



NBP

Narodowy Bank Polski

Economic Institute

Inflation and economic growth projection of Narodowy Bank Polski based on the NECMOD model

Warsaw / 13 March 2017



Outline

Outline:

Changes between rounds

Projection 2017 – 2019

- External environment
- Consumption demand
- Investment demand
- Foreign trade
- Inflation

Uncertainty

1 Changes between projection rounds

2 Projection 2017 - 2019

3 Uncertainty

Outline:

Changes between rounds

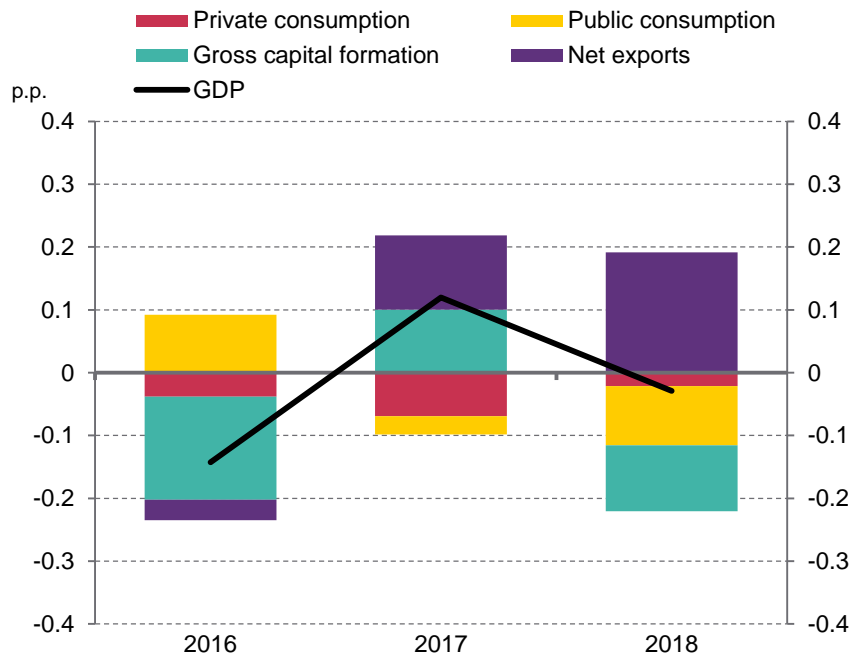
Projection 2017 – 2019

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Changes between projection rounds

March GDP projection compared to November projection



⇩ Lower than expected GDP data for the second half of 2016 (weaker investment)

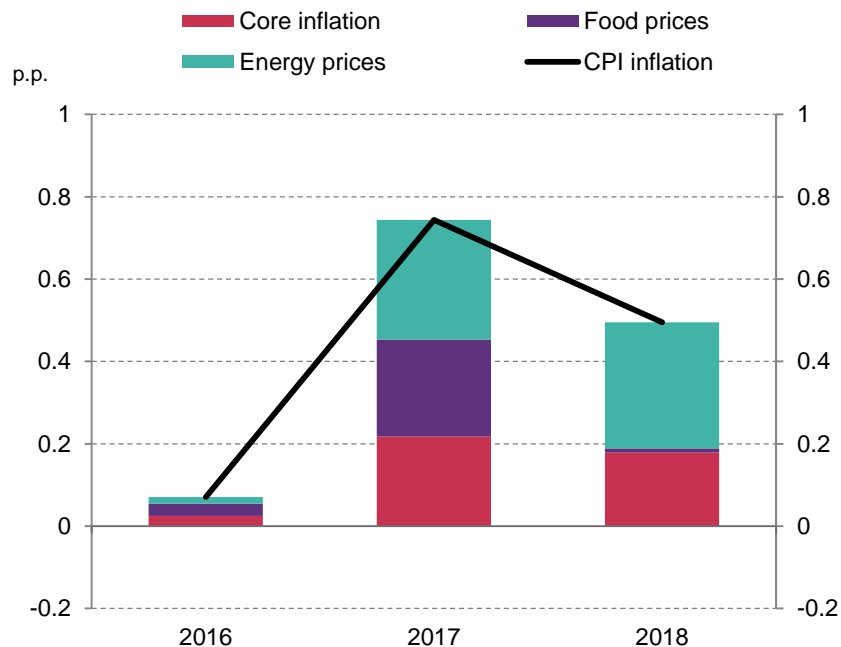
⇧ Slight upward revision of the expected GDP growth in 2017:

⇧ Exports – higher economic growth forecasts in Poland’s main trading partners and depreciation of the zloty exchange rate

⇧ Inventories – cyclical adjustment due to higher demand from abroad

GDP y/y, %	2016	2017	2018
November 2016	3.0	3.6	3.3
March 2017	2.8	3.7	3.3

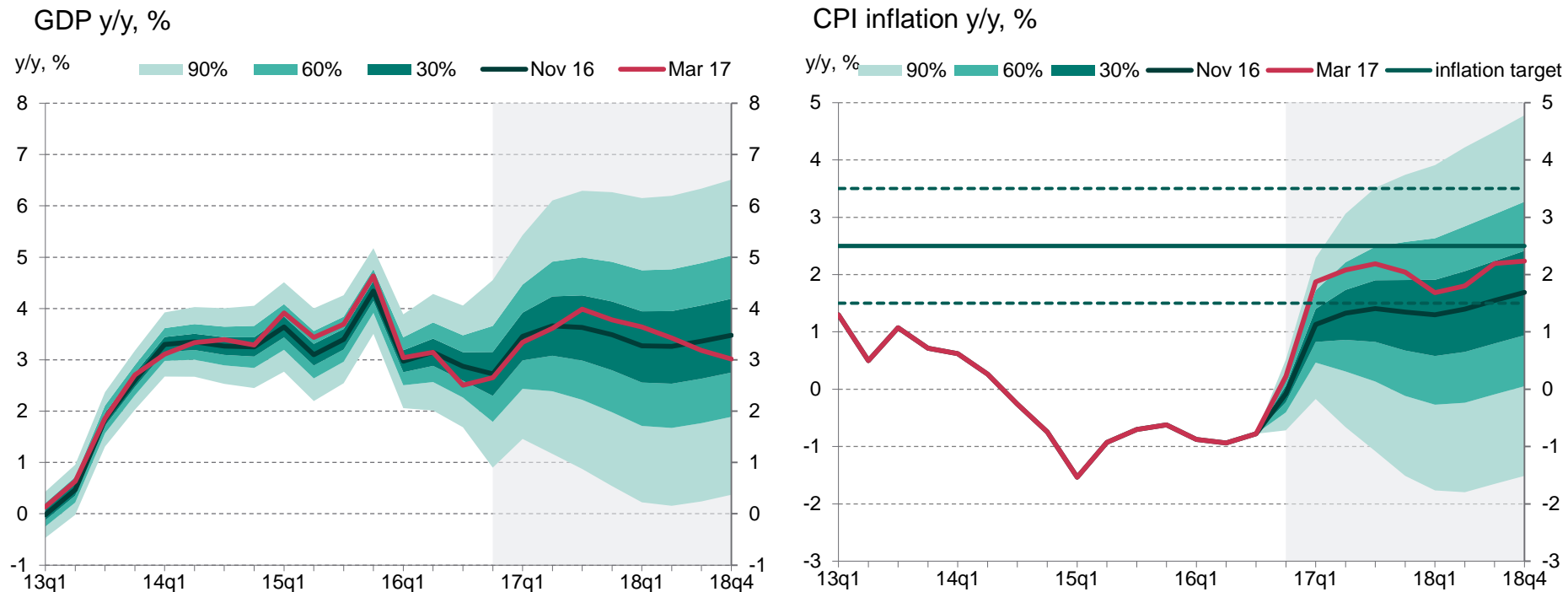
March CPI projection compared to November projection



- ↑ Higher prices of energy commodities in the global markets
- ↑ In 2017 increase in agricultural global commodity prices
- ↑ The impact of higher energy prices on other prices
- ↑ Only a slight increase in demand pressure

CPI y/y, %	2016	2017	2018
November 2016	-0.6	1.3	1.5
March 2017	-0.6	2.0	2.0

March CPI projection compared to November projection



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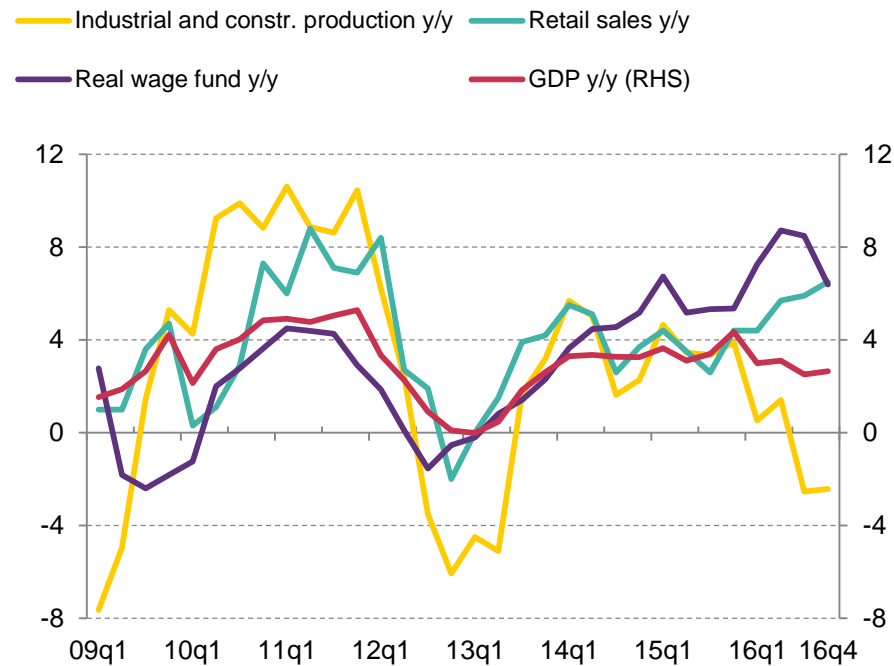
Uncertainty

Projection 2017-2019

- Economic conditions abroad
- Consumption demand
- Investment
- International trade
- Inflation

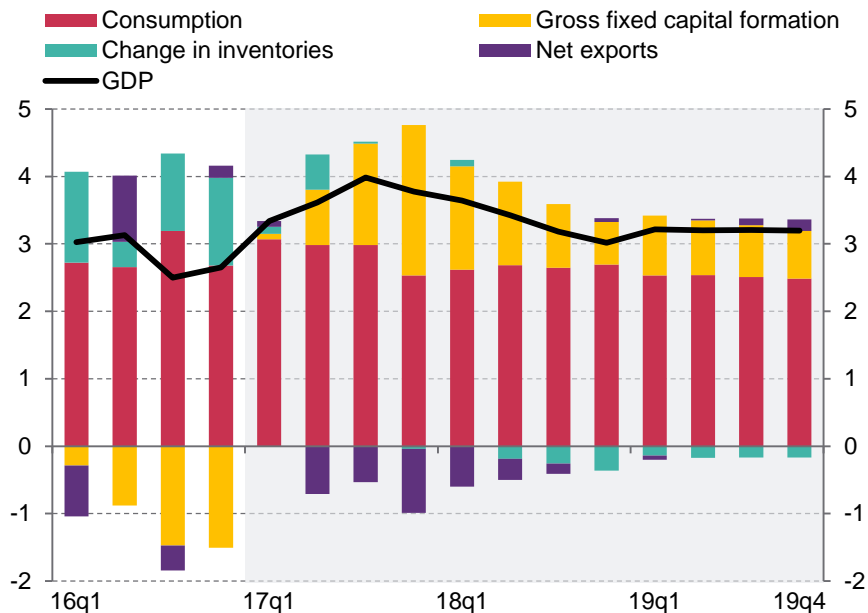
GDP growth in the second half of 2016 below 3% y/y

	16q3		16q4	
GDP (y/y) (%)	2.5	(2.9)	2.7	(2.7)
Domestic demand (y/y) (%)	2.9	(2.8)	2.5	(2.5)
Private consumption (y/y) (%)	3.9	(4.0)	4.2	(4.2)
Public consumption (y/y) (%)	4.9	(4.3)	2.9	(-2.1)
Gross fixed capital form. (y/y) (%)	-7.7	(-4.9)	-5.7	(-1.8)
Exports (y/y) (%)	6.8	(7.3)	6.6	(6.1)
Imports (y/y) (%)	7.8	(7.3)	6.6	(5.6)
Net exports contribution (pp.)	-0.3	(0.1)	0.2	(0.3)



Values from the November projection are given in brackets (16q4 seasonally adjusted). Indicators with values higher than in the November projection are marked green, whereas indicators with lower values are marked red.

In 2017 GDP growth will improve, and in 2018-2019 it will stabilize at the slightly lower level



- ↑ GDP growth will be driven by individual consumption – a result of the improved situation in the labour market and the increase in family benefits
- ↑ Economic growth driven also by positive gross fixed capital formation dynamics – supported by the inflow of EU funds under the new 2014-2020 financial framework
- ↓ Negative net exports contribution in 2017-2018 – higher domestic demand, unfavourable outlook for global trade and appreciation of zloty exchange rate

y/y, %	2016	2017	2018	2019
GDP	2.8	3.7	3.3	3.2

Outline:

Changes between rounds

Projection 2017 – 2019

- External environment
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Uncertainty

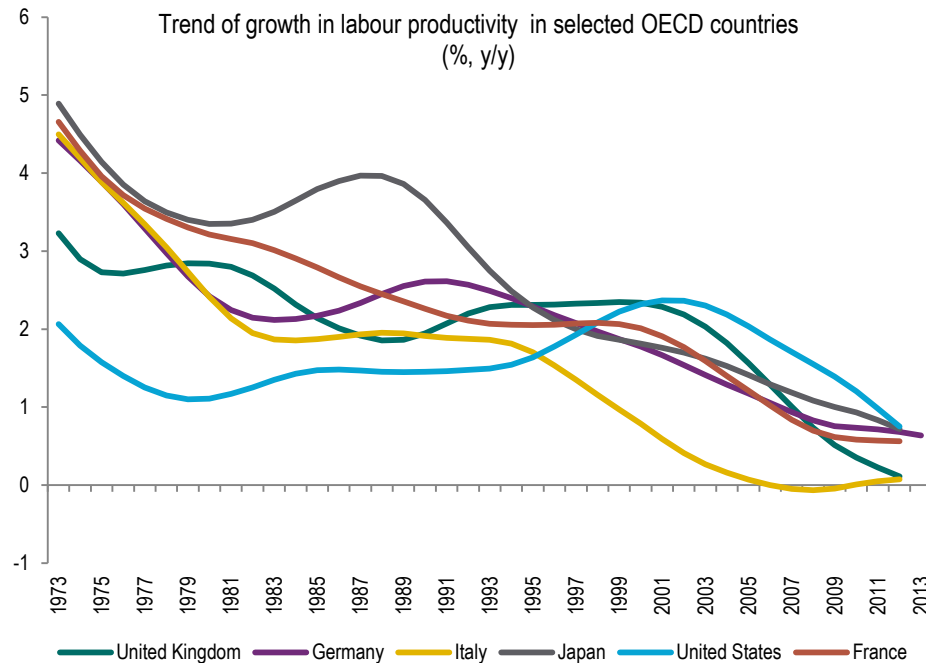
Economic conditions abroad

As compared to the November projection, global economic outlook improved, however its impact on the Polish GDP growth remains slightly negative.

