



**NBP**

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Narodowy Bank Polski

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Economic Institute

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# **Inflation projection of the National Bank of Poland based on the NECMOD model**

Warsaw / 10 March 2014



Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Outline

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1 Changes between projection rounds

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2 Projection 2014 – 2016

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3 Uncertainty

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Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Changes between projection rounds

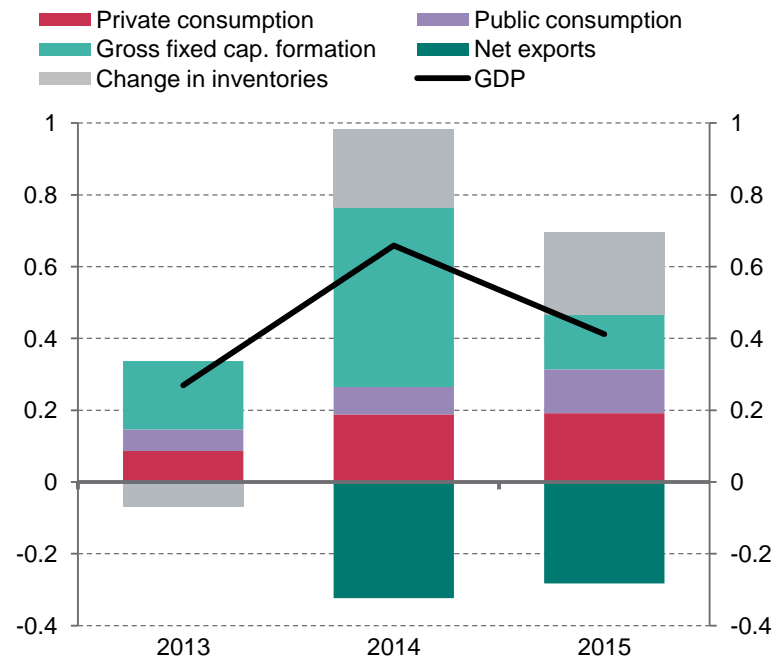
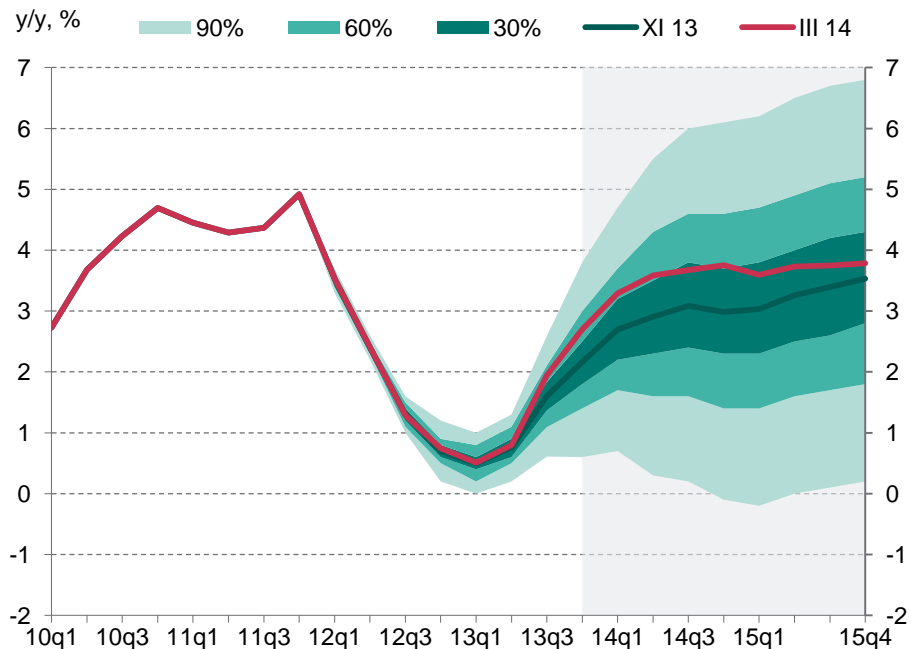
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- Changes in the projection assumptions
- March projection compared to November projection

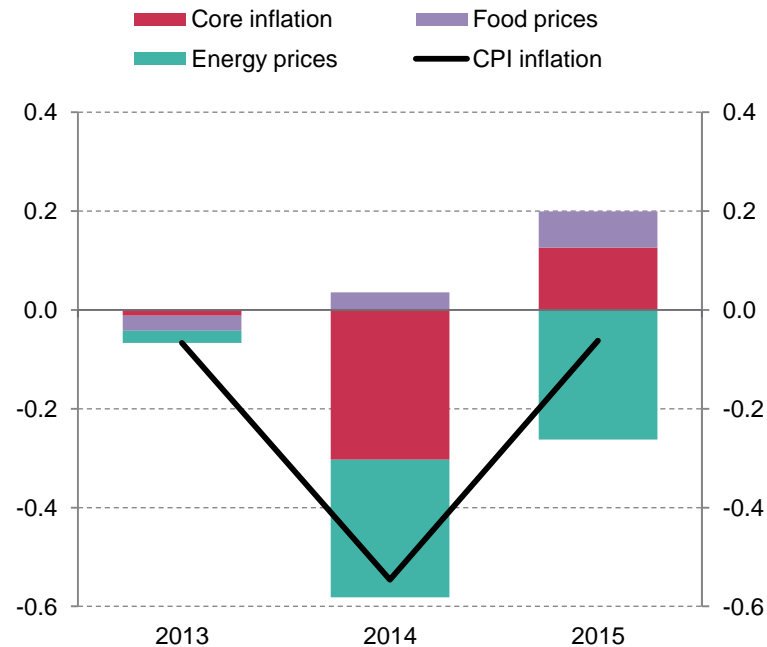
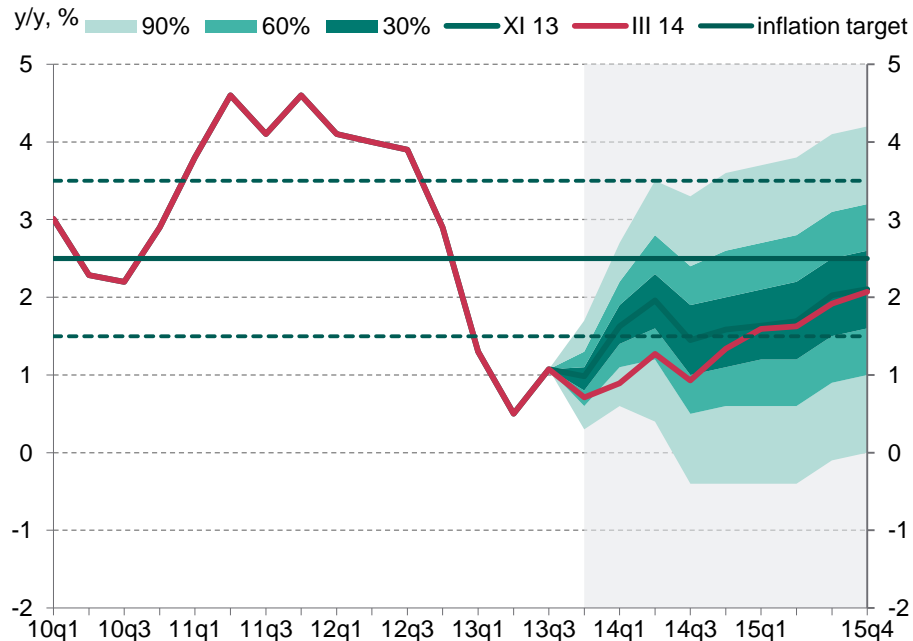
## Changes in the projection assumptions

- External environment:
  - forecasts of GDP growth abroad revised upwards,
  - lower energy and – to a lesser extent – agricultural commodity prices.
- Better than expected data on National Accounts in 2013 H2.
- Better than expected LFS data on employment in 2013 Q3.
- Stronger zloty exchange rate in 2013 Q4 and the beginning of 2014.
- Higher than expected drop in electricity prices as a result of new tariffs for households approved by the Energy Regulatory Office in December 2013.

# March GDP projection compared do November projection



# March CPI projection compared to November projection



Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Projection 2014-2016

- Projection scenario
- Economic conditions abroad
- Aggregate demand
- Inflation

## Projection scenario – assumptions

- Further improvement in economic conditions abroad
- Relatively stable commodity prices
- End of the fiscal consolidation in the medium term
- Overlap in the utilization of funds from the current (2007-2013) and the new (2014-2020) financial framework in 2014-2015
- Further increase in GDP growth to below pre-crisis long-term average and closing of the output gap in mid-2015
- Stable zloty exchange rate
- Gradual, moderate increase in inflation of all main CPI components resulting in CPI inflation reaching NBP target in 2016 H1



Outline:

Changes between rounds

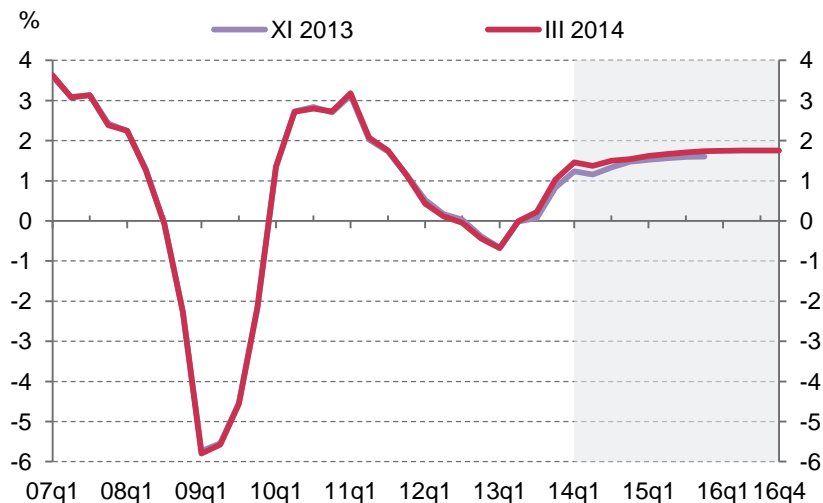
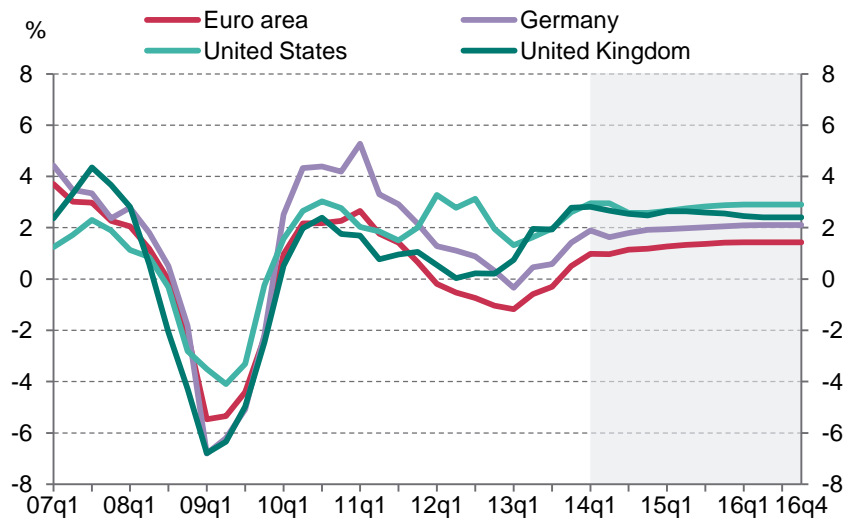
Projection 2014 - 2016

Uncertainty

## **Economic conditions abroad**

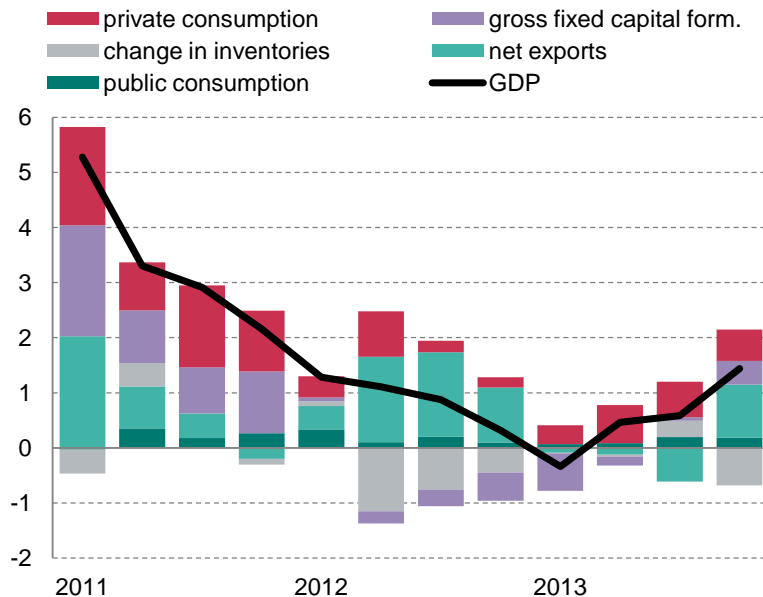
# GDP growth abroad

(slightly higher)

