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Russia's New Social Contract in Light of the Oil Taxation Reforms

The Fiscal Rule and the Foreign Exchange Market in Russia: Stepping in the Same River Twice?

Global Slowdown and the Russian Economy

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

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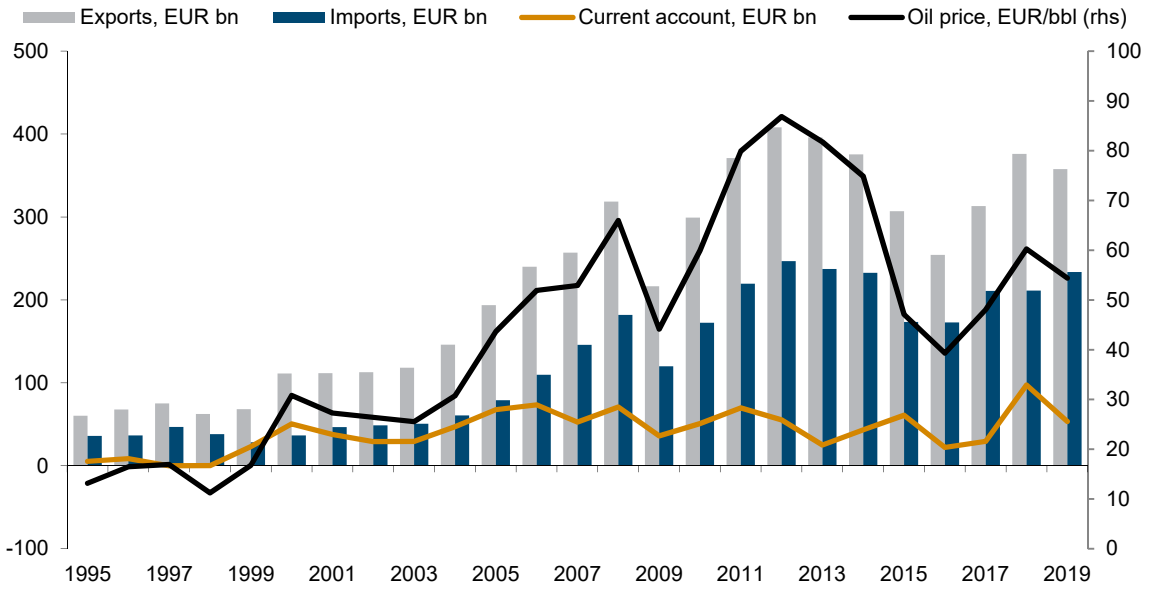

Sources: wiiw Annual Database, Central Bank of Russia, Rosstat, own estimates.

Russian export revenues and the economy as a whole have been extremely dependent on energy. The chart above illustrates the close association between exports and oil price developments – almost as if the oil price line shown in the chart would represent smoothed export development columns.

Traditionally, Russian energy export revenues account for about two thirds of total goods exports, fluctuating with the movement of the oil price. The collapse of the oil price in the late 1990s and in 2014-2016 contributed to recessions, and the oil price surge at the beginning of the 21st century initiated an economic boom.

Energy export revenues also dominate the development of the current account. The oil price recovery in 2017-2018 helped to stabilise the Russian economy, Western sanctions notwithstanding. With a current account surplus of more than EUR 100 billion in 2018 (7% of GDP), foreign exchange reserves of EUR 450 billion, simultaneous foreign debt deleveraging and a fiscal surplus, Russia is getting ready for a prolonged conflict with the West – disregarding the collateral damage that sanctions have on the domestic economy. A renewed collapse of the oil price – not anticipated in the medium term though notoriously difficult to predict – could interrupt this mobilisation strategy.

Opinion Corner*: Russia's new social contract in light of the oil taxation reforms

BY ANDREI V. BELYI[1]

Russia's budgetary difficulties in recent years have forced a significant change in national economic policy. Among various reforms, the government has introduced changes to the way the oil sector is taxed, by increasing domestic taxation and by gradually exempting the industry from export duties. With these changes in oil rent collection, Russia seems to be moving towards a new social contract, and may even put into question the previously elaborated concept of itself as a 'Global Energy Superpower'.

Russia's political economy is again in focus. In recent years Russia has experienced significant budgetary difficulties, caused by lower oil prices and restrictions imposed on financial transactions and access to technologies following a deterioration in relations with the West. Despite an apparent ability to adapt to the challenges and to reduce the meaningful effects of sanctions,[2] calls for urgent economic reforms inside Russia have become louder. Among the most famous examples, Aleksey Kudrin, the former Minister of Finance and a senior Kremlin advisor, expressed alarmist statements about the harmful effects of the sanctions. Mr Kudrin expressed support for an in-depth pension reform and a more rigid fiscal policy.[3]

2018 saw some of Mr Kudrin's core ideas being implemented. The ongoing fiscal initiatives include an increase in value added tax from 18% to 20%, the introduction of new property taxes, and a large-scale pension reform aiming to radically increase the retirement age and reduce the national pension fund's financial commitments to future pensioners.

Although various attempts to reform the federal budget often occurred in the past, the scale of the most recent economic plans is much greater. Most importantly, changes in Russia's political economy have triggered a shift in oil rent collection by the government. From 2019 onwards, royalties from oil extraction activities (or mineral extraction tax) will be significantly increased while export duties will be gradually phased out during the next five years. Because cash collection from royalty taxes will significantly outweigh revenues from the export duties, the changes will generate an additional inflow of RUB 2.7trn (approximately USD 45-50bn) in 2019-2024, even with an oil price of around USD 60 per barrel.[4]

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* Disclaimer: The views expressed in the Opinion Corner section of the Monthly Report are exclusively those of the authors and do not necessarily represent the official view of wiiw.

1 Adjunct Professor at the University of Eastern Finland.

2 Richard Connolly, Russia's Response to Sanctions: How Western Economic Statecraft is Reshaping Political Economy in Russia, Cambridge University Press, Cambridge, 2018.

3 Katherine Hille, 'Russia raises retirement age to boost state budget', Financial Times, 14 June 2018.

4 Sergey Ezhov and Eugene Tyrtov, 'Tax Maneuvering or a Dead End?', Oil and Gas Journal Russia, August 2018.

HARMFUL EFFECTS FOR THE OIL INDUSTRY

By increasing upstream royalties and exempting firms from export duties, the so-called ´tax manoeuvre´ has engendered controversy. Critical reactions from various expert and industrial communities emphasised that the higher taxation burden on domestic activities could have a damaging effect on domestic refining and the processing segments of the industry.[5] In fact, taxation costs for the oil companies (particularly for smaller players oriented mostly to domestic markets) will be substantial because Russia's taxation system – in contrast to wider international practices – is mostly based on gross revenue tax instead of net profit tax.[6] Subsequently, oil refineries will receive more expensive feedstock and overall operational costs will rise. The Russian government recently proposed a tax return system for nine large refineries in exchange for their firm commitment to invest RUB 300bn on modernisation.[7] Although the offer may have a positive long-term impact on the modernisation of these nine refineries, the governmental proposal rather reaffirms the existing consensus about mostly negative implications of the new measures for the sector.

OUTDATED STEREOTYPES AND A NEW SOCIAL CONTRACT

In spite of a significant transformation of national economic policy in both the oil and non-hydrocarbon sectors, the international expert community still operates with outdated notions of Russia. These include assumptions about the government being unwilling to conduct structural reforms, a reliance on energy to drive growth and raise revenues for the state, and the continued strong influence on economic policy of the 'oil lobby'. In order to grasp the extent to which the ongoing economic reforms actually mark an important move away from these outdated stereotypes, one needs to contrast the newly emerging social contract with the previous mode of collecting and distributing oil rent.

During the last two decades, Russia's resource regime was based on duties collected from oil and gas exports, which provided significant windfall profits to the budget, especially during periods of higher global oil prices. The Russian state provided a certain level of welfare and kept tax rates low for its citizens. In return, the government implicitly requested limited involvement of business in domestic political affairs. Since the Yukos case of 2003/04, Russia's oil firms have enjoyed relative autonomy in exchange for their non-interference in domestic political life.[8] During that time, the social contract assumed political stability in exchange for economic benefits distributed from resource income.

With the current economic reforms, the Russian state appears to be changing the social contract by generating taxation revenue from all segments of the economy and society at large. Since the main revenue burden will now be shifted from exports to domestic activities (mineral export tax, and taxes on domestic sales), the state will exert unprecedented pressure on its oil sector, which already provides up to 60% of the collected tax income. This implies that Moscow is ready to sacrifice its 'sacred cow' for the sake of higher inflows to the national budget.

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5 Nadia Rodova, 'Outlook 2019: Russia's tax overhaul has refining in a fever', *S&B Global Platts*, December 2018.

6 Grigory Vygon, Anton Rubtsov and Sergei Ezhov, 'Tax reform in Oil Sector: Focal Points', Vygon Consulting Report, January 2017.

7 *Kommersant,* 18 January 2019.

8 Thane Gustafson, *Wheel of Fortune: The Battle for Oil and Power in Russia,* Harvard University Press, 2012.

INDIRECT REJECTION OF 'ENERGY SUPERPOWER' CONCEPT

Paradoxically enough, even the very concept of 'Global Energy Superpower' (*energeticheskaya sverkhderzhava*), elaborated by the Russian government since the G-8 Summit of 2006, is now being challenged. This political concept marked an explicit difference from a traditional Petro-State, and implied a higher level of modernisation of the domestic energy sector. However, the ongoing transformation described above may create serious difficulties for the modernisation of hydrocarbon processing industries, and could have a detrimental effect on small and medium-sized private oil producers. Even more, earlier promises to stimulate exports of refined fuels have suddenly been overshadowed by gloomy prospects for domestic oil products. Consequently, the weaknesses surrounding the oil refining sector in the aftermath of the reform risk diluting the previously elaborated concept of Russia as an 'Energy Superpower'.

In addition, recent developments indicate the need for a reassessment of power relations between various parts of the Russia state. In contrast to previous initiatives related to oil taxation, the Ministry of Finance assumed the pivotal role in formulating the new initiatives, whereas the traditional channel for oil lobbyists, the Ministry of Energy, was mostly ousted from the decision-making process. This policy process also provoked tensions between the authors of the reform and Rosneft, the largest state-owned oil company. Contrary to widespread assumptions of Mr Sechin's univocal influence, Rosneft's CEO was rather unsuccessful in securing the driving seat in conducting the so-called tax manoeuvre. Temporary exemptions on a case-by-case basis may be the only major gain he managed to secure throughout the negotiation process.[9] Quintessentially, these exemptions have only been a consolation prize for the loss of control over the whole system of oil governance in Russia.

WIDER SOCIAL AND POLITICAL IMPLICATIONS

The main indirect consequence of the tax manoeuvre consists in increasing fuel costs for final consumers, even beyond the recent increase in excise taxes on oil products[10]. Refineries – which already pay more for crude than prior to the tax changes – may pass this on to consumers via higher gasoline and heating fuel prices. In the context of low competition in the domestic oil product markets in many remote regions, the price burden on final consumers could become even more significant. Some experts even forecast a 1 percentage-point increase in inflation in the aftermath of the reform.[11]

It might then be unsurprising that the latest opinion polls reveal a gradual decline of public confidence in governmental economic policies. Meanwhile, the afore-mentioned exemptions for the industry could be perceived as subsidies to the rich in light of increasing domestic discontent already fuelled by the pension reform. In turn, the Russian government seems to be attempting to address the population's discontent with the use of scapegoats ('evil oil tycoons'), in order to portray itself as the most equitable Hobbesian balance of power. However, the overall socioeconomic sustainability of the new social contract needs to be tested.

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9 *Vedomosti,* 15 July 2018.

10 *Rossijskaya Gazeta,* 13 January 2019.

11 *Ekspert*, 20-26 April 2015 (343).

The fiscal rule and the foreign exchange market in Russia: Stepping in the same river twice?

BY ARTEM KOCHNEV[1]

Last month the Central Bank of Russia announced its return to the foreign exchange market, according to the fiscal rule implemented in 2017. This note finds that the previous round of the currency interventions by the Bank of Russia was effective in stabilising exchange rate movements by counterbalancing the effects of the oil price changes on the Russian currency.

INTRODUCTION

The dependence of the Russian economy on energy is an open secret. The inability to diversify the country's export revenues is a topic with a long history (Gaidar, 2010). Although the history of attempts to implement structural change to the Russian economy leads through a graveyard of unrealised economic reforms, the government took some lessons of the (not so recent) past seriously. The fiscal rule introduced in 2017 is one of the measures that arguably helped diminish the pro-cyclical effect of oil prices on the Russian economy.

The main aim of the fiscal rule is to set constraints for government expenditures and limit the appetites of politicians willing to spend the 'easy' export revenues on popular projects regardless of their efficiency. Aside from this, the design of the latest fiscal rule in Russia pursued another important goal – namely, to have a stabilising impact on the Russian foreign exchange market. The rule mandated the Russian Central Bank (CBR) to buy or sell currency depending on the current oil price since February 2017. However, the rising volatility of financial markets in August 2018 caused the CBR to postpone its purchases, without any specific message when it would return to active operations in the market.

The silence was broken on 25 January, when the CBR announced its return to foreign exchange interventions according to the latest version of the fiscal rule (CBR, 2019). The announcement naturally received much attention in the specialised media with some commentators expressing doubts about the efficiency of the previous interventions in terms of stabilising the foreign exchange market (Kazarnovsky, 2019). This is at odds with the strong conviction of the Russian Ministry of Finance, which advocates the efficiency of the CBR interventions according to the fiscal rule (Minfin, 2018, pp. 4-6).

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As it turned out, however, little (open source) quantitative analysis has been done to investigate the validity of any of the claims. Academic literature on the efficiency of the introduction of the latest version of the fiscal rule is largely silent[2], with arguments supported using a bivariate regression analysis without taking into account the other confounding factors. This note takes a closer look at the correlation between the period of the interventions by the CBR and the dynamics of the RUB/USD exchange rate from 2016 to 2018.

ON FISCAL RULES IN THE RUSSIAN ECONOMY

Before diving into the sea of the regression analysis, it is worth recalling the meaning, history and basic parameters of the fiscal rules introduced in Russia.

As briefly noted in the introduction, a fiscal rule is a tool enforcing fiscal discipline at the legislative level in the form of state law or sometimes as an article in a constitution. Fiscal rules are (historically) a relatively new tool for balancing government budgets. Having only been applied in a minority of countries in the early 1980s, the International Monetary Fund counted 92 countries that applied fiscal rules in 2015 (Bova et al., 2015). In most of the cases, the fiscal rules are typically introduced on a country level, though supranational cases exist as well (the EU Stability and Growth Pact is probably the most famous example). Depending on the restrictions introduced by the fiscal rules, the IMF divides them into four types: expenditure rule, revenue rule, budget balance rule, and debt rule. Russian policy-makers relied on fiscal rules that set limits on the expenditure levels and/or the parameters of the budget deficit.

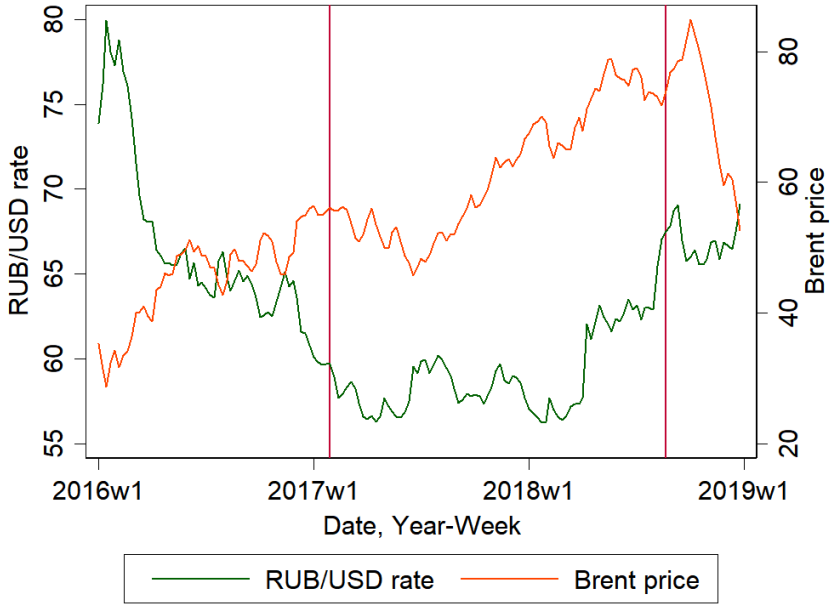
The practice of fiscal rules in Russia dates back to 2004 (Kudrin and Sokolov, 2017). When oil prices started to rise, the government introduced a cut-off point of USD 20 per barrel, after which all additional oil and gas tax revenues were transferred to the so-called Stabilisation Fund. By design, the Stabilisation Fund should have served as a countercyclical stabiliser: it accumulated the excess oil tax revenues at times of high oil prices and supported the budget revenues whenever the oil prices fell.

