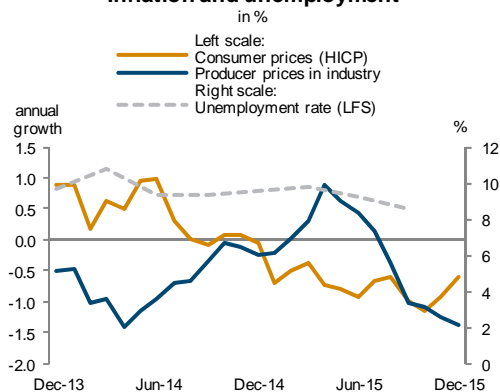
Real sector development



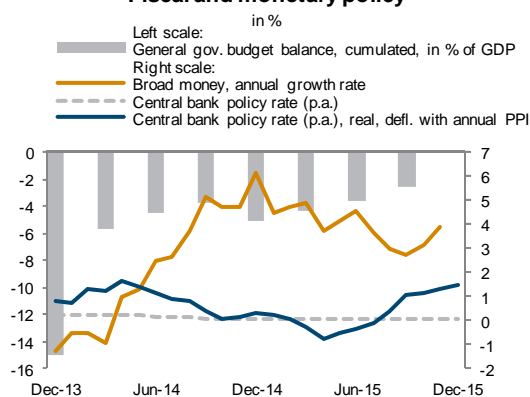
Unit labour costs in industry



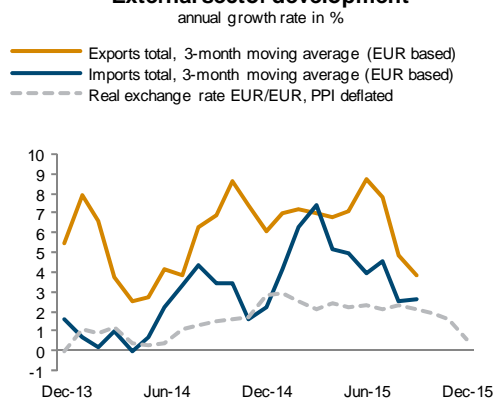
Inflation and unemployment



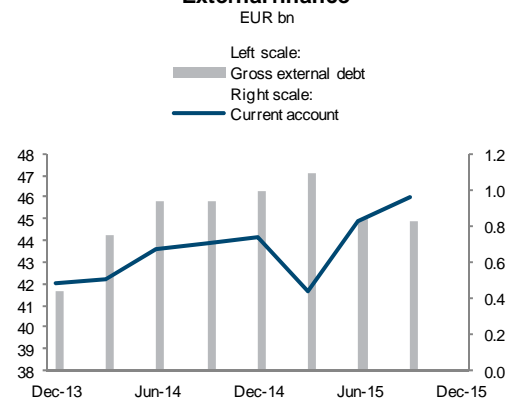
Fiscal and monetary policy



External sector development



External finance



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

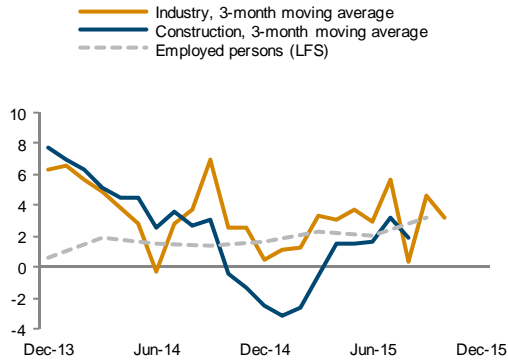
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

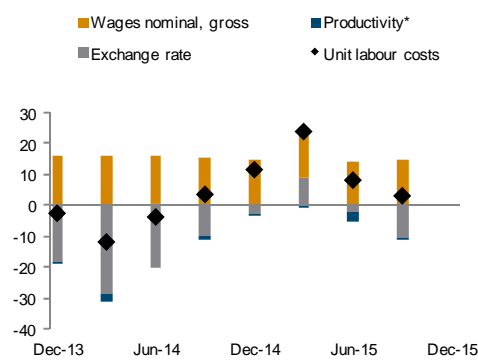
<http://data.wiiw.ac.at/monthly-database.html>