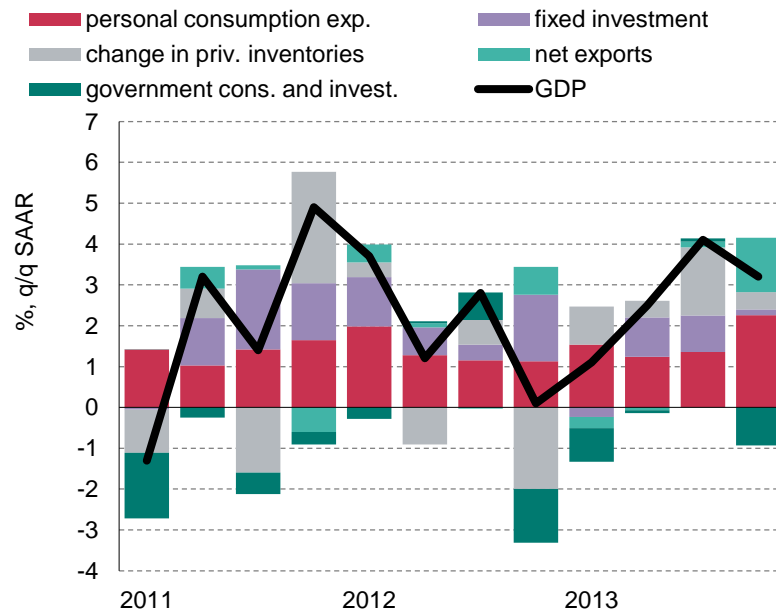


# GDP decomposition

Germany (% , y/y)



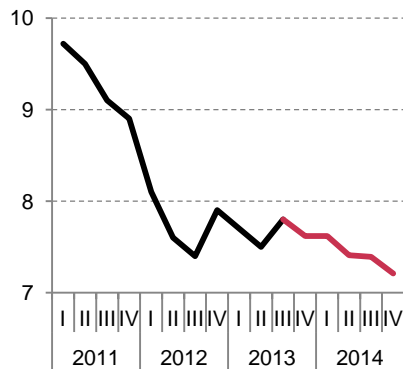
United States (% , q/q, SAAR)



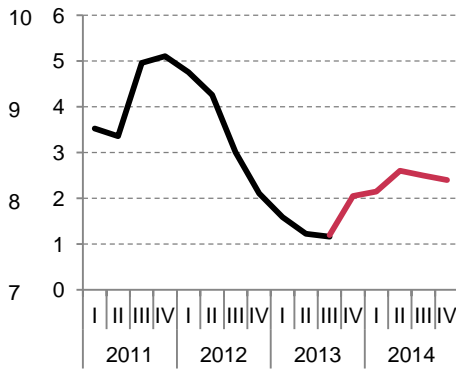
# Emerging markets

GDP growth, (% , y/y)

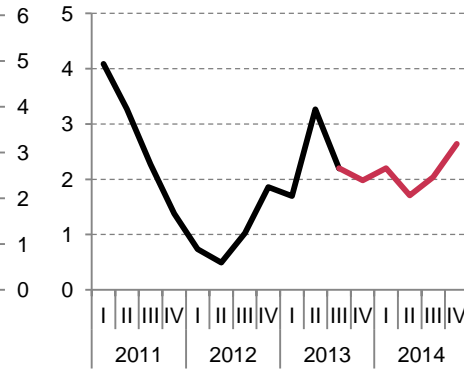
China



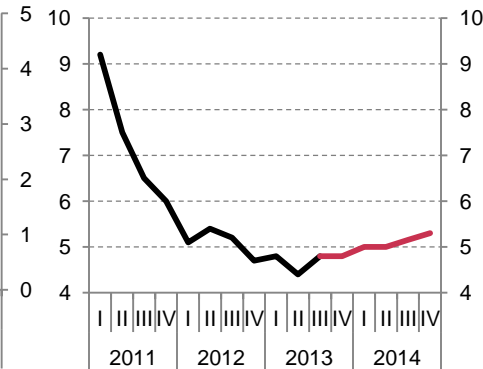
Russia



Brazil



India

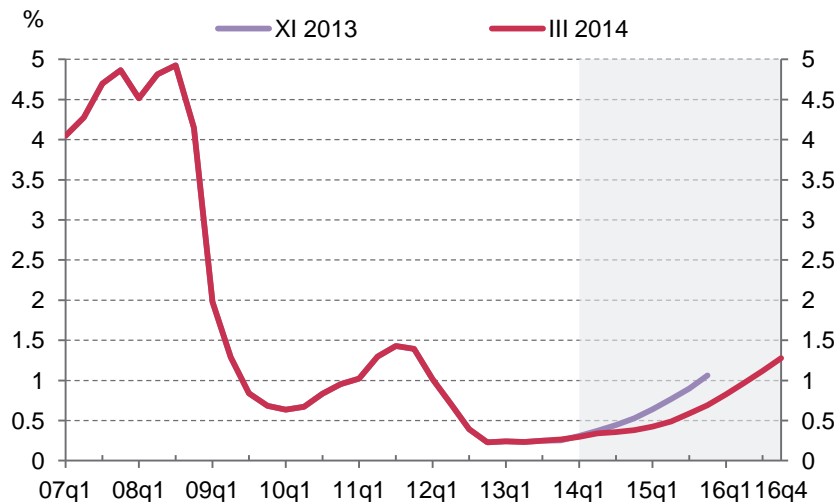
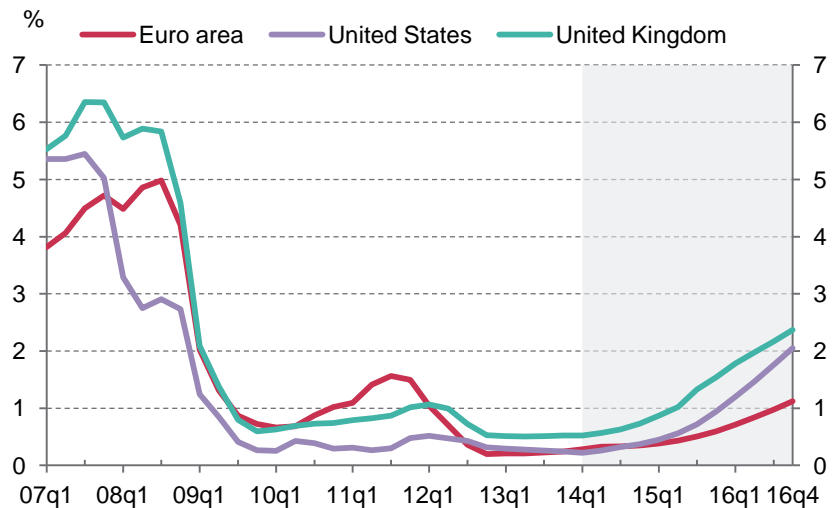


— actual data

— Bloomberg forecast

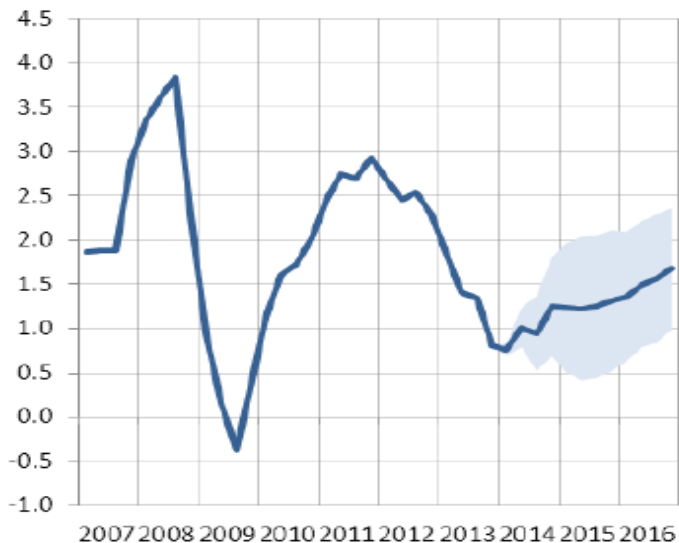
# Interest rates abroad

(lower)



## ECB projections

**Euro area HICP**  
(%, y/y)



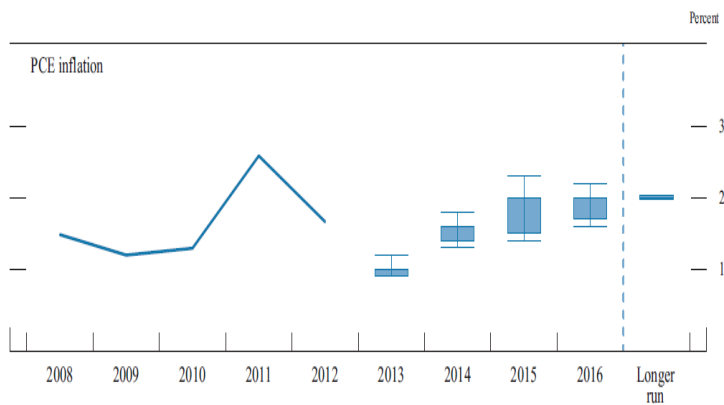
**Euro area real GDP**  
(%, q/q)



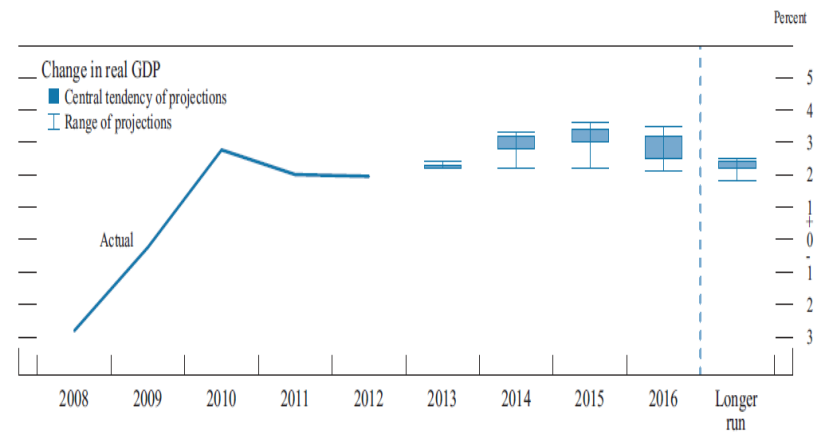
Source: March 2014 ECB staff macroeconomic projections for the euro area

# FED projections

## PCE inflation (%)



## Real GDP (%)



Source: Monetary Policy Report, Federal Reserve System, February 2014

Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Aggregate demand

- Consumption demand
- Government demand
- Investment demand
- Foreign trade



## GDP and its components – 2013 H2

	13q3		13q4	
GDP (y/y) (%)	1,9	(1,6)	2,7	(2,2)
Domestic demand (y/y) (%)	0,5	(-0,1)	1,1	(0,9)
Private consumption (y/y) (%)	1,0	(0,9)	1,9	(1,3)
Public consumption (y/y) (%)	1,9	(0,9)	2,5	(1,6)
Gross fixed capital formation (y/y) (%)	0,6	(-1,8)	1,4	(0,7)
Exports (y/y) (%)	6,4	(3,5)	6,9	(4,0)
Imports (y/y) (%)	3,4	(-0,1)	3,2	(1,3)
Net exports contribution (p.p.)	1,4	(1,7)	1,6	(1,3)

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

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

Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Consumption demand

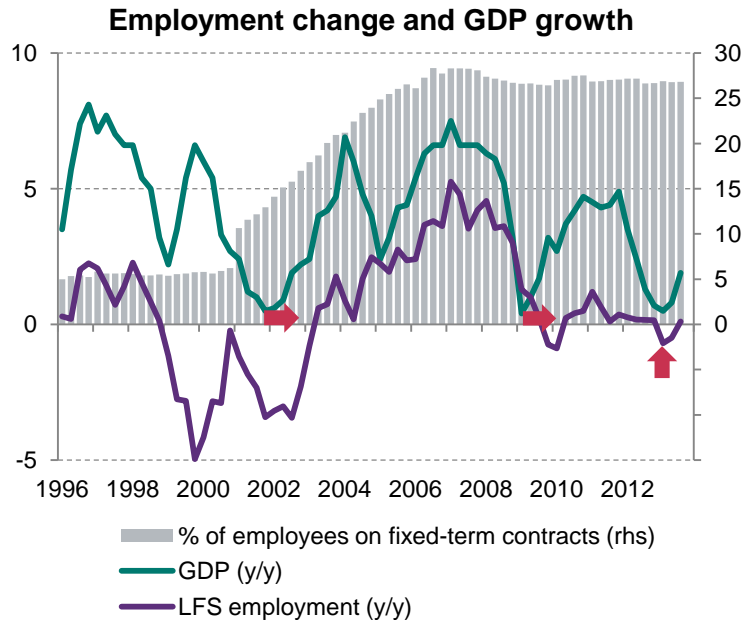
## Labour market – 2013 H2

	13q3		13q4	
ULC (y/y) (%)	2,6	(1,8)	1,1	(0,5)
Labour productivity (y/y) (%)	1,8	(2,0)	2,3	(3,0)
Gross wages (y/y) (%)	4,0	(3,4)	3,6	(3,6)
Total employment LFS (y/y) (%)	0,1	(-0,5)	0,4	(-0,8)
Unemployment rate LFS (%)	10,2	(10,4)	10,1	(10,5)
Participation rate (%)	56,0	(55,9)	56,1	(55,9)

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

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

# Employment is responding faster to economic recovery

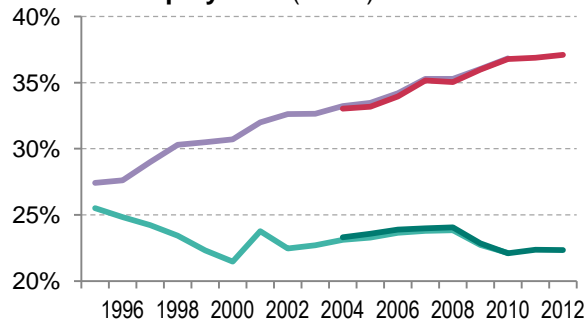


The phenomenon may be attributed to structural changes occurring in the Polish economy:

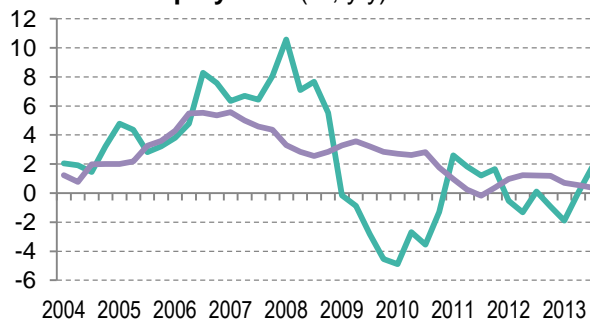
- 1) Widespread fixed-term labour contracts lower the cost of staff turnover whereas simultaneously skilled workers are hoarded during economic slump,
- 2) Stabilization of the positive outlook on domestic economic situation (also owing to the EU funds),
- 3) Increasing importance of services in the economy, which are less susceptible to economic fluctuations; share of employment in the service sector rose from 46% in 1995, through 51% in 2004, to 57% in 2013 → quicker effects of increase in labour demand.