One disadvantage of the fiscal rule design was in the political dimension. It remained vulnerable to attacks by the proponents of expansionary fiscal policy and a more proactive approach in the structural transformation of the Russian economy. Since then, Russian policy-makers have made two attempts to redesign the fiscal rules to address the issues. However, both were short-lived. The first attempt failed in 2008 when the global financial crisis made reaching the planned budget targets impossible. The second attempt was carried out in 2013, but lasted no longer than two years, ending when the economic crisis hit at the end of 2014.

The last and current version of the fiscal rule has gradually been introduced since February 2017. According to this rule, government expenditures should not exceed the volume of a) the forecasted non-oil revenues, b) debt service costs, or c) oil tax revenues below USD 40 per barrel, increasing by 2% annually (Kudrin and Sokolov, 2017; TASS, 2017).

[2] The author was able to find only one paper, by Prilepsky (2018), dedicated to the topic. Yet, as mentioned above, the paper does not move beyond the bivariate regression analysis. This is not to say that little work has been done to investigate the oil price–exchange rate elasticity for the Russian economy in general. Recent investigations have been done in comparison with many countries (Basher et al., 2016) and for specific applications due to the impact of sanctions (Dreger et al., 2016). The author was not able to find a paper that would systematically address the change in the oil price–exchange rate elasticity after the introduction of the fiscal rule.

Figure 1 / RUS/USD exchange rate and the Brent oil price



Note: Red lines indicate the start and the end period of active CBR interventions according to the fiscal rule.
Source: investing.com

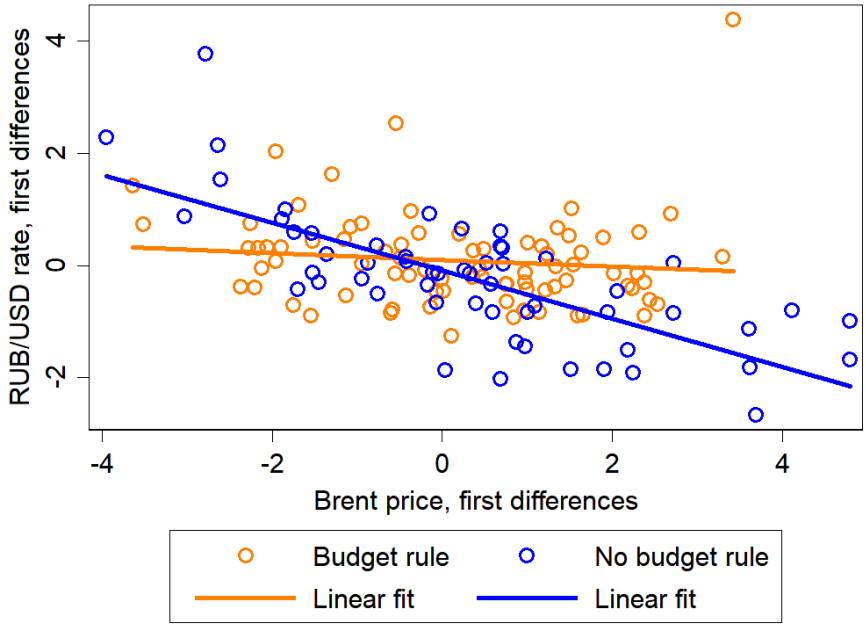
An important feature distinguishing the current fiscal rule from its predecessors has been the explicit regulation of currency purchases. Through the actions of the CBR on the currency market, the government intended to counterbalance the effect of the rapidly changing oil prices on the rouble and reduce the volatility of the foreign exchange market. Although the fiscal rule was formally introduced in July 2017 (Fiscal Code Amendment Bill, 2017), the CBR had already started interventions on the currency market in February 2017.

The CBR intervened on the currency markets during low volatility, high-volume trading days. The value of purchases was set separately for each month with the monthly volume equally split over the working days. In the event that the purchases of a specific day were postponed (due to high volatility or low trading volume during the day), the amount was equally redistributed over the remaining working days of the same month (Kazarnovsky and Litova, 2019).

The mode of operation lasted until August 2018 when the launch of the new US sanctions triggered a strong depreciation of the rouble despite the rising oil price (see Figure 1). As a result, the CBR decided to postpone its operations on the foreign exchange market to avoid supporting excessive volatility with its own actions. It was not until December 2018 that the CBR announced it would resume foreign exchange interventions on 15 January 2019.

The claim for the efficiency of the fiscal rule was mainly driven by using a bivariate correlation analysis. Figure 2 shows that the unconditional correlation (not adjusted by the effect of other factors) has indeed changed. During the fiscal rule period, the correlation between the oil price and the RUB/USD foreign exchange rate was clearly negative (the blue line in Figure 5) but flattened thereafter (the orange line).

Figure 2 / Change of the RUB/USD exchange rate and the Brent oil price



Source: cbr.ru, investing.com.

The setting offers certain advantages for the purpose of analysis. First, the start of the currency interventions was likely unexpected for market agents as the currency operations were launched in February 2017, before the formal introduction of the fiscal rule in July 2017.[3] Although the public discussion about a possible introduction of the fiscal rule began in 2016, the sudden stop of currency purchases due to the panic on the financial markets made it more likely that the CBR's actions would not be anticipated by market agents. Second, the rules and amount of the CBR currency purchases were broadly smooth across the intervention period. Third, although the time span of the currency purchases by the CBR was not particularly long (80 weeks in total), it should be long enough to detect the effect of the interventions in case it was a strong one. To assess the effect, this paper uses the publicly available time series and estimates a first-order autoregressive model using a maximum likelihood method.

RESULTS AND DISCUSSION

If the introduction of the fiscal rule was an effective mechanism of reducing the oil price dependency of the rouble, one would observe a structural break in the time series, which we model according to the following equation:

$$\ln(r_t) = \gamma \times \ln(r_{t-1}) + \beta_0 + \beta_B \times \ln(Brent_t) + \beta_F \times Fiscal\ Rule_t + \beta_{BF} \times \ln(Brent_t) \times Fiscal\ Rule_t + \sum_{i=1}^{k} \beta_i \times x_{it} + \varepsilon_t$$

[3] Although the first media reports about the new parameters of the fiscal rule appeared in February 2016, it was not until October 2016 that they were finally stated in the programme document of the Russian Ministry of Finance, 'Main directions of a budget, tax and customs-tariff policy for 2017' (Minfin, 2016). Yet the document did not mention either the parameters or the starting period of the CBR currency interventions.

where r_t stands for the exchange rate, $Brent_t$ for the Brent oil price, $Fiscal\ Rule_t$ is the dummy variable, which is equal to one during the fiscal rule regime, x_i is the 'i-th' additional covariate, γ, β_i are the parameters that measure elasticity between the dependent and independent variables and ε_t is the error term, which the paper assumes to be normally and identically distributed over time.

According to the model specification, coefficient β_{BF} is of particular interest as it demonstrates how strongly the effect of the oil price shocks changed after the introduction of the fiscal rule:[4]

$$\frac{\partial D.\ln(r_t)}{\partial Fiscal\ Rule_t \partial \ln(Brent_t)} = \beta_{BF}$$

Since Russia is an oil exporting country, it is reasonable to expect that β_B is negative as the rising oil price increases export revenues in foreign currency, creates demand for domestic currency and leads to an appreciation of the rouble. Since the fiscal rule – by design – works as a stabiliser of the exchange rate and mitigates the impact of oil price shocks on the foreign exchange market, β_{BF} must have the opposite – and therefore a positive – sign. Table 1 tests this claim by estimating a multivariate first-order autoregressive model using the maximum likelihood method using four specifications[5].

Table 1 / Regression estimates for the first-order autoregressive model

	(1)	(2)	(3)	(4)
Brent price (β_B)	-0.268***	-0.268***	-0.251***	-0.251***
	(0.042)	(0.029)	(0.047)	(0.032)
Budget rule (β_F)	-0.893***	-0.893**	-0.860***	-0.860**
	(0.264)	(0.390)	(0.314)	(0.426)
Budget rule stop (β_{FP})	-0.556	-0.556*	-0.622*	-0.622*
	(0.340)	(0.316)	(0.341)	(0.345)
Brent x Budget rule (β_{BF})	0.218***	0.218**	0.210***	0.210**
	(0.065)	(0.097)	(0.075)	(0.106)
Brent x Post budget rule (β_{BFP})	0.142*	0.142*	0.158*	0.158**
	(0.086)	(0.074)	(0.086)	(0.080)
Standard errors	Ordinary	Robust	Ordinary	Robust
Controls	No	No	Yes	Yes
Observations	156	156	155	155
Log likelihood	460.406	460.406	460.657	460.657

Standard errors in parentheses, * p<0.10, ** p<0.05, *** p<0.01.
Additional controls: CBR key rate, Fed key rate, Dow Jones index. All continuous variables are log-transformed.
Sources: Investing.com, cbr.ru, fred.stlouisfed.org.

In line with the expectations, the correlation between the exchange rate and the oil price is negative and statistically significant at the 1% significance level. If one uses the full model with quarterly and yearly

[4] It is worth noting though that the total effect of the fiscal rule is compounded and equal to the sum of the two elements: the permanent effect of the fiscal rule β_F, and the counterbalancing effect of the fiscal rule on the impact of the oil price shocks $\beta_{BF} \times \ln(Brent_t)$: $\frac{\partial D.\ln(r_t)}{\partial Fiscal\ Rule_t \partial \ln(Brent_t)} = \beta_F + \beta_{BF} \times \ln(Brent_t)$.

[5] The paper utilises five time-series sets in the regression analysis: RUB/USD exchange rate, the values of the key interest rate of the Central Bank of Russia, the effective Fed rate, the Dow Jones Industrial Average Index and the Brent oil futures price. Daily values for all time series were downloaded from the database of Investing.com except for the interest rates of the CBR and the Fed retrieved from the websites of the Bank of Russia and the FRED database respectively. The sample period covers three years, from 1 January 2016 to 31 December 2018.

dummies (the last column in Table 1) as the benchmark estimate[6], then the estimated value of -0.251 is the elasticity between the oil price and the RUB/USD rate. Thus, a 1% increase of the oil price is associated with an approximately 0.251% decline (appreciation) of the RUB/USD exchange rate. A good sign is that the regression estimates do not strongly vary in magnitude after accounting for additional factors (compare columns 2 and 3 in Table 1). It is worth noting that incorporating the one-lag autoregressive process was sufficient to incorporate the major features of the autoregressive process. Figures 3 and 4 show that the autocorrelation is not an issue for the RUB/USD rate residuals even for model 1. The estimated sign for β_{BF} is positive as expected and statistically significant at the 5% level across all tested models. The size of the coefficient is significant in economic terms: prior to the fiscal rule, the oil price–RUB/USD elasticity was equal to -0.268, whereas the elasticity changed to -0.041 after the introduction of the fiscal rule[7] – a fivefold decline compared to the pre-intervention period. Figure 8 shows that the exchange rate is conditionally positively correlated with the oil price interacted with the fiscal rule intervention.[8]

Figure 3 / Correlogram of residuals of the RUB/USD rate, model (1)

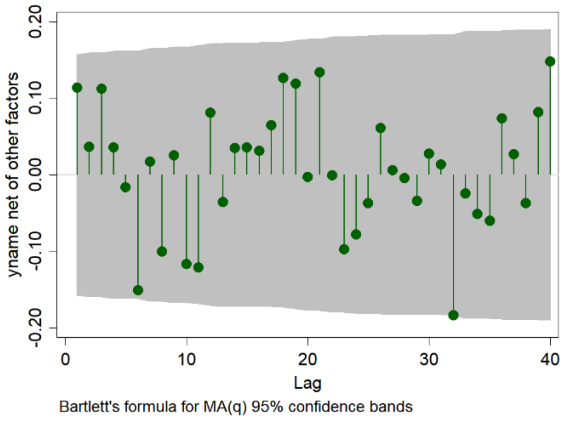
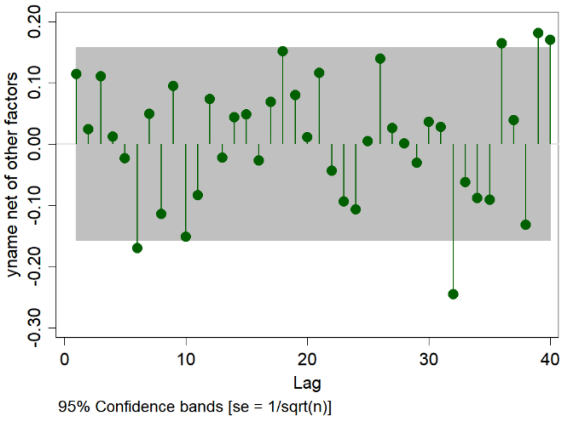


Figure 4 / Partial correlogram of residuals of the RUB/USD rate, model (1)



Two other points follow from Table 1. First, the introduction of the fiscal rule was associated with the appreciation of the Russian currency as the coefficient of the dummy variable, which accounts for an exchange rate shift β_F equal to -0.893. This estimation implies that the fiscal rule strengthened the Russian currency against the US dollar by 59% compared to the pre-intervention period.[9]

Second, the estimations indicate that the fiscal rule had a more lasting effect even after the CBR stopped its interventions from August 2018. The interaction term of the oil price with the post-

[6] As it is the richest model in terms of the features it incorporates.

[7] The estimated elasticity during the fiscal rule can be formally expressed as follows:

$$\frac{\partial \ln(r_t | Fiscal\ Rule = 1)}{\partial Brent_t} = \hat{\beta}_F + \hat{\beta}_{BF} = -0.251 + 0.21 = -0.041$$

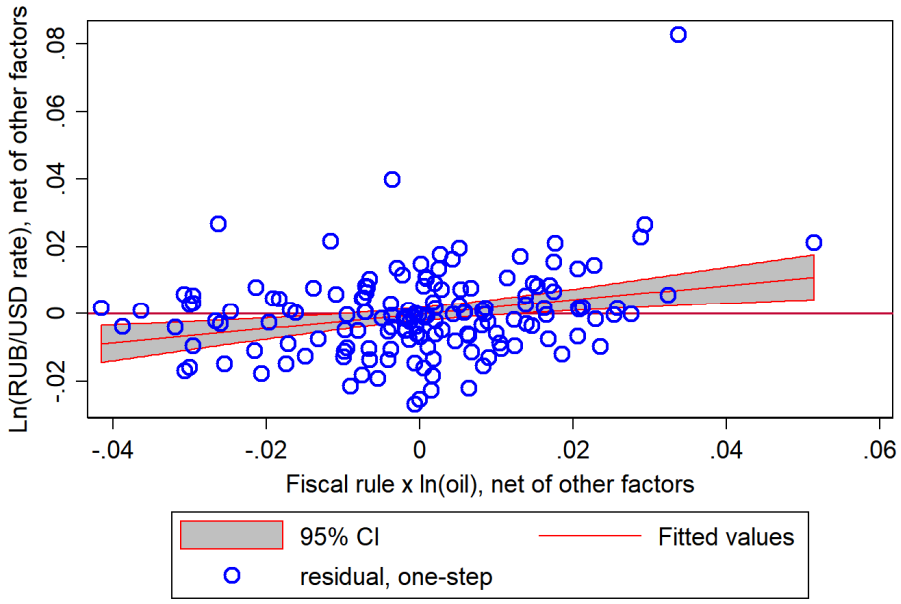
[8] The relationship also holds after deleting the outlier around the point (0.04, 0.08) from the sample. The result is available upon request.

[9] Since the RUB/USD is log-transformed, the effect is calculated as follows: $\Delta r_t = \left(1 - e^{\hat{\beta}_F}\right) \times 100\% = 59\%$

intervention period β_{BFP} is equal to 0.158 in the last model. Whether the correlation is, however, robust to model specification is not clear.

On the one hand, the coefficient is statistically significant at the 5% level only in one model out of four. On the other hand, the last model is the richest one in terms of the features it implements (robust standard errors, yearly and quarterly fixed effects). Moreover, the sample period for the post-intervention stage covers only 19 observations compared to 56 observations of the intervention period. Thus, the test is severely underpowered and the 5% significance level might be too strong of a test given the sample size.