- ⇓ Weak outlook for global trade's growth
- ⇓ Unfavourable long-term global economic outlook due to low productivity
- ⇑ Change in the composition of economic growth in the euro area
- ⇑ In US the impact of falling oil prices is fading away
- ↔ Relative stabilization of the economic situation in BRIC countries

GDP y/y, %	2016	2017	2018	2019
Euro area	1.7 (1.6)	1.6 (1.4)	1.5 (1.4)	1.4
Germany	1.8 (1.8)	1.6 (1.5)	1.5 (1.3)	1.4
United States	1.6 (1.5)	2.2 (2.1)	2.1 (2.0)	1.9
United Kingdom	2.0 (1.9)	1.5 (1.2)	1.4 (1.5)	1.7

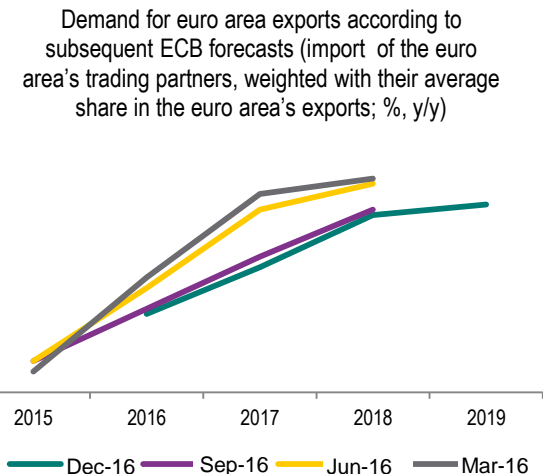
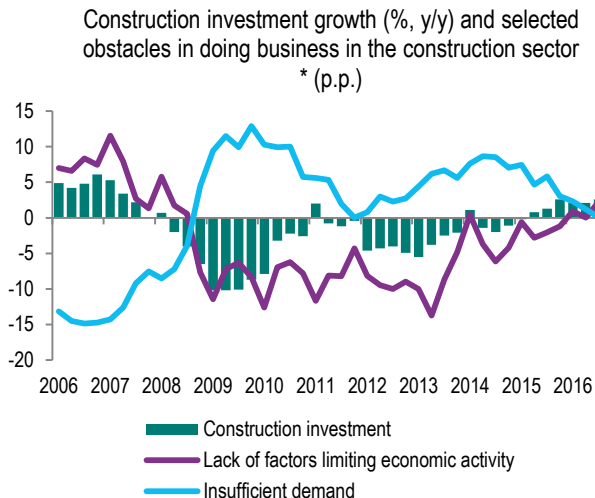
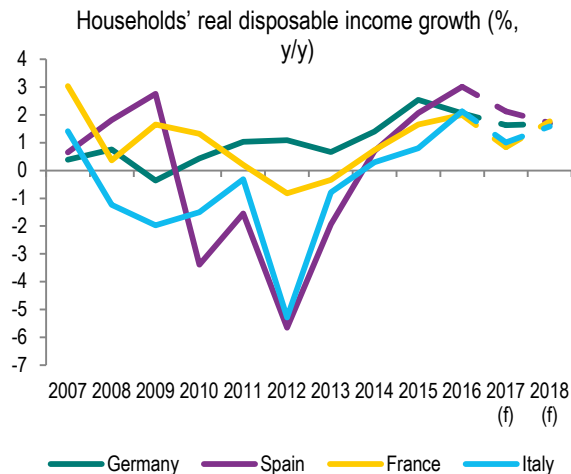
November 2016 projection data are given in brackets.



Source: OECD data, IE NBP forecasts

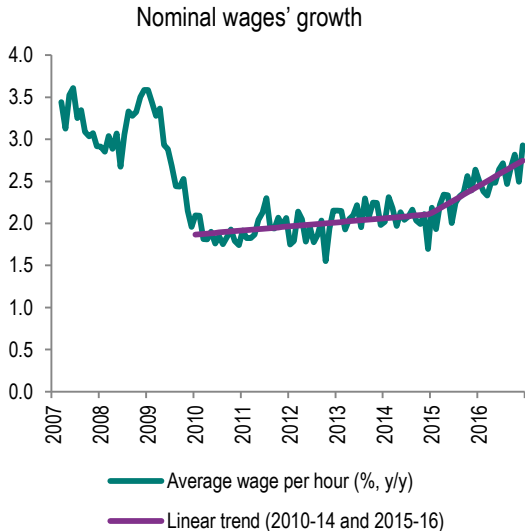
Slightly lower GDP growth expected in the euro area

- Individual consumption growth, currently the main driving force of economic recovery, will slow down in line with fading positive impact of low energy prices on real disposable income.
- Gross fixed capital formation dynamics will be driven by construction investment.
- Weak outlook for global trade growth will limit exports dynamics, whereas change in the composition of domestic demand's growth will lead to the increase in the euro area's imports.

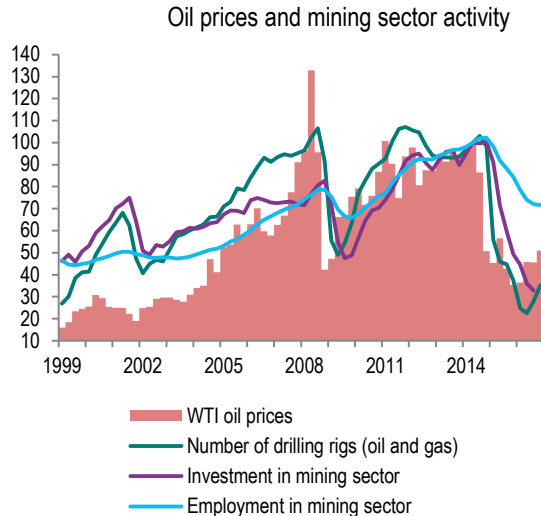


GDP growth in United States will accelerate due to investment

- The further improvement is expected in the manufacturing and mining sectors as oil prices start rising, the effects of dollar appreciation from 2015-2016 are weakening and the situation in the emerging markets stabilizes. It will support corporate investment growth and an increase in inventories.
- High household's net wealth value, the end of deleveraging process and closing employment gap will fuel consumption, although its growth will slow down in the medium term.

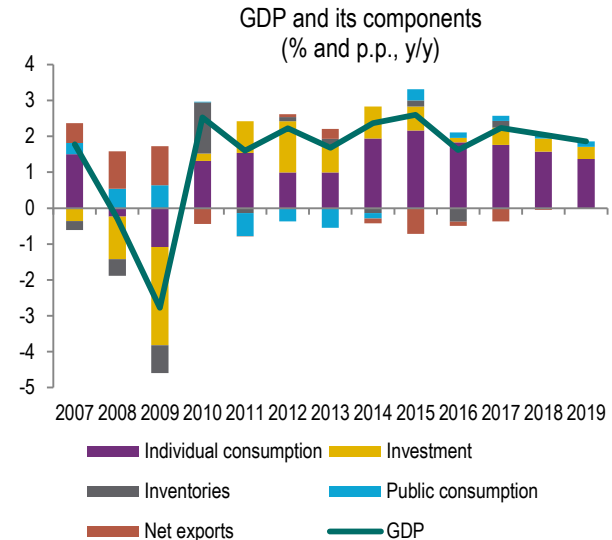


Source: BLS



index 2014q2 = 100

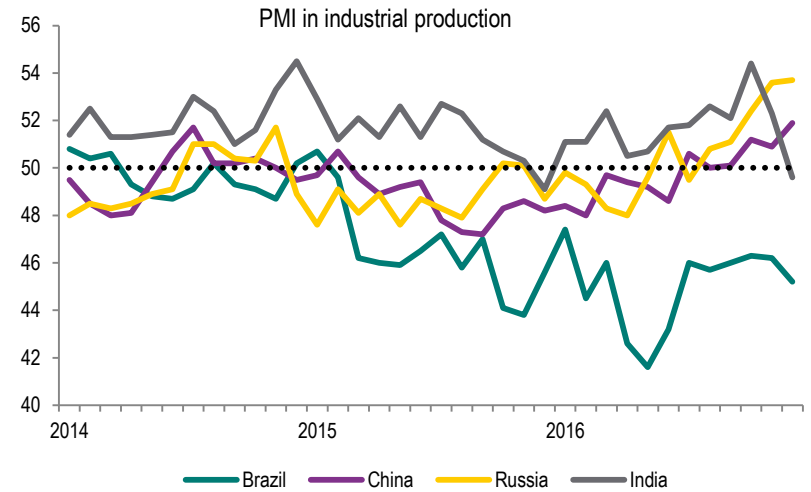
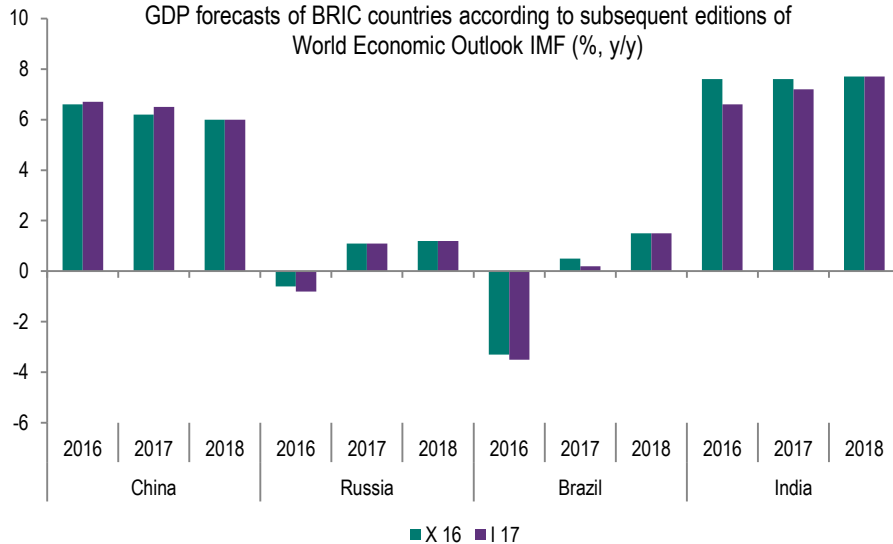
Source: Reuters, Baker Hughes, BEA, BLS



Source: BEA, IE NBP calculations

Relative stabilization of the economic situation in BRIC countries

- Chinese economic slowdown is not as deep as it was expected due to the government's expansionary measures.
- Unchanged economic outlook in Russia, which assumes gradual increase in economic activity.
- In Brazil, relatively slow improvement in economic situation.
- In India, in the short term economic growth will be hampered by recent unexpected demonetization (November 2016).



Outline:

Changes between rounds

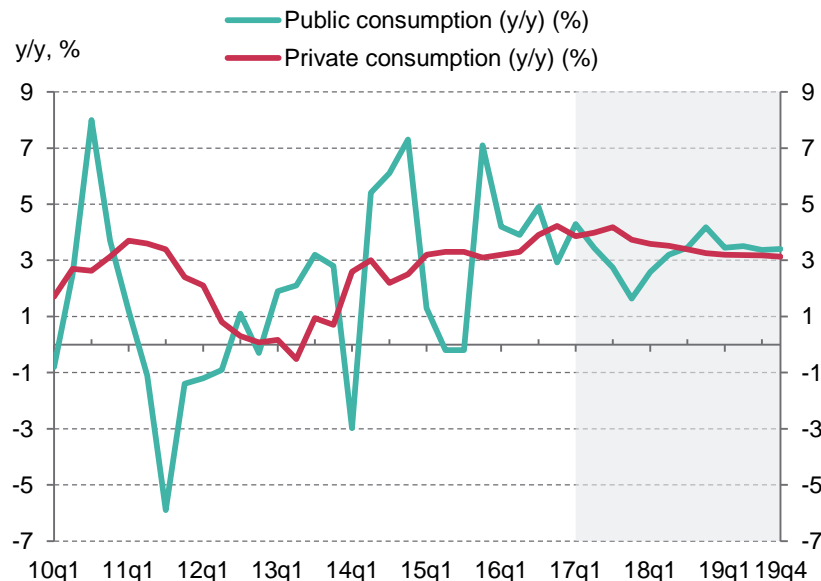
Projection 2017 – 2019

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Uncertainty

Consumption demand

Consumption demand as the main driver of GDP growth in projection



Individual consumption:

- ↑ Very good labour market conditions – further growth in real wages
- ↑ Progress in households' financial situation – programme „Family 500 plus”
- ↑ Improvement in consumer sentiment
- ↑ Low interest rates facilitate financing consumption through borrowing

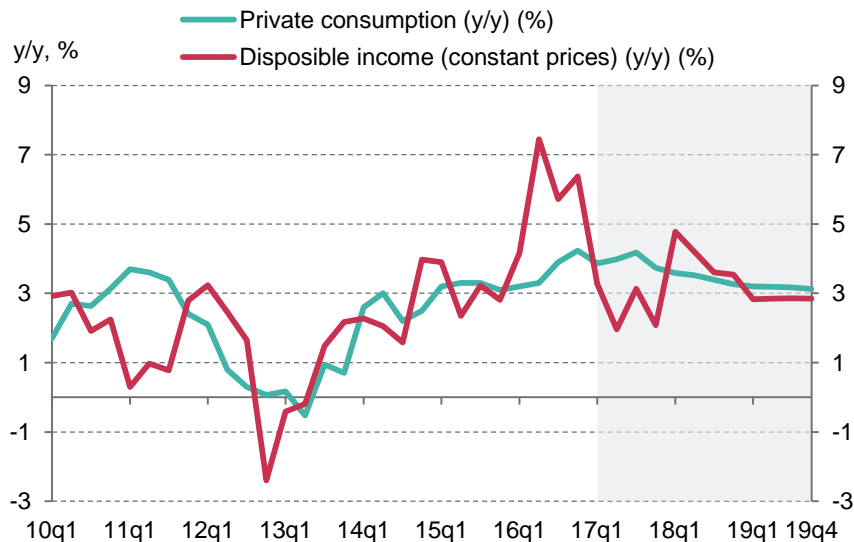
Public consumption:

- ↓ 2017 Budget Act – relatively low growth rate of current expenditures and spending on targeted subsidies
- ↑ Years 2018 - 2019 – lack of detailed information on the continuation of cutting public expenditure

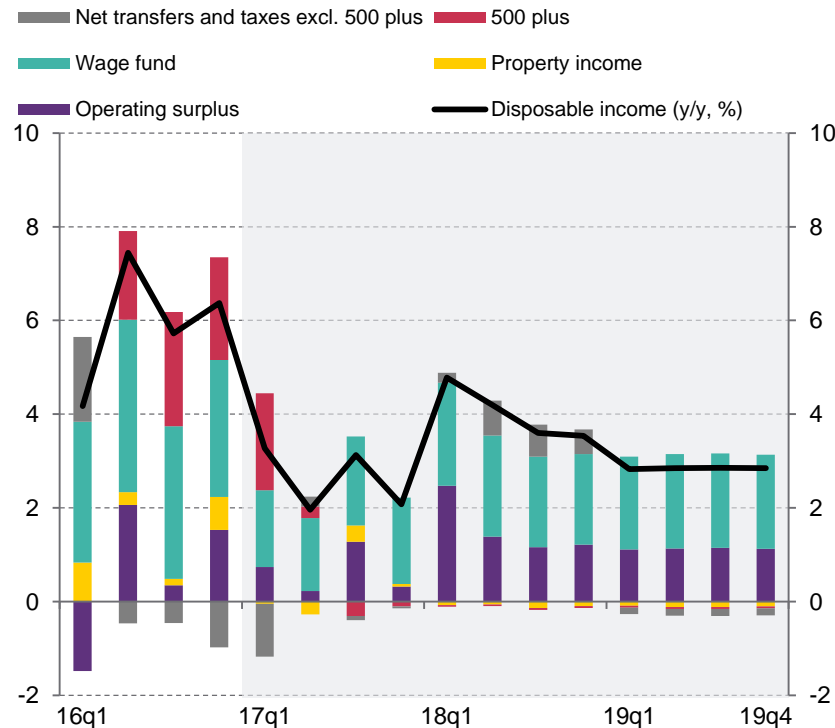
y/y, %	2016	2017	2018	2019
Private consumption	3.6	3.9	3.4	3.2
Public consumption	3.9	3.0	3.4	3.4

Good households' financial situation

- The increase in real wages lead to higher consumption in the whole projection horizon
- In 2016-2017 dynamics of households' disposable income will be elevated by the growth in family benefits, due to the programme „Family 500 plus”, which was implemented in April 2016 (it will affect individual consumption with a lag due to the intertemporal consumption smoothing mechanism).



Disposable income decomposition (constant prices) (y/y, %)

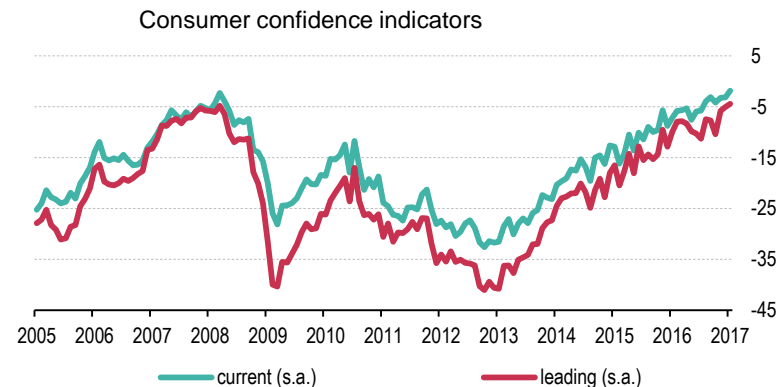
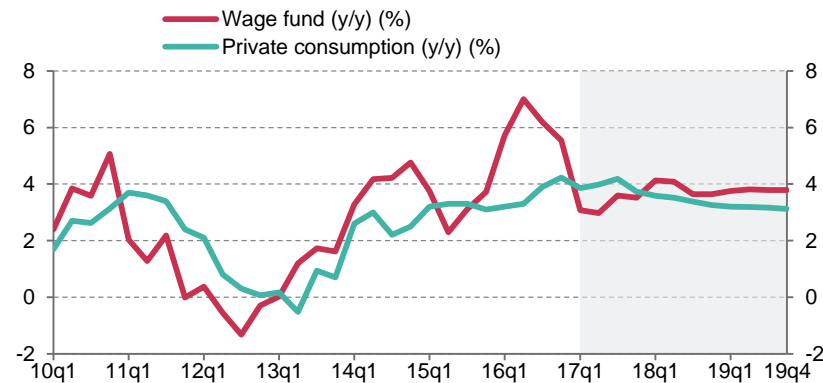


Consumption is driven by very good labour market conditions and favourable consumer sentiment

	16q3		16q4	
ULC (y/y) (%)	2.0	(2.4)	1.8	(2.2)
Labour productivity (y/y) (%)	2.3	(1.9)	2.3	(2.2)
Gross wages (y/y) (%)	4.1	(4.4)	3.7	(4.5)
Employment LFS (y/y) (%)	0.2	(1.0)	0.4	(0.5)
Unemployment rate LFS (%)	6.1	(5.7)	5.6	(5.7)
Participation rate (%)	56.2	(56.3)	56.3	(56.4)

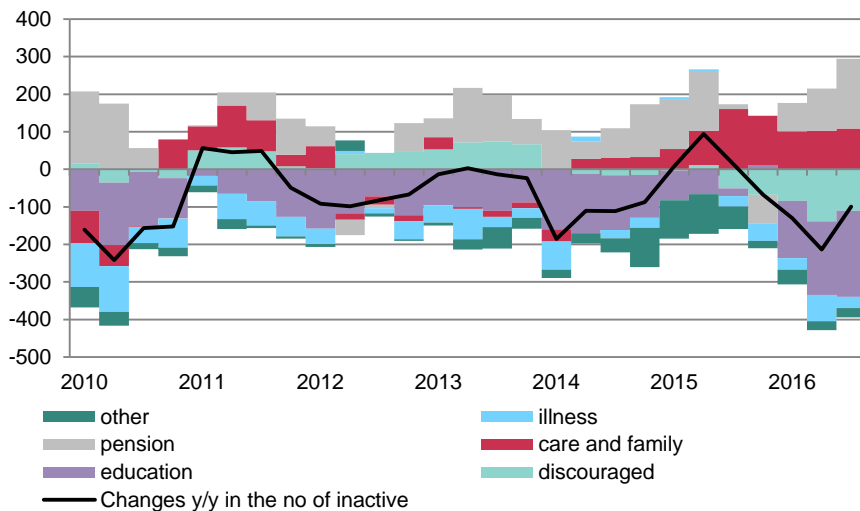
Values from the November projection are given in brackets (seasonally adjusted). Indicators with values higher than in the November projection are marked green, whereas indicators with lower values are marked red.

Source: GUS data, NBP calculations



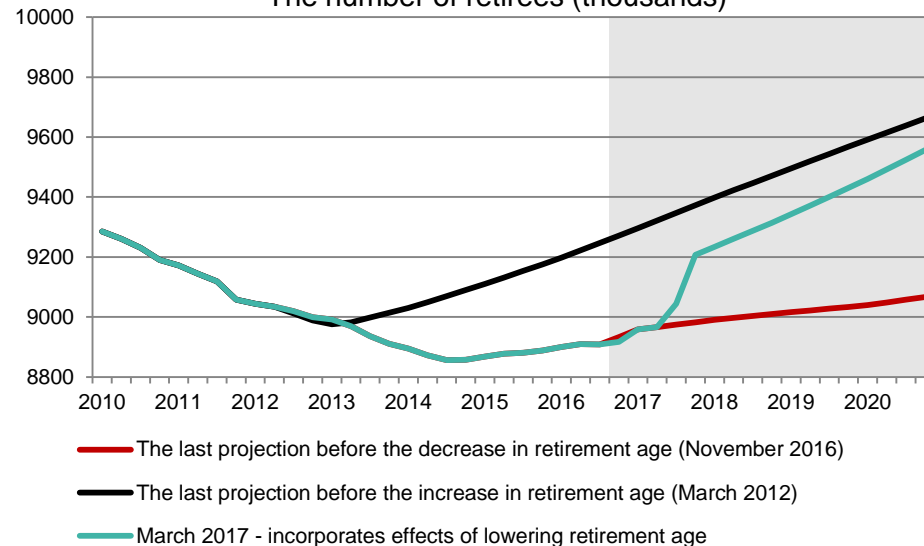
Forecasted decline in labour supply

Changes (y/y) in the number of inactive persons by the reason



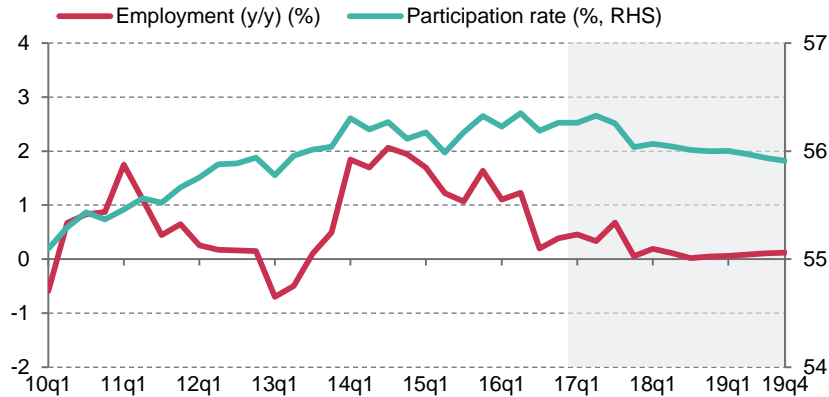
- Although in 2016q3 the number of inactive people stopped falling, it was mainly due to the increased retirement.
- The number of inactive people for the family reason is increasing since 2014, the implementation of „Family 500 plus” programme did not result in any changes.

The number of retirees (thousands)

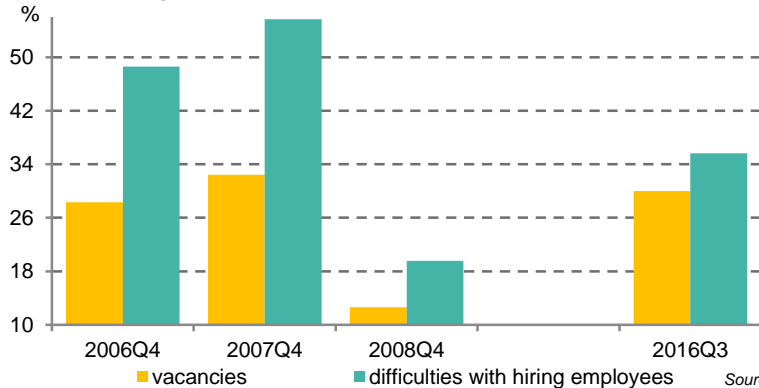


- Lowering of retirement age will probably result in the surge in the number of retirees and slump in the labour participation rate at the end of 2017.
- Lowering of retirement age may also inhibit the labour participation rate of the pre-retirement age group, as some employers may be tempted to reduce the employment of people who are just before being entitled to protection against being dismissed.

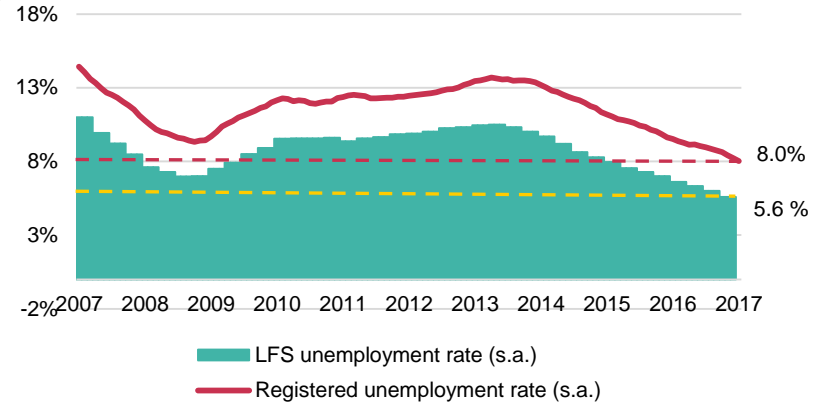
Slowdown in employment growth in the projection horizon



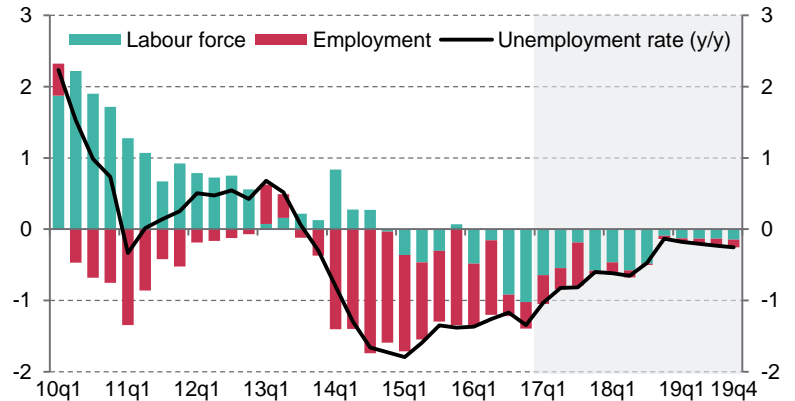
Vacancies and difficulties with hiring employees (percentage of enterprises)



Unemployment rate

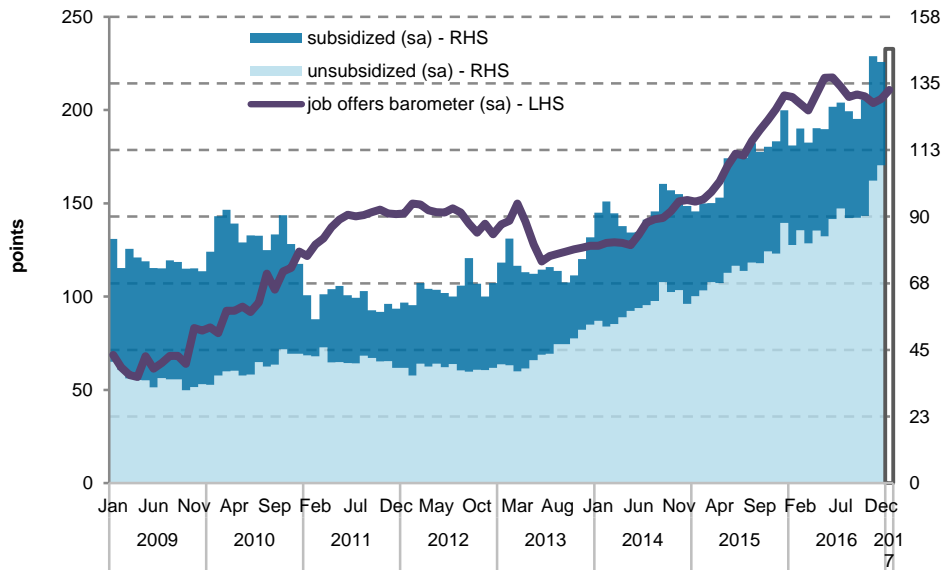


Change in unemployment rate - decomposition

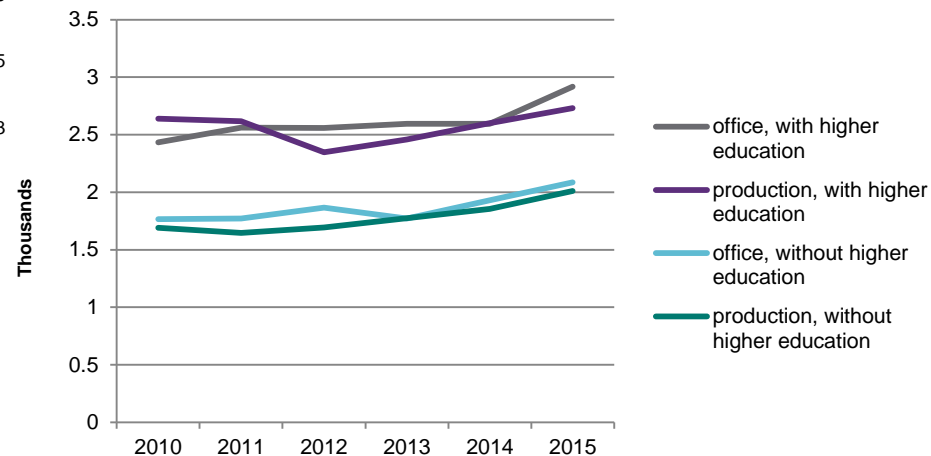


Many vacancies on the labour market, time for finding an employee is prolonging

Vacancies (subsidized and unsubsidized) and the number of job offers in the Internet (job offers barometer) (in thous.)

