Inflation projection of Narodowy Bank Polski based on the NECMOD model
Outline:

1. Changes between projection rounds
3. Uncertainty
Changes between projection rounds

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

- External environment:
  - forecast of GDP growth abroad revised downwards (especially in the euro area),
  - significantly lower agricultural and energy commodity prices.

- GDP data in 2014Q2 lower than expected in July projection, with comparable domestic demand and weaker net exports.

- Lower absorption of funds from the 2014-2020 European financial perspective due to changes in National Road Construction Programme.

- Lower than expected food prices inflation (due to favourable agrometeorological conditions and the Russian embargo on fruits, vegetables, meat, fish and dairy).

- Lower expectations for the growth of fuel prices (falling oil prices on the global markets).
November GDP projection compared to July projection
November CPI inflation projection compared to July projection
Projection for 2014-2016

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

- Substantial deterioration in economic situation abroad (slowdown in the euro area, exacerbation of the Russian-Ukraine conflict).

- In consequence deterioration in foreign trade balance (weaker demand for Polish exports) and lower growth of private sector investment (depressed sentiments in the domestic corporate sector).

- Slowdown in Polish economy mitigated by the increase in private consumption due to the relatively sound labour market situation.

- The slow pace of closing of the output gap (negative since the second half of 2012).

- Relatively stable, low prices of commodities in the global markets.

- Low inflation in 2014 as a result of the economic slowdown, favourable weather conditions, Russian embargo and Energy Regulatory Office regulatory decisions.

- Since 2015 gradual, moderate increase in CPI dynamics, however CPI inflation remains below 2%.
Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

Economic conditions abroad
2014Q2 GDP data in the euro area

GDP in 2014Q2 (% q/q)

- GDP dynamics in DE, FR, IT below the market expectations
- Declining investment demand (by 0.3% q/q) due to a drop in construction investment (the base effect), as well as low expenditure on other fixed assets

Source: Eurostat, Bloomberg
Weak external demand

Global trade’s growth and exports of goods from the euro area (constant prices y/y)

Dynamic’s decomposition of EA exports of goods (current prices)
Emerging economies
GDP growth, (%, y/y)
Forecasts’ revisions

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GDP abroad
(lower in the short term, similar in the long term)
Interest rates abroad
(lower)
Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

Aggregate demand

- Consumption demand
- Government demand
- Investment demand
- Foreign trade
GDP and its components – 2014 Q2 and Q3

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<th>14q2</th>
<th>14q3</th>
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<td>GDP (y/y) (%)</td>
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<td>(3.7)</td>
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<tr>
<td>Domestic demand (y/y) (%)</td>
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<td>Private consumption (y/y) (%)</td>
<td>2.8</td>
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<td>Public consumption (y/y) (%)</td>
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<td>Gross fixed capital formation (y/y) (%)</td>
<td>8.4</td>
<td>(8.6)</td>
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<tr>
<td>Exports (y/y) (%)</td>
<td>5.9</td>
<td>(7.0)</td>
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<td>Imports (y/y) (%)</td>
<td>9.8</td>
<td>(8.9)</td>
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<tr>
<td>Net exports contribution (p.p.)</td>
<td>-1.6</td>
<td>(-0.6)</td>
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Values from the July projection are given in brackets (seasonally adjusted). Indicators with values higher than in the July projection are marked green, whereas indicators with lower values are marked red. Values for 2014Q3 are the estimates of IE and constitute the starting point for the November projection.
Consumption demand
Labour market – 2014 Q2 and Q3

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<td>Labour productivity (y/y) (%)</td>
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<td>(2.2)</td>
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<tr>
<td>Gross wages (y/y) (%)</td>
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<td>(4.2)</td>
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<tr>
<td>Total employment LFS (y/y) (%)</td>
<td>1.7</td>
<td>(1.5)</td>
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<td>Unemployment rate LFS (%)</td>
<td>9.2</td>
<td>(9.9)</td>
</tr>
<tr>
<td>Participation rate (%)</td>
<td>56.2</td>
<td>(56.4)</td>
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Values from the July projection are given in brackets (seasonally adjusted). Indicators with values higher than in the July projection are marked green, whereas indicators with lower values are marked red. Values for 2014Q3 are the estimates of IE and constitutes the starting point for the November projection.
Stable employment forecasts, no wage pressure (NBP Quick Monitor.)