Figure 5 / Conditional correlation between the RUB/USD exchange rate and the oil price interacted with the fiscal rule



Note: Shaded area shows the 95% confidence interval of the linear approximation. The red horizontal line shows the residuals of the ln(RUB/USD) rate at point zero.
Source: Author's calculations.

AN AFTERTHOUGHT WITH A CAUTIOUS NOTE

The results of the statistical test confirm the consensus view of the stabilising impact of CBR interventions on the foreign exchange market. The interventions were associated with a drop in the oil price–exchange rate elasticity by a factor of five.

A warning note is needed though before taking stock of the analysis. The model structure is simple and does not embed the potential interdependencies across the variables assuming all of the covariates are exogenous. In the context of the present study, this might be a reasonable assumption for, say, the Fed interest decisions, but less so for domestic monetary policy. Finally, the impact of certain factors (external financial sanctions is the first thing that comes to mind) is addressed in a loose manner using the time and fixed effects.

Therefore, the causal interpretation of the estimated coefficients depends on the belief of whether the fiscal rule and the interventions of the central bank were exogenous to developments in financial markets. One warning sign with respect to the exogeneity is the magnitude of the coefficient $\hat{\beta}_F$, which measures the permanent effect of the fiscal rule on the RUB/USD rate. The appreciation effect of 59% seems large and it is hard to believe that strengthening fiscal discipline made the markets so excited about the Russian currency.

Although the obtained results are rather descriptive in nature, the correlation appears to be strong for a rather small sample size. Therefore, even if the estimations are inflated, the interventions of the central bank still helped to mitigate the impact of the oil price shocks on the Russian currency exchange market. That is why the announced comeback of the CBR to the foreign exchange market is so intriguing. Let's see what comes next.

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Global slowdown and the Russian economy

BY ILYA B. VOSKOBOYNIKOV[1]

The article reviews long-run sources of Russian economic growth and demonstrates that the stagnation of the Russian economy in the past decade can be considered in the context of the global productivity slowdown. Conventional industry growth accounting shows that in contrast to the transformational recession before 1998, the recent stagnation of 2008-2014 is primarily the outcome of a slowdown in total factor productivity (TFP) growth and a deterioration in the allocation of labour, rather than bottlenecks in capital inputs.

DECLINE IN TFP THE MAIN REASON FOR RECENT STAGNATION IN RUSSIA

Labour productivity of the global economy accelerated from the early 1990s until the eve of the global financial crisis of 2008, being fuelled by the fast growth of emerging economies and partially offset by OECD countries. In the post-crisis period, however, productivity trends changed. Labour productivity in emerging economies continued growing at a moderate pace of around 2-3%, while in OECD countries it dropped below 1% per year. All in all, starting from the mid-2000s, the global economy exhibited a slowdown, which is called 'global stagnation' in the literature and attributed to the slowdown in efficiency improvements related to the management and organisation of production processes, R&D and innovations (McGowan et al., 2015).

Table 1 / Growth rates decomposition of the Russian economy and global TFP growth in 1995-2014

		1995-2000	2000-2005	2005-2010	2010-2014
1.	Real GDP, % per year (2+3)	1.95	5.98	3.52	2.33
2.	Hours worked, pp	-0.43	0.84	0.18	0.04
3.	Labour productivity growth, pp (4+5).	2.39	5.14	3.34	2.29
4.	Labour reallocation, pp	1.49	0.63	0.68	0.38
5.	Intra-industry labour productivity, pp (6+7+8)	0.90	4.51	2.66	1.91
6.	**TFP, pp**	**1.34**	**3.00**	**-0.08**	**-0.47**
7.	Labour composition per hour worked, pp	0.23	0.04	0.14	0.32
8.	Capital intensity, pp (9+10)	-0.67	1.47	2.60	2.06
9.	ICT capital, pp	0.16	0.17	0.15	0.05
10.	Non-ICT capital, pp	-0.83	1.30	2.45	2.01
11.	**TFP, global economy, % per year**	**0.10**	**1.02**	**0.30**	**0.34**

Source: Russia KLEMS 2017 (1-10), the Conference Board Total Economy Database™, March 2018 (11).

[1] National Research University Higher School of Economics, Moscow, Russia. The main data source for this paper is the recent preliminary release of Russia KLEMS, which is expected to be published at the end of 2019. Previous releases were issued in 2013 and 2017 and are available at http://www.worldklems.net/data.htm. Details of data construction are available in the background paper of Voskoboynikov (2012).

Table 1 shows the trends in global productivity (row 11) and the growth accounting decomposition of the Russian economy. Both in the world and in Russia (row 6) the slowdown in total factor productivity started in 2005-2010. Table 1 also shows that the structure of Russian economic growth changed remarkably over time. Over the entire period 1995-2014, it was labour productivity (row 3) which provided the lion's share of GDP growth in Russia, with the impact of hours worked (row 2) being relatively small. In 1995-2000 labour reallocation, which is defined as labour flows between industries with different productivities, accounted on average for 1.5 percentage points (pp) of the 2.4% growth of labour productivity, or more than half, while in 2010-2014 it accounted for only 0.4 pp of the 2.3% labour productivity growth. Interestingly, the contribution of capital intensity (the flow of capital services per hour worked) to Russian economic growth was negative in the late 1990s; thus, the shortage of capital was a real obstacle to growth. Starting from 2000, the contribution of capital to growth was significant and even during stagnation (2010-2014) did not fall substantially.

One of the remarkable features of the global economy development was the decreasing contribution of information and communication technology (ICT) capital starting from mid-2000. Exactly the same can be seen also in the Russian economy. Table 1 shows that the maximum contribution of ICT capital intensity was recorded in 2000-2005, and has been falling thereafter. Finally, the impact on growth of labour reallocation in favour of more productive groups can be seen in row 7. It was positive in all periods in question, but limited with 0.1-0.3 pp. So, there is no clear evidence of a direct substantial impact of human capital on economic growth in Russia; in the European economies this impact has not been very high either (see Timmer et al., 2010).

All in all, taking into account the contributions of all proximate sources of economic growth, the decline in total factor productivity turns out to be the most obvious reason for the recent stagnation in Russia. In what follows I delve into the level of industries, consider structural change and sources of growth in detail, discussing industry-level sources of TFP and capital intensity in detail.

PRODUCTIVITY GROWTH AND STRUCTURAL CHANGE

The role of labour reallocation in aggregate productivity growth was substantial in the late 1990s and early 2000s, which can be seen in Table 1 and is discussed in detail by Voskoboynikov (2019). What was the direction of structural change?

The economic structure of command economies was unbalanced, in favour of manufacturing and agriculture. That is why an expanding market services sector in parallel with a shrinking manufacturing sector was among the few basic stylised facts common to all economies in transition. Table 2 shows that Russia was not an exception. It indicates changes in shares of value added in major sectors of the Russian economy over time. As can be seen, the combined share of agriculture and manufacturing shrank from 30% in 1995 to 19% in 2014, which may reflect comparative disadvantages of Russian manufacturing vis-á-vis its main trading partners. At the same time, the share of finance and business services, including retail, construction, telecom as well as hotels and restaurants (RCT), expanded from 24% to 31%. In contrast to many other post-transition economies, Russia is a resource-exporting country. The rise in global oil prices after 1999 led to a remarkable extension of the country's mining and mining-related industries, combined in Table 2 to 'extended oil and gas sector', from 20% in 1995 to

almost a quarter in 2014. The increasing role of the extended mining and services sectors predetermines the leading contribution of these sectors to aggregate growth.

Table 2 / Aggregate GDP growth and structural change in Russia in 1995-2014

	Share of value added (%)		Average growth rate (% p.a.)	Average contribution to GDP growth (pp p.a.)
	1995	2014	1995-2014	1995-2014
Total	100.0	100.0	3.47	3.47
Market economy	86.1	80.9	3.60	3.00
Agriculture	7.6	4.2	1.39	0.08
Extended oil and gas sector	20.1	24.2	3.59	0.80
Manufacturing	22.4	14.9	2.15	0.40
RCT	19.2	18.6	4.07	0.77
Finance & business services	5.1	12.0	8.41	0.72
Transport	11.7	6.9	2.55	0.24
Nonmarket services	13.9	19.1	2.79	0.46

Source: Russia KLEMS 2017.

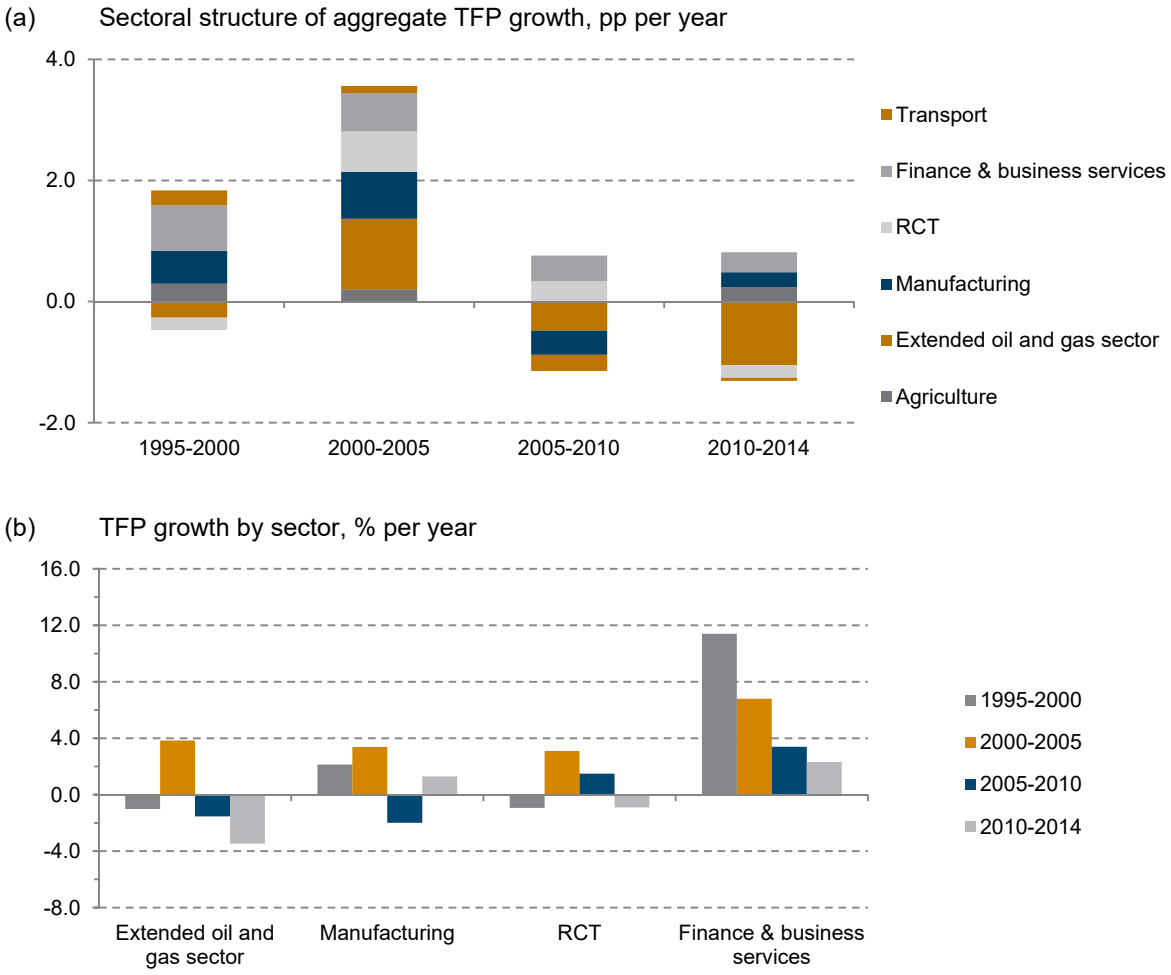
Table 2 provides also the summary statistics for sectoral growth rates and their contributions to Russia's overall GDP growth. Finance and business services demonstrated the best performance, with an average yearly growth rate of 8.4% in 1995-2014. However, their contribution to GDP growth was more modest and equalled only 0.7 pp, behind the oil and gas and the RCT sector, because the average share of the finance industry in Russian value added was on average only 8.6% (0.7 = 8.41 × ½ × (5.1%+12.0%)). These three sectors contributed the most to economic growth, while the role of traditional industries of material production was relatively modest. Agriculture and manufacturing contributed on average only 0.5 pp to the 3.5% aggregate growth, or about one sixth.

TFP GROWTH ACROSS INDUSTRIES

Slicing up the impact of structural change, I turn to the intra-sectoral sources of growth. I start from the sectoral composition of TFP growth, developing the story of the TFP slowdown, and in the next section consider the role of capital intensity.

Figure 1 represents the sectoral composition of the aggregate TFP slowdown in the 'market economy' sectors (see Table 2) (a) and TFP growth of different sectors (b) in Russia in 1995-2014. It indicates which sectors contributed most to aggregate TFP growth. The most important drivers of TFP growth before stagnation were finance and manufacturing. Financial services were catching up, starting from a very low base in 1995 in terms of technologies, while manufacturing enjoyed optimisation, modern technologies inflow and global integration. As can be seen from Figure 1b, both these sectors declined after 2005. In turn, oil and gas demonstrates low efficiency growth, except in 2000-2005 – the period of growing oil prices.

Figure 1 / TFP growth in the Russian economy 1995 - 2014



Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

Figure 1 highlights two important facts. First, the aggregate TFP slowdown in Russia happened because of the TFP decline in the two main drivers of productivity: finance and business services, and manufacturing. For both, integration into the global economy is important. In the case of manufacturing, integration helps adopt advanced technologies, while finance needs unlimited access to assets in other countries. Second, the extended oil and gas sector contributed to aggregate TFP growth starting from 2005.

THE ROLE OF CAPITAL INTENSITY

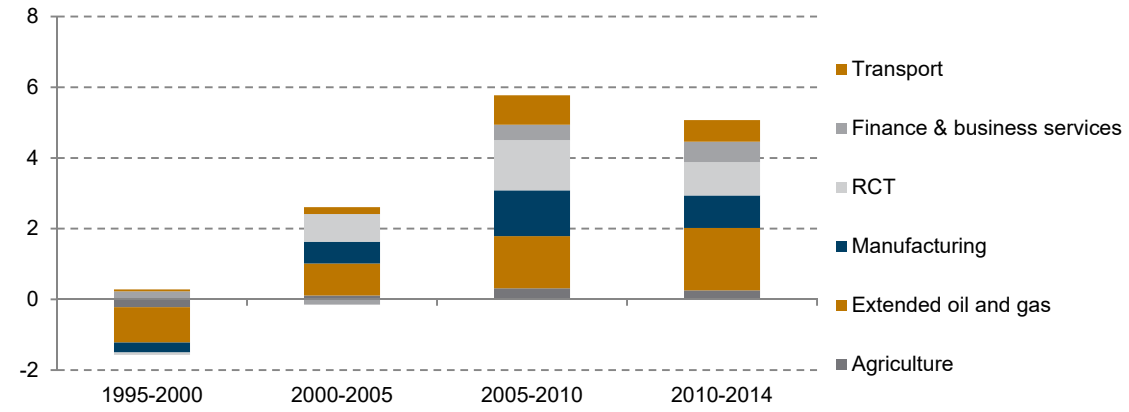
More attention should be also paid to the role of capital intensity for economic growth in Russia. The inflow of oil and gas could be partially transformed into investments in the extended oil and gas sector. This is confirmed by the data reported in Figure 2. As can be seen, the extended oil and gas sector accounted for the second largest yearly average contribution to overall capital intensity growth among the sectors of the 'market economy' in 2000-2010.

At the same time, market services (finance and business services and RCT combined) enjoyed the highest capital inflow. This is also not surprising: large investments were made in retail trade, which was underdeveloped in the early transition period. According to McKinsey (1999, p. 5; 2009, p. 65), by 1999 only 1% of retail trade in Russia was accounted for by modern supermarkets, while after 10 years this share had increased to 35%. In addition, huge investments were made in telecommunications, both because of its technological backwardness inherited from the planned economy and the ICT boom in the late 1990s and early 2000s.

Finally, the slowdown in aggregate capital intensity in Russia in 2010-2014 was modest, and mostly because of RCT and manufacturing.

