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CONSEQUENCES OF INTRODUCING THE EURO FOR THE POLISH FOREIGN TRADE IN AGRO-FOOD PRODUCTS

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Background

- Expected introduction of the euro :
 - The Maastricht Treaty (formally, the Treaty on European Union or TEU), 1992;
 - Athens Treaty (The Treaty of Accession, 2003;
 - Obligation with derogation;
- Ongoing Discussions and Debates on:
 - Appropriateness and fulfilment of the convergence criteria;
 - Pros and cons of introducing the common currency (€);
 - Effect of joining and participating in the ERM II.



Objectives (I)

- Discuss briefly pros and cons of adopting the euro from a macroeconomic standpoint and in the context of potential sectorial effects;
- Depict development of the Polish agro-food foreign trade as well as the exchange rate fluctuations after the accession to the EU;
- Highlight some theoretical aspects of the exchange rate role in shaping a country competitiveness in the international trade;



Objectives (II)

- Show theoretically potential transmission channels between exchange rates and price levels;
- Present movements of relative prices of selected agro-food products in comparison to the exchange rates fluctuations;
- Attempt to assess how the adoption of the euro may affect the Polish agro-food trade dynamics, particularly with the EU countries.



Pros and Cons of Joining the Eurozone – A Macro Perspective

PROS

- Lower transaction costs related to currency exchange and exchange risks;
- Lower interest rates;
- Elimination of a financial crisis risk;
- More transparent and comparable prices;
- Increased macroeconomic stability.

CONS

- Disappearance of autonomy in monetary policy,
- a risk of inflation,
- a risk of a credit boom,
- asymmetry in distribution of the effects of replacing the national currency.

The overall balance of costs and benefits seems to be clearly positive. According to the National Bank of Poland simulations exports from Poland should increase by 12-13% annually at least over a period of several years contributing substantially to the economic growth.



Effects of Joining the Eurozone – A Sectorial Perspective

- Many studies, mainly based on gravity models of international trade, showing positive effects of a common currency or monetary unions on international trade (e.g. Rose 2000, Frankel and Rose 2002, Glick and Rose 2002).;
- Relatively little empirical evidence on how this impact is distributed across countries and sectors;
- Theoretically, different sectors may benefit differently from euro adoption due to:
 - technological and market structure characteristics,
 - differences in specialization at national level;
- Emergence of “winners and losers” in the export competition (Pappalardo and Vicarelli 2012);
- Some other related works (de Nardis and Vicarelli 2003, Baldwin, Skudelny and Taglioni 2005, de Nardis, de Santis and Vicarelli 2008);
- Lack of studies on how conversion of a national currency into a single currency can impact sectorial trade.