Employment forecasts

Share of enterprises planning wage increases

Wage pressure
Labour market

- **Employment**
  - y/y, %
  - VII 2014
  - XI 2014

- **Unemployment rate (LFS)**
  - %
  - VII 2014
  - XI 2014

- **Gross wages**
  - y/y, %
  - VII 2014
  - XI 2014

- **Participation rate**
  - %
  - VII 2014
  - XI 2014
Consumer sentiment and retail sales

- Improvement in consumer sentiment in September 2014, after 2-month deterioration period.
- The index of intended major purchases in the next 12 months has stabilized since 2014Q2.
Consumption demand

Real gross disposable income
(similar)

Private consumption
(lower)
Outline:

Changes between rounds

Projection 2014 - 2016

Government demand
EU transfers absorption (lower)

- Human capital
- Agricul. Fund for Rural Dev.
- Other expend., mainly enterprises
- Public sector current expenditure
- Common Agricultural Policy
- Public sector capital investment
- EU transfers

EUR bn

VII 2014
XI 2014

EUR bn

0.5 1 1.5 2 2.5 3 3.5 4 4.5 5

07q1 08q1 09q1 10q1 11q1 12q1 13q1 14q1 15q1 16q1 16q4


0 2 4 6 8 10 12 14 16 18 20


0 2 4 6 8 10 12 14 16 18 20

0 1 1.5 2 2.5 3 3.5 4 4.5 5

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
Inflation projection of the NBP based on the NECMOD model

Public consumption

Public consumption

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<td>08q1</td>
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<td>15q1</td>
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<td>16q1</td>
<td></td>
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<tr>
<td>16q4</td>
<td></td>
</tr>
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</table>

VII 2014  XI 2014
Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

Investment demand
Investment demand

Forecasts of demand, production and orders

- Demand (SA)
- Production (SA)
- Orders (SA)

Source: NBP Quick Monitoring Survey data

Forecasts and assessment of exports conditions

- Index of exports contracts (SA)
- Index of exports forecasts (SA)
- Index of new exports contracts (SA)

Source: NBP Quick Monitoring Survey data
Investment outlays of enterprises

Estimated value of newly started investments – cumulative data, current prices, y/y (F01/I-01 CSO)

New investment indicator (share of enterprises planning to commence new investment within a quarter, NBP Quick Monitoring Survey)
Investment demand

**Housing construction**
- Dwellings for which permits have been granted
- Dwellings in which construction has begun

y/y, %

```
04m1 05m1 06m1 07m1 08m1 09m1 10m1 11m1 12m1 13m1 14m1
```

**New housing loan contracts:**
- Value and number of contracts

```
Value (PLN bn)
```

Source: CSO data

Source: ZBP
Gross fixed capital formation
(lower in short and medium term)
Outline:

Changes between rounds

Foreign trade
Lower dynamics of Polish exports

Polish exports by countries
(current prices, EUR, y/y)

- Deeper slump in exports to Russia and Ukraine.
- Decreasing exports to UE countries – due to the economic slowdown in UE, a drop in sales of final GVC goods intended for the Russian market and the Russian embargo on food, covering also UE countries.
Foreign trade

Real effective exchange rate
(weaker)
Net exports contributions
(higher in the short term)
GDP (lower)

- Consumption
- Change in inventories
- Gross fixed capital formation
- Net exports
- GDP

y/y, %

VII 2014
XI 2014
Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

Inflation
CPI inflation – 2014Q2 and 2014Q3

<table>
<thead>
<tr>
<th></th>
<th>14q2</th>
<th>14q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI inflation (y/y) (%)</td>
<td>0.3</td>
<td>-0.3</td>
</tr>
<tr>
<td></td>
<td>(0.2)</td>
<td>(-0.2)</td>
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<tr>
<td>Core inflation (y/y) (%)</td>
<td>0.8</td>
<td>0.5</td>
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<tr>
<td></td>
<td>(0.8)</td>
<td>(0.5)</td>
</tr>
<tr>
<td>Food price inflation (y/y) (%)</td>
<td>-0.4</td>
<td>-1.9</td>
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<td>(-0.5)</td>
<td>(-1.8)</td>
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<td>Energy price inflation (y/y) (%)</td>
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<td>-0.5</td>
</tr>
<tr>
<td></td>
<td>(-0.6)</td>
<td>(-0.1)</td>
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</table>