Figure 2 / Sectoral structure of aggregate capital intensity growth

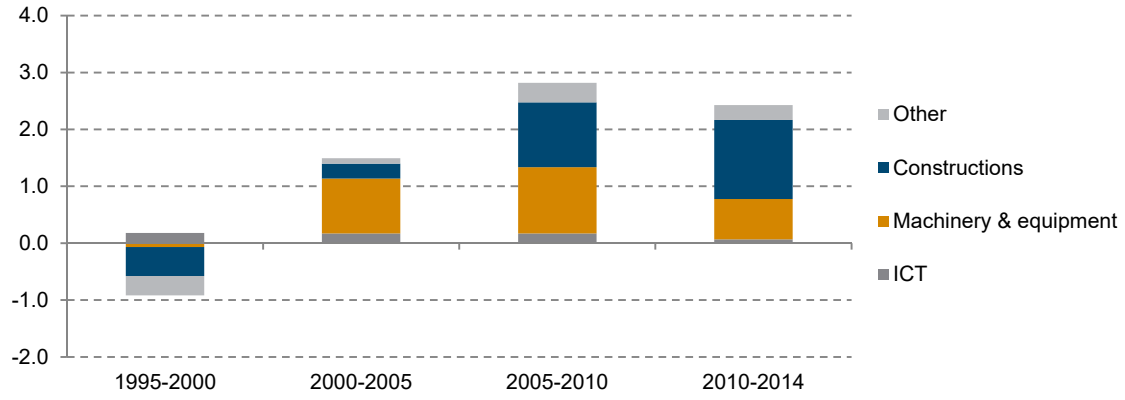
'Market economy' sectors, pp per year



Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

Figure 3 / Contributions of different types of assets to aggregate capital intensity growth

'Market economy' sectors, pp per year



Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

Figure 3 illustrates the role of different types of assets in capital intensity growth in Russia. In the years of soaring growth, 2000-2005, it was machinery and equipment which provided the biggest contribution

to capital intensity growth, while in the following years of slowdown and stagnation it was replaced by construction. Interestingly, the figure shows that the impact of ICT on capital intensity was at the highest level in the years of the ICT boom, 1995-2000, and diminished in the following years.

CONCLUSION

From the supply side perspective, the recent stagnation of 2009-2014 of the Russian economy is primarily the outcome of TFP slowdown and a deterioration of labour allocation rather than bottlenecks in capital inputs. In fact, capital intensity continued growing, which makes the Russian pattern to some degree similar to the resource-abundant countries Australia and Canada (Voskoboynikov, 2017). However, the contribution of ICT capital to labour productivity growth in Russia after 2008 declined, which could impede technology diffusion.

Summarising, this article has suggested considering the post-crisis stagnation of the Russian economy in a comparative perspective. This can shed new light on the causes of the stagnation, because at least some of these are of a global nature. At present, the key to sustainable productivity growth would be efficient reallocation of resources and the creation of an institutional environment which stimulates technology diffusion among firms, as summarised by McGowan et al. (2015).

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Conventional signs and abbreviations used

%	per cent
ER	exchange rate
GDP	Gross Domestic Product
HICP	Harmonized Index of Consumer Prices (for new EU Member States)
LFS	Labour Force Survey
NPISHs	Non-profit institutions serving households
p.a.	per annum
PPI	Producer Price Index
reg.	registered

The following national currencies are used:

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

EUR euro – national currency for Montenegro, Kosovo 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).

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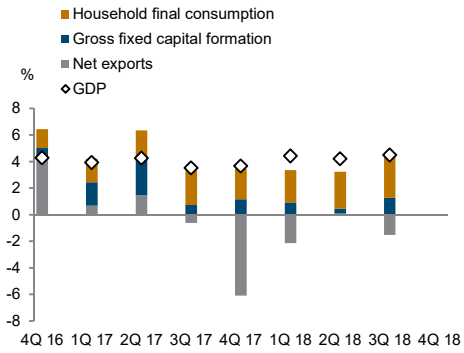
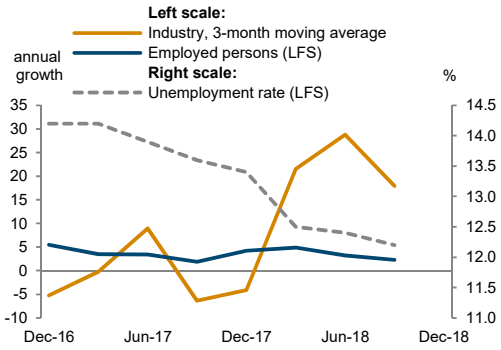
Albania

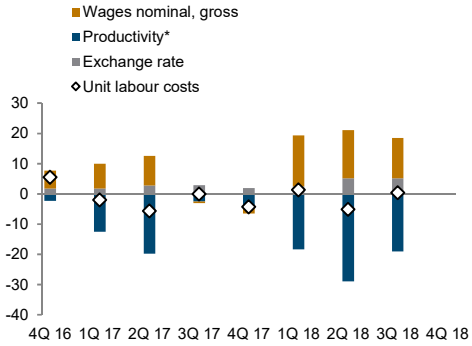
Real GDP growth and contributions
year-on-year



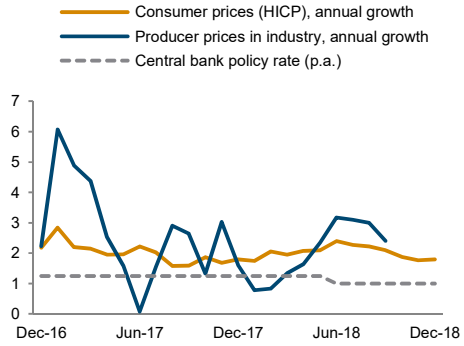
Real sector development
in %



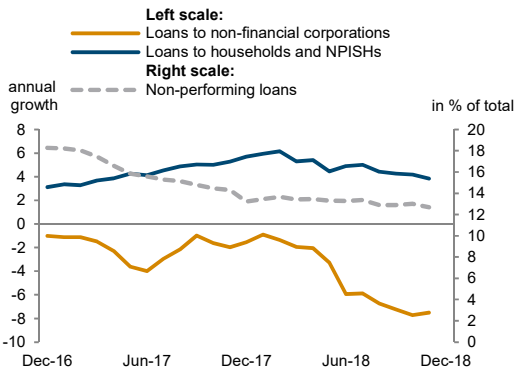
Unit labour costs in industry
annual growth rate in %



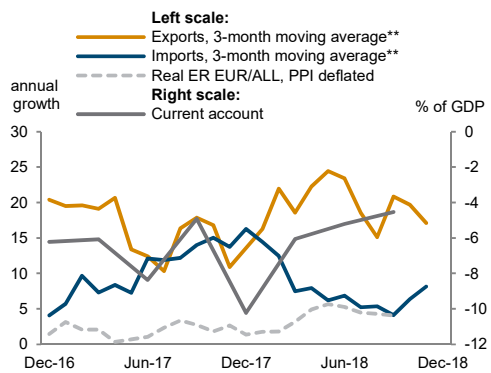
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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

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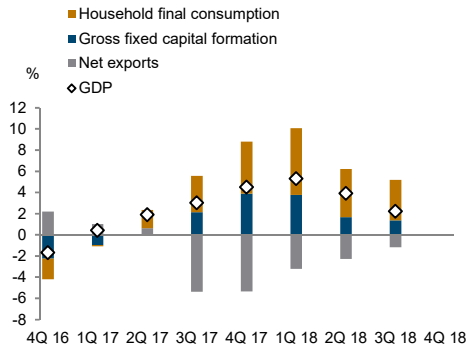
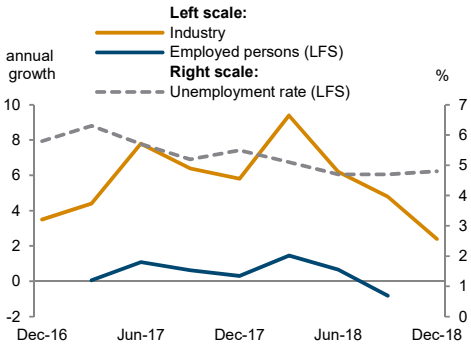
Belarus

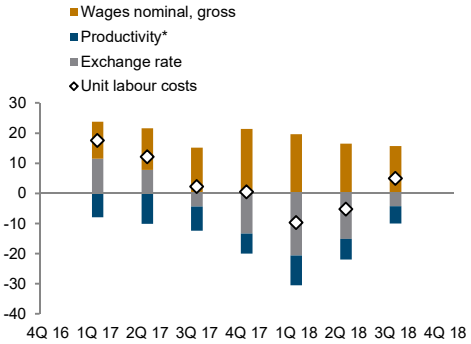
Real GDP growth and contributions
year-on-year



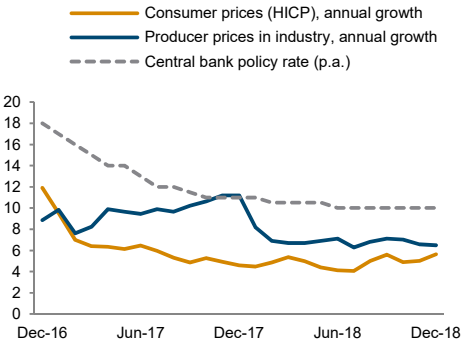
Real sector development
in %



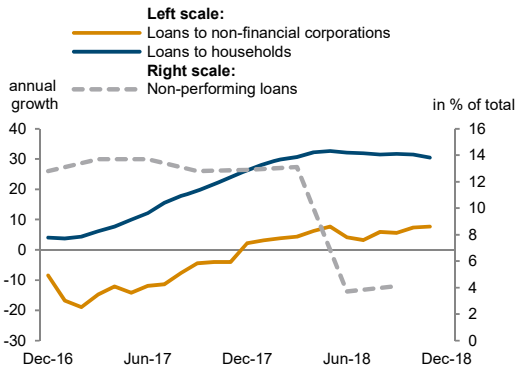
Unit labour costs in industry
annual growth rate in %



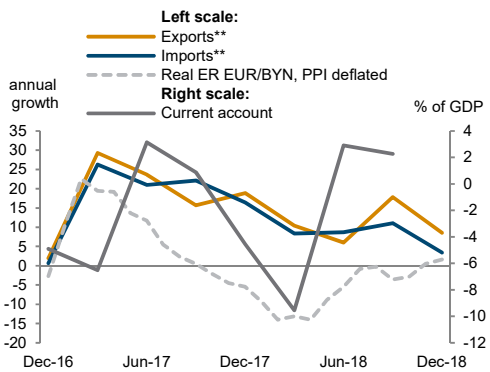
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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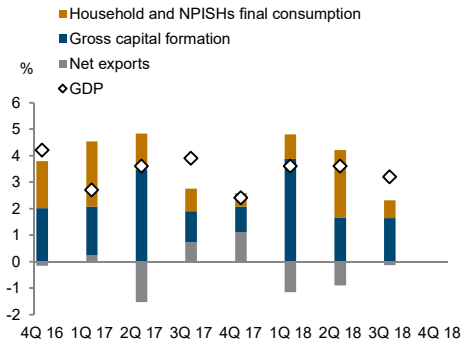
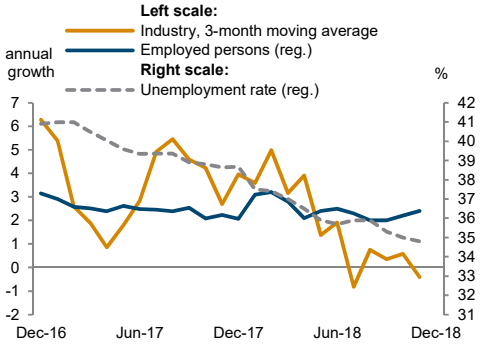
Bosnia and Herzegovina

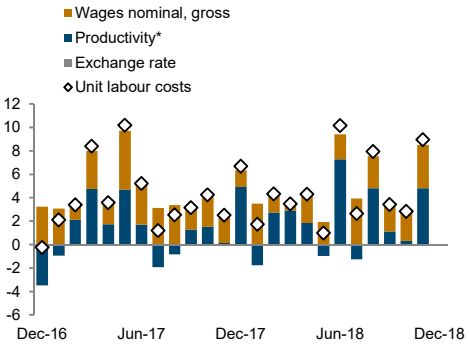
Real GDP growth and contributions
year-on-year



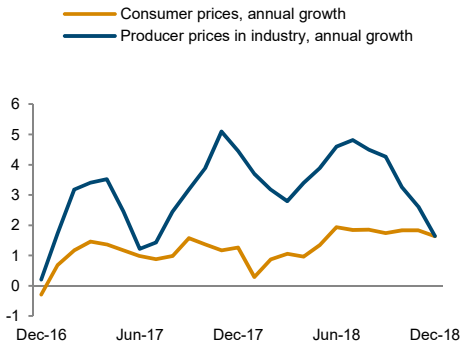
Real sector development
in %



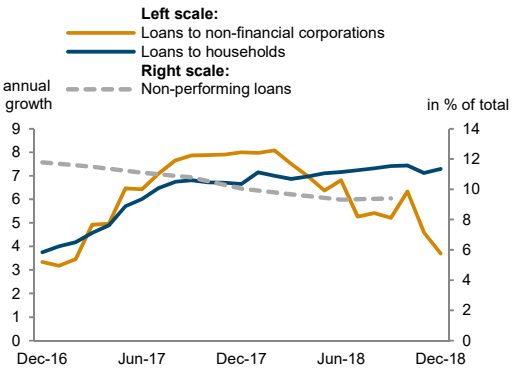
Unit labour costs in industry
annual growth rate in %



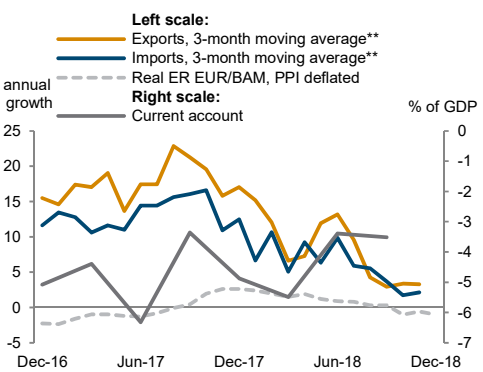
Inflation
in %



Financial indicators
in %



External sector development
in %



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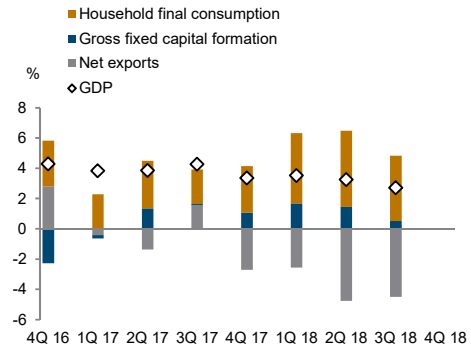
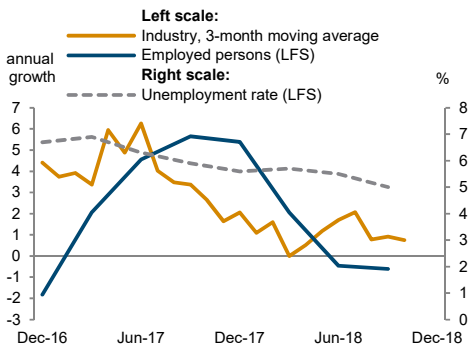
Bulgaria

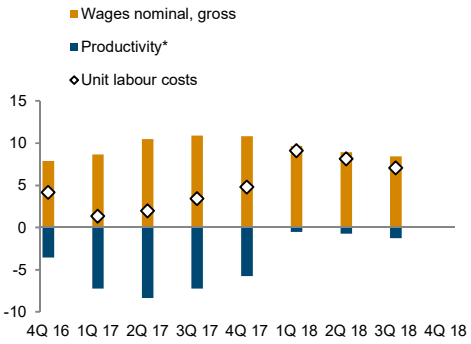
Real GDP growth and contributions
year-on-year



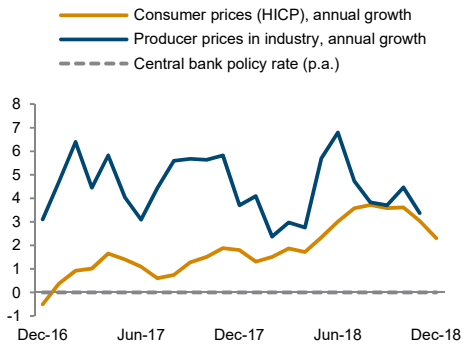
Real sector development
in %



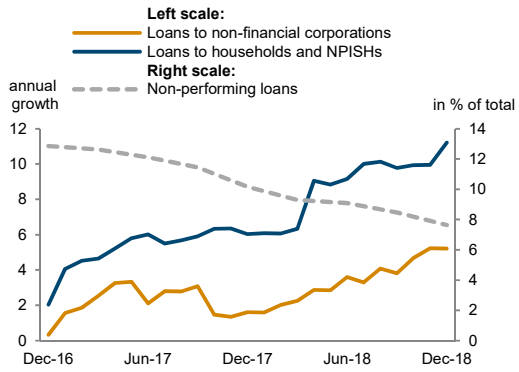
Unit labour costs in industry
annual growth rate in %