# Increasing role of services and changes in employment and productivity

## Employment (share)



## Employment (% y/y)



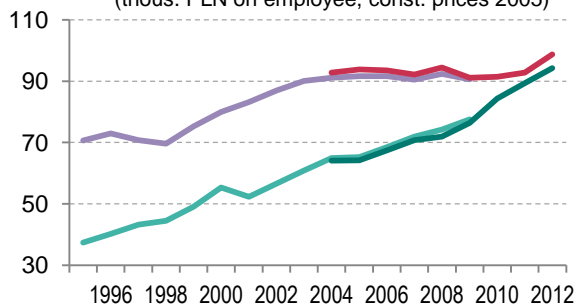
Employment in the service sector grows systematically and is relatively acyclical. As a result, until recently, labour productivity in the service sector stagnated, although it has been higher than in the manufacturing sector.

Employment in manufacturing is strongly procyclical. Since restructuring in the late 90s and early 2000s downward trend of employment share in manufacturing has been stopped. Also, it is manufacturing that saw a steady trend of growing labour productivity.

Increasing importance of service sector in the Polish economy results in smaller employment decline during an economic slump, which can then faster translate into employment rise when the economy starts to recover.

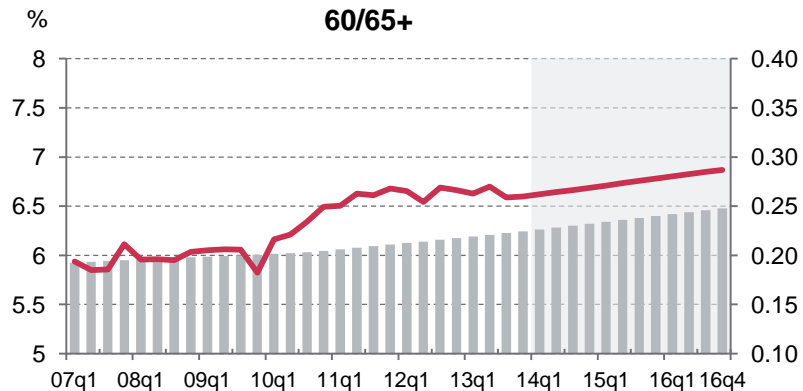
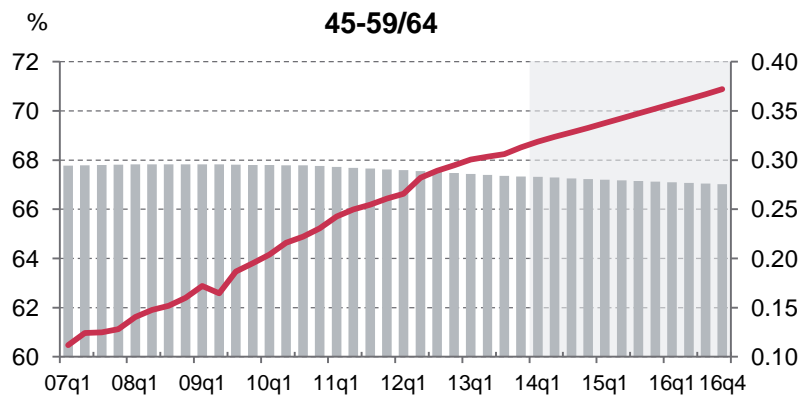
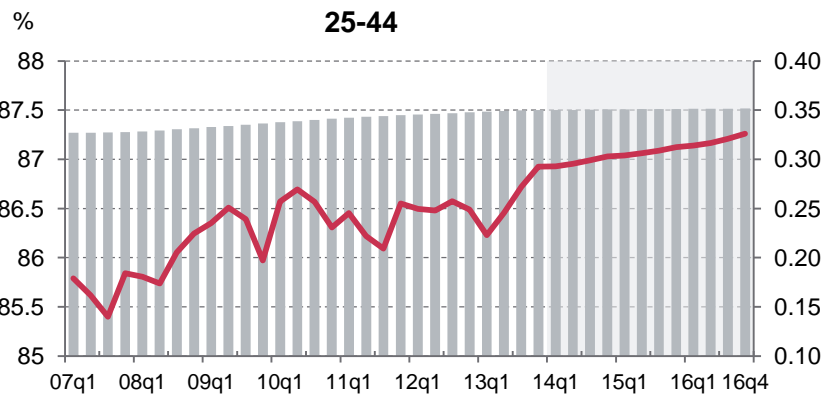
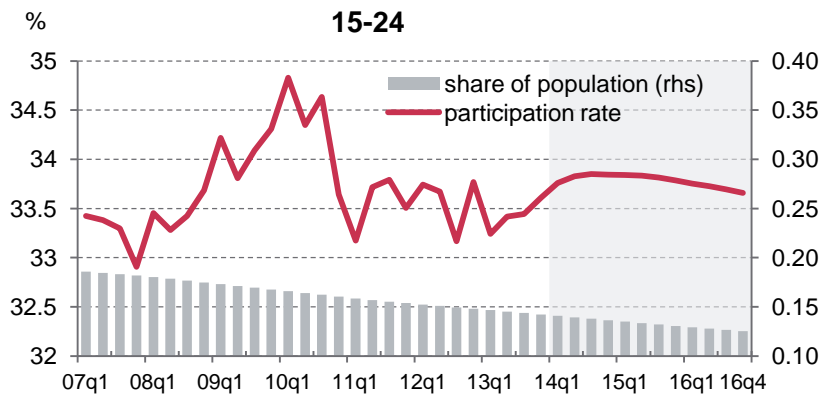
## Labour productivity

(thous. PLN on employee, const. prices 2005)

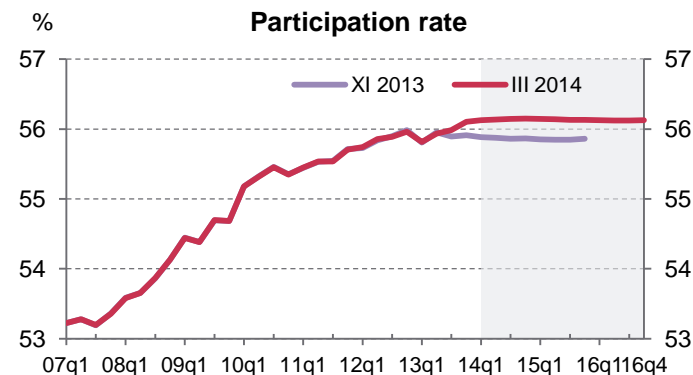
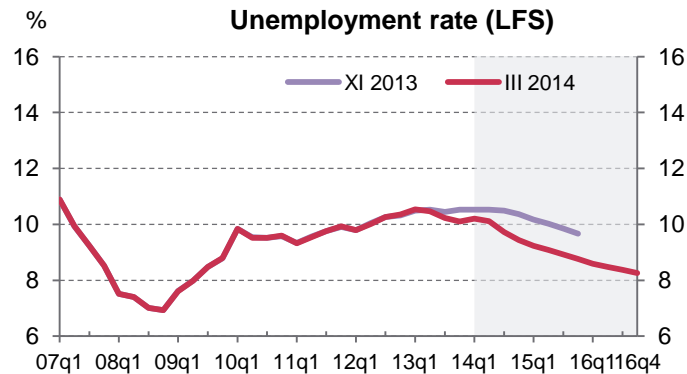
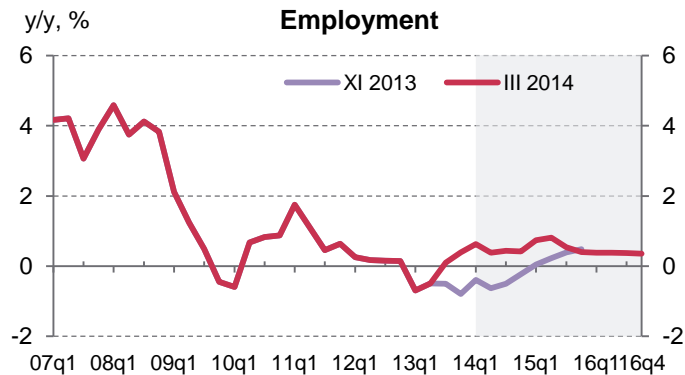


— Manufacturing (NACE 1.1)    — Market services (NACE 1.1)  
— Manufacturing (NACE 2)    — Market services (NACE 2)

# Labour force participation rate by age

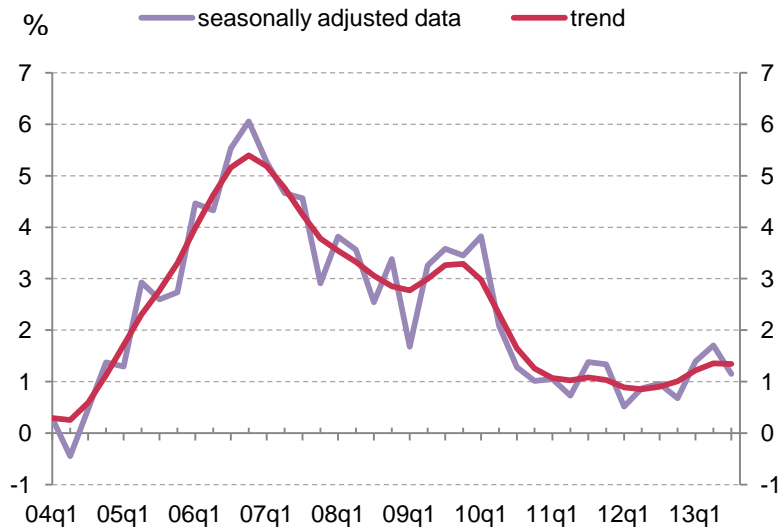


# Labour market



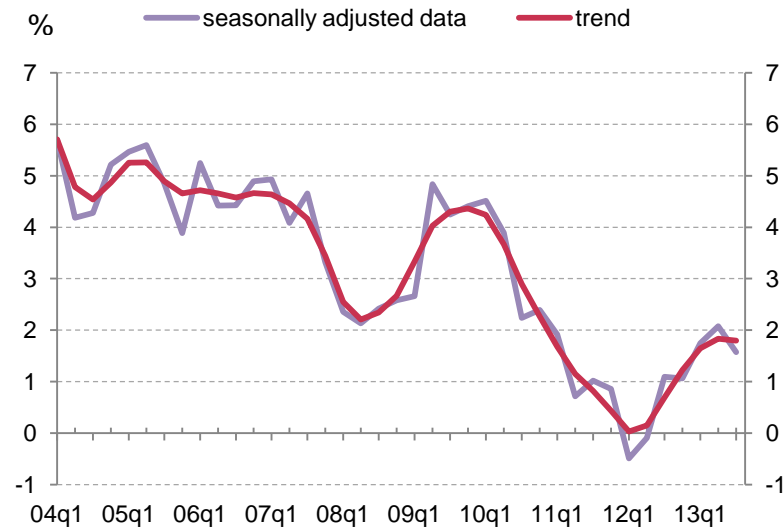
# Income and savings of households

## Real gross disposable income (%, y/y)



Source: own calculations based on the GUS data

## Voluntary savings rate

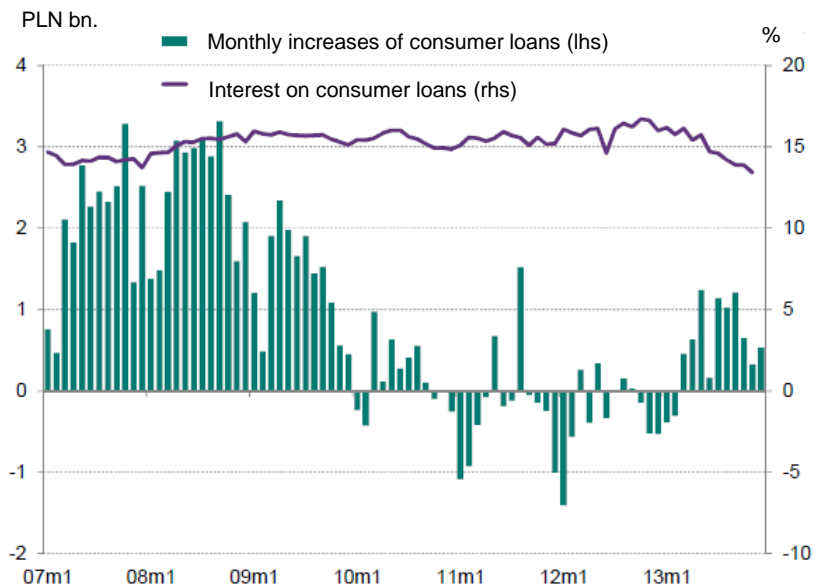


Source: own calculations based on the GUS data



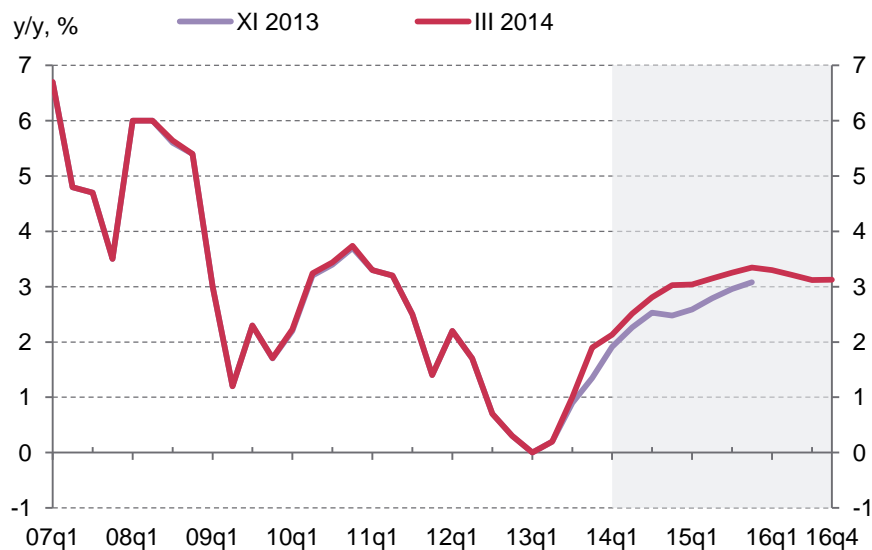
# Consumption demand

## Consumer loans



Source: NBP

## Private consumption (higher)



Outline:

Changes between rounds

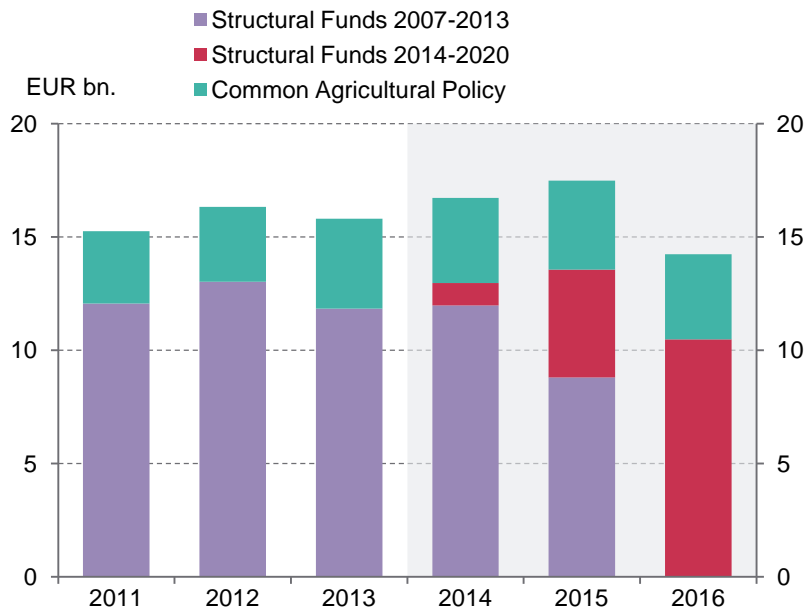
Projection 2014 - 2016

Uncertainty

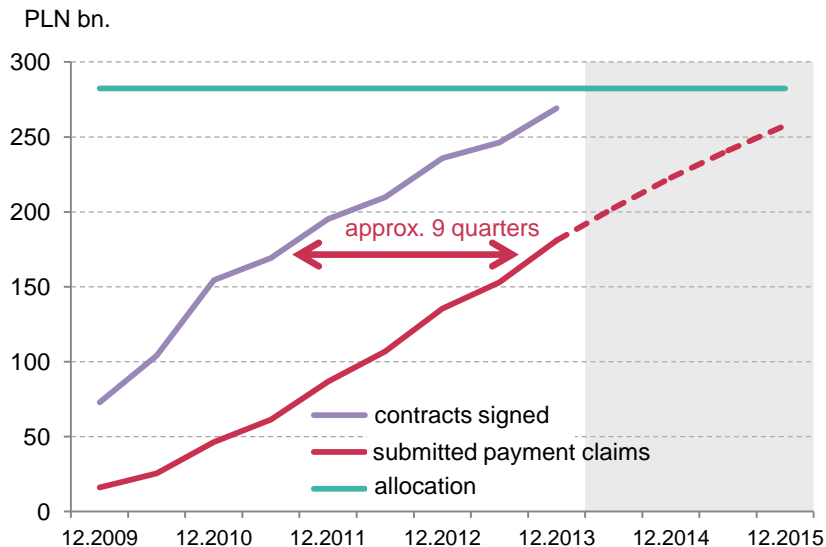
## Government demand

# Absorption of EU funds

## Absorption of EU funds by framework

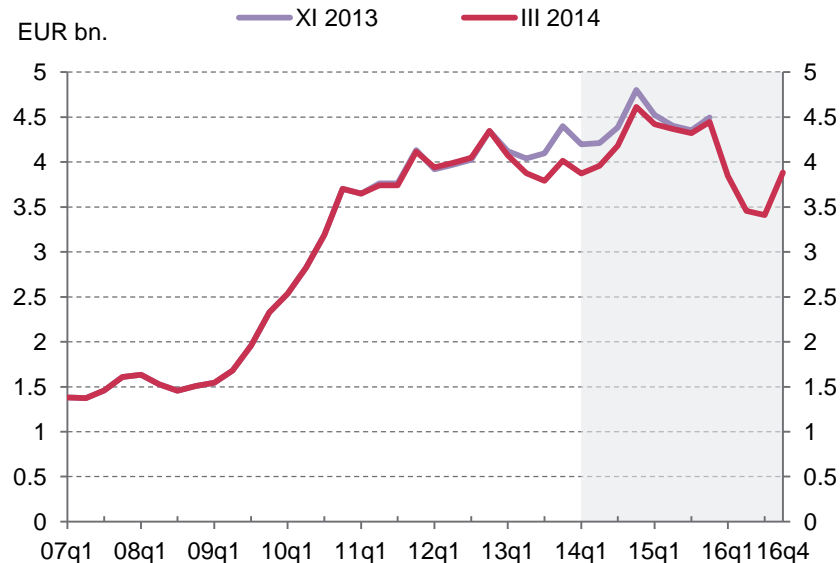
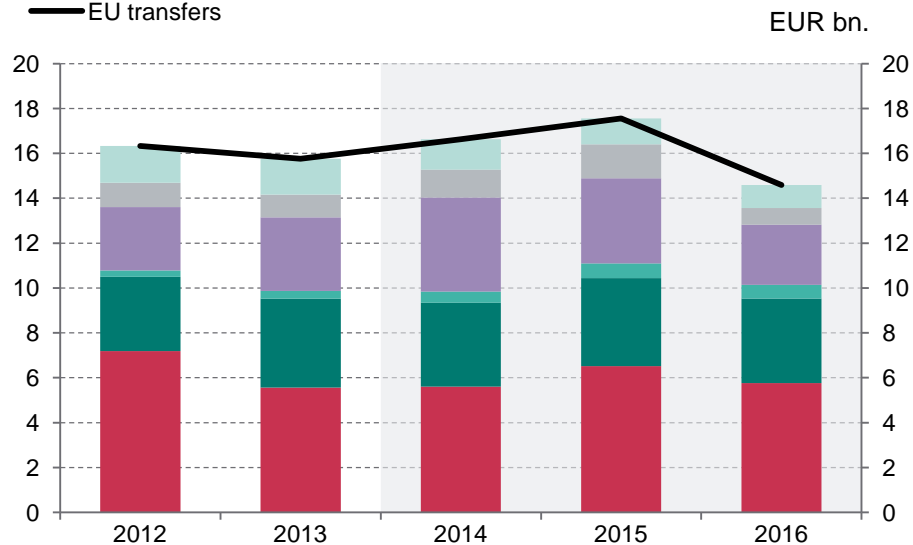


## Estimated absorption of 2007-2013 structural funds in 2014-2015

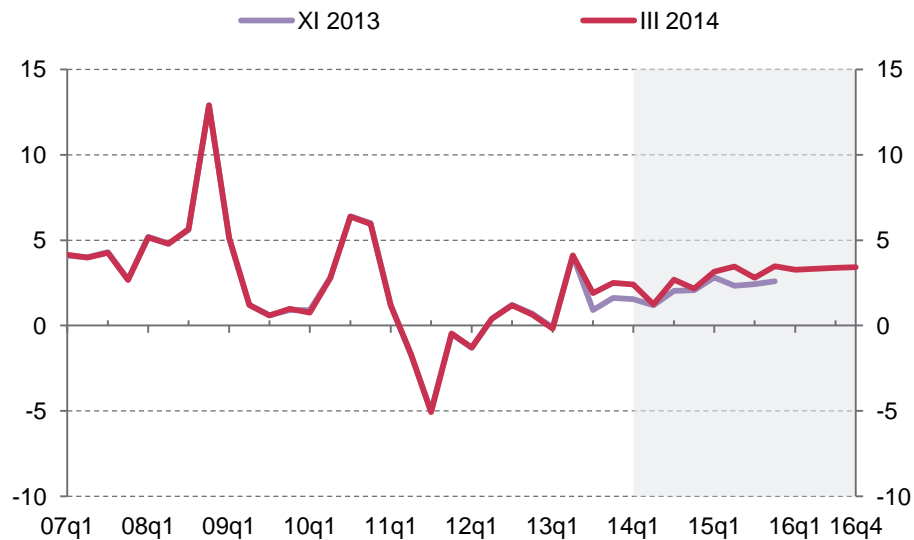


# EU transfers

(lower in the short term)



# Public consumption



Outline:

Changes between rounds

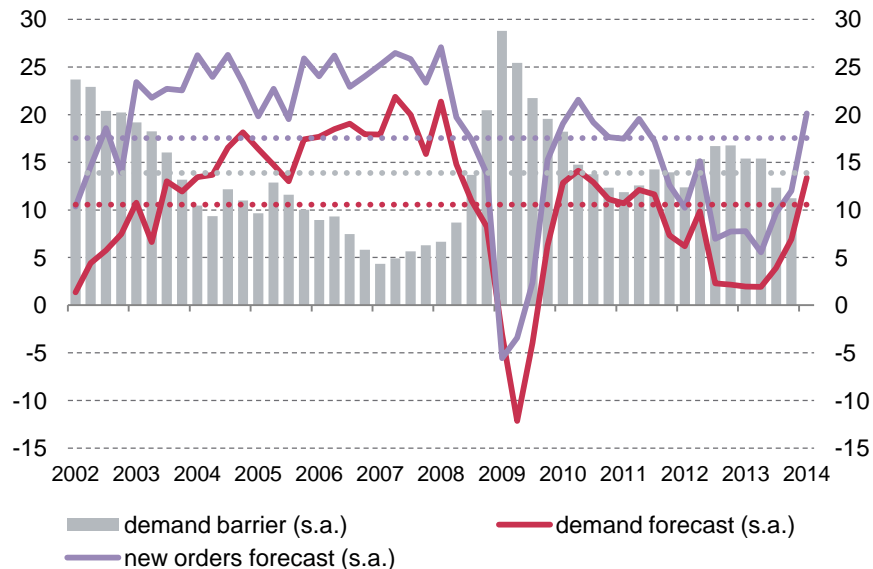
Projection 2014 - 2016

Uncertainty

## Investment demand

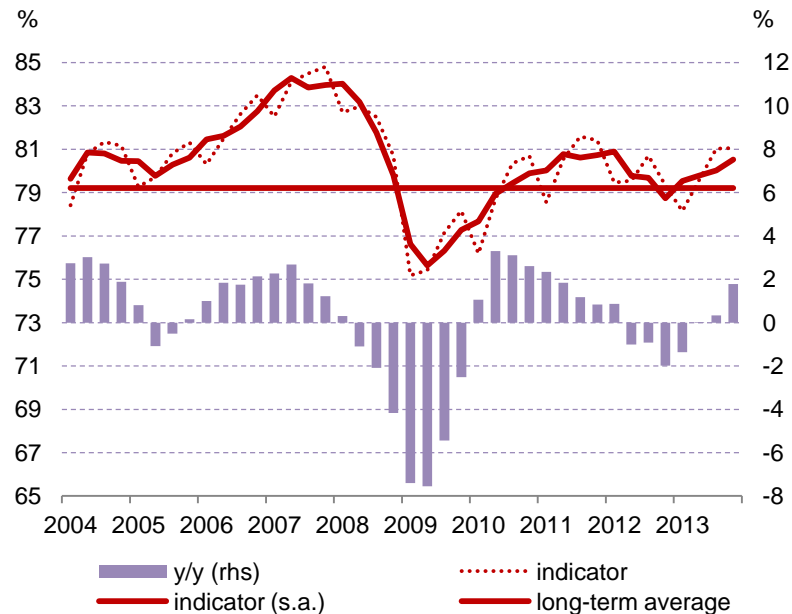
# Investment demand

## Demand barrier and forecasts of demand



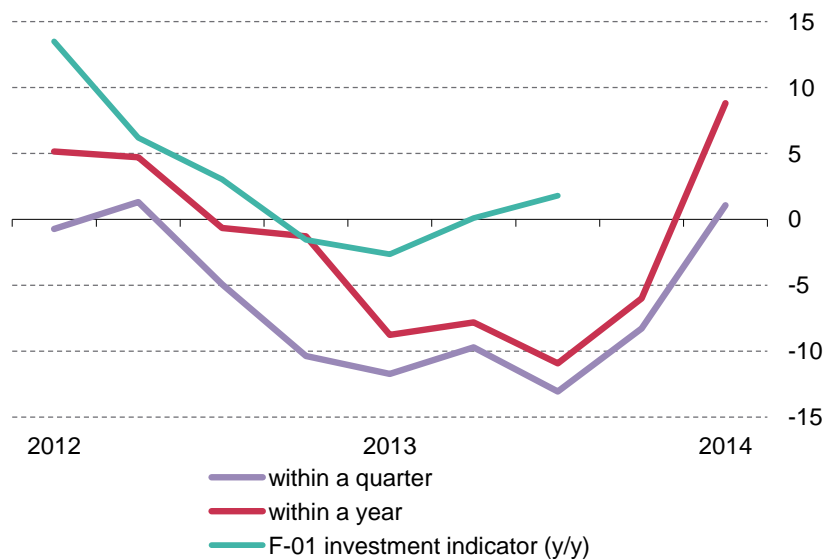
Source: NBP Quick Monitoring

## Production capacity utilization

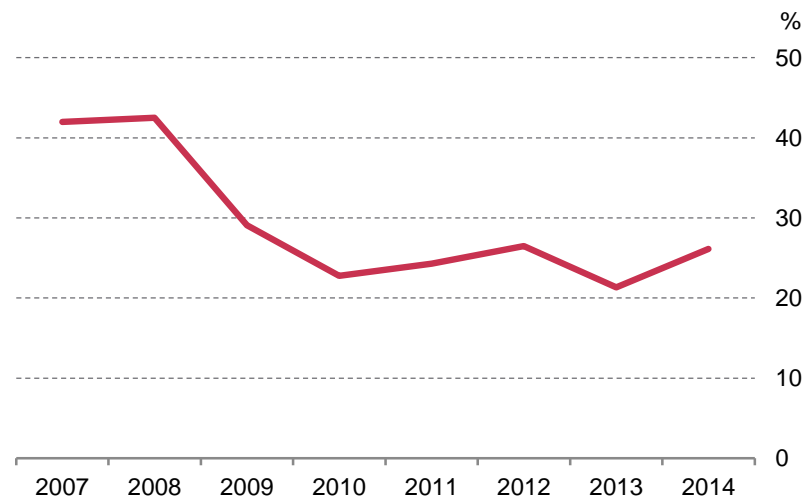


# Investment demand

## Planned change in the total amount of outlays (net forecasts)



## Share of enterprises with capacity expansion as a main reason to invest

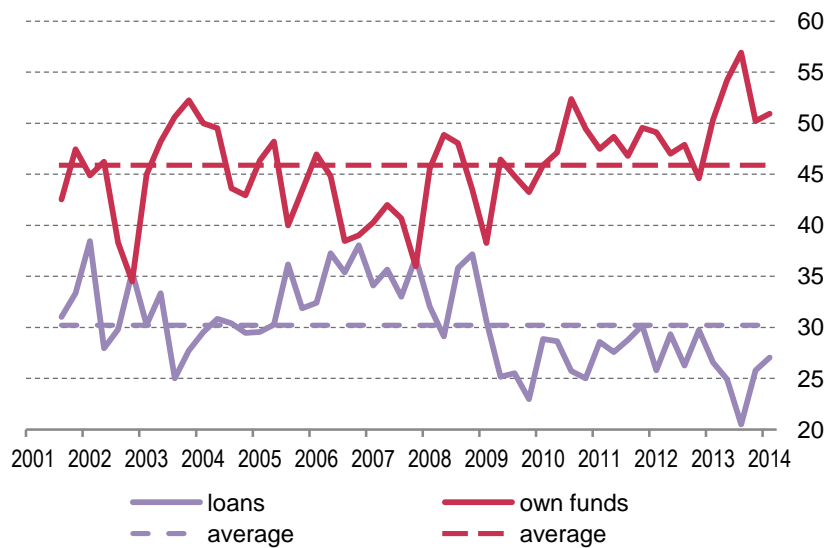


Source: NBP Quick Monitoring

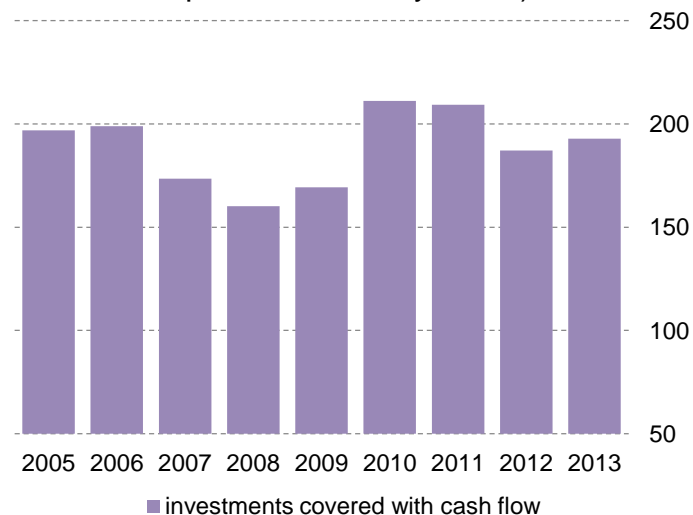


# Investment demand

**Sources of investment financing**  
(% of investors)



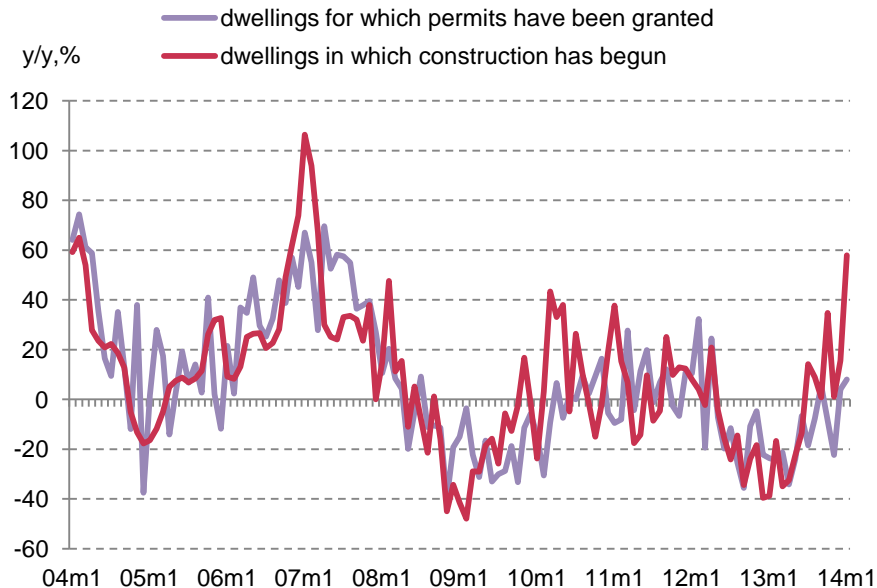
**Self-financing capacity**  
(depreciation + financial result/investment, data for I-III quarters of each year, %)



Source: NBP Quick Monitoring and own calculations based on the GUS F-01 data.

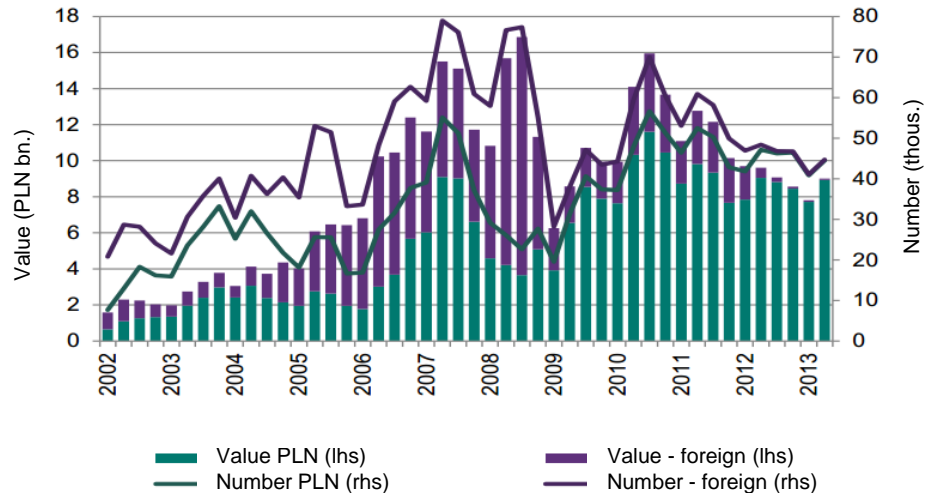
# Investment demand

## Housing construction



Source: GUS

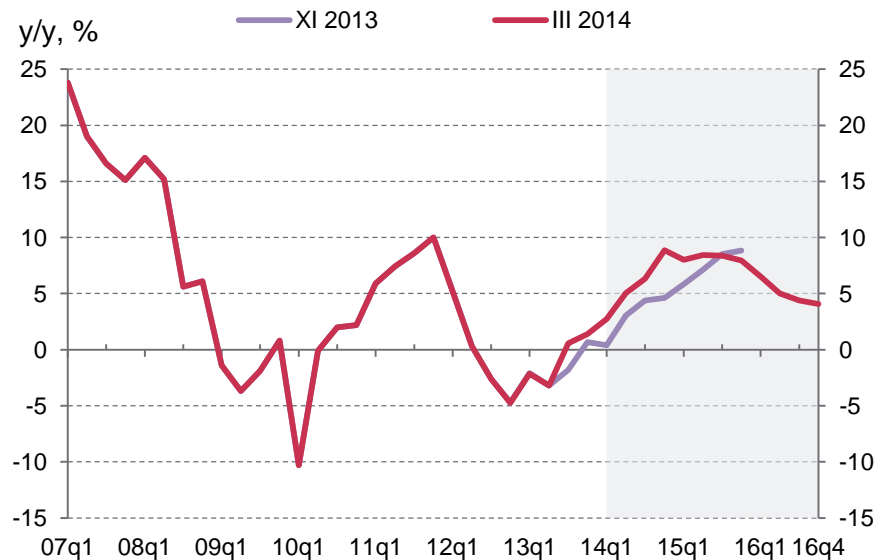
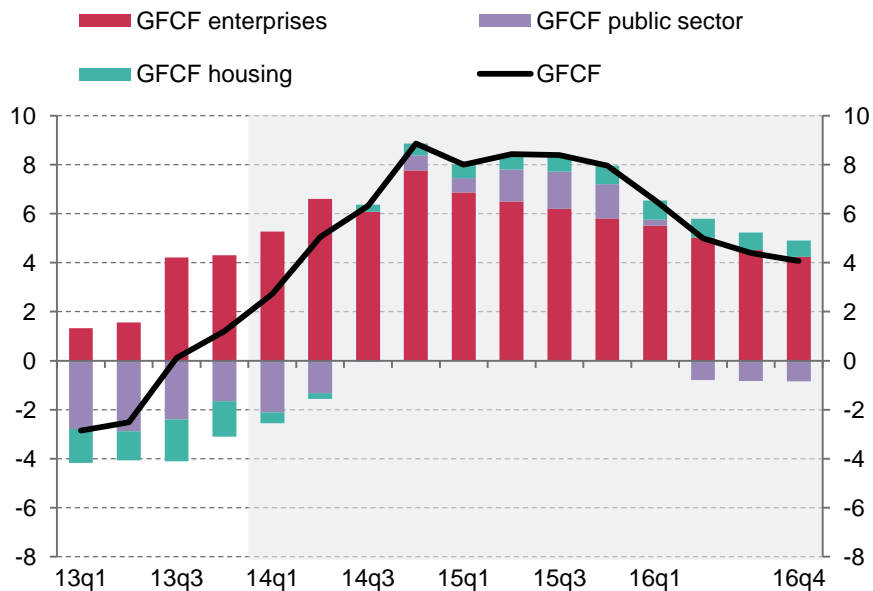
## New housing loan contracts: Value and number of contracts



Source: ZBP

# Gross fixed capital formation

(higher)



Outline:

Changes between rounds

Projection 2014 - 2016

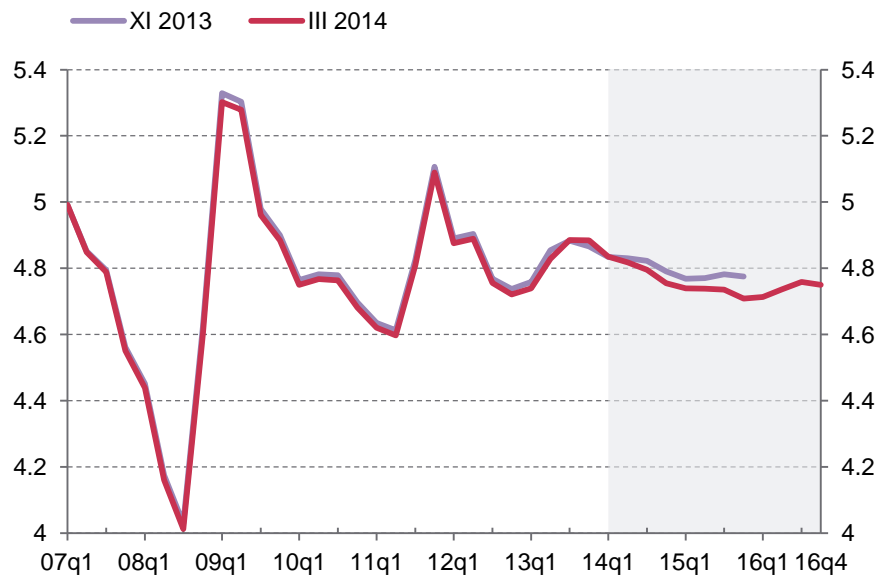
Uncertainty

## Foreign trade

# Foreign trade

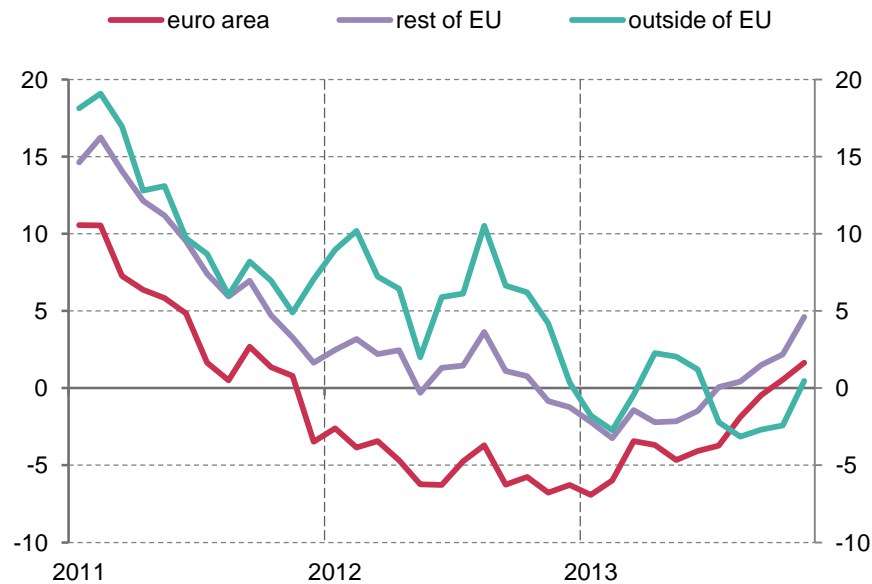
## Real effective exchange rate

(stronger)



## Germany's exports by group of countries (% y/y)

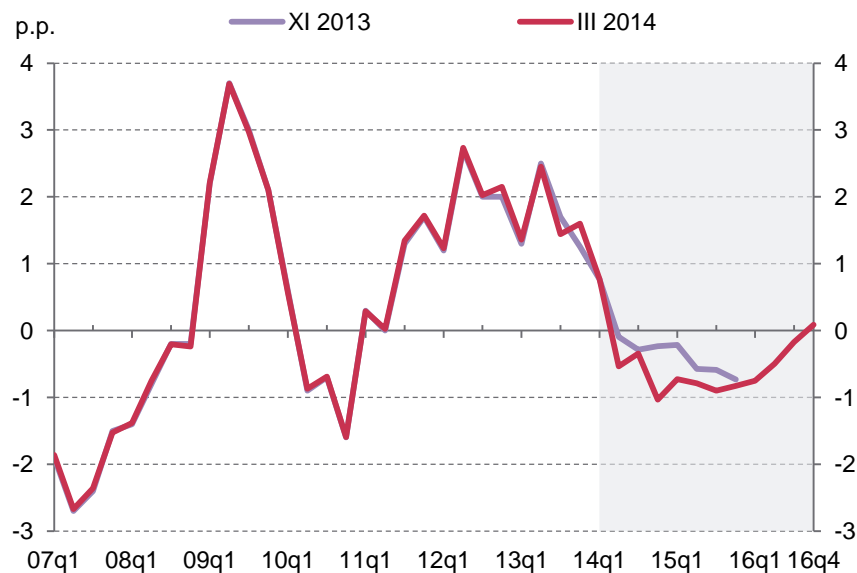
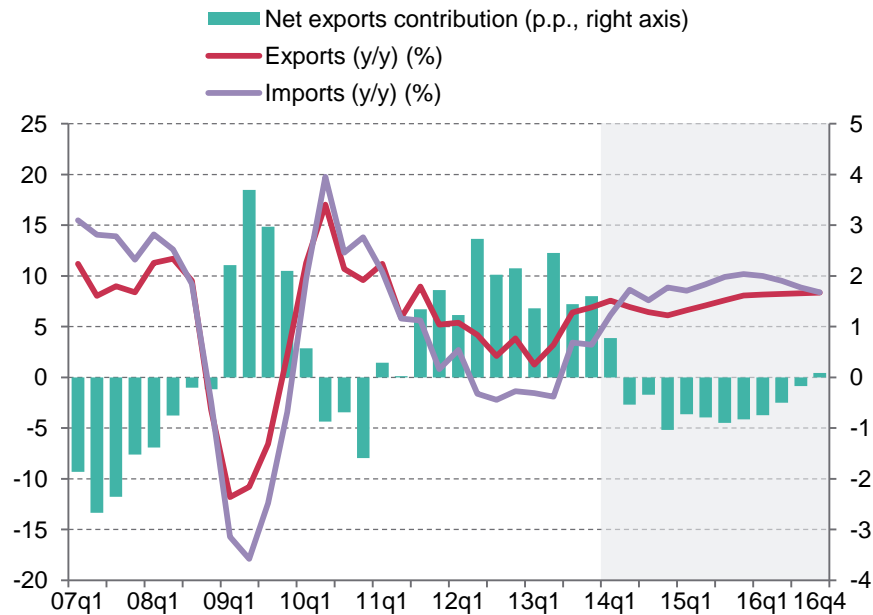
(higher demand for German goods should strengthen an upward trend of Polish exports)



Source: Eurostat, own calculations

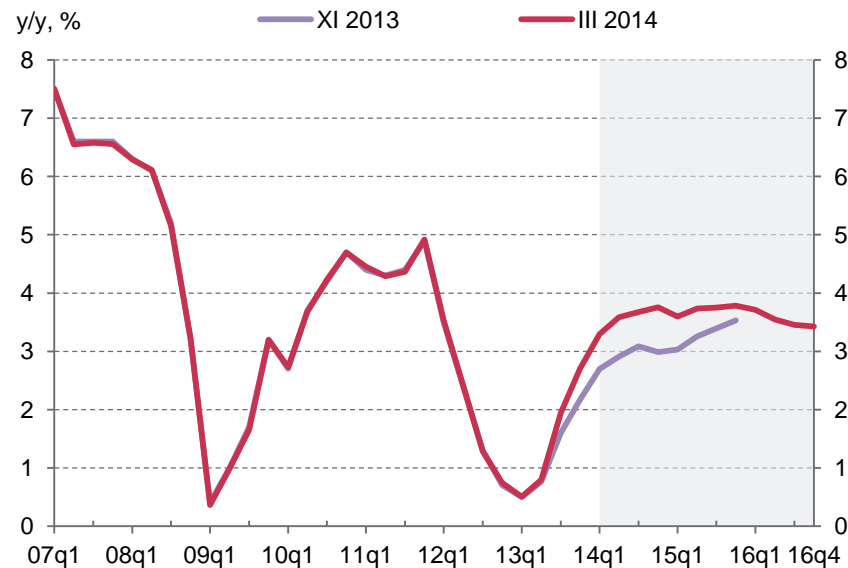
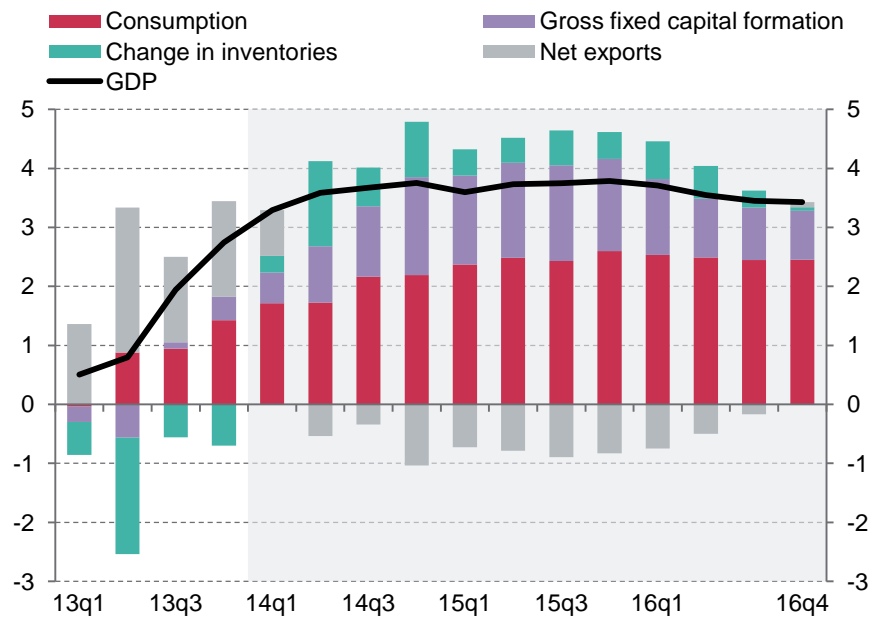
# Net exports contribution

(lower)



# GDP

(higher)



Outline:

Changes between rounds

Projection 2014 - 2016

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# Inflation



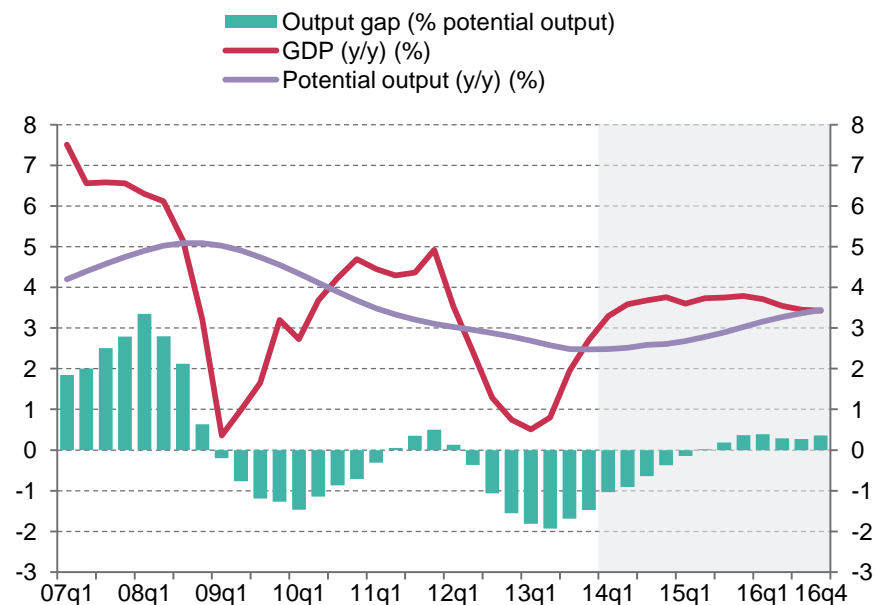
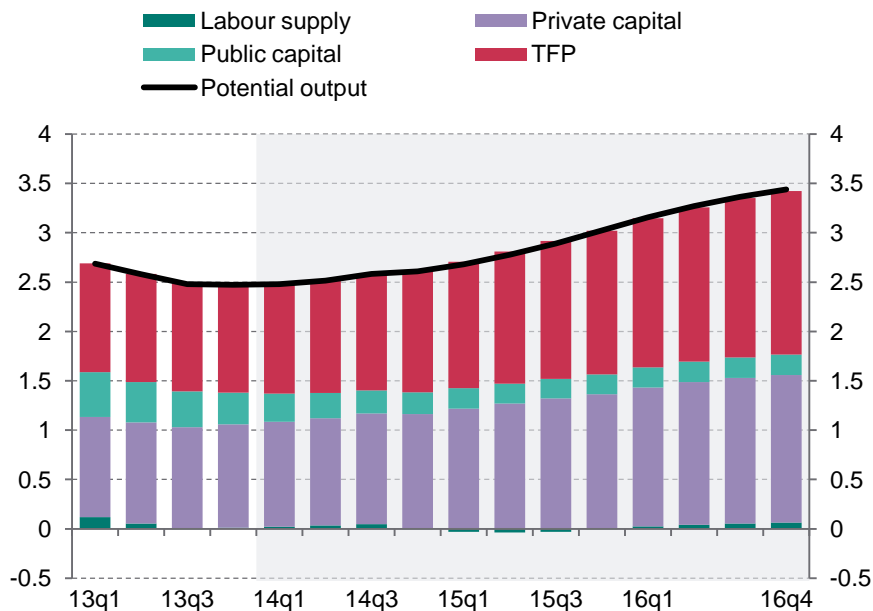
## CPI inflation – 2013 H2

	13q3		13q4	
CPI inflation (y/y) (%)	1,1	(1,1)	0,7	(1,0)
Core inflation (y/y) (%)	1,4	(1,4)	1,2	(1,3)
Food price inflation (y/y) (%)	2,5	(2,5)	1,7	(2,2)
Energy price inflation (y/y) (%)	-1,8	(-1,8)	-2,1	(-1,5)

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

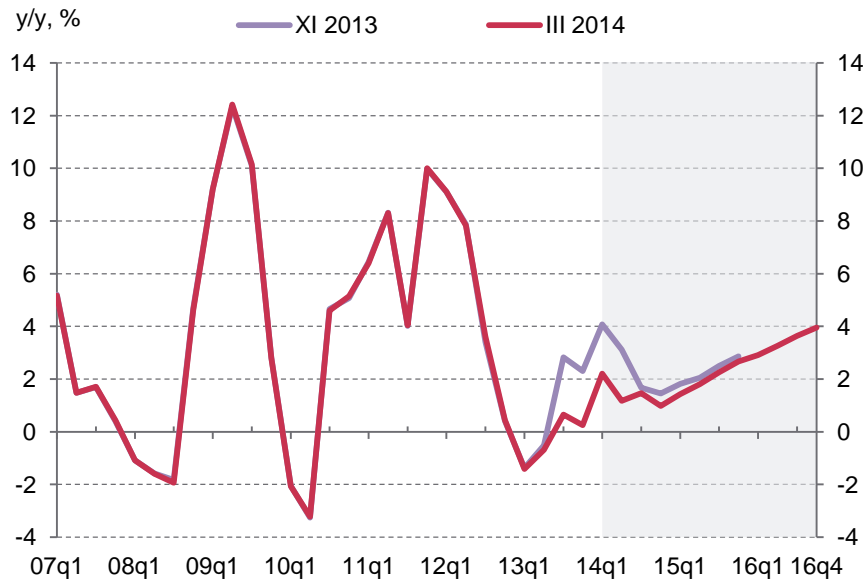
Indicators with values higher than in the November projection are marked green, whereas indicators with lower values are marked red.