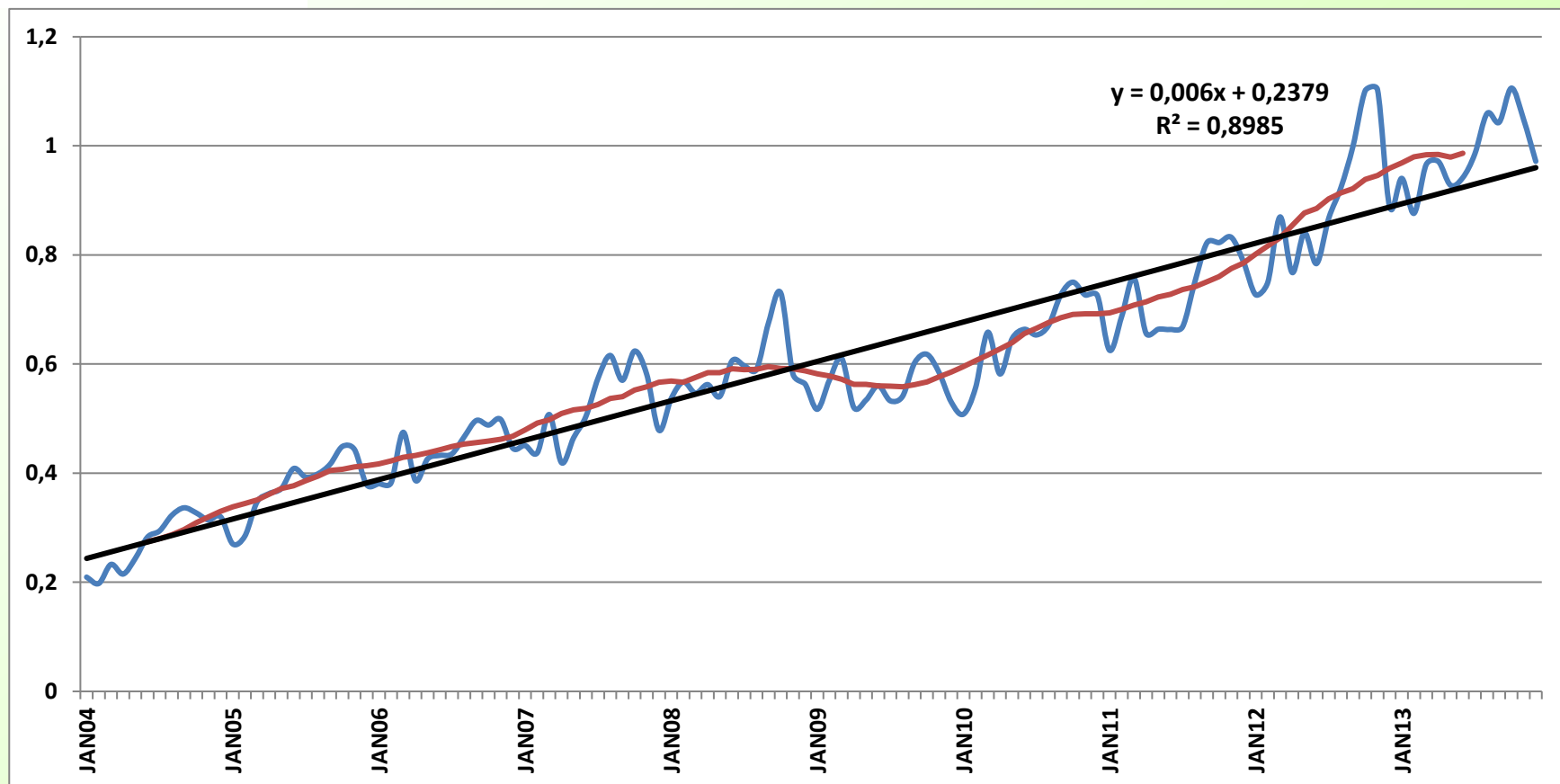


Polish Foreign Agro-Food Trade in 1995-2013 – Key Facts

- The export increased from around **2** to around **18 bn euros** and import from around **3** to **14 bn euros**;
- Trade balance was slightly negative until 2002 and then it was considerably improving;
- In 2013 Poland reached around **4 bn euro** positive trade balance in agro-food products;
- A slight decrease in the agro-food industry export and import in 2009, but in subsequent years the rates of both export and import growths recovered to the levels prior to 2008 (almost **40% a year**);
- In 2013 export amounted to **18.7 bn** and import to **13.7 bn euros**.
- In 2013 the agro-food trade constituted **12.5%** of the Polish total export and **9.2%** of the total Polish import;
- As of 2012 the agro-food products were mostly exported to the EU27 (**76.9%**) and imported from the EU27 (**68.5%**).