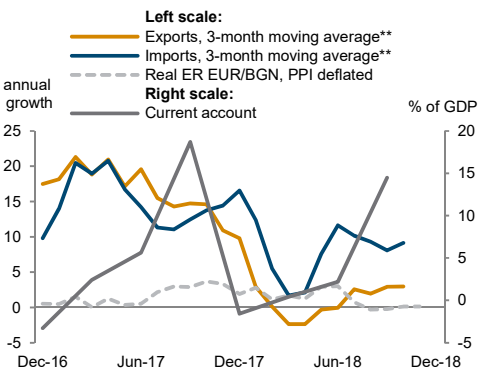
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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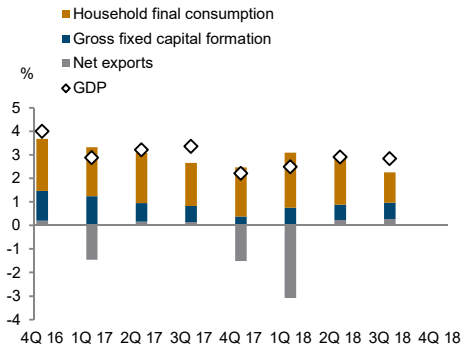
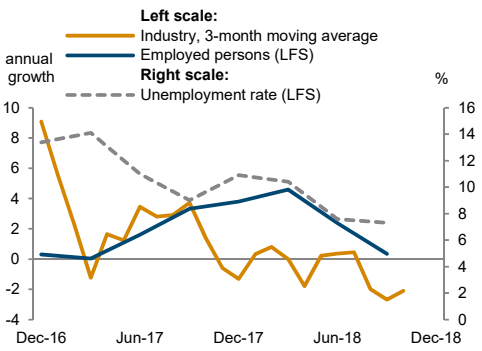
Croatia

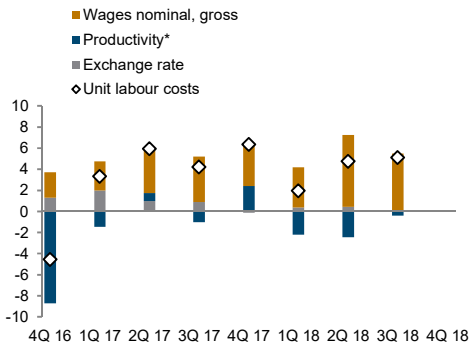
Real GDP growth and contributions
year-on-year



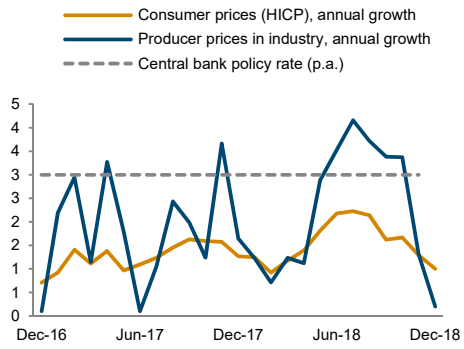
Real sector development
in %



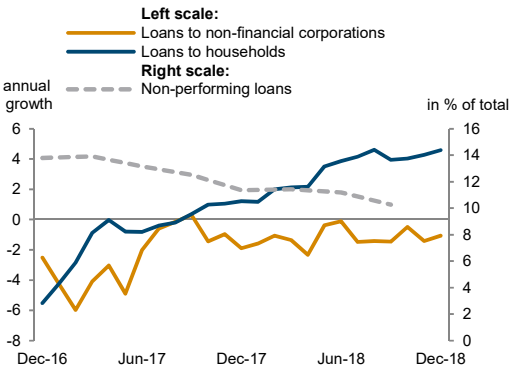
Unit labour costs in industry
annual growth rate in %



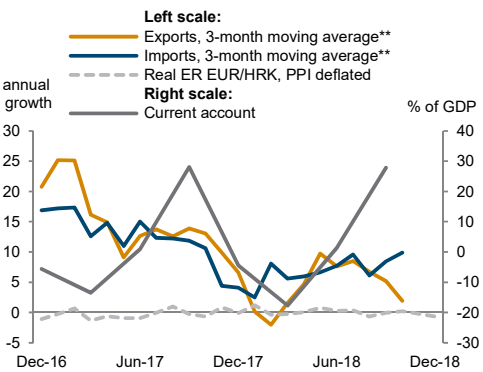
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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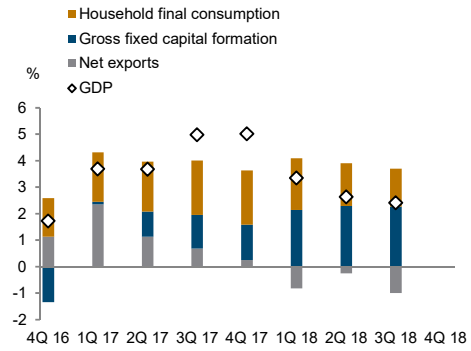
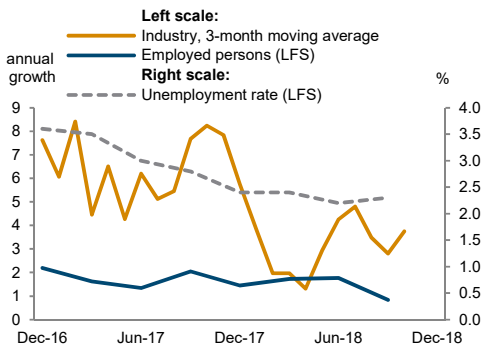
Czech Republic

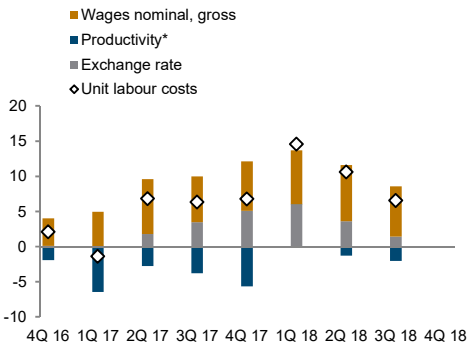
Real GDP growth and contributions
year-on-year



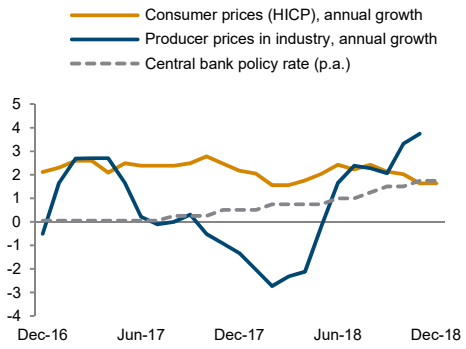
Real sector development
in %



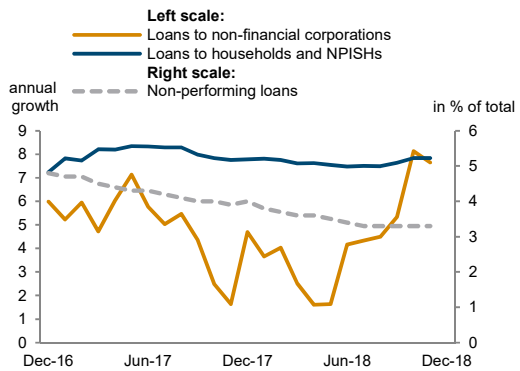
Unit labour costs in industry
annual growth rate in %



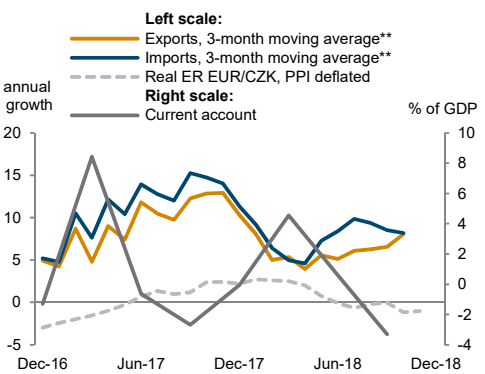
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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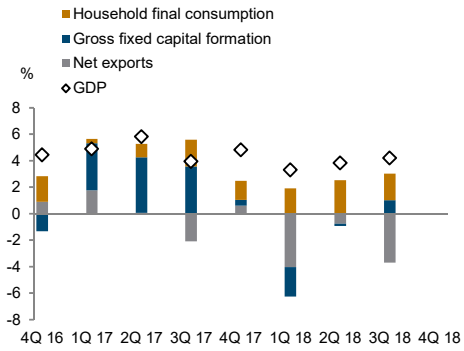
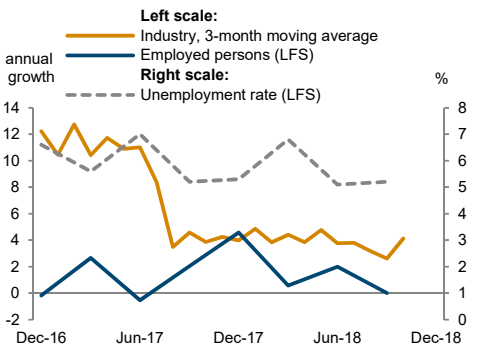
Estonia

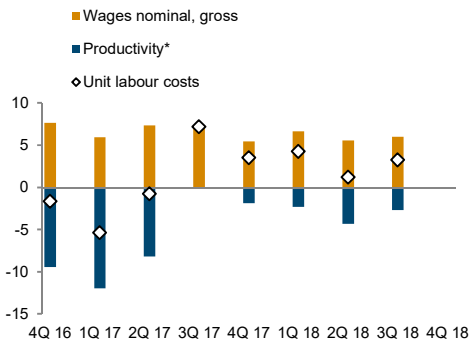
Real GDP growth and contributions
year-on-year



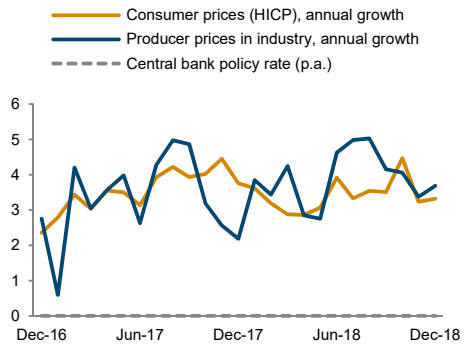
Real sector development
in %



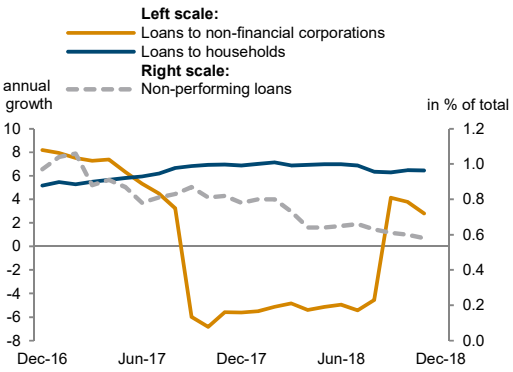
Unit labour costs in industry
annual growth rate in %



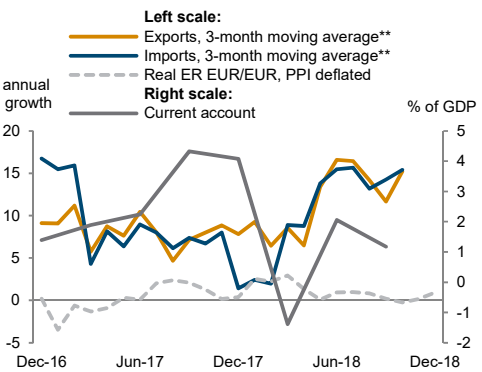
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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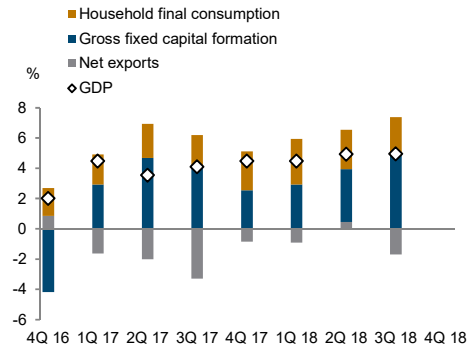
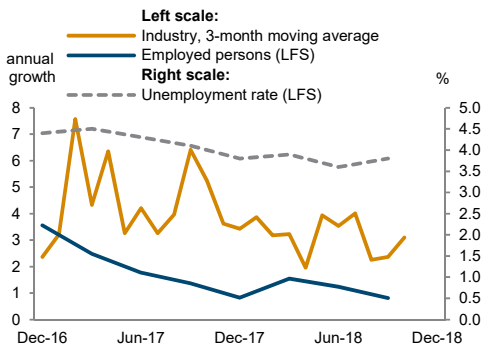
Hungary

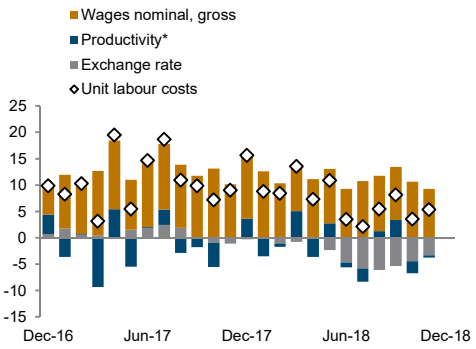
Real GDP growth and contributions
year-on-year



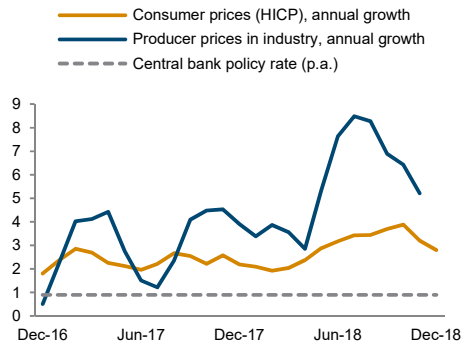
Real sector development
in %



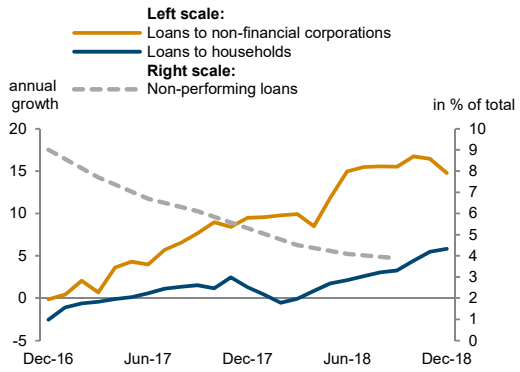
Unit labour costs in industry
annual growth rate in %



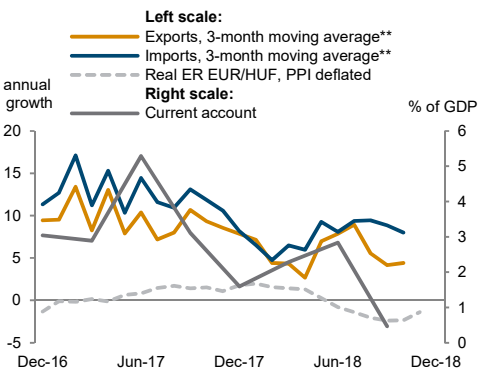
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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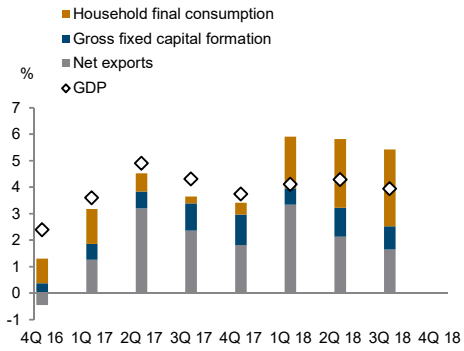
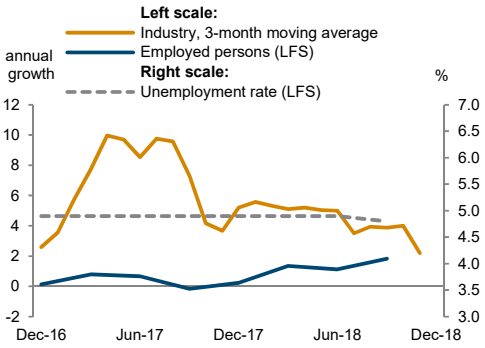
Kazakhstan