# Potential output

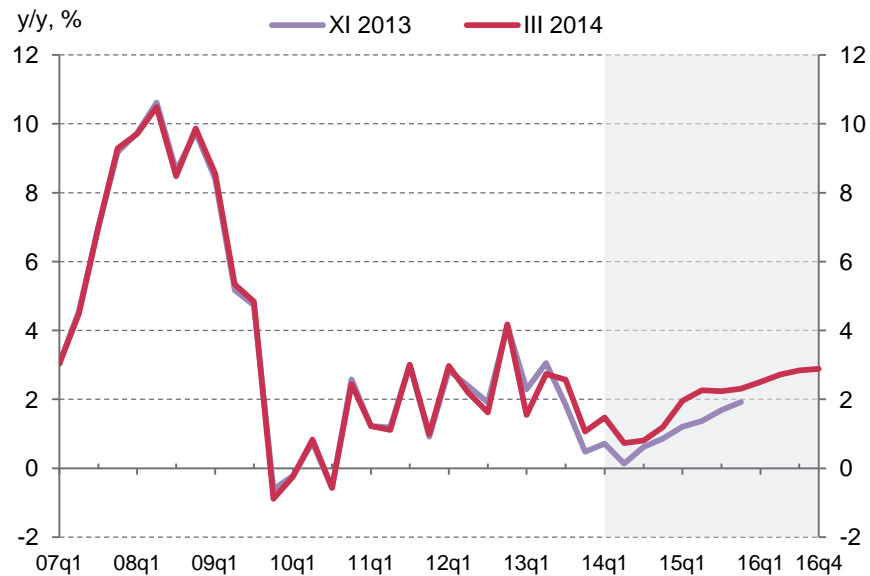


# Import prices and unit labour costs

## Import prices (excluding oil and natural gas) (lower)

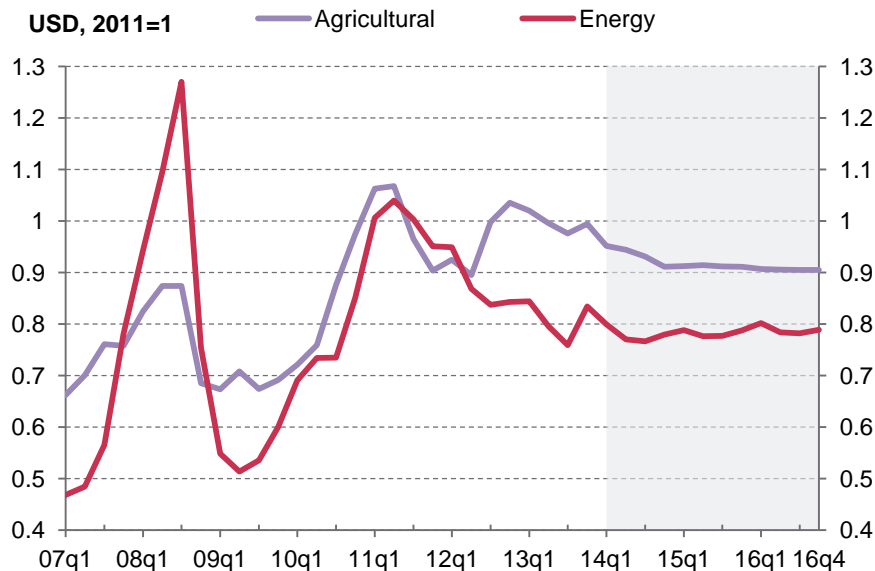


## Unit labour costs (higher)

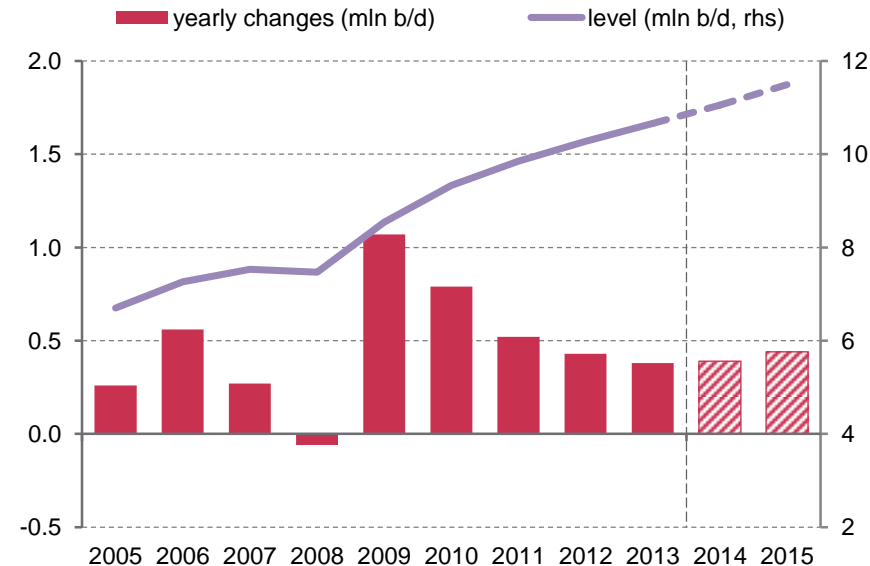


# Commodity prices

**Indexes of commodity prices (lower)**



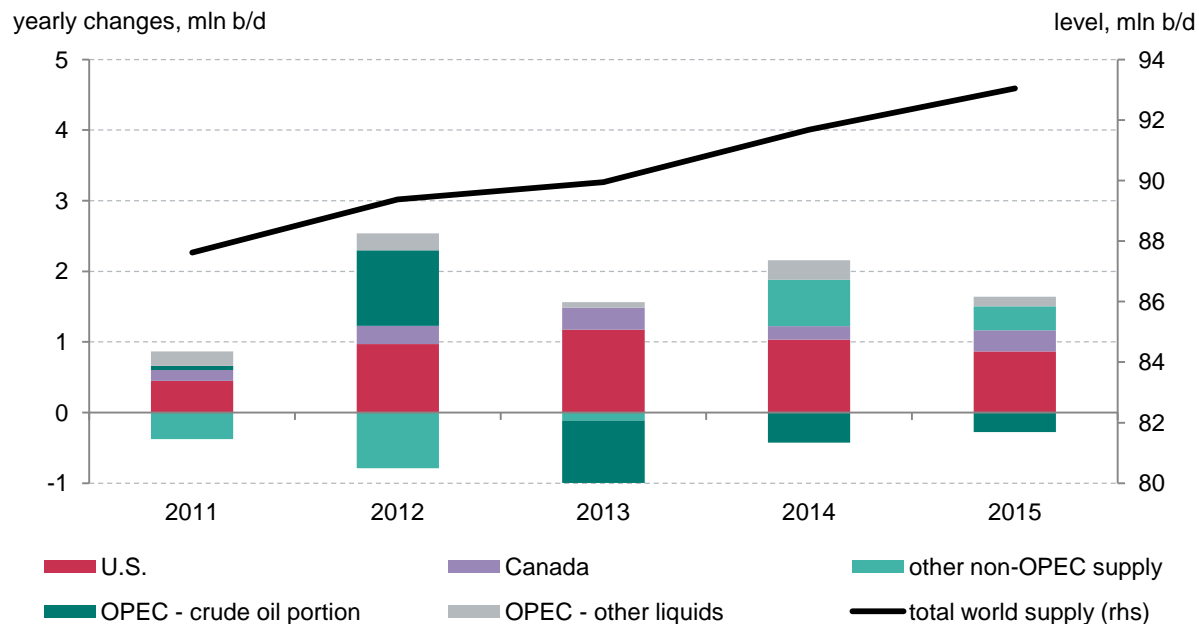
**Consumption of oil in China (expected moderate increase in 2014-2015)**



Source: US Energy Information Administration

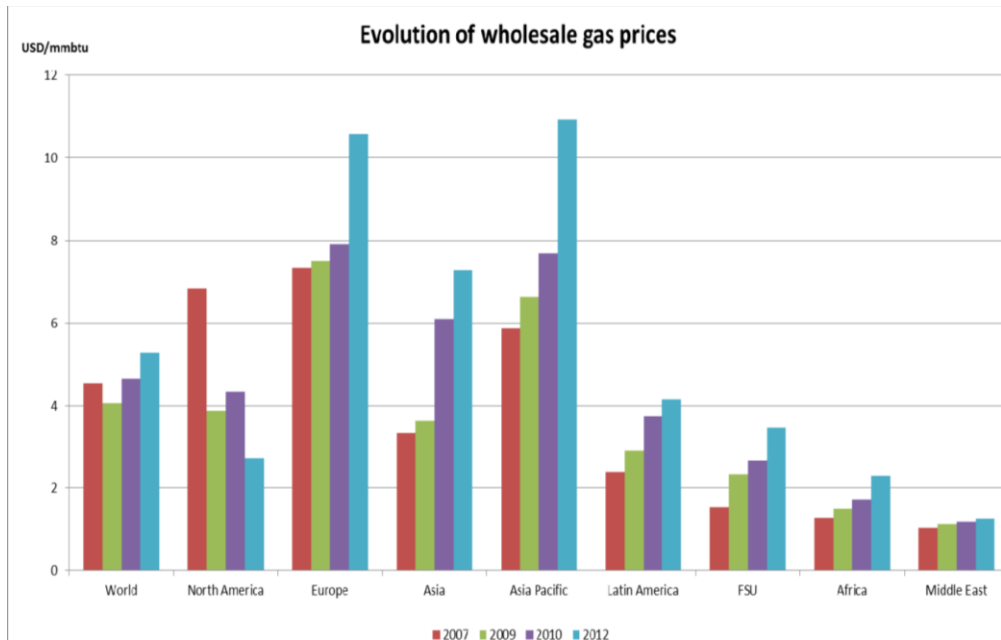
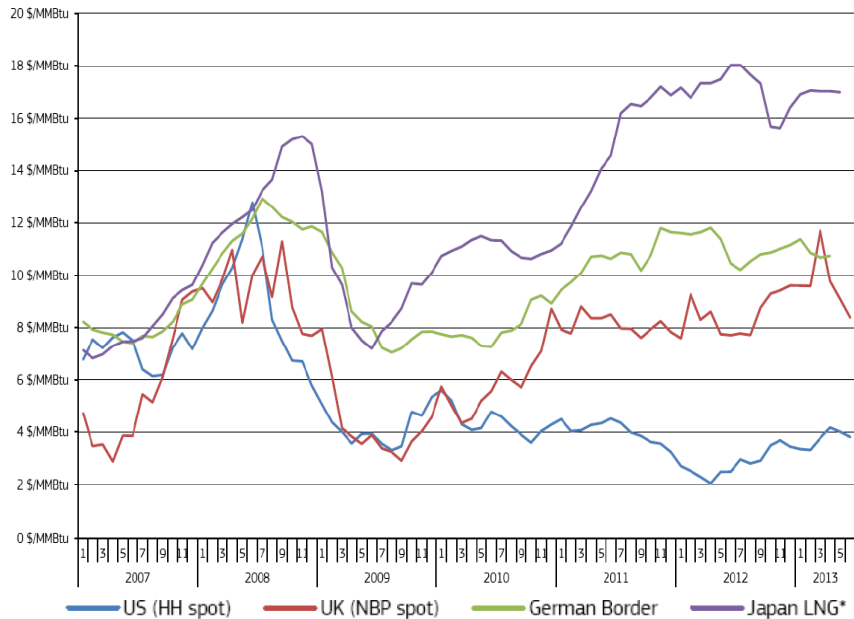
# World crude oil and liquid fuels production growth

(growing production from non-OPEC countries)