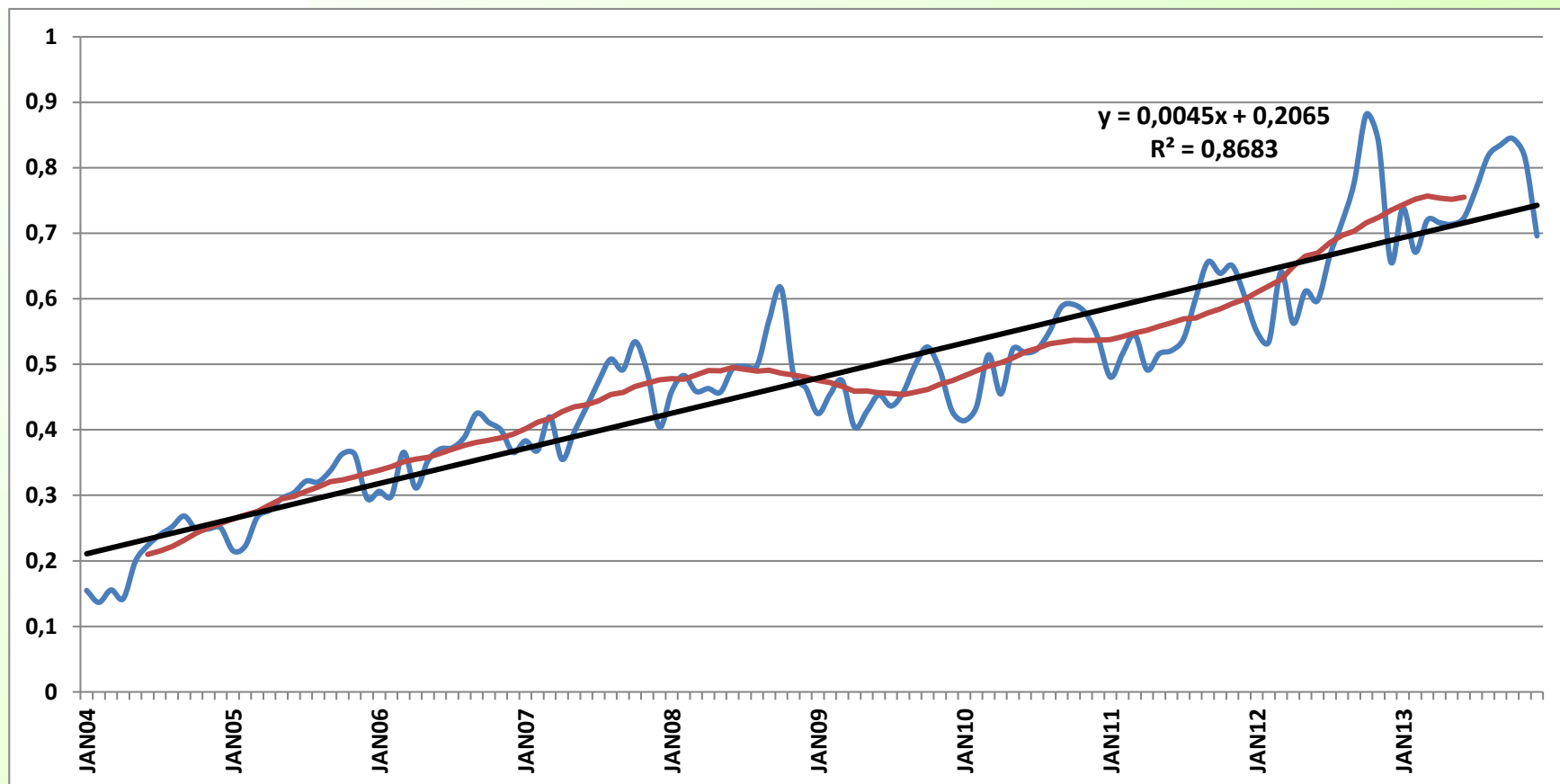
Polish Agro-food Export to the World in 2004-2014