Turkey

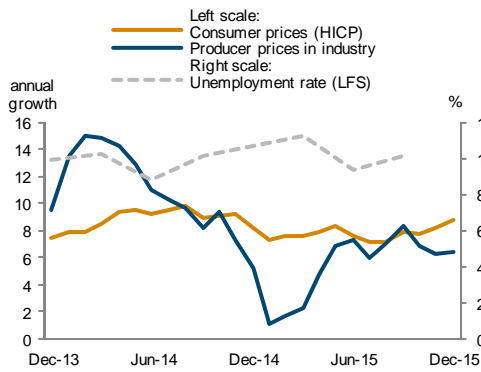
Real sector development
annual growth rate in %



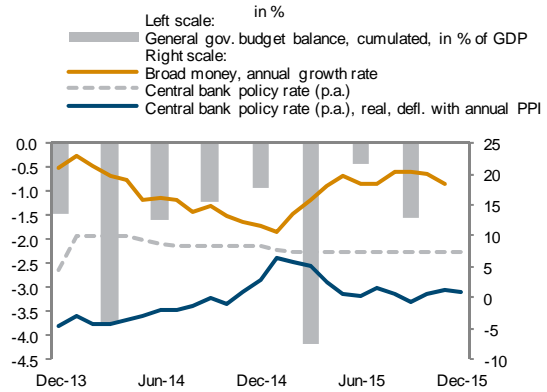
Unit labour costs in industry
annual growth rate in %



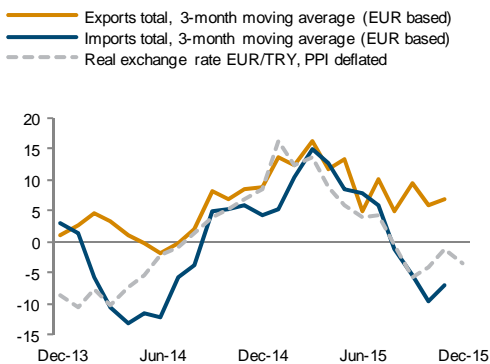
Inflation and unemployment
in %



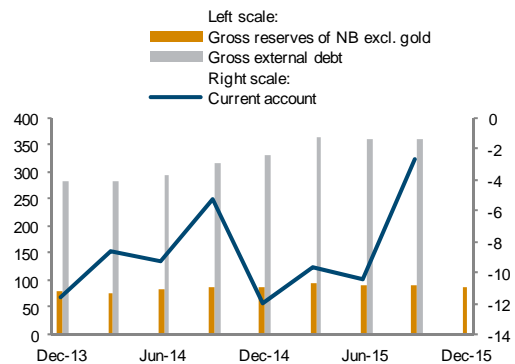
Fiscal and monetary policy
in %



External sector development
annual growth rate in %



External finance
EUR bn



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

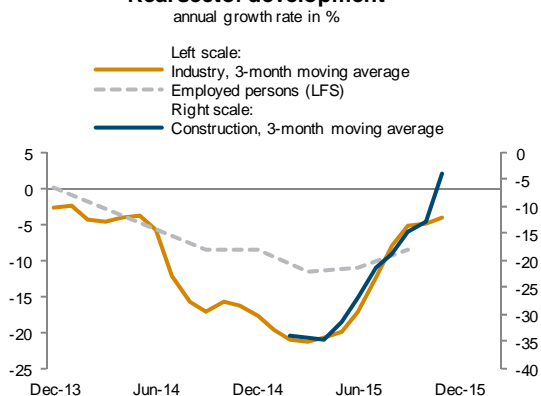
Source: wiiw Monthly Database incorporating Eurostat and national statistics.