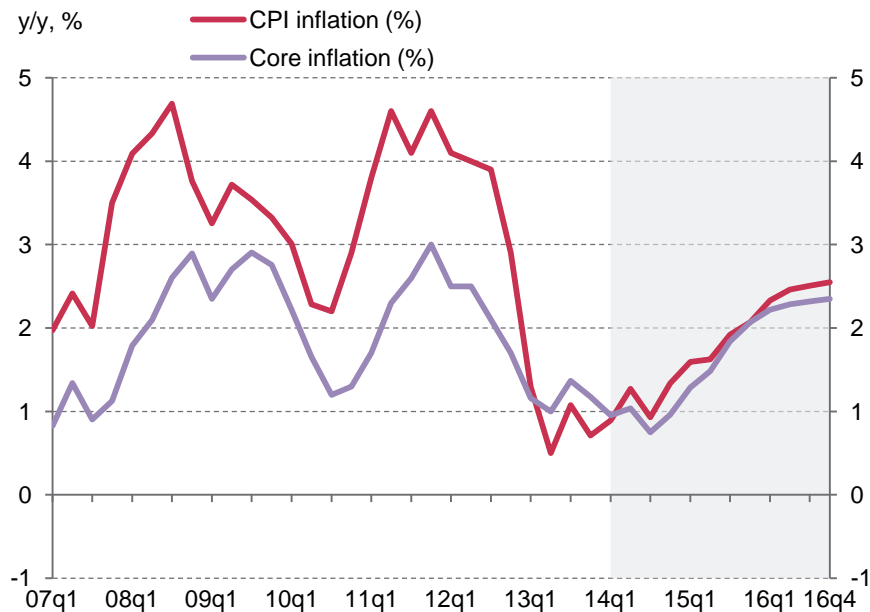
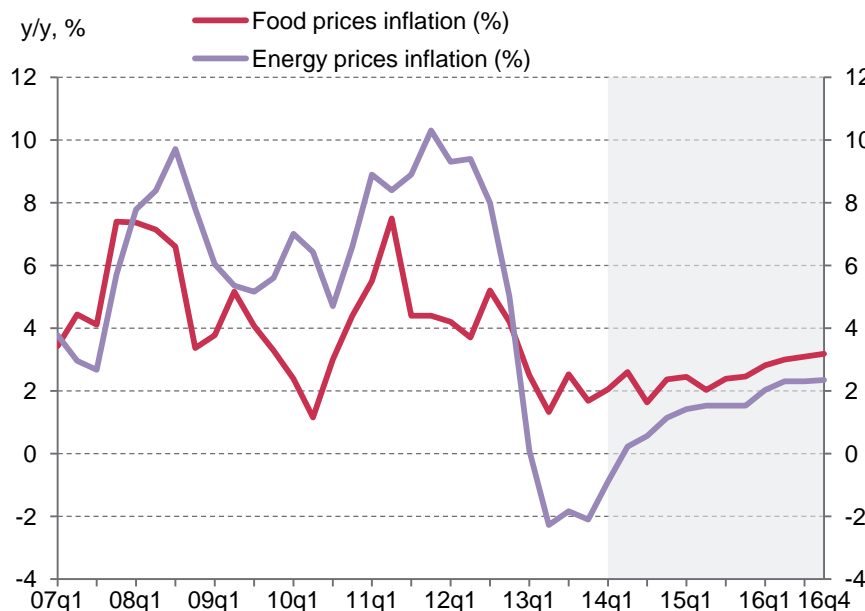
Source: US Energy Information Administration

# Wholesale gas prices in EU and other world regions (USD/mmbtu)

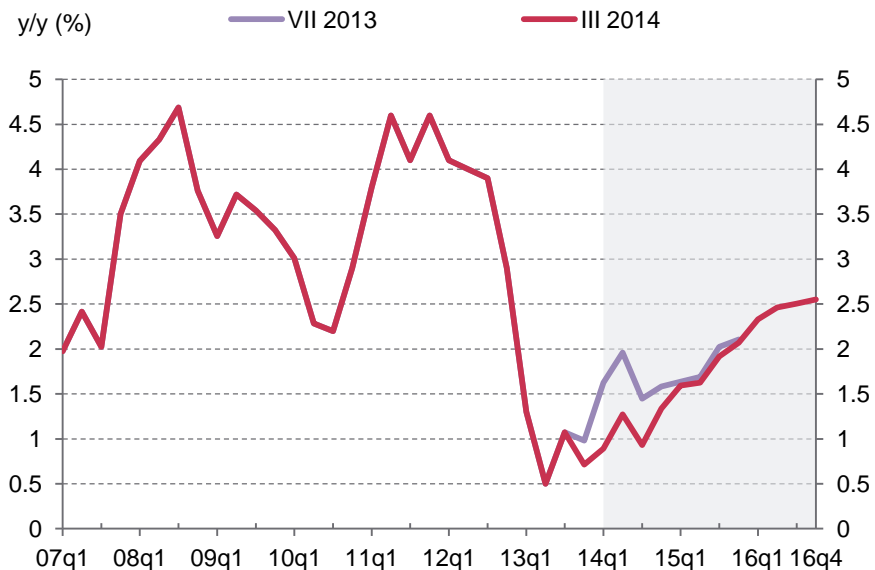
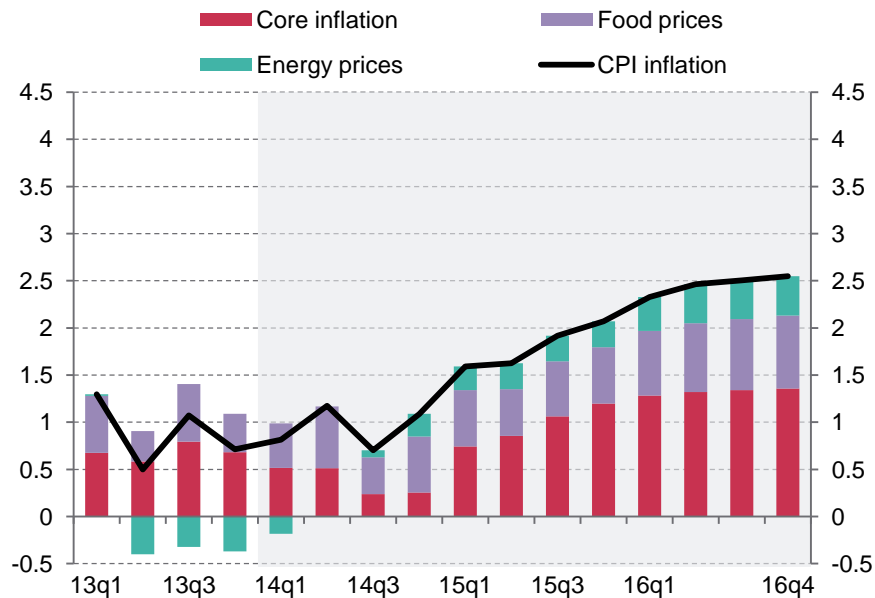


Source: „Energy prices and costs in Europe” – European Commission report

## Domestic inflation



# CPI inflation (y/y, %)





Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

# Uncertainty

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- Risk factors
- Fan charts

Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

## Risk factors

Risk area	Description	Impact	Scale of impact
External environment and exchange rate	<ul style="list-style-type: none"> <li>• The scale and sustainability of the recovery in the euro area               <ul style="list-style-type: none"> <li>◦ the pace of demand growth from emerging markets,</li> <li>◦ the pace of consumption demand growth from German households,</li> <li>◦ appreciation of the euro,</li> <li>◦ situation of the banking sector in the euro area.</li> </ul> </li> </ul>	Inflation ↔ GDP ↔	***
Domestic demand and the competitiveness of the Polish economy	<ul style="list-style-type: none"> <li>• The pace of recovery of the Polish labour market.</li> <li>• The scale and sustainability of the observed recovery of the credit market.</li> <li>• Slow recovery in the euro area amidst the prevailing low savings rate may hamper growth in domestic consumption and investment.</li> <li>• The response of exports and imports to the anticipated expansion in domestic and foreign demand.</li> </ul>	Inflation ↔ GDP ↔	**

Risk area	Description	Impact	Scale of impact
Food and energy prices in Poland	<ul style="list-style-type: none"> <li>• Uncertain impact of European regulations on prices in Poland, particularly those concerning Climate and Energy Package (future prices of CO2 allowances).</li> <li>• Tariff policy of the Energy Regulatory Office.</li> <li>• Regulatory activities on the food market.</li> <li>• Future prices of agricultural commodities (agrometeorological conditions).</li> <li>• Future global energy commodity prices (oil supply disruptions and the response of OPEC countries, rising extraction of shale oil and gas in the United States and legal conditions associated with the possibility of oil and gas export).</li> </ul>	Inflation ↔ GDP ↔	**
Conclusions		Inflation ↔ GDP ↔	

Outline:

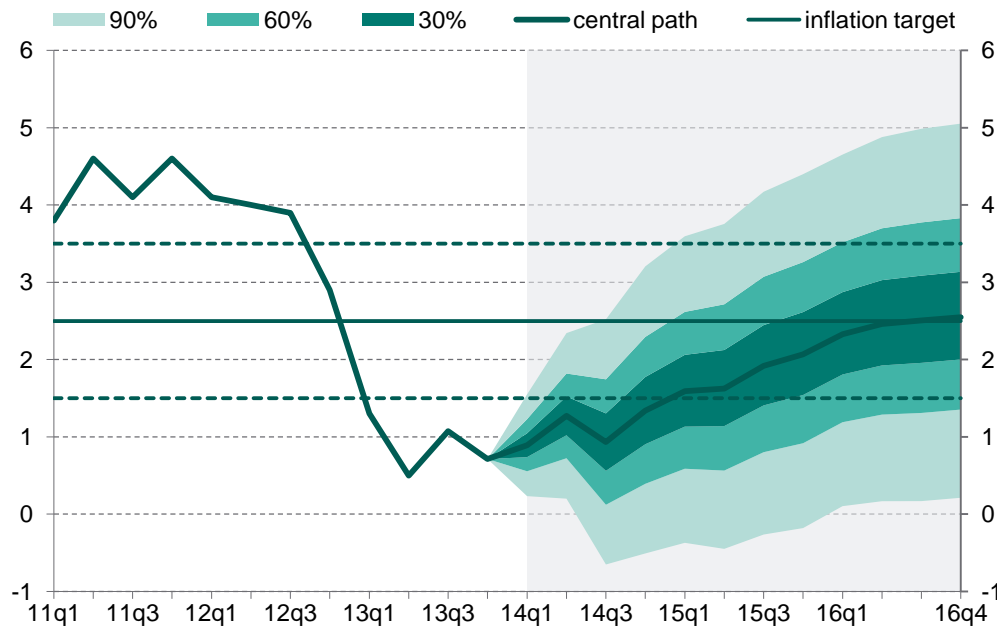
Changes between rounds

Projection 2014 - 2016

Uncertainty

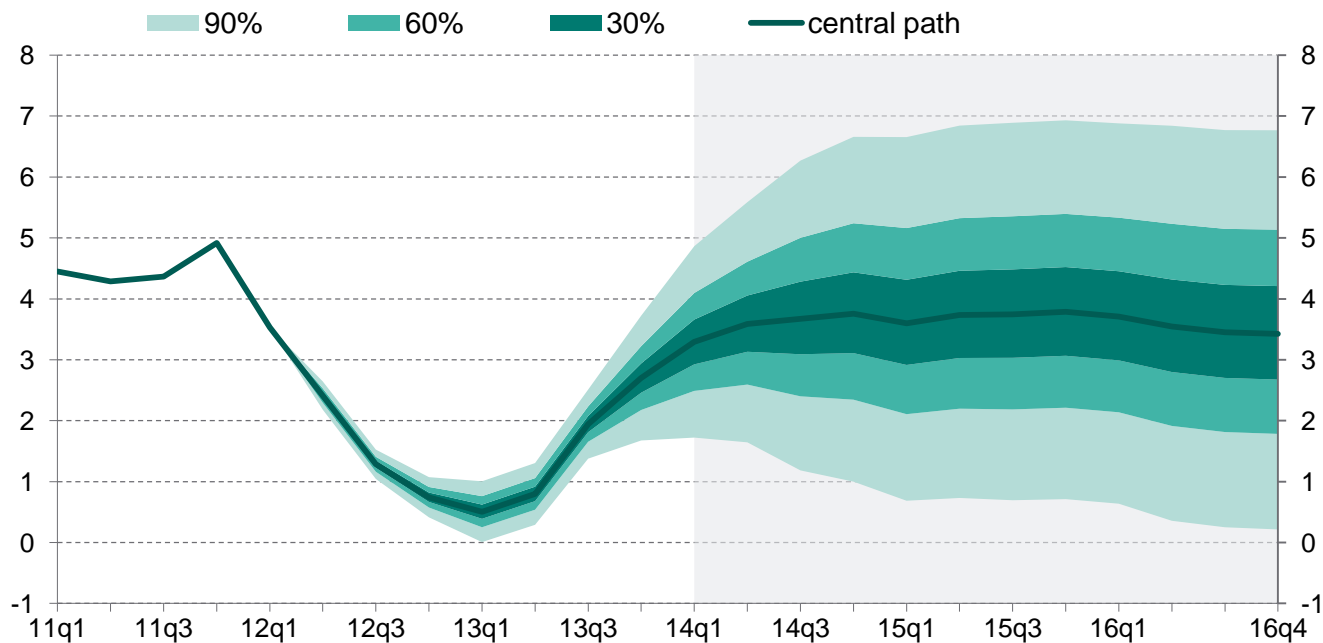
## Fan charts

## CPI inflation projection – March 2014



	below 1,5%	below 2,5%	below 3,5%	below central path	in the range (1,5-3,5%)
<b>14q1</b>	0,94	1,00	1,00	0,50	0,06
<b>14q2</b>	0,64	0,97	1,00	0,50	0,36
<b>14q3</b>	0,72	0,95	1,00	0,50	0,27
<b>14q4</b>	0,55	0,85	0,97	0,50	0,42
<b>15q1</b>	0,46	0,77	0,94	0,49	0,48
<b>15q2</b>	0,45	0,75	0,93	0,49	0,47
<b>15q3</b>	0,37	0,66	0,87	0,49	0,50
<b>15q4</b>	0,33	0,61	0,84	0,49	0,51
<b>16q1</b>	0,26	0,54	0,79	0,49	0,53
<b>16q2</b>	0,24	0,50	0,75	0,49	0,51
<b>16q3</b>	0,23	0,48	0,74	0,48	0,51
<b>16q4</b>	0,22	0,47	0,72	0,48	0,50

## GDP projection – March 2014



*We protect the value of money*