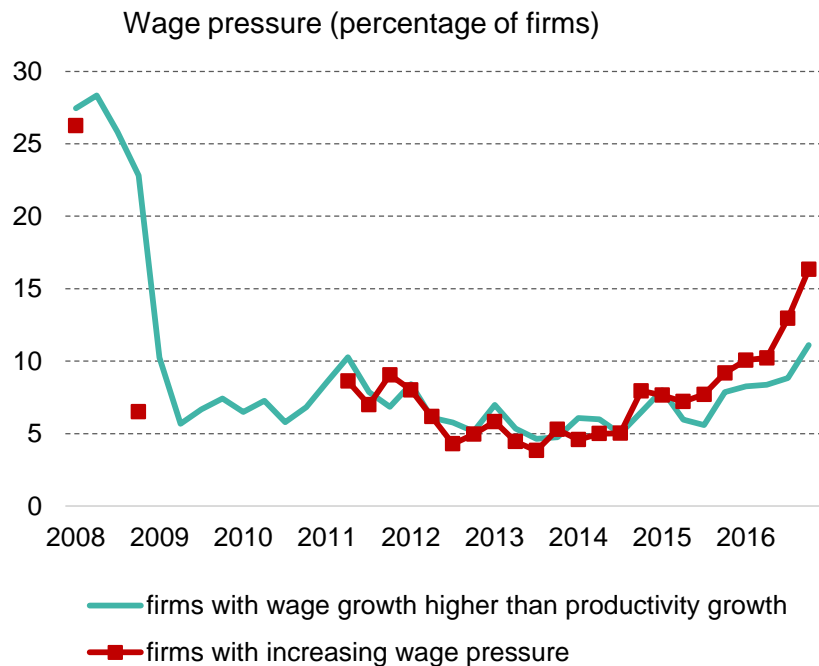


Average time (in months) necessary for finding an employee by qualification

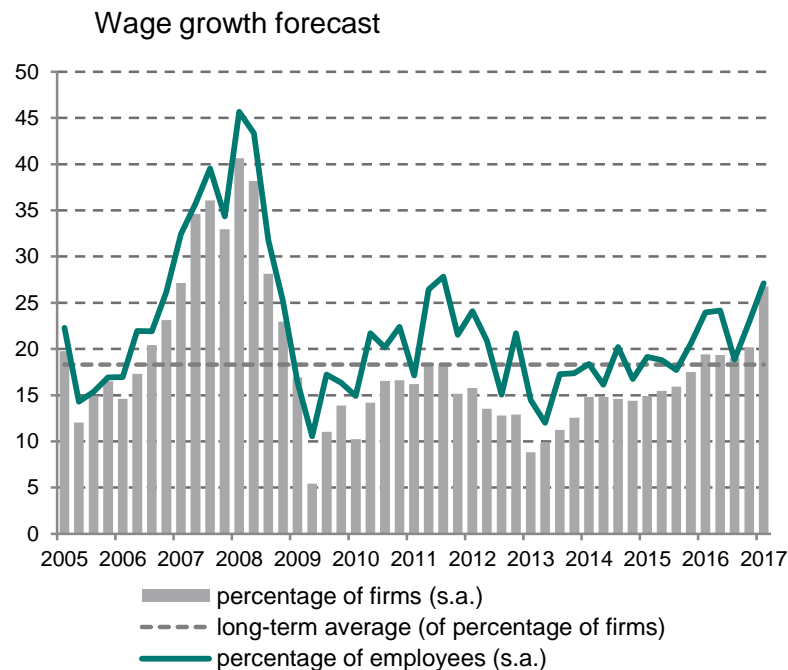


Source: Ministry of Labour and Social Policy data, BIEC, NBP Labour Market Survey

Increasing wage pressure declared by enterprises ...

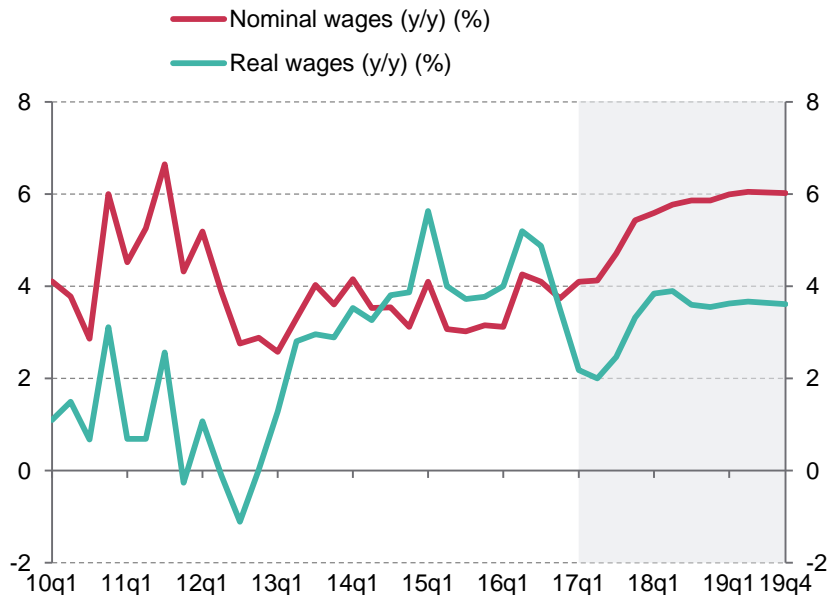


Higher wage pressure is positively correlated with the increasing percentage of firms characterised by wage growth higher than productivity growth.

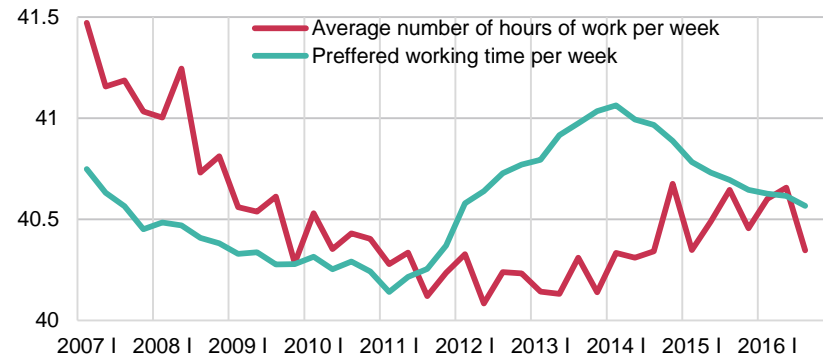


According to the survey of enterprises, wage growth forecast is the highest since 2011, when it exceeded 6% y/y.

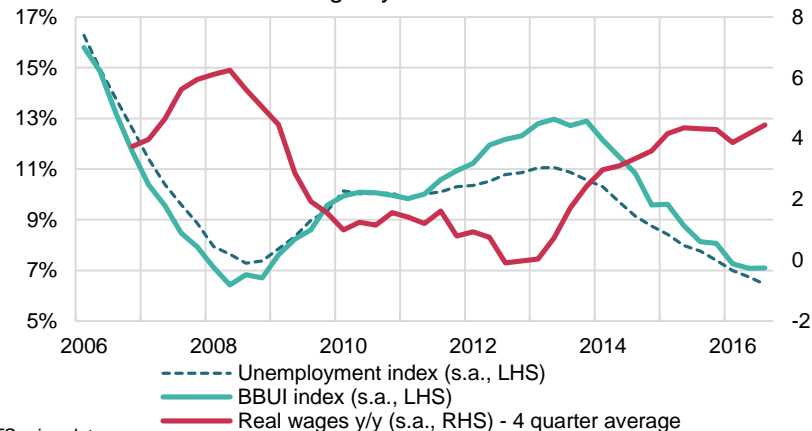
... lead to higher wage dynamics



Preferred vs actual number of hours worked per week (s.a.)



Inverse relation between BBUI index and wage dynamics



Source: GUS data, NBP calculations, LFS microdata

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Changes between rounds

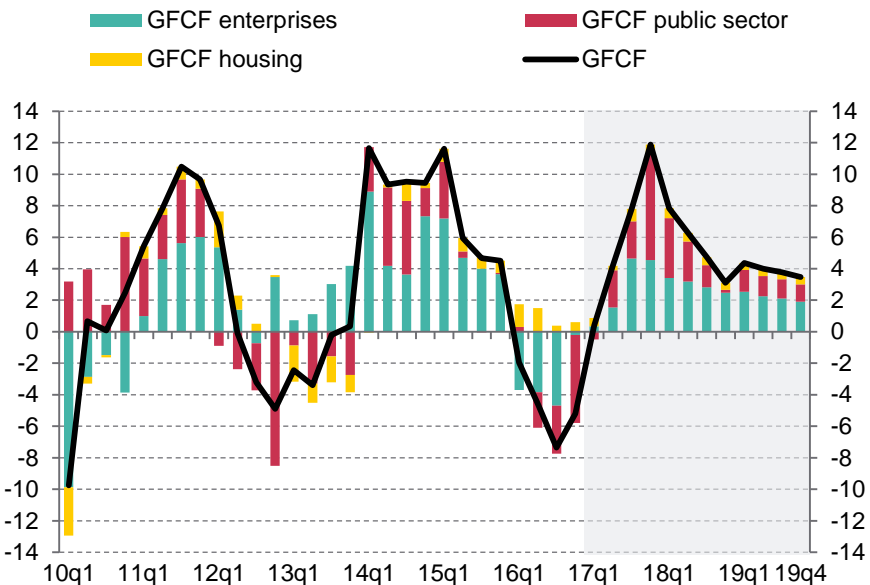
Projection 2017 – 2019

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Uncertainty

Investment demand

Increase in investment from 2017



Private investment:

- ↑ Increasing use of funds from 2014-2020 EU financial perspective
- ↑ Good financial condition of enterprises
- ↑ Low interest rates
- ↑ Increase in the share of firms which are planning investment

Public investment:

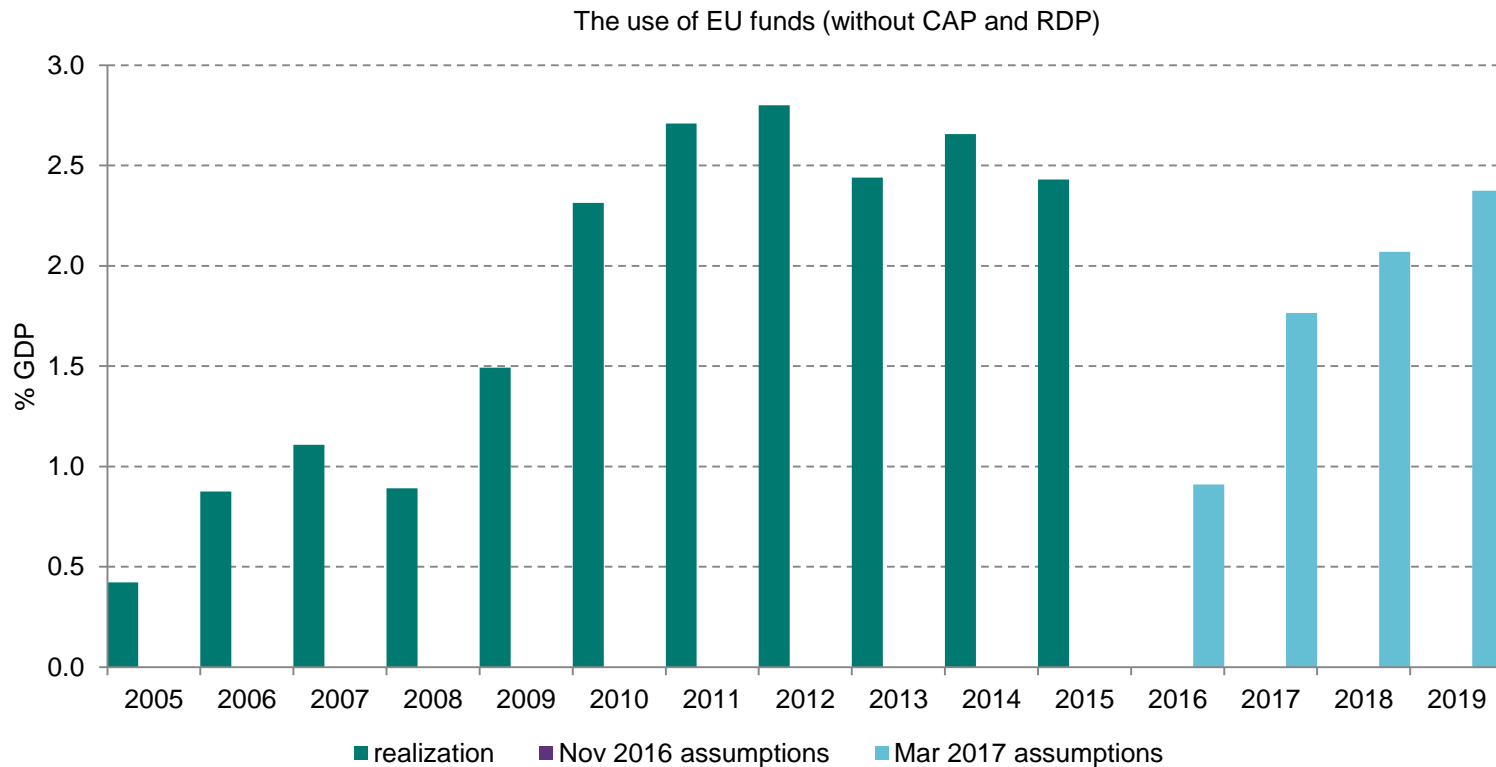
- ↑ Increasing use of funds from 2014-2020 financial perspective