Source: Own calculations based on the CAAC data



Polish Agro-food Export to the EU-28 in 2004-2014



Source: Own calculations based on the CAAC data

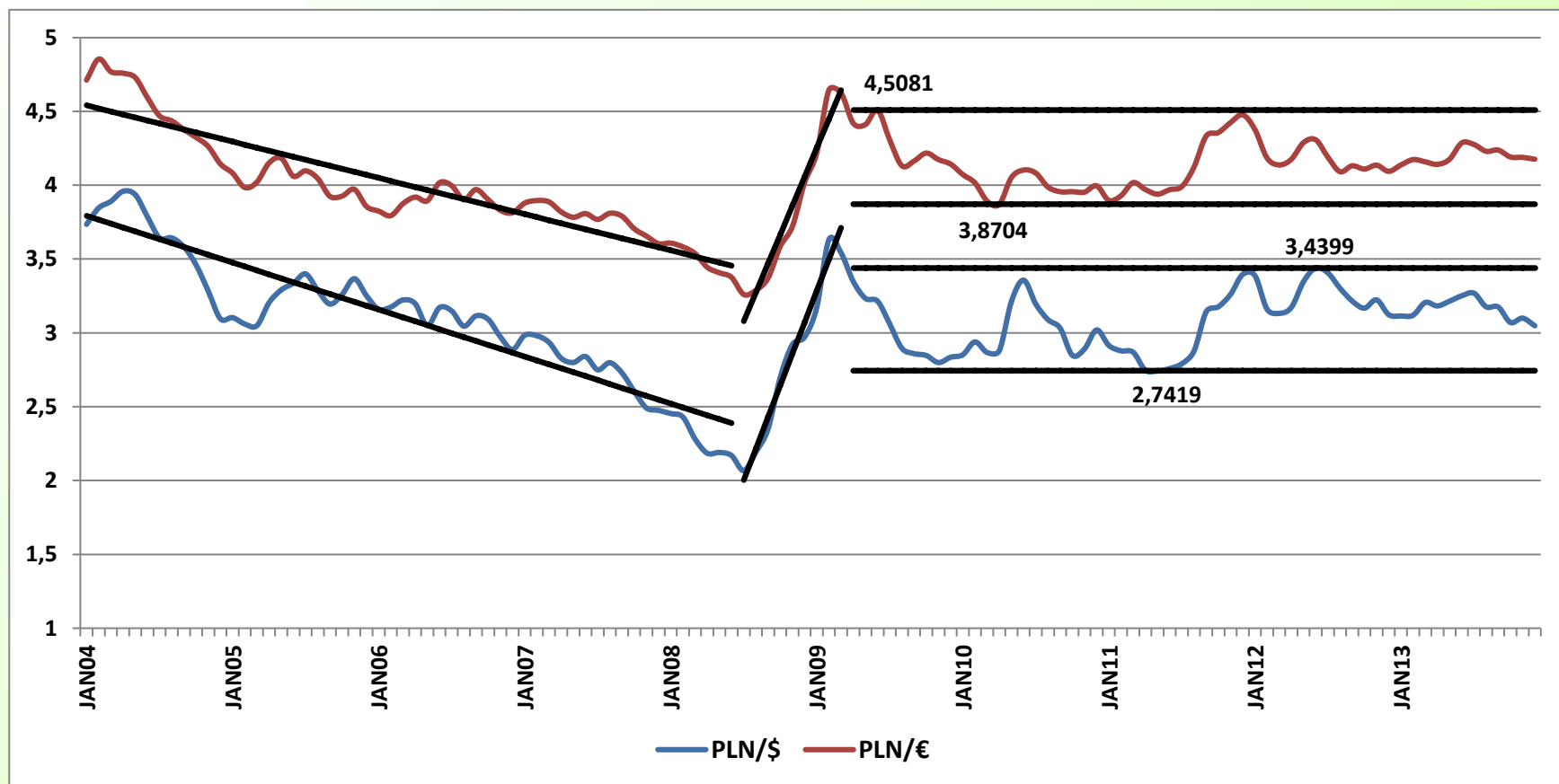


Exchange Rate and International Trade Competitiveness

- The basic theory says that the exchange rates play a vital role in a country's level of trade:
 - **Depreciation** → **export (+)** and **import (-)**
 - **Appreciation** → **export (-)** and **import (+)**
- Short run relationship:
 - **Interest Rate Parity (IPR) theory**
- Long run relationship:
 - **Law of One Price (LOP) Theory**
 - **Purchasing Power Parity (PPP) Theory**