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

Index of energy commodity prices (lower)

Index of agricultural commodity prices (lower)
Brent oil prices

The global production, consumption and inventories of Brent oil

- A decrease in Brent oil prices in 2014 due to lower consumption, which is the effect of lower global economic growth as well as the increase in shale oil extraction in the USA.
- In October 2014 USA Department of Energy (DE) lowered its oil production forecast for 2015 expecting OPEC to reduce its extraction (by 300 tous. b/d as compared to 2014).
- Moreover Department of Energy envisages the global demand improvement in 2015, which combined with lower production leads to a decrease in oil inventories and a gradual increase in oil prices.
- Oil prices index based on futures contracts was lowered as compared to the July projection assumptions, however it is following the upward trend, in line with the forecasts of DE.
Agricultural commodities
(favourable supply conditions and stable production costs)
Stable agricultural commodity prices expectations

ICSR NBP (cut-off: 2014-09-30, V 2010=100)

Historic realization ICSR NBP
90% Confidence interval
ICSR NBP forecast

ICSR NBP forecasts (cut-off: 2014-09-30)

Wheat  Rapeseed  Hog
Skimmed milk powder  Butter
Cocoa  Coffee  Sugar
Frozen orange juice  Potatoes (right axis)
Food and non-alcoholic beverages inflation
2014 vs 2005-2013 average

Prognostic groups contributions to the difference between the average path of 2005-2013 and CPI path of the 2014
Core inflation

Core inflation measures (%, y/y)

- Variability interval of core inflation indices
- Inflation excluding most volatile prices
- Inflation excluding food and energy prices
- Inflation excluding administered prices
- 15% trimmed mean

Decomposition of core inflation (CPI excl. food and energy prices, y/y)

Core inflation

Excise goods
Other goods
Dwelling maintenance
Telecommunication
Restaurants and hotels
Other services
PPI Inflation

Deceleration of the downward trend of the producer price index

- In recent months there has been a deceleration of the downward trend of the producer price index, which is lasting for over 2 years.

- The dynamics of producer price index in September diminished slightly by 0.1 p.p. to -1.6% y/y.

- In October, the dynamics of PPI on exports market production was lower than PPI composite (y/y) by 0.5 p.p.

- The dynamics of the domestic market production PPI y/y (-1.2% y/y, IE forecast for September) was higher than the dynamics of PPI composite y/y by 0.4 p.p.

*Source: CSO, IE.*
Low cost pressure

IMF index 2005=100

PPI 2010=100

IMF energy index  Manufacturing commodities index

PPI - domestic market
Inflation in the euro area
Positive, however low ULC growth, v. slow closing of the output gap and base effect

**Output gap estimates in the euro area**

**ULC in the euro area**

**Impact of base effect on HICP, related to price changes of energy and unprocessed food (p. p.)**

Source: IMF, 10.2014 WEO
Inflation in the CEE countries and the euro area
Potential output
Import prices and unit labour costs

**Import prices (excluding oil and natural gas)**

(lower)

**Unit labour costs**

(lower in medium and long term)
Domestic inflation

- Food prices inflation (%)
- Energy prices inflation (%)
- CPI inflation (%)
- Core inflation (%)
CPI inflation (y/y, %)
Outline:

Changes between rounds

Projection 2014 - 2016

Uncertainty

- Risk factors
- Fan charts
Outline:

Changes between rounds

Projection 2014 - 2016

Risk factors
Scale of recovery abroad and in Poland

- Stagnation in the euro area (lack of improvement in competitiveness, ineffective actions aimed at stimulating lending, limited possibilities of ECB monetary policy easing) leading to decoupling of inflation expectations, deeper slowdown in emerging economies, especially in China, growing tensions in UE-Russia relations, deterioration in business sentiment in Europe, slower growth of global energy and agricultural commodity prices – pessimistic scenario

- Higher economic growth abroad (in the euro area, in particular in Germany, in USA, in China), the effect of the Russia-Ukraine conflict on the economy wears off, faster rebuilding of investment and consumption – optimistic scenario
Consumers and producers sentiments in the euro area

- Readings of PMI indicate a deterioration in situation both in manufacturing and in services sectors.