Baseline data, country-specific definitions and methodological breaks in time series are available under:

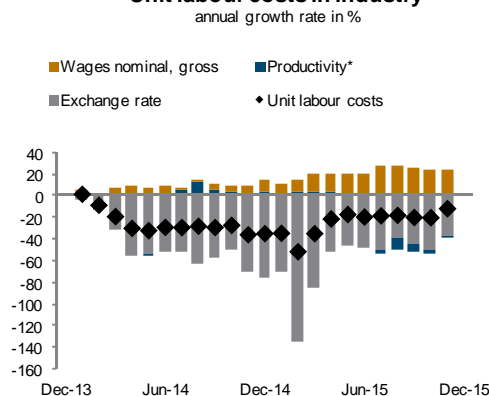
<http://data.wiiw.ac.at/monthly-database.html>

Ukraine

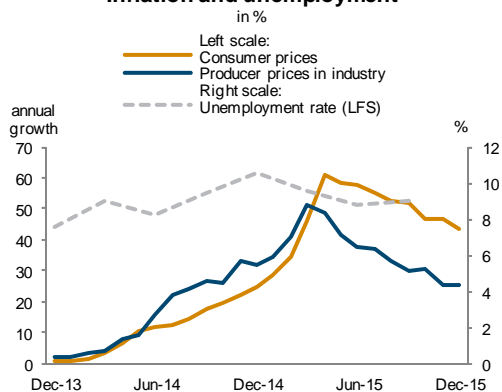
Real sector development



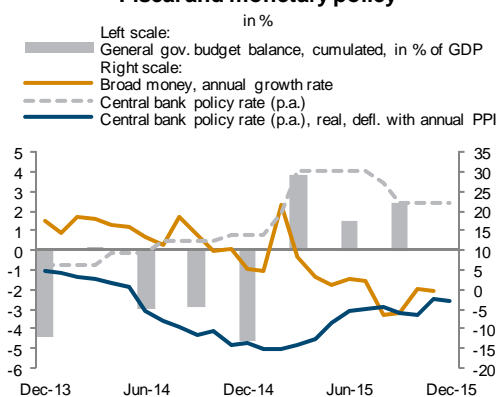
Unit labour costs in industry



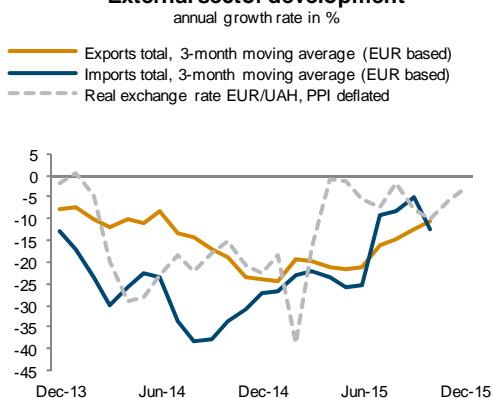
Inflation and unemployment



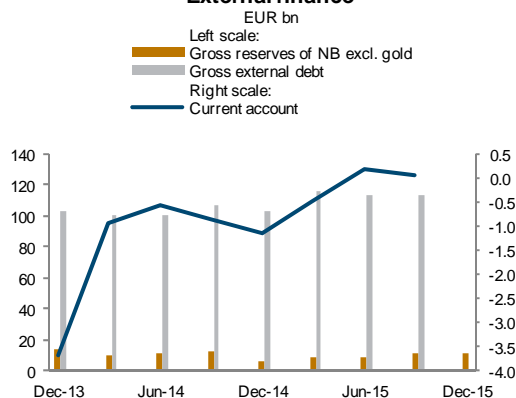
Fiscal and monetary policy



External sector development



External finance



*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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Economics editors: Julia Grübler, Sándor Richter

IMPRESSUM

Herausgeber, Verleger, Eigentümer und Hersteller:
Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Nachdruck nur auszugsweise und mit genauer Quellenangabe gestattet.
P.b.b. Verlagspostamt 1060 Wien

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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