Housing investment :

- ↑ Good labour market conditions
- ↑ Low interest rates
- ↓ In 2017 further tightening of credit conditions (Recommendation S)

y/y, %	2016	2017	2018	2019
Gross fixed capital formation	-5.5	6.0	5.4	3.9

Lower investment dynamics in 2016 due to temporary decline in the use of EU funds

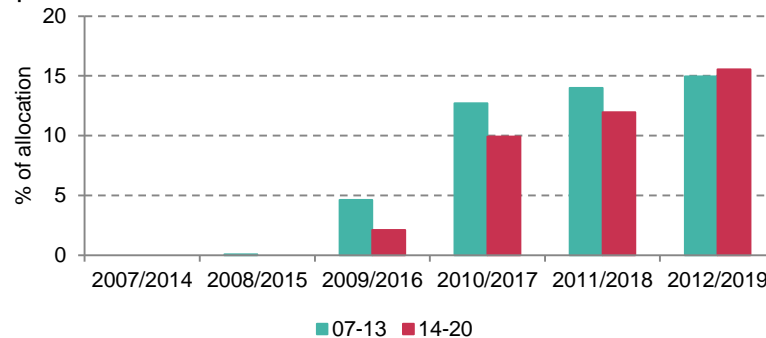
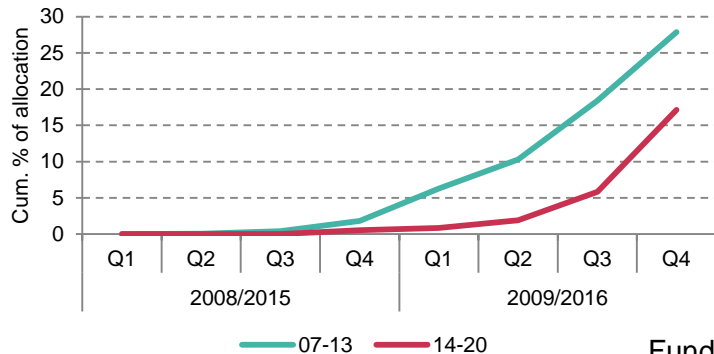


Growing number of agreements signed for the use of EU funds justifies the expected improvement in the absorption rate in 2017

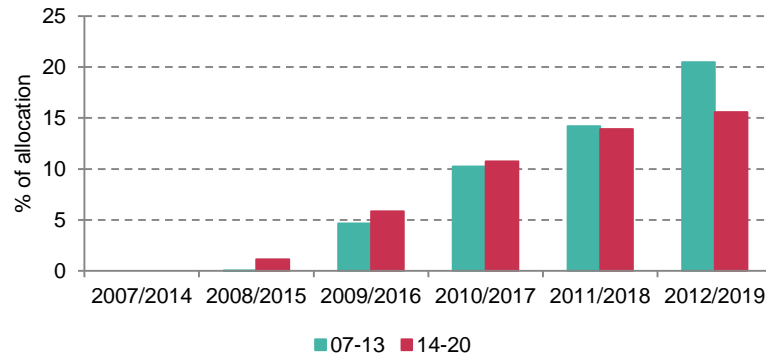
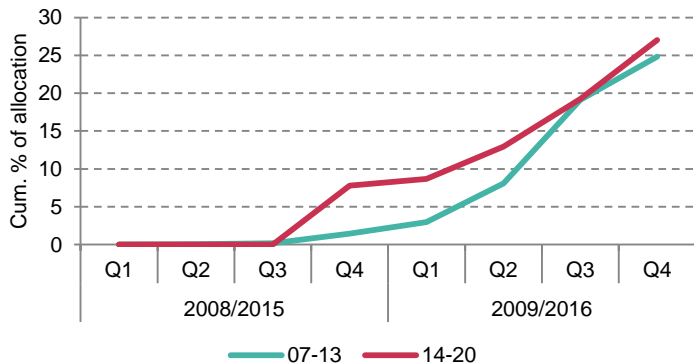
The stage of signing contracts

The stage of the use of funds

Funds for enterprises

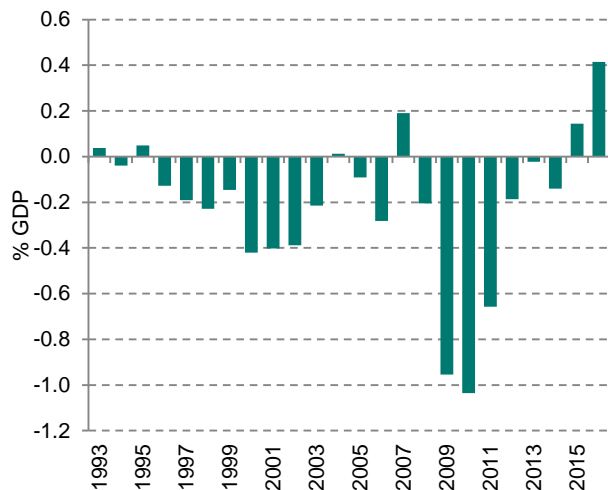


Funds for public investment

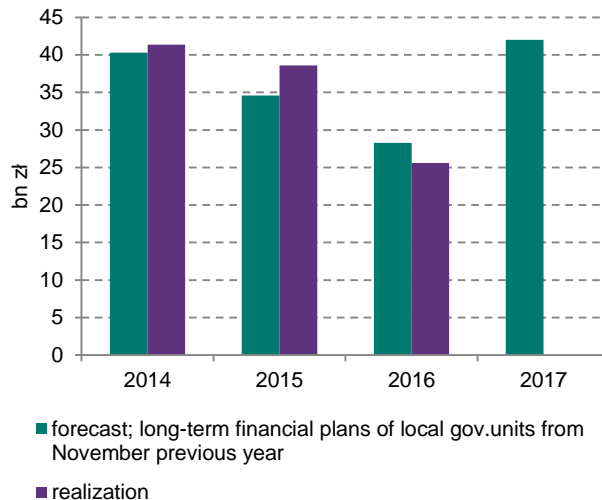


In particular, higher investment growth in local government units

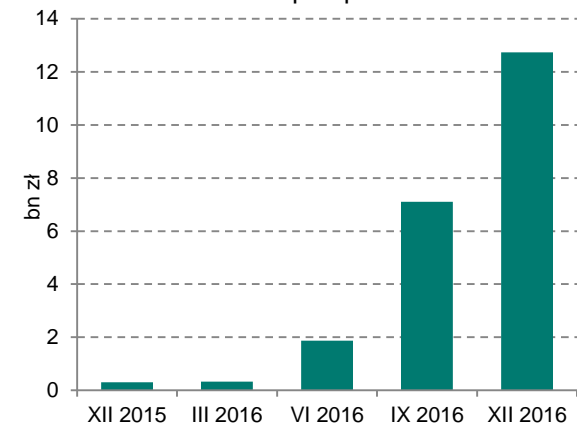
Balance of local government units



Forecast of capital expenditure of local government units

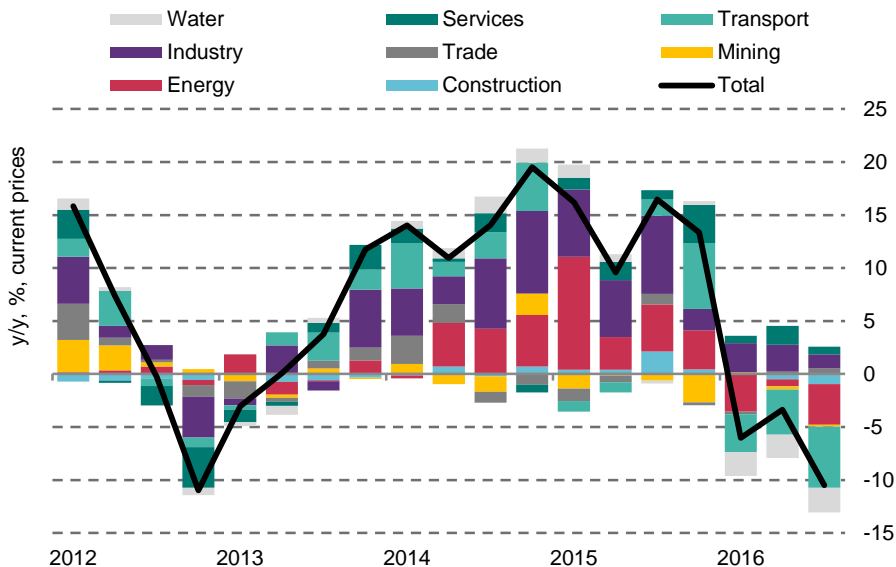


Value of agreements signed by local government units for the implementation of projects co-financed with the use of EU funds from 14-20 financial perspective

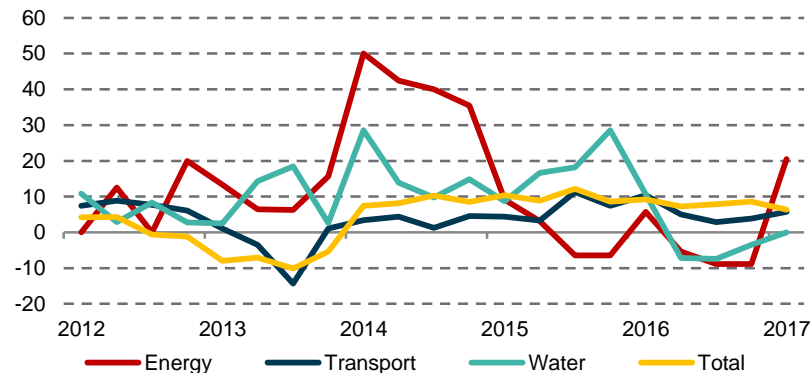


In 2017 planned investment increase in energy and transport sector

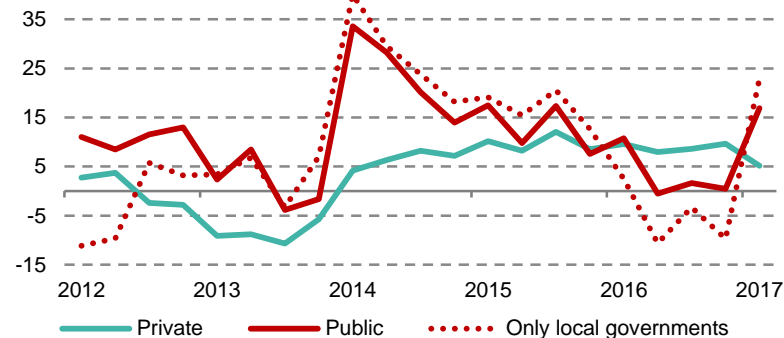
The contribution of sectors in the growth rate of investment



Planned changes in investment outlays within the current year y/y in selected sectors (balance of changes, %)



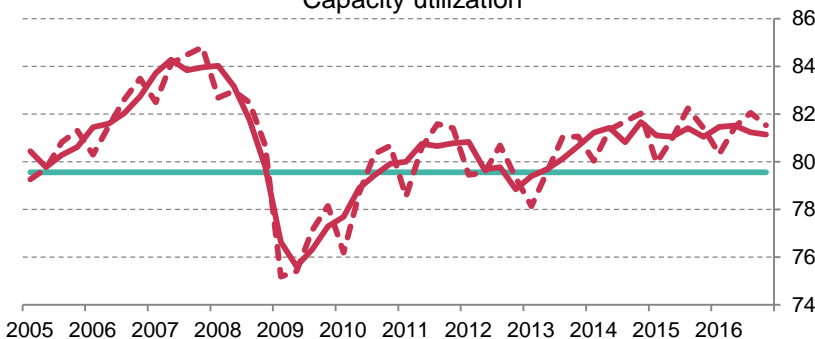
Planned changes in investment outlays within the current year y/y by ownership (balance of changes,%)



Source: F01, NBP calculations, Quick Monitoring NBP

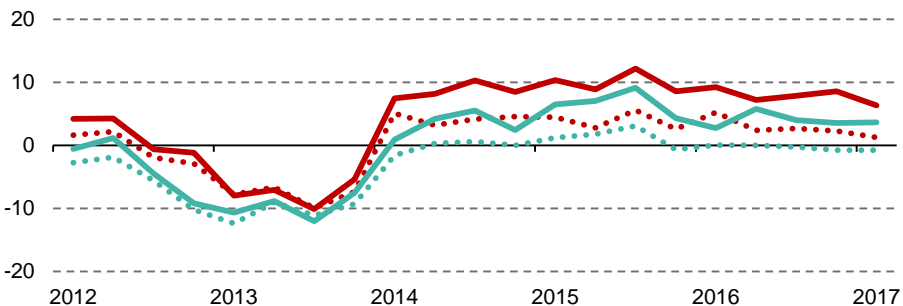
Survey among enterprises point to the expected demand growth

Capacity utilization



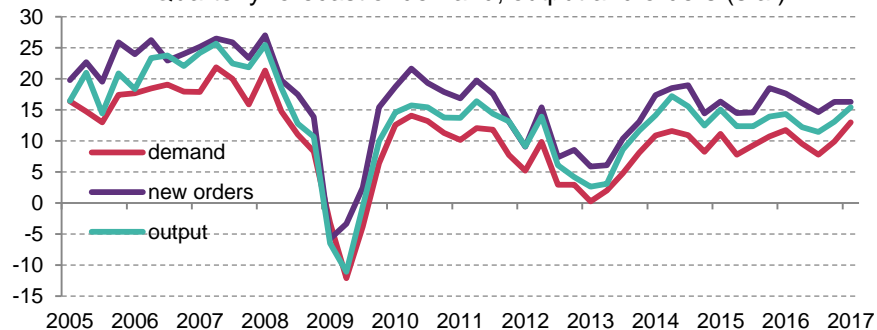
— mean values - - - indicator — indicator s.a.