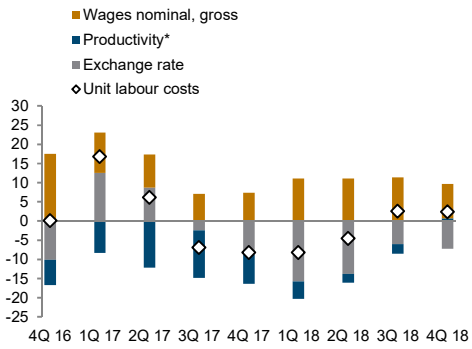
Real GDP growth and contributions
year-on-year



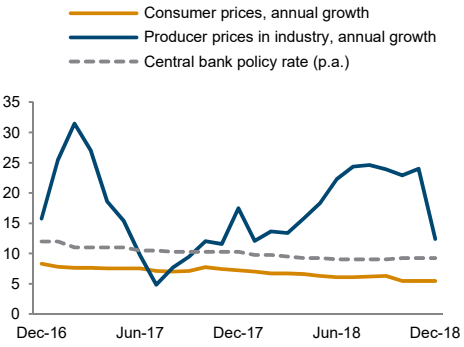
Real sector development
in %



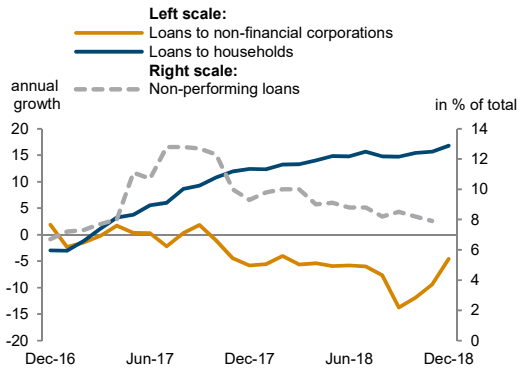
Unit labour costs in industry
annual growth rate in %



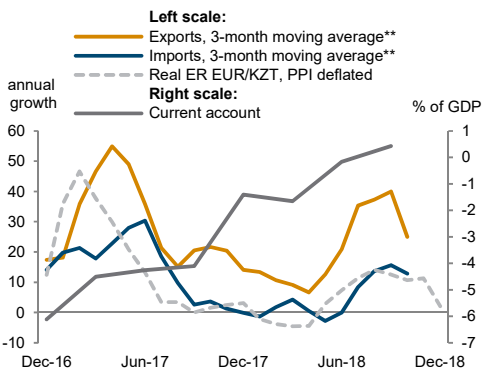
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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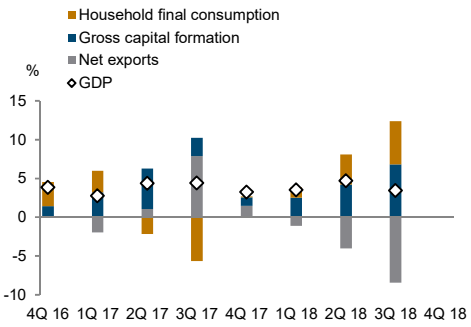
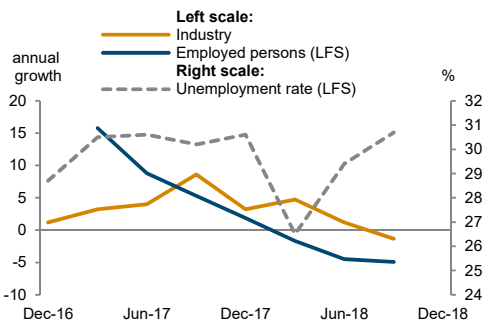
Kosovo

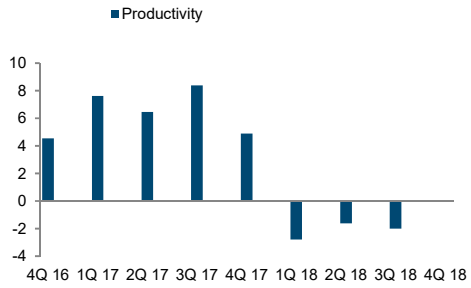
Real GDP growth and contributions
year-on-year



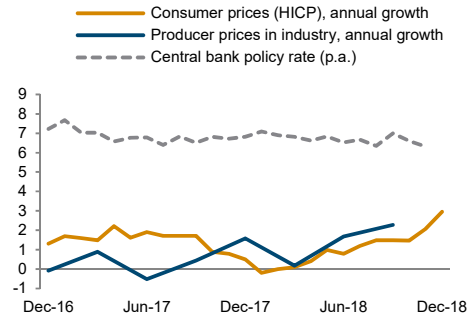
Real sector development
in %



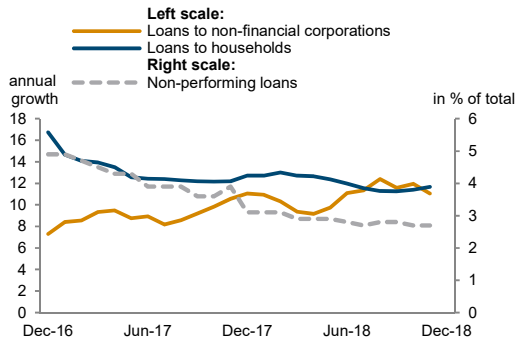
Productivity in industry
annual growth rate in %



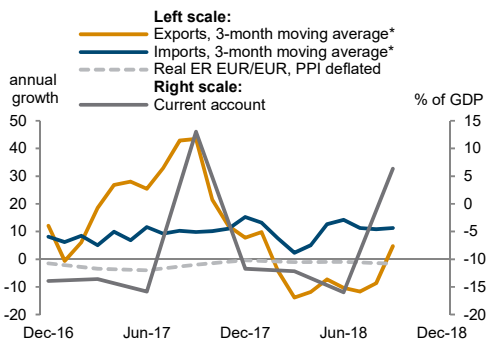
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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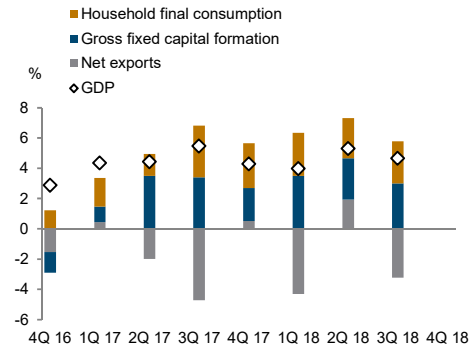
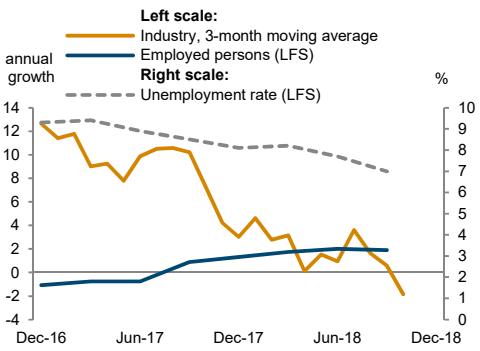
Latvia

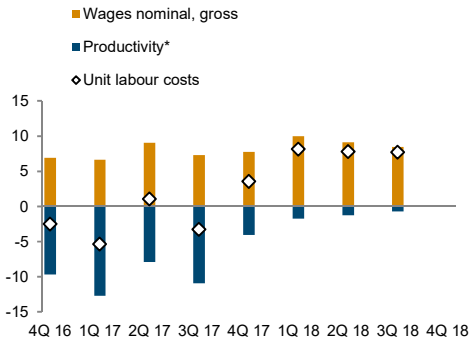
Real GDP growth and contributions
year-on-year



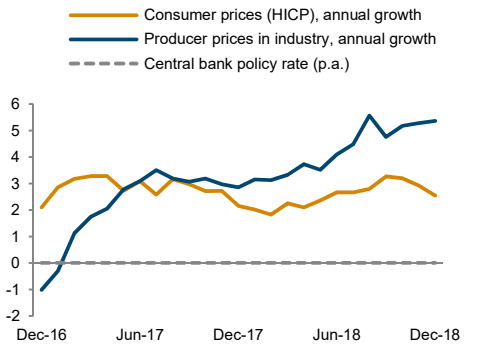
Real sector development
in %



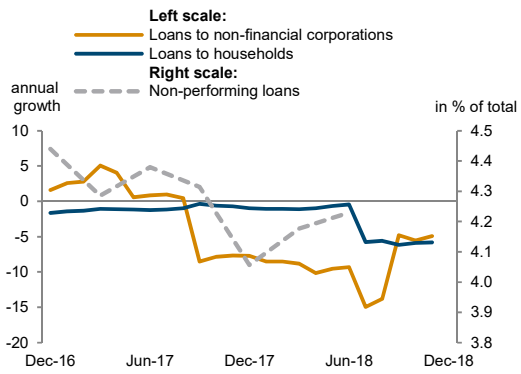
Unit labour costs in industry
annual growth rate in %



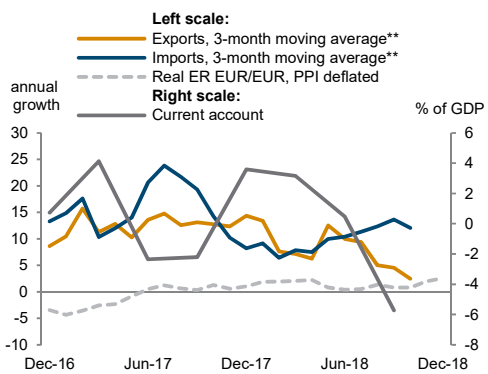
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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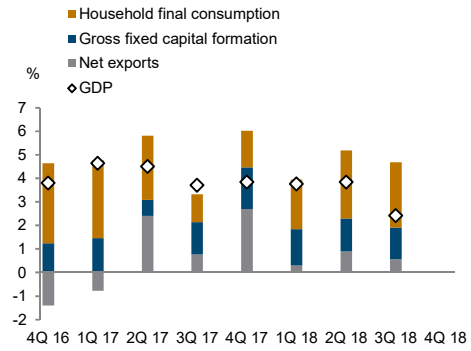
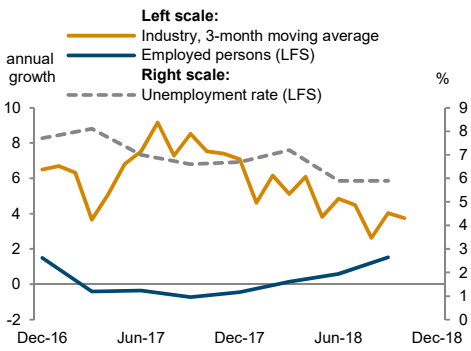
Lithuania

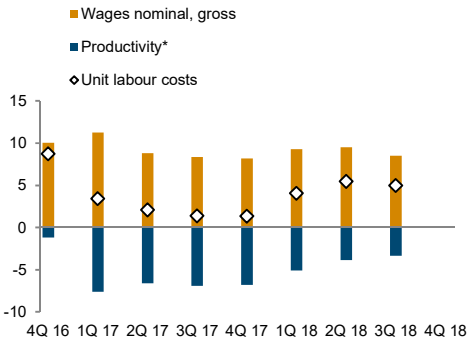
Real GDP growth and contributions
year-on-year



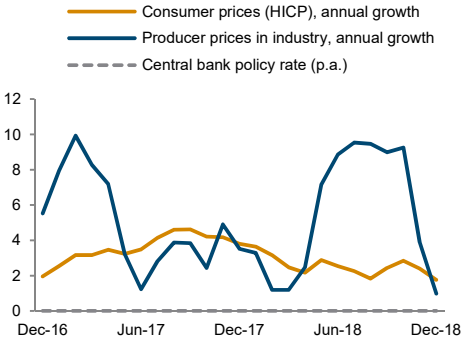
Real sector development
in %



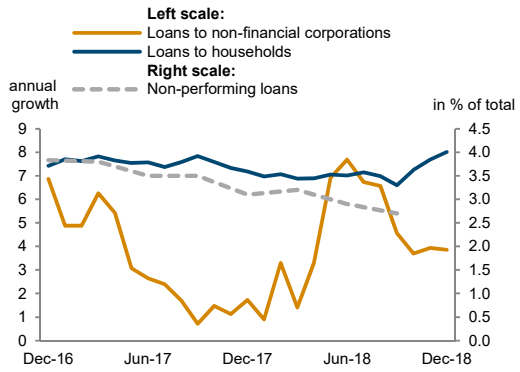
Unit labour costs in industry
annual growth rate in %



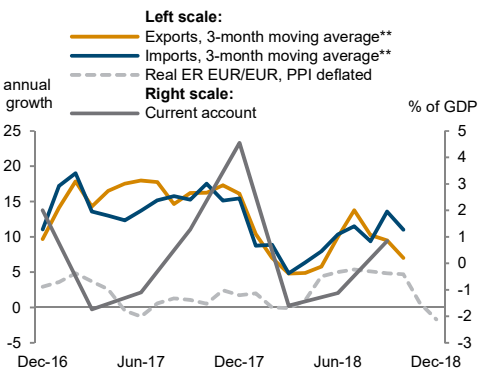
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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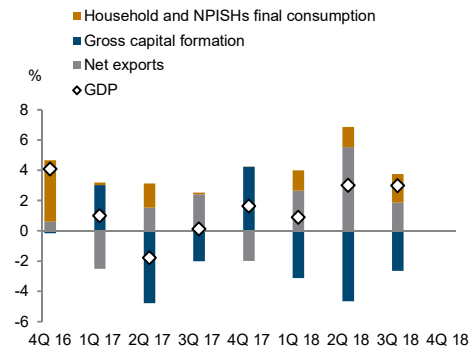
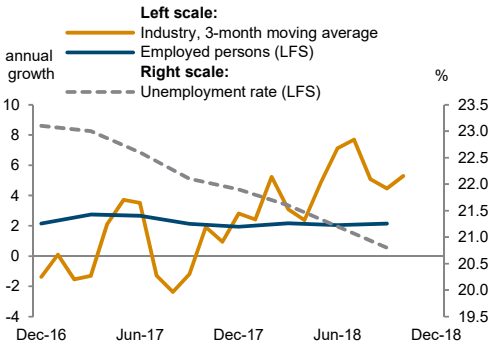
Macedonia

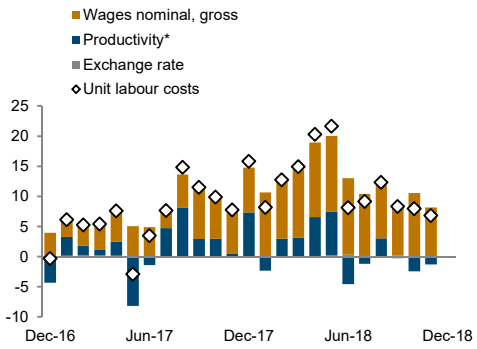
Real GDP growth and contributions
year-on-year



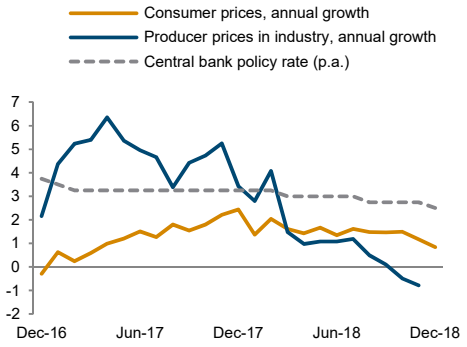
Real sector development
in %



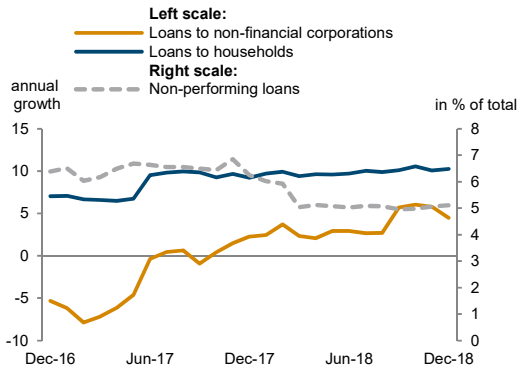
Unit labour costs in industry
annual growth rate in %



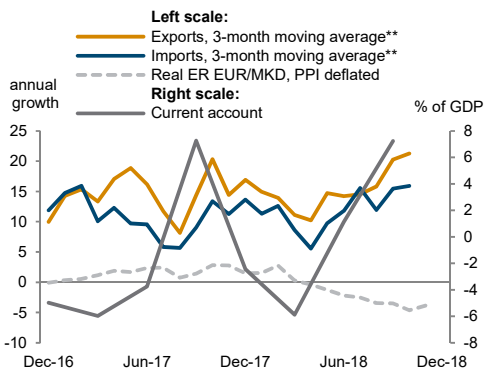
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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**EUR based.