- Since the second half of 2014 consumers sentiments diminish, subsequent readings are below the market expectations median.

Source: Eurostat, Bloomberg
Euro area – enterprises’ access to loans

MFI loans for the private sector in the euro area (% GDP)

Credit conditions in the euro area (BLS survey)*

• Banks restrain from stronger credit policy easing due to the uncertainty associated with the review of banks’ assets conducted by ECB.
• The structural problems of the banking sector in EA might be underestimated.
• The possible prolonging of EA banks deleveraging process might decrease the effectiveness of ECB action aimed at stimulating lending, which may hamper the economic recovery in the euro area.

*positive values mean tightening of credit policy, negative values – easing.
Euro area – conditions of public debt financing

- Very low bonds profitability in some countries of EA (close to historically low levels), despite unsolved fiscal and structural problems of these economies – according to IMF these assets valuation substantially diverges from the fundamental factors.
- Possible change in financial markets risk evaluation may lead to higher pressure on fiscal tightening in the euro area, deteriorating financing conditions for banks and enterprises.
Since July average monthly Brent oil prices are decreasing due to:

- low demand (conditioned on the global economic growth),
- high supply (the increase in extraction of shale oil in USA; lower political risk for the supply of oil from Iraq and Libya)

The forecasts of the US Department of Energy which indicate the rise in oil prices in 2015 are based on the assumptions concerning the global economic growth.
The increase in probability of recession and deflation in the euro area

Probability of recession (%)

Probability of deflation (%)

- October WEO IMF, forecast for 2014Q3-2015Q2
- April WEO IMF, forecast for 2013Q4-2014Q3
Pessimistic scenario – economic conditions abroad

**GDP abroad**

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<tr>
<th>Period</th>
<th>2007q1</th>
<th>2008q1</th>
<th>2009q1</th>
<th>2010q1</th>
<th>2011q1</th>
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<th>2013q1</th>
<th>2014q1</th>
<th>2015q1</th>
<th>2016q1</th>
<th>2016q4</th>
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<tbody>
<tr>
<td>y/y, %</td>
<td>-8.0%</td>
<td>-8.0%</td>
<td>-8.0%</td>
<td>-8.0%</td>
<td>-8.0%</td>
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<td>-8.0%</td>
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**Global index of agricultural commodity prices**

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<th>2016q1</th>
<th>2016q4</th>
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<tr>
<td>USD, 2011=1</td>
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**Value added deflator abroad**

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<td>y/y, %</td>
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<td>2.5%</td>
<td>2.5%</td>
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**Global index of energy commodity prices**

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<tr>
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<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
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</table>

| *Narodowy Bank Polski* | *Inflation projection of the NBP based on the NECMOD model* | 61 |
Pessimistic scenario – GDP

- Consumption
- Change in inventories
- Gross fixed capital formation
- Net exports
- GDP

Changes in GDP over time, with projections for different scenarios.
Pessimistic scenario – inflation
Outline:

Changes between rounds

Projection 2014 - 2016

Fan charts
CPI inflation projection – November 2014

<table>
<thead>
<tr>
<th>Quarter</th>
<th>below 1.5%</th>
<th>below 2.5%</th>
<th>below 3.5%</th>
<th>below central path</th>
<th>in the range (1.5-3.5%)</th>
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<td>0.99</td>
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<td>15q3</td>
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<td>0.82</td>
<td>0.95</td>
<td>0.56</td>
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<td>0.94</td>
<td>0.58</td>
<td>0.41</td>
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<td>16q3</td>
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<tr>
<td>16q4</td>
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<td>0.76</td>
<td>0.93</td>
<td>0.59</td>
<td>0.42</td>
</tr>
</tbody>
</table>
GDP projection – November 2014
We protect the value of money