Planned changes in investment outlays within a quarter and in the current year

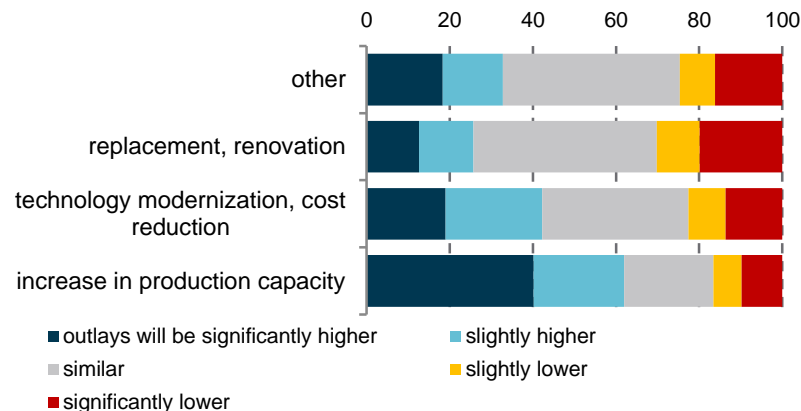


— annual plans annual plans (major change balance)
 — quarterly plans quarterly plans (major change balance)

Quarterly forecast of demand, output and orders (s.a.)



Main purpose of new investment and its planned dynamics



Source: Quick Monitoring NBP

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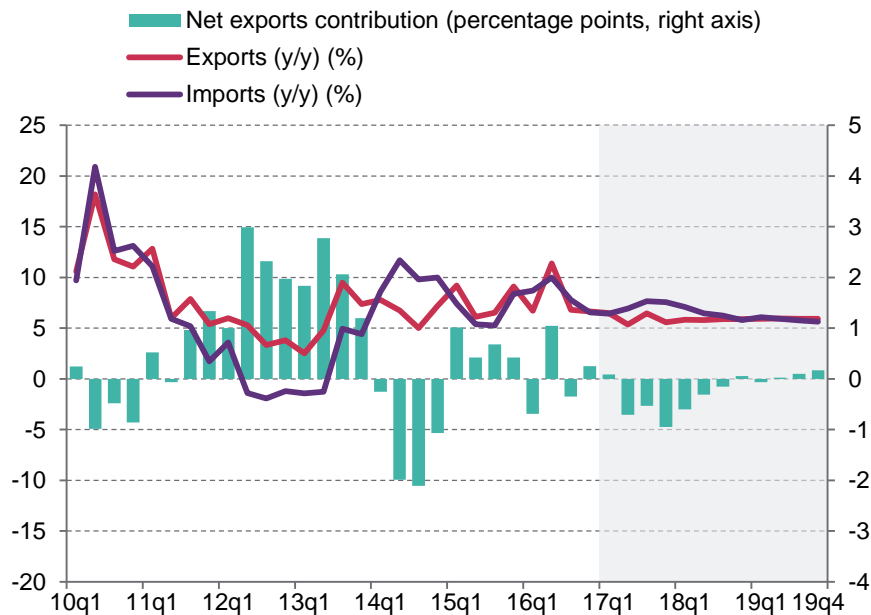
Projection 2017 – 2019

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Foreign trade

Net exports contribution to growth will limit GDP dynamics in 2017-2018



Exports:

- ⇩ Unfavourable outlook for global trade
- ⇩ Appreciation of the zloty exchange rate

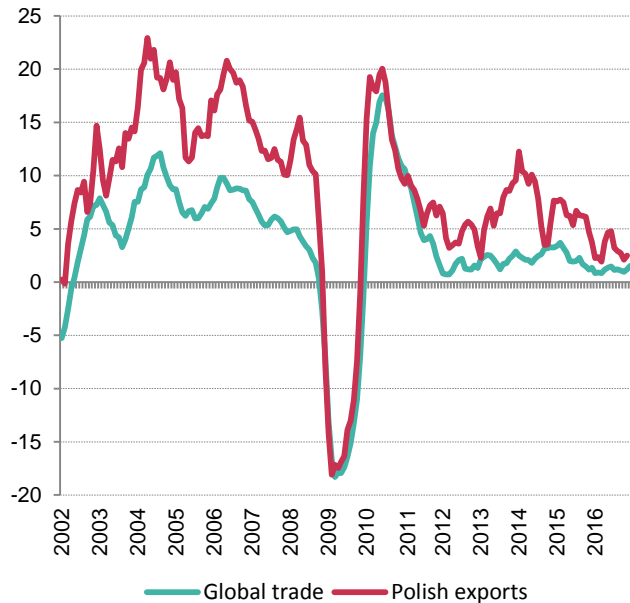
Imports:

- ⇧ In 2017 acceleration of consumption and investment dynamics
- ⇩ From 2018 slower domestic demand growth

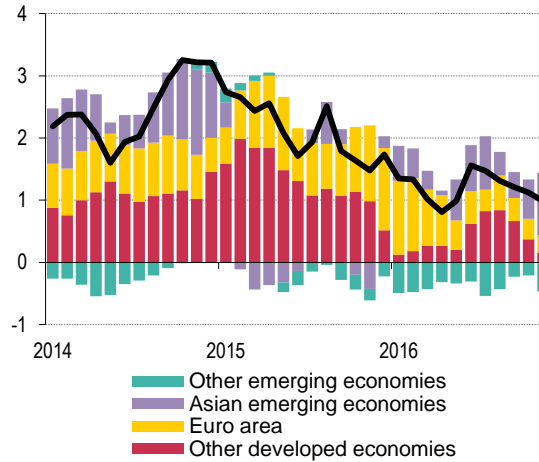
y/y p.p.	2016	2017	2018	2019
Net exports contribution	0.1	-0.5	-0.2	0.1

Maintaining high exports growth will be difficult to achieve in the coming years

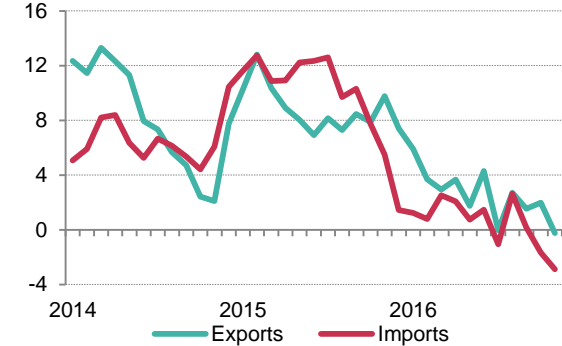
Changes in global trade and Polish exports in 2002-2016 (% y/y)



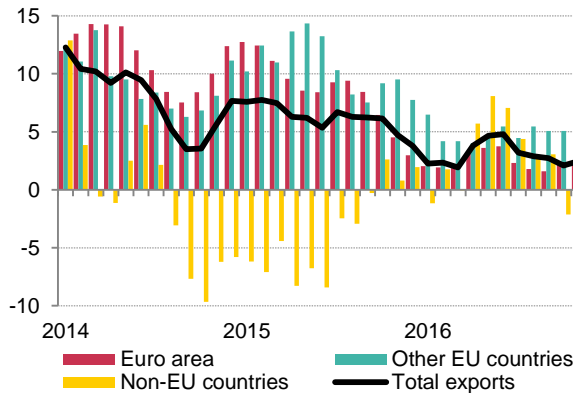
Global imports of goods dynamics (% y/y, 3M)



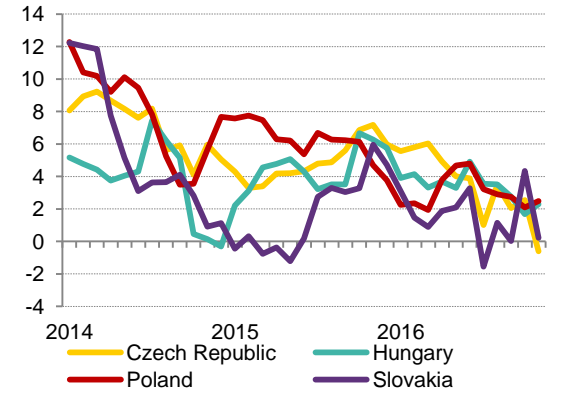
Changes in Polish exports and imports to and from the euro area in the subgroup of machinery and transport equipment (sitc 7, % y/y)



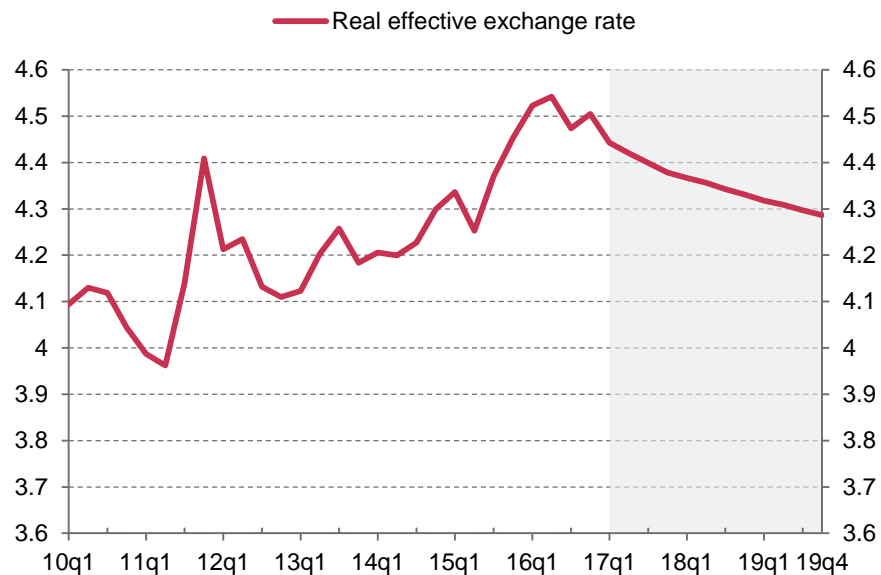
Changes in Polish exports by main groups of countries (%; y/y)



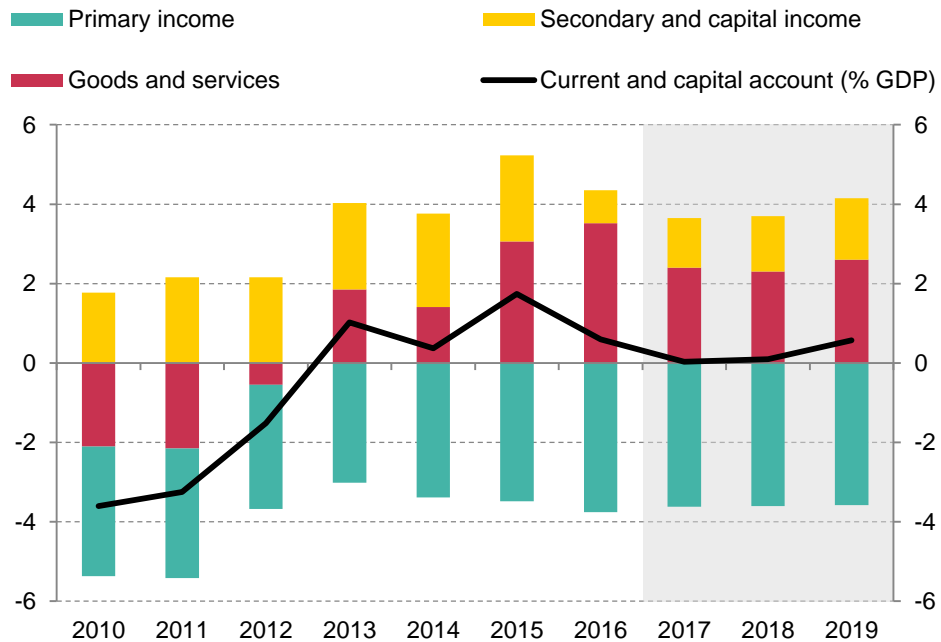
Changes in the total exports of Visegrad countries (%; y/y)



The gradual appreciation of the zloty, bringing the effective exchange rate to the equilibrium exchange rate



Slight decrease of current and capital account balance in 2017-2019



Outline:

Changes between rounds

Projection 2017 – 2019

- External environment
- Consumption demand
- Investment demand
- Foreign trade
- Inflation

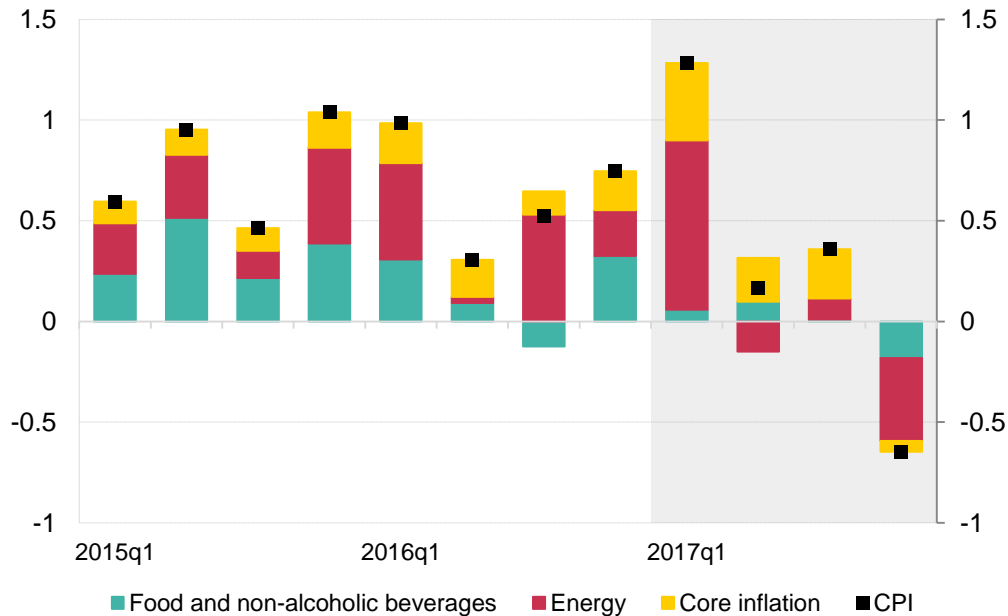
Uncertainty

Inflation

Inflation growth rate at the turn of 2016/2017 under the base effect

y/y, %	16q4	
CPI inflation	0.2	(-0.1)
Core inflation	-0.1	(-0.2)
Food prices inflation	1.3	(0.9)
Energy prices inflation	-0.2	(-0.9)

Base effect – the influence on CPI

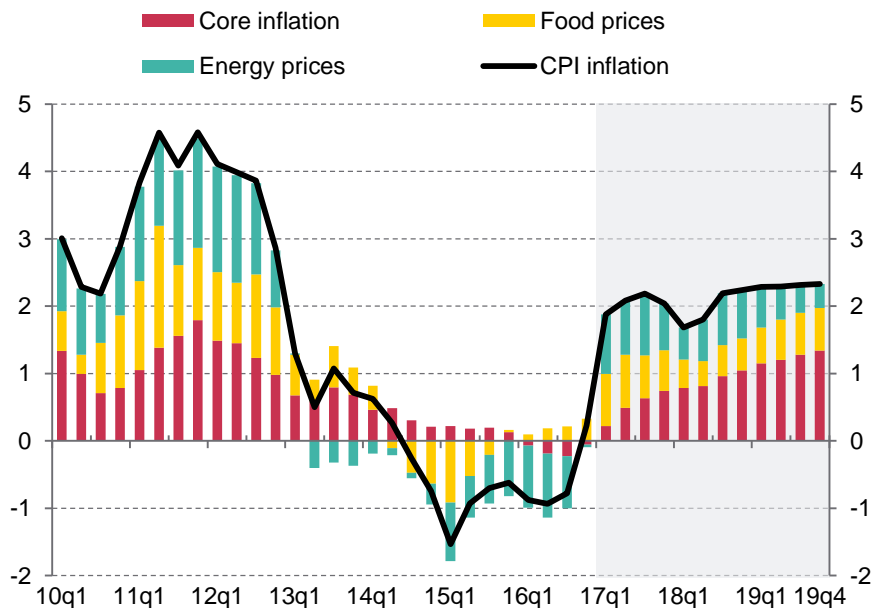


Values from the November projection are given in brackets (seasonally adjusted).