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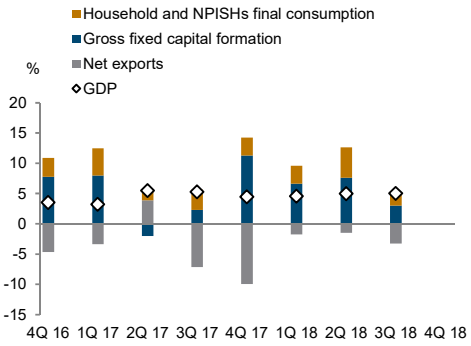
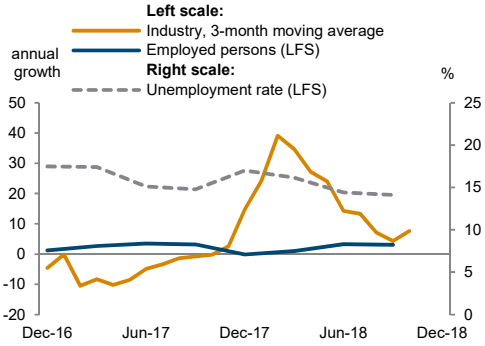
Montenegro

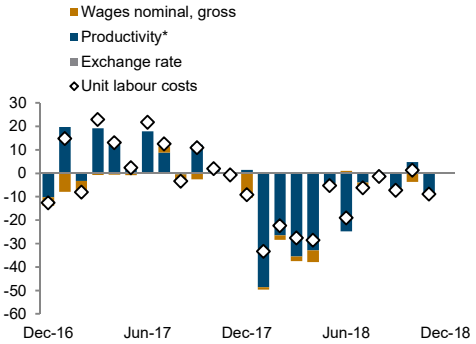
Real GDP growth and contributions
year-on-year



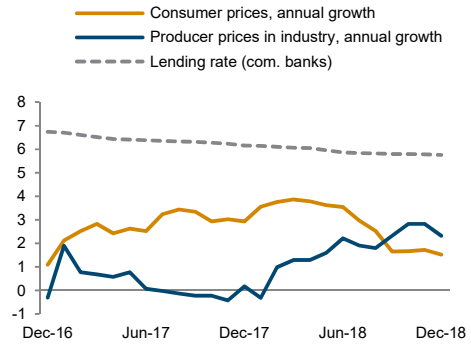
Real sector development
in %



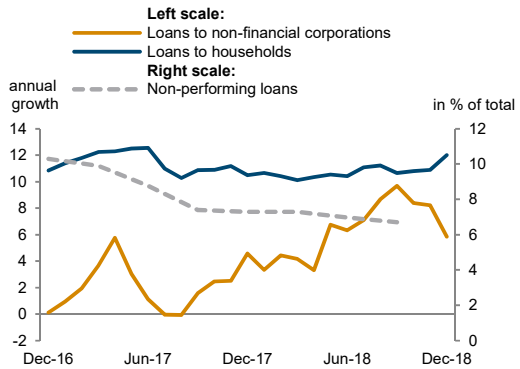
Unit labour costs in industry
annual growth rate in %



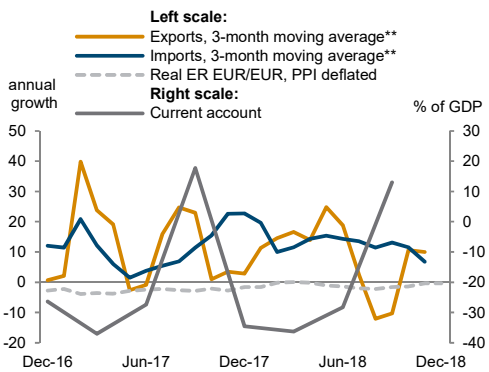
Inflation and lending rate
in %



Financial indicators
in %



External sector development
in %



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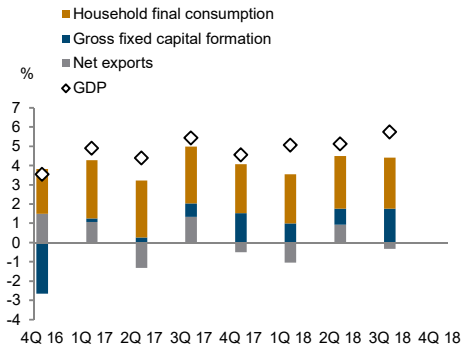
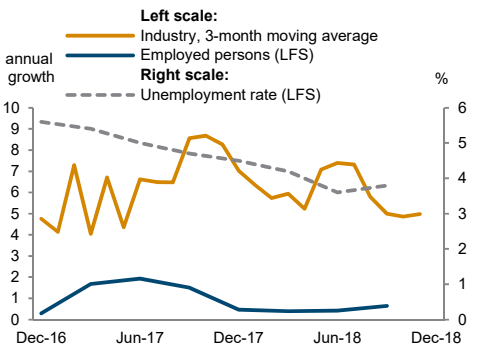
Poland

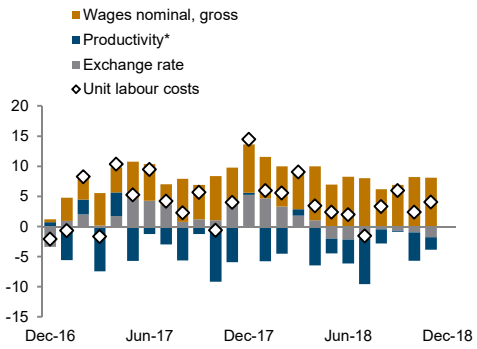
Real GDP growth and contributions
year-on-year



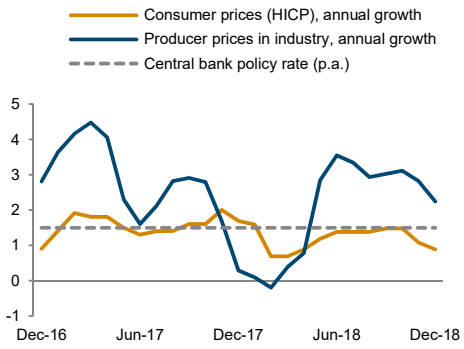
Real sector development
in %



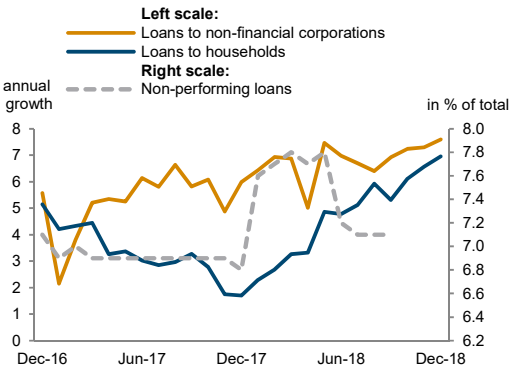
Unit labour costs in industry
annual growth rate in %



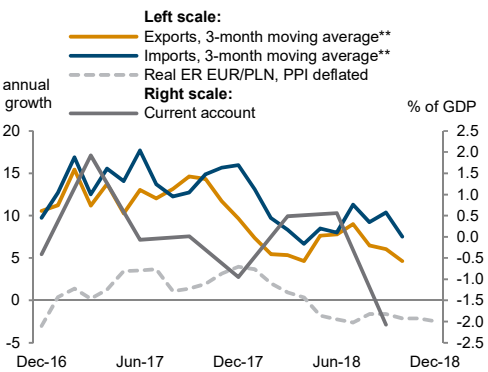
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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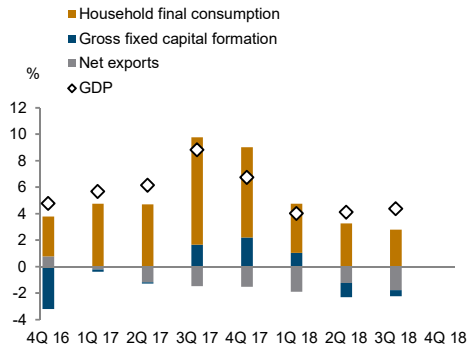
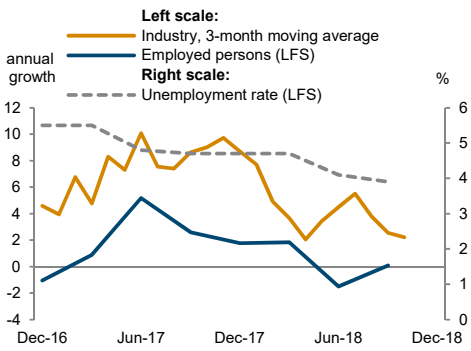
Romania

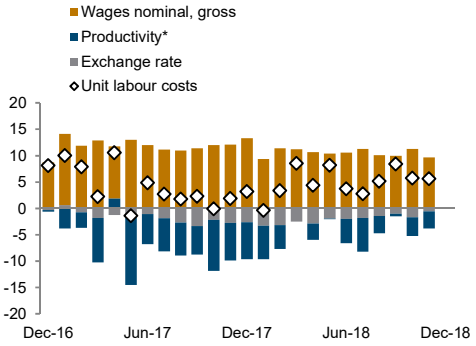
Real GDP growth and contributions
year-on-year



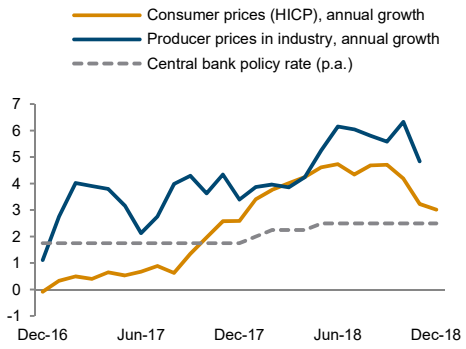
Real sector development
in %



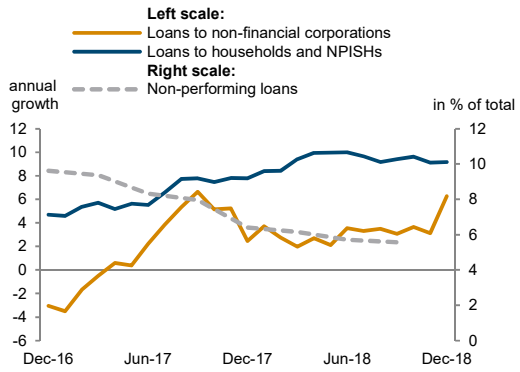
Unit labour costs in industry
annual growth rate in %



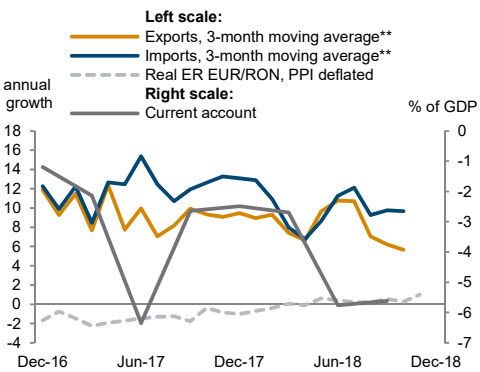
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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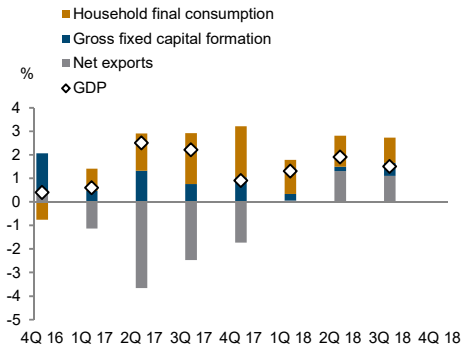
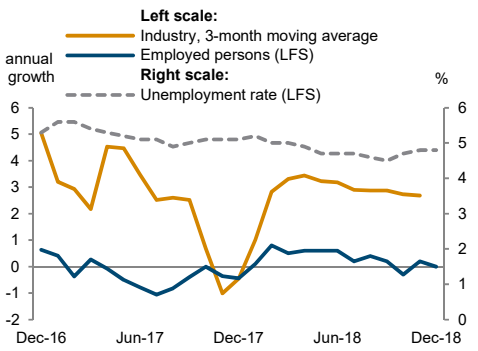
Russia

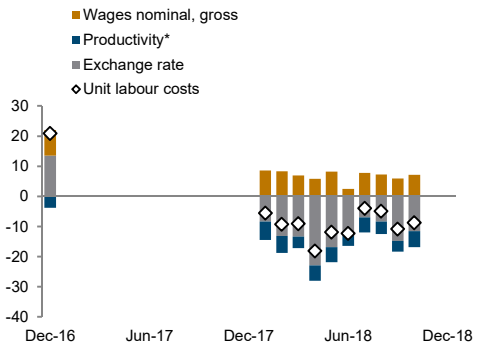
Real GDP growth and contributions
year-on-year



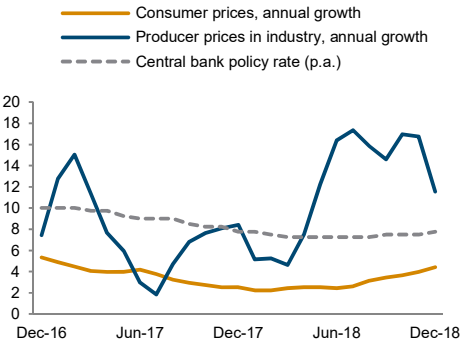
Real sector development
in %



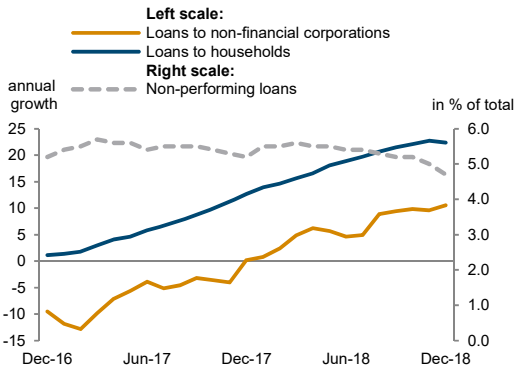
Unit labour costs in industry
annual growth rate in %



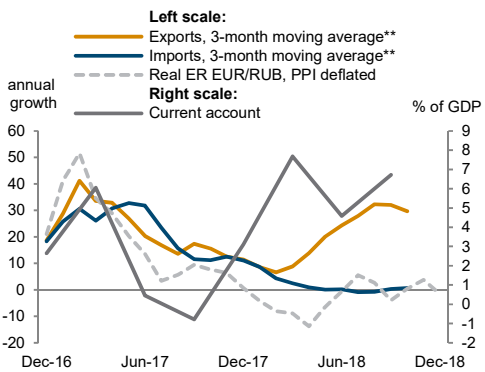
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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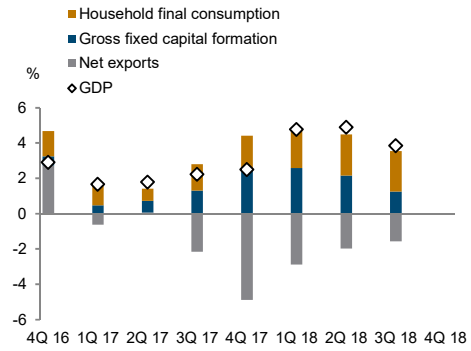
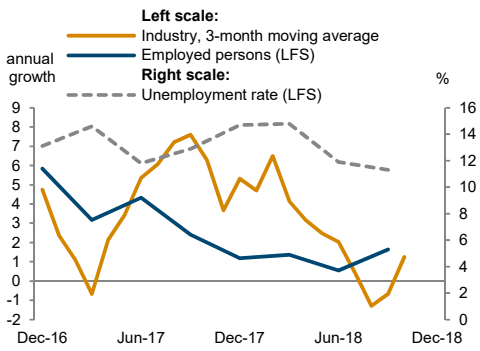
Serbia

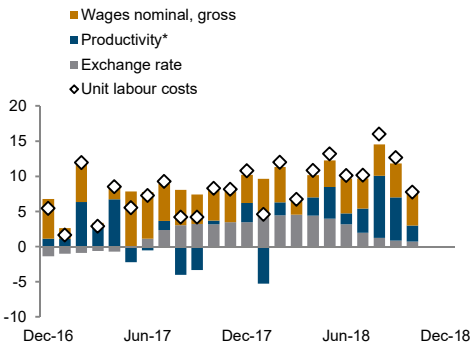
Real GDP growth and contributions
year-on-year