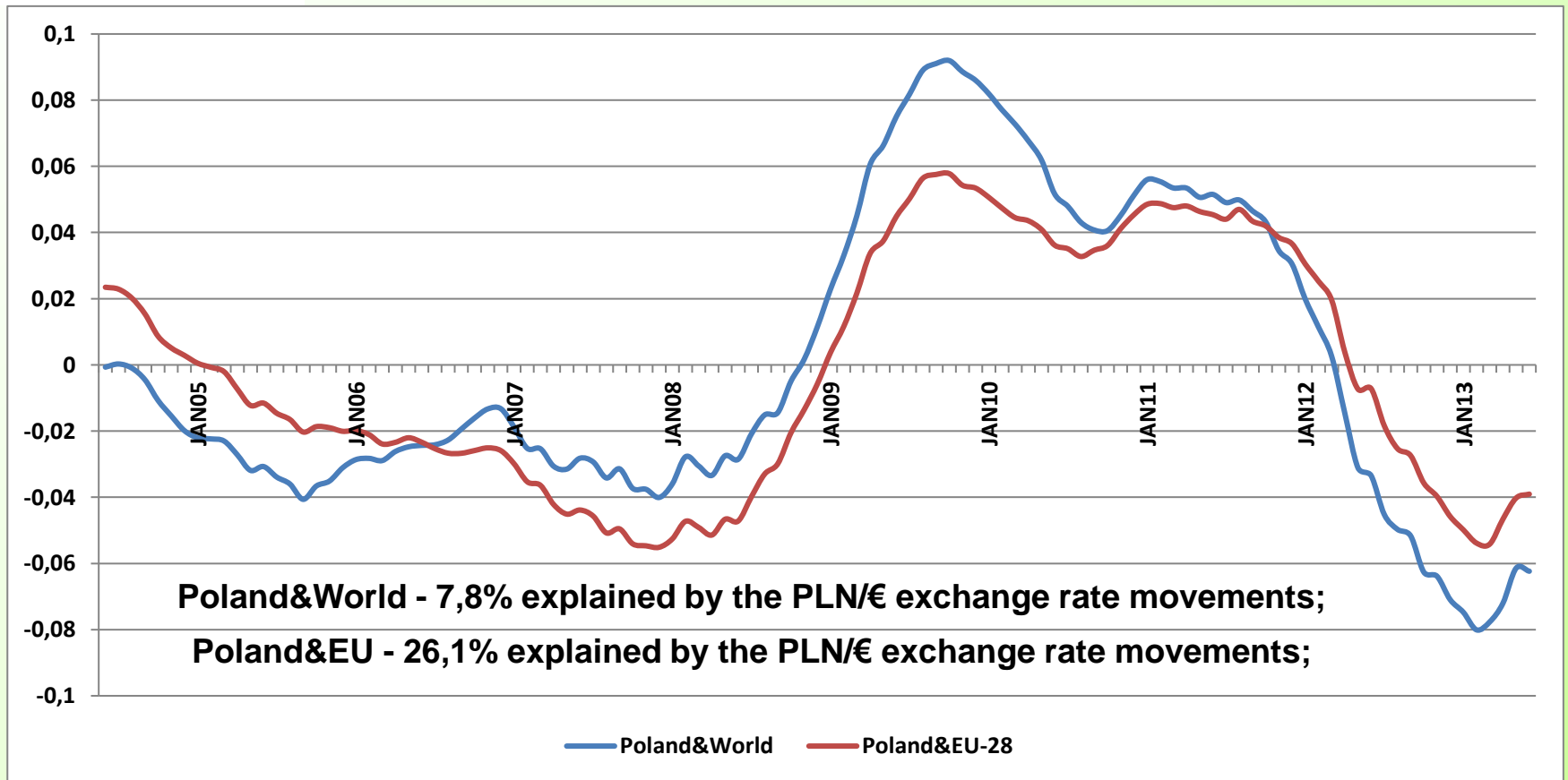
The PLN/\$ and PLN/€ Exchange Rates in 2004-2014



Source: Own calculations based on the NBP data



“Residuals” from the Polish Agro-food Export Time Series



Source: Own calculations based on the CAAC data



Exchange Rates and Price Levels – Transmission Channels

LOP Theory

$$P_{\text{PLN}}^i = E_{\text{PLN}/\text{€}} P_{\text{€}}^i \quad E_{\text{PLN}/\text{€}} = P_{\text{PLN}}^i / P_{\text{€}}^i$$

Relative PPP Theory

$$(E_{\text{PLN}/\text{€}, t} - E_{\text{PLN}/\text{€}, t-1}) / E_{\text{PLN}/\text{€}, t-1} = \Pi_{\text{PLN}, t} - \Pi_{\text{€}, t}$$

Long run model

$$P = \gamma P^N + (1 - \gamma) P^T \quad E_{\text{PLN}/\text{€}} = P_{\text{PLN}}^T / P_{\text{€}}^T$$

$$P_{\text{PLN}} = \alpha P^N + (1 - \alpha) P^T \quad P_{\text{€}} = \beta P^N + (1 - \beta) P^T$$

$$P_{\text{PLN}} / P_{\text{€}} = [\alpha P_{\text{PLN}}^N + (1 - \alpha) P_{\text{PLN}}^T] / [\beta P_{\text{€}}^N + (1 - \beta) P_{\text{€}}^T]$$

$$P_{\text{PLN}} / P_{\text{€}} = E_{\text{PLN}/\text{€}} [\alpha P_{\text{PLN}}^N / P_{\text{PLN}}^T + (1 - \alpha)] / [\beta P_{\text{€}}^N / P_{\text{€}}^T + (1 - \beta)]$$

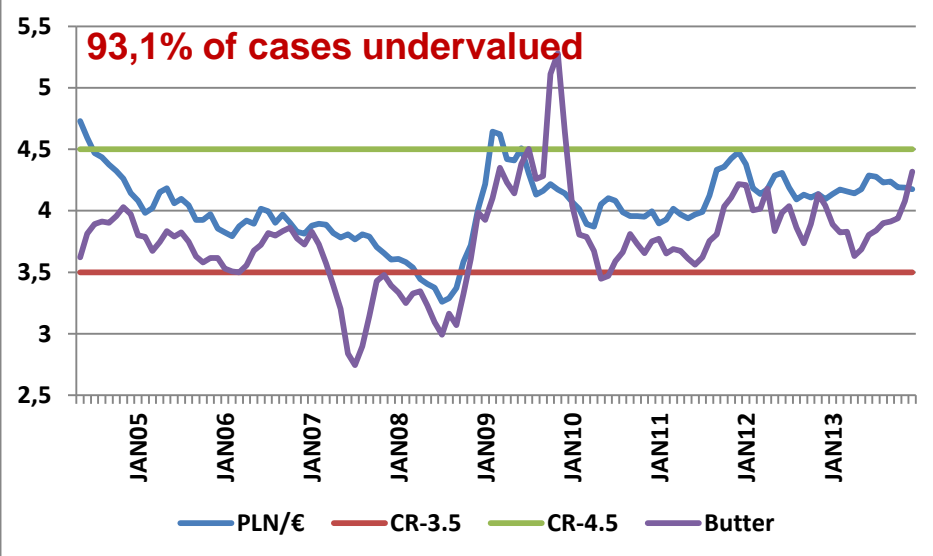