Indicators with values higher than in the November projection are marked green, whereas indicators with lower values are marked red.

Source: GUS data, NBP calculations

Consumer prices dynamics within the range of inflation target



Slight increase in demand pressure

↑ Slightly positive output gap

Increase in cost pressure:

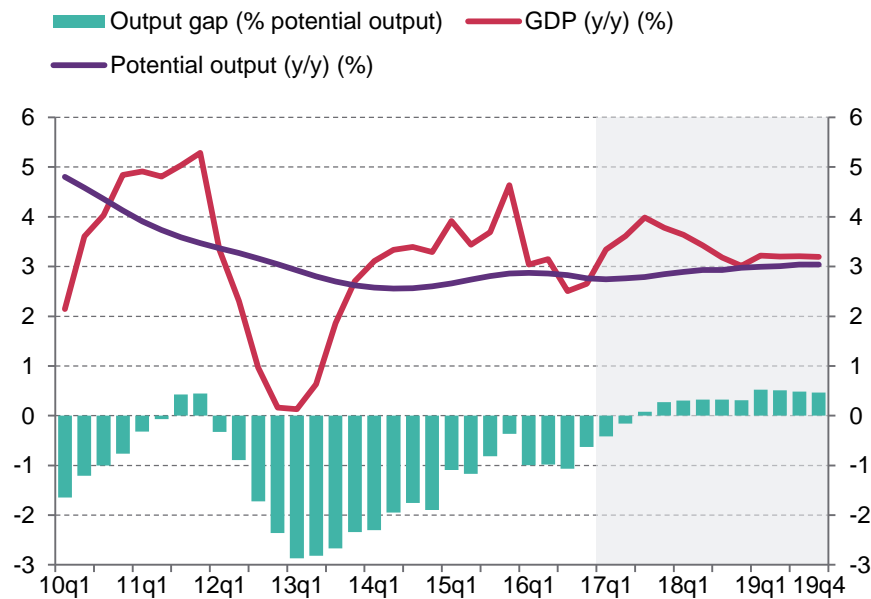
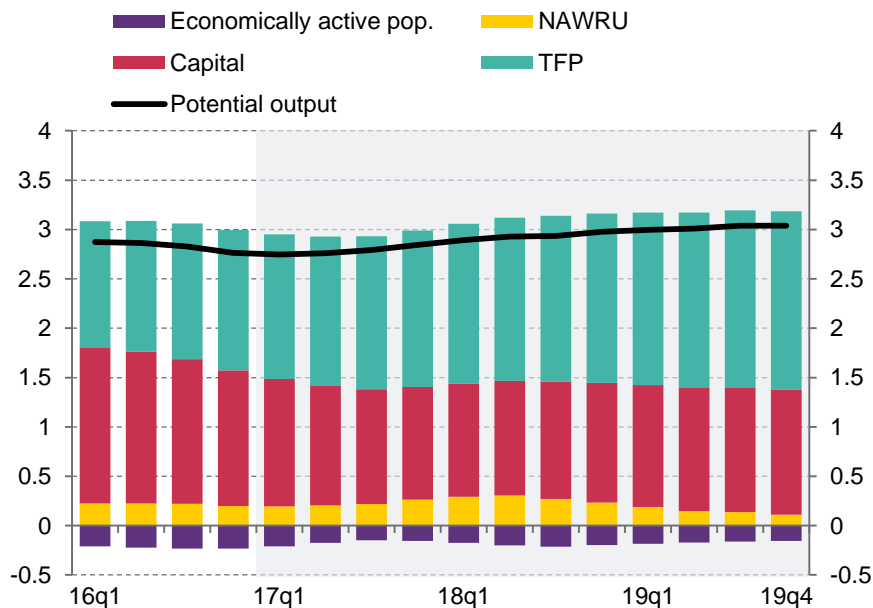
↑ Dynamics of unit labour costs close to the long-term average

↑ Growth in levels of commodity prices

↑ Increase in import prices' dynamics in the short projection horizon

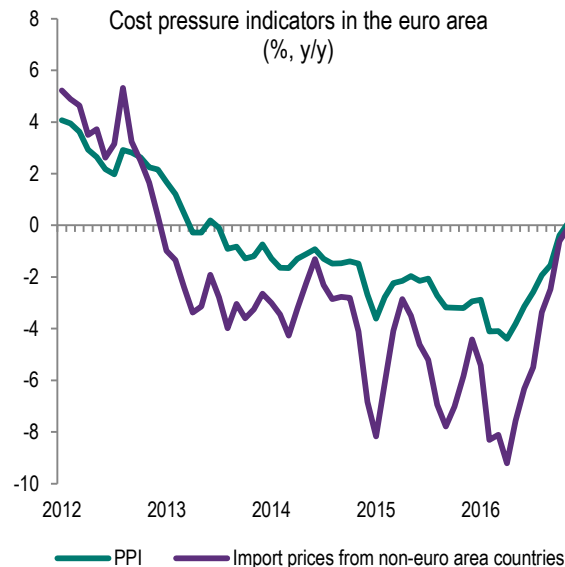
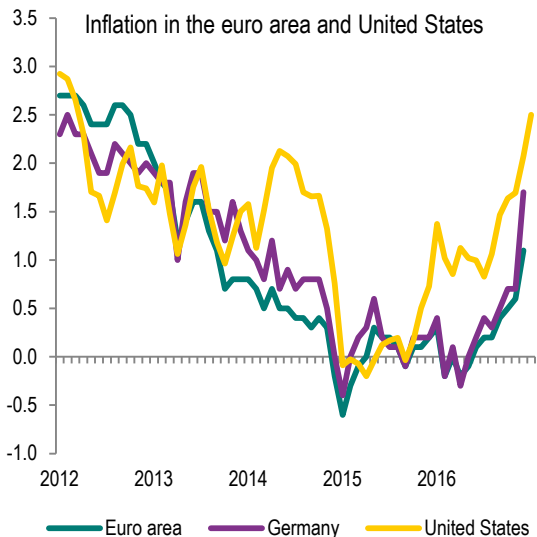
y/y, %	2016	2017	2018	2019
CPI inflation	-0.6	2.0	2.0	2.3

Slightly positive output gap



In the short term, inflation in the immediate environment of the Polish economy will rise on the back of the increase in commodity prices

- Fast increase in current inflation reflects the movement of energy commodity prices.
- Higher commodity prices lead to growing cost pressure in the euro area and short-term inflation expectations of firms and consumers.



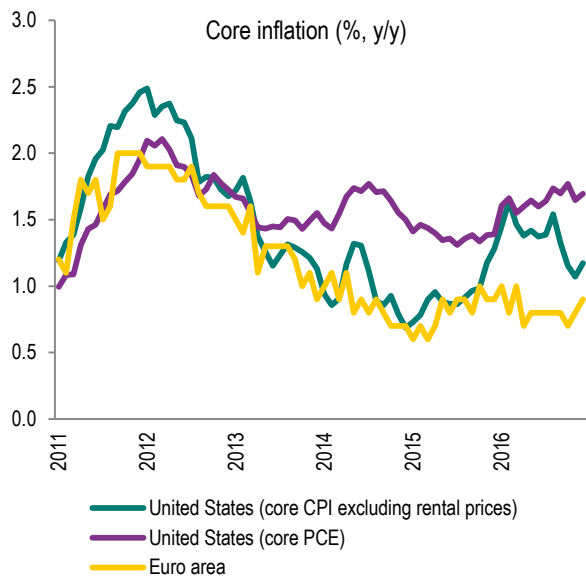
Inflation forecasts of European Commission, February 2017

	2016	2017 F	2018 F
Euro area	0.2 (0.3)	1.7 (1.4)	1.4 (1.4)
Germany	0.4 (0.4)	1.9 (1.5)	1.5 (1.5)
US	1.3 (1.2)	2.4 (2.0)	2.5 (2.1)

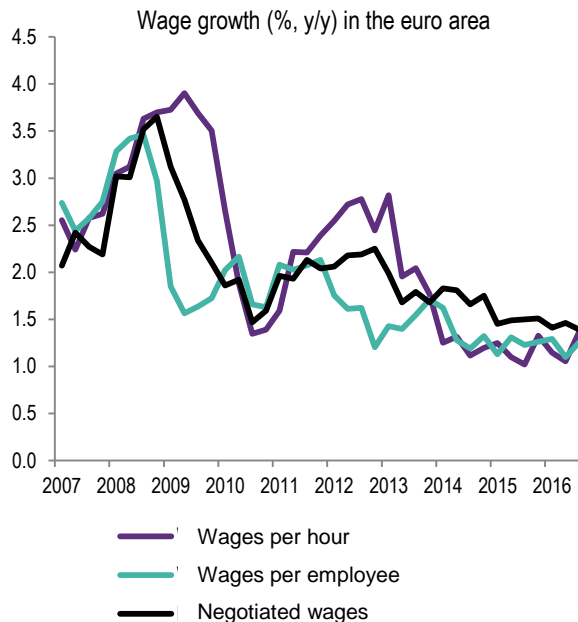
Values from the autumn forecasting round are given in brackets.
F - forecast

The medium-term inflationary pressure in the immediate environment of the Polish economy will rise gradually, although it will remain relatively low.

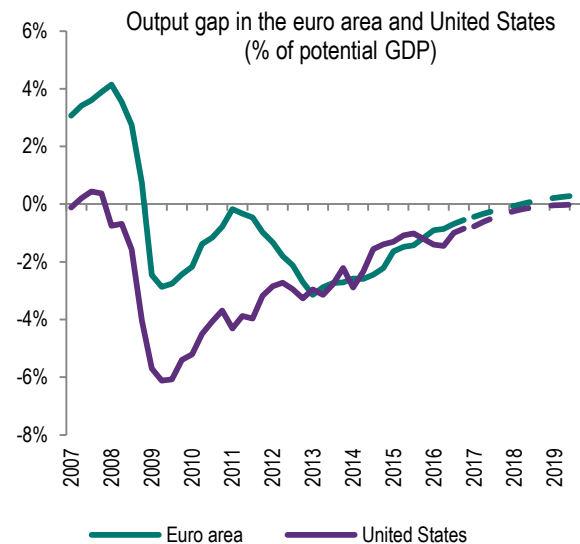
- Core inflation remain moderate (core CPI inflation in US is pushed up by rising rental prices)
- In the euro area wage pressure remains low, constrained by the growing participation rate.
- Within a projection horizon, output gap in the euro area and United States will close, however it will remain low.



Source: Eurostat, BEA, BLS

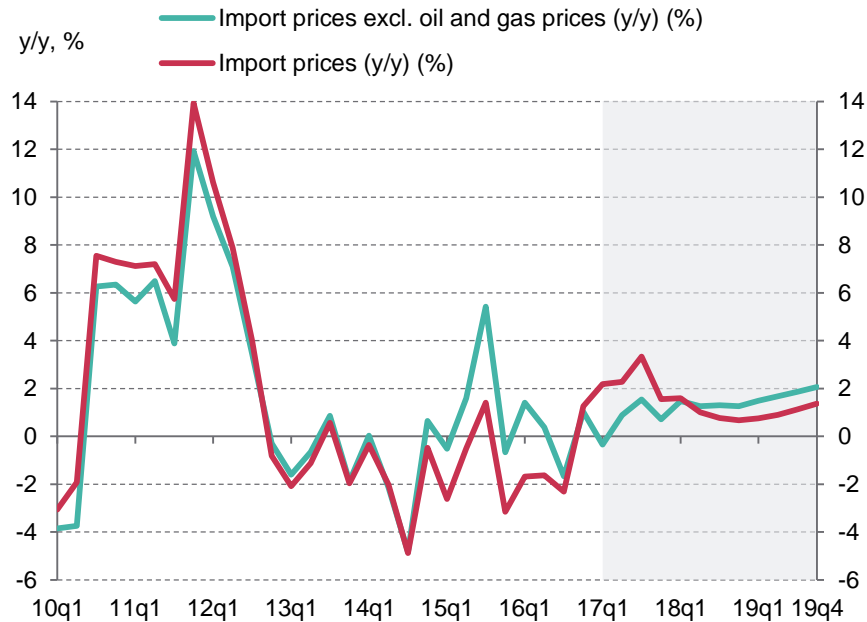
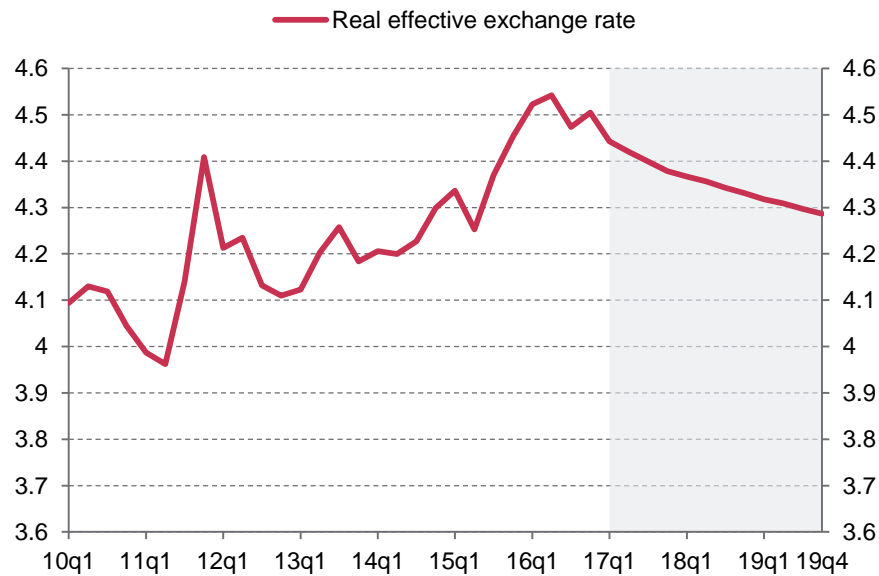