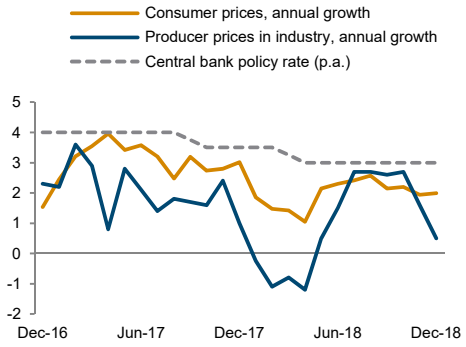
Real sector development
in %



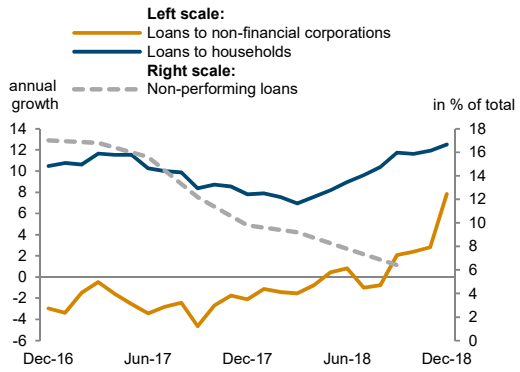
Unit labour costs in industry
annual growth rate in %



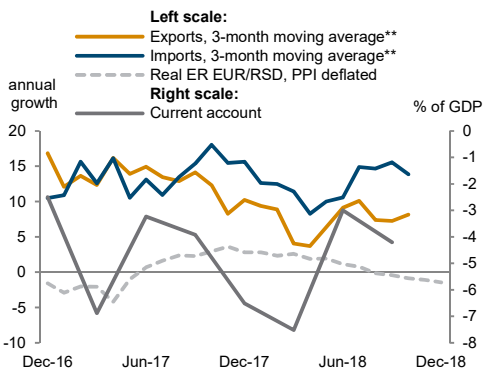
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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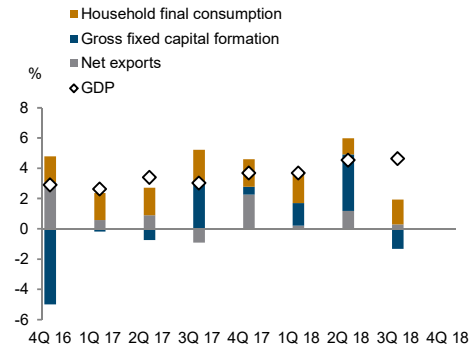
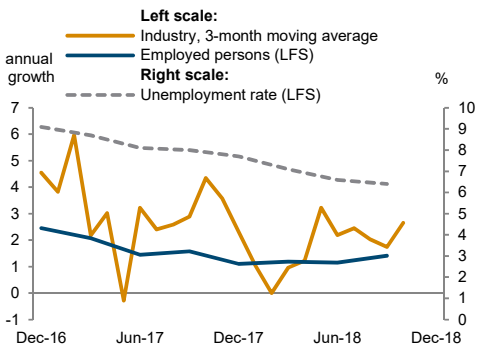
Slovakia

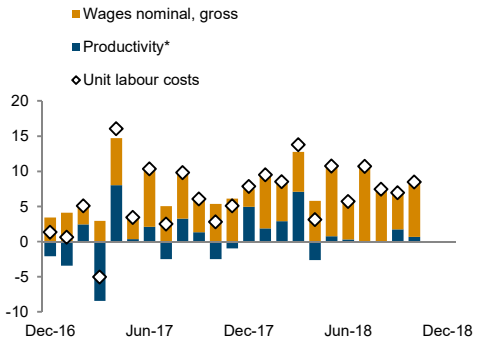
Real GDP growth and contributions
year-on-year



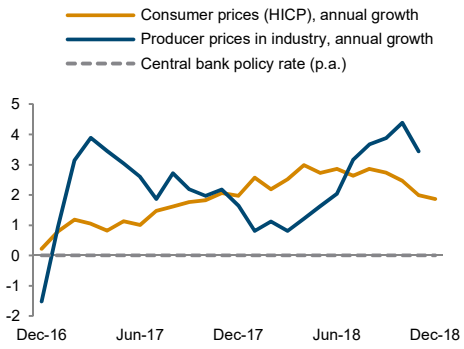
Real sector development
in %



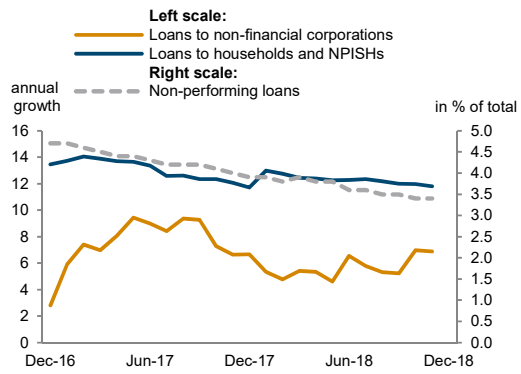
Unit labour costs in industry
annual growth rate in %



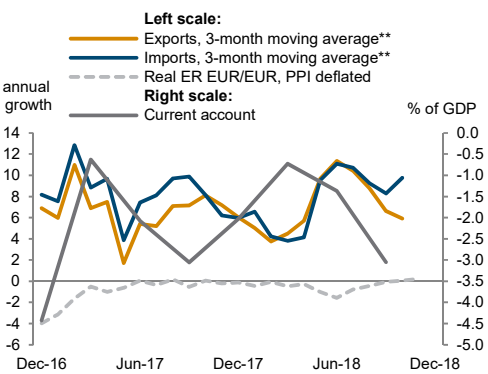
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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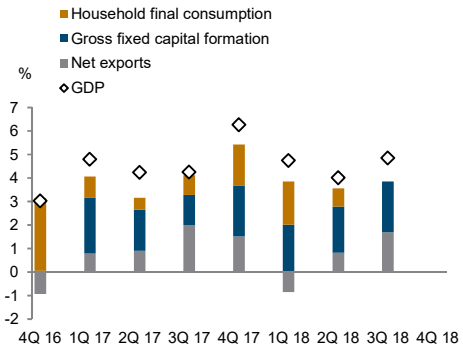
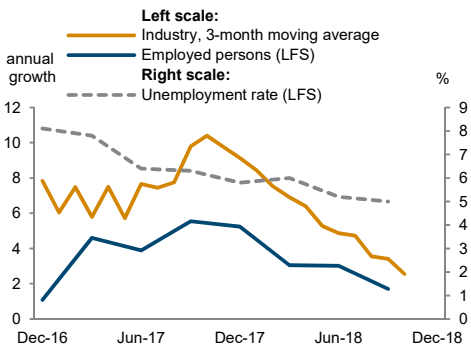
Slovenia

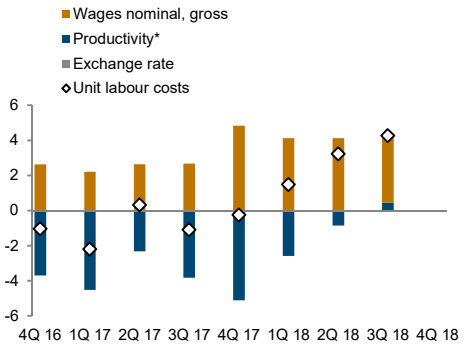
Real GDP growth and contributions
year-on-year



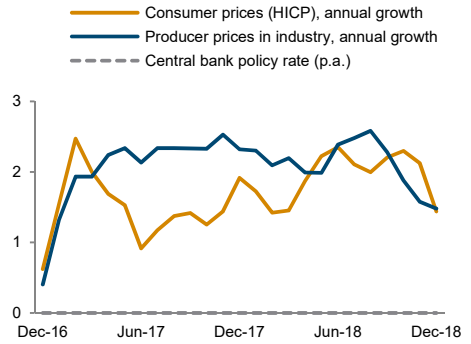
Real sector development
in %



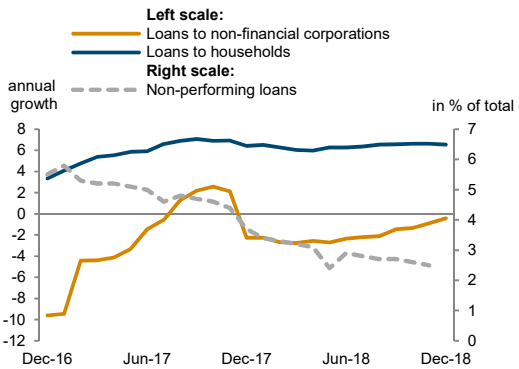
Unit labour costs in industry
annual growth rate in %



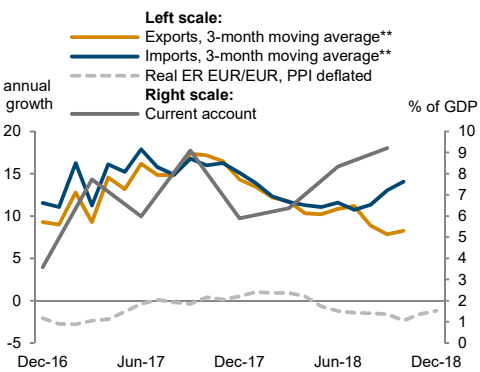
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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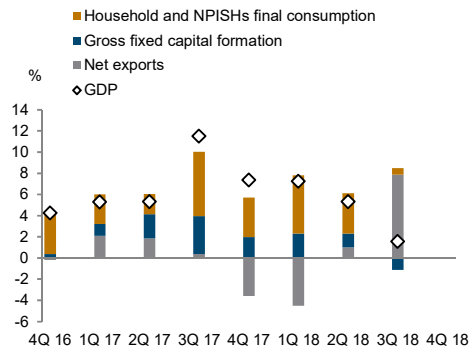
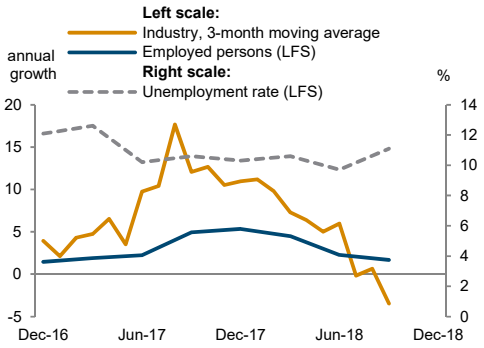
Turkey

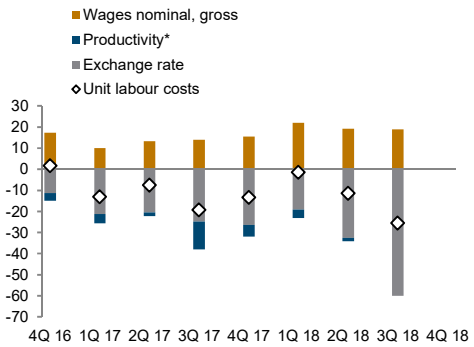
Real GDP growth and contributions
year-on-year



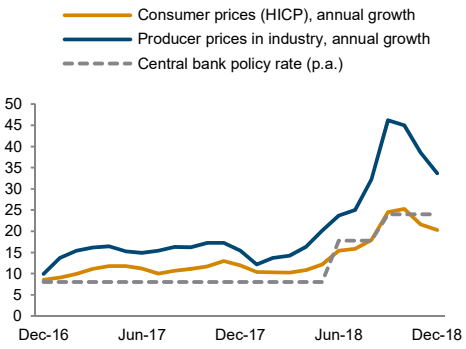
Real sector development
in %



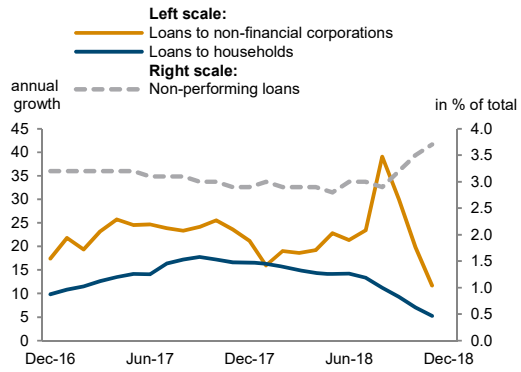
Unit labour costs in industry
annual growth rate in %



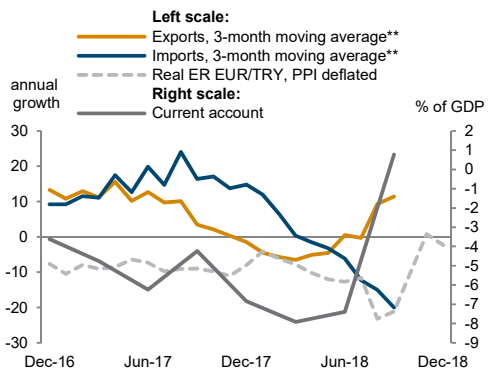
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %

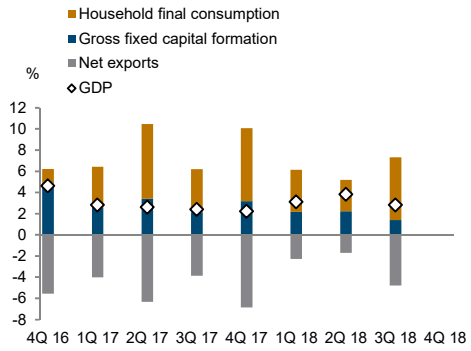


*Positive values of the productivity component on the graph reflect decline in productivity and vice versa.
**EUR based.

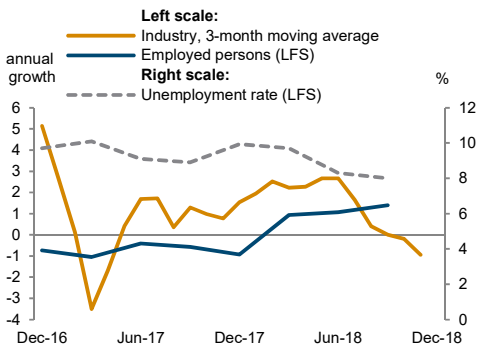
Source: wiiw Monthly Database incorporating Eurostat and national statistics.
Baseline data, country-specific definitions and methodological breaks in time series are available under:
https://data.wiiw.ac.at/monthly-database.html

Ukraine

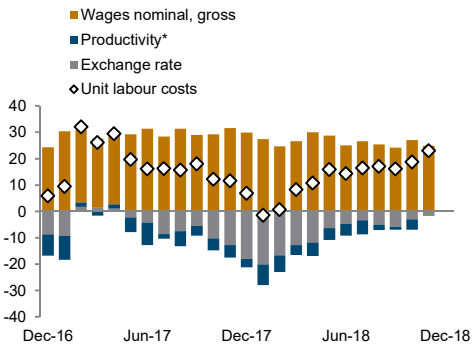
Real GDP growth and contributions
year-on-year



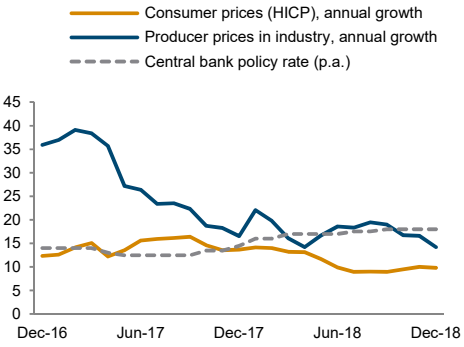
Real sector development
in %



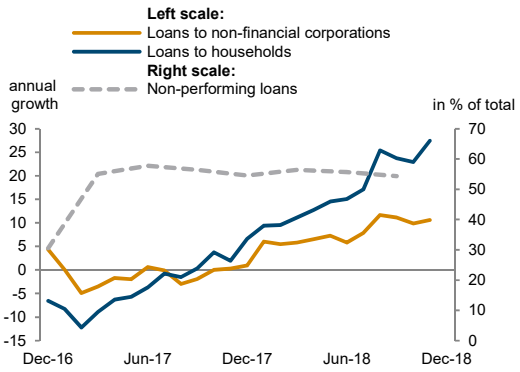
Unit labour costs in industry
annual growth rate in %



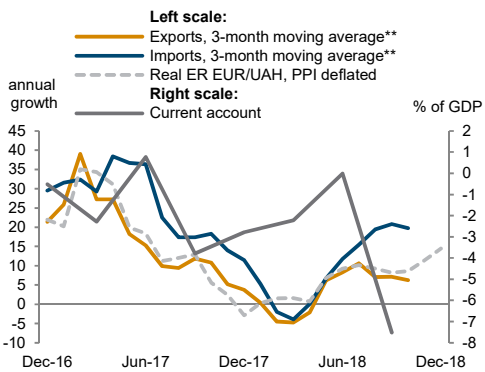
Inflation and policy rate
in %



Financial indicators
in %



External sector development
in %



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multi-country articles and statistical overviews

Economics editors: Vasily Astrov, Richard Grieveson

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