Source: AMECO, Eurostat, ECB



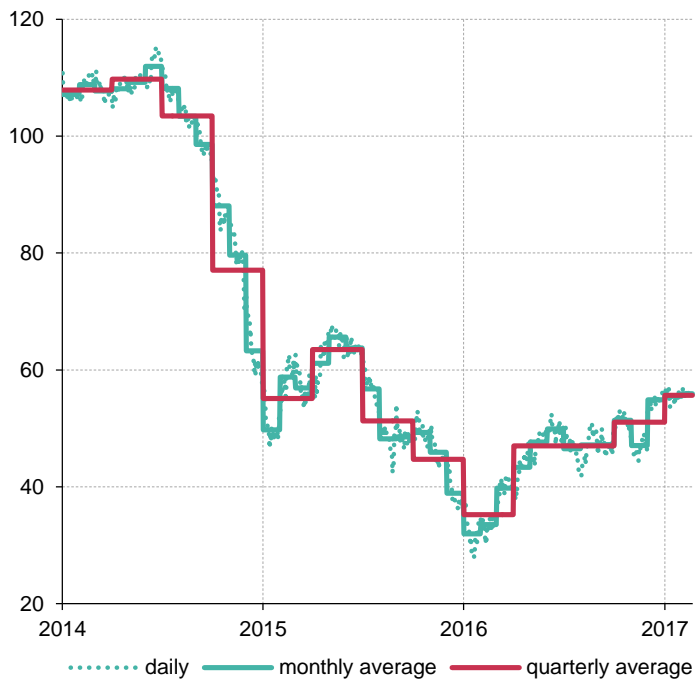
Source: GDP forecasts - IE NBP, output gap forecasts - CBO, IMF

Low inflation in the euro area and appreciating exchange rate constrain domestic import prices

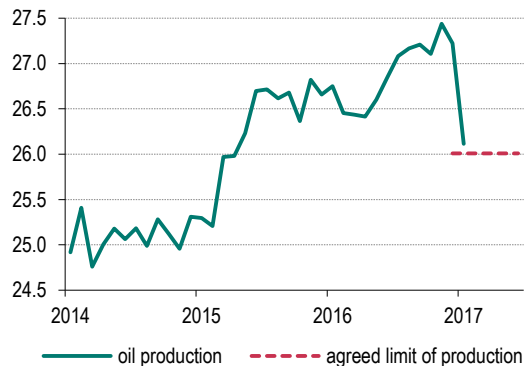


Expected stabilization of oil prices

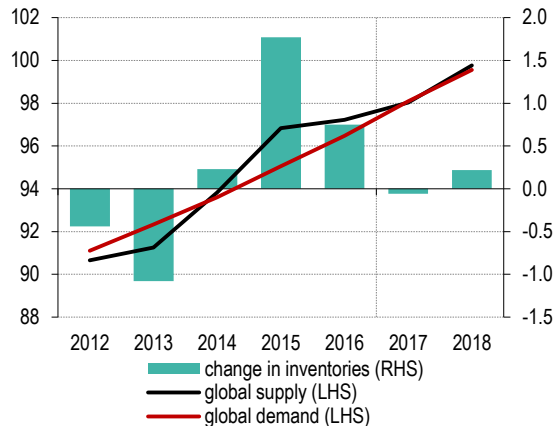
Brent oil prices (USD/b)



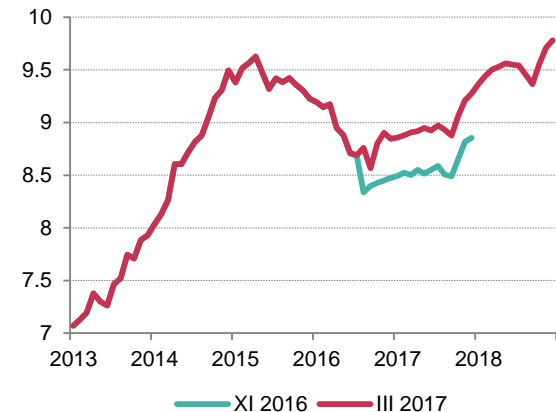
Oil extraction in the OPEC countries covered by the production restrictions (mln b/d)



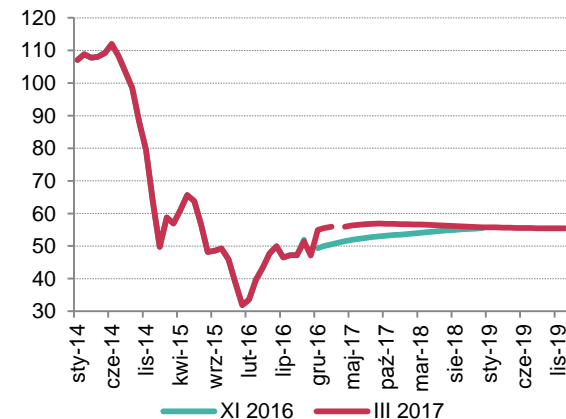
Global production, consumption and changes in inventories of crude oil (mln b/d)



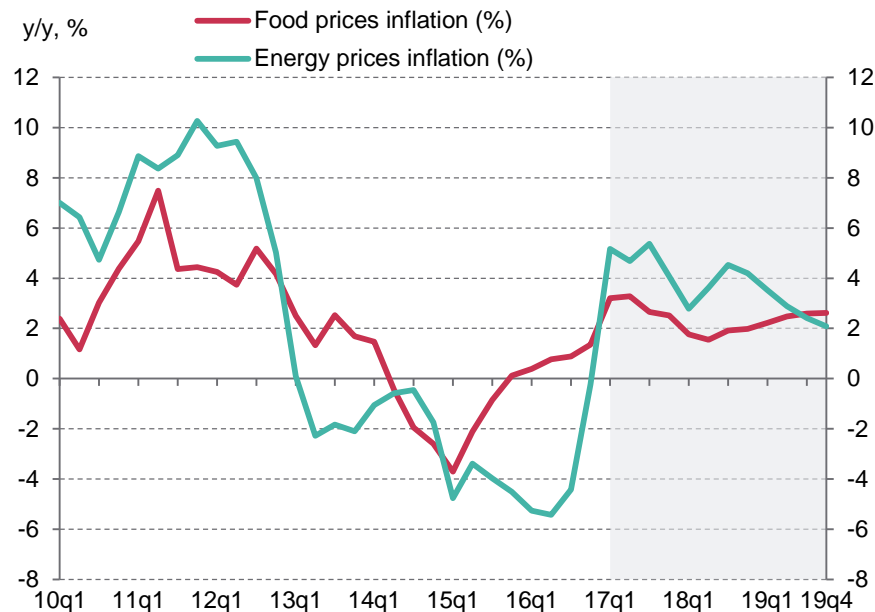
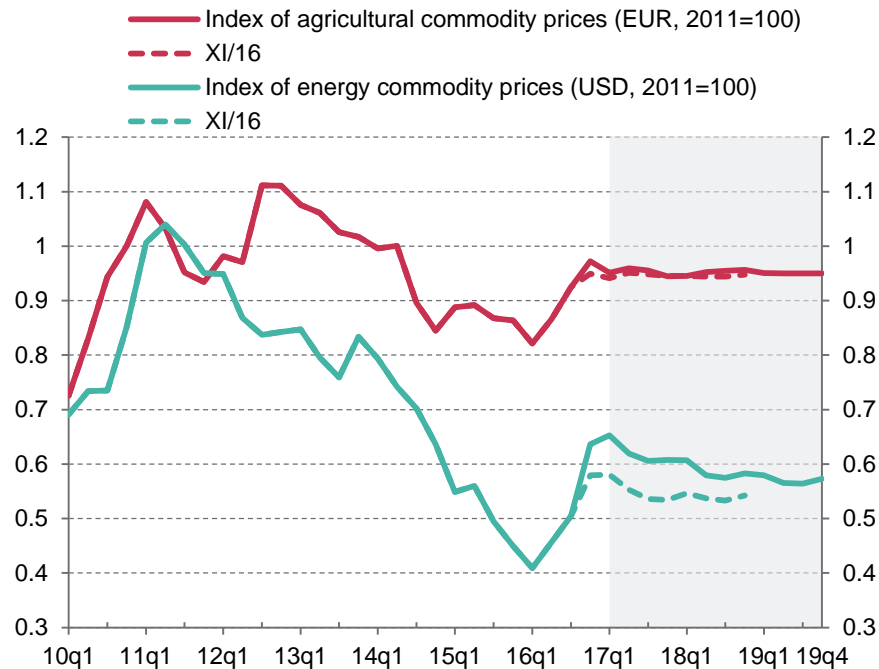
Forecast of oil production in the United States (mln b/d)



Current vs previous forecast



Energy commodity prices after a hike in the short term will gradually lower



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- Inflation

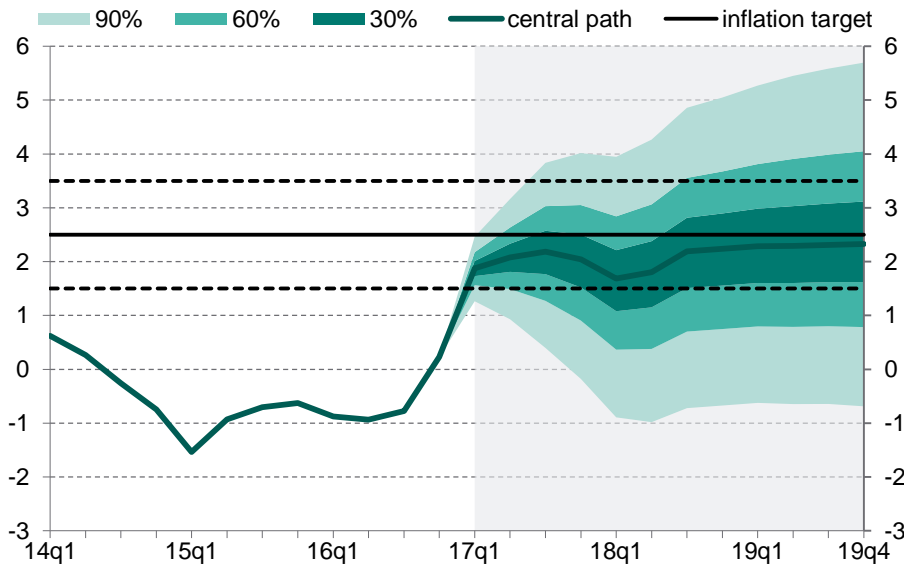
Uncertainty

Uncertainty

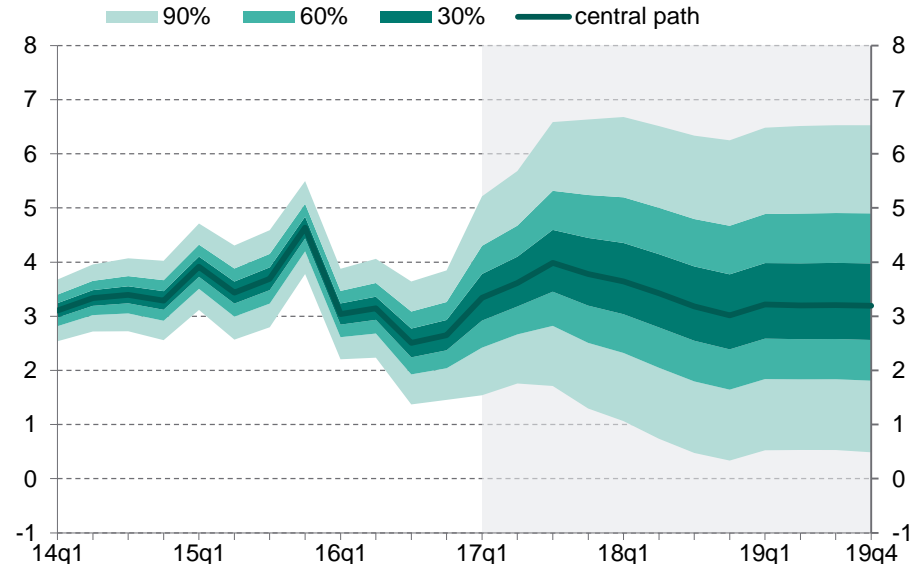
- Risk factors
- Fan charts

Risk area	Description	Impact	Scale of impact
Improvement in global economic conditions	<ul style="list-style-type: none"> ▪ Higher economic growth in US (positive effect of fiscal stimulus, higher consumption dynamics due to households deleveraging process which is almost coming to the end). ▪ Higher economic growth in the euro area (higher dynamics of investment in plant and machinery, deeper weakening of the euro against the dollar, more pronounced fiscal easing). 	Inflation ↑ GDP ↑	**
Deterioration of global growth outlook	<ul style="list-style-type: none"> ▪ Economic slowdown in China (stability of the financial system, weaker-than-expected impact of the government's expansionary measures, uncontrolled bursting of the speculative bubble in the Chinese housing market). ▪ Decline in the US economy (more pronounced slowdown in China, stronger dollar exchange rate, diminishing mining sector activity). ▪ Weakening of growth in the euro area (uncertainty concerning Brexit agreement, impact of low profitability of European banks on the limited lending). 	Inflation ↓ GDP ↓	**
Crude oil prices in the global markets	<ul style="list-style-type: none"> ▪ Fluctuations in the oil supply in the global markets: <ul style="list-style-type: none"> - unknown shape of OPEC's supply policy after the 2017Q2, eg. the moment when the agreement on the reduction of oil output terminates, - the scale of the future growth of the number of drilling sites and oil output in the United States. ▪ Global growth outlook, especially in the emerging Asian countries. 	Inflation ⇔ GDP ⇔	*
Conclusions		Inflation ⇔ GDP ⇔	

CPI inflation y/y, %



GDP y/y, %



CPI y/y, %	below 1.5%	below 2.5%	below 3.5%	below centr. path	in the range 1.5-3.5%
2017	24%	76%	99%	52%	75%
2018	40%	66%	87%	52%	47%
2019	30%	52%	74%	48%	44%

CPI y/y, %	central path	50% probability interval	
2017	2.0	1.6	2.5
2018	2.0	0.9	2.9
2019	2.3	1.2	3.5

GDP y/y, %	central path	50% probability interval	
2017	3.7	3.4	4.0
2018	3.3	2.4	4.5
2019	3.2	2.3	4.4

We protect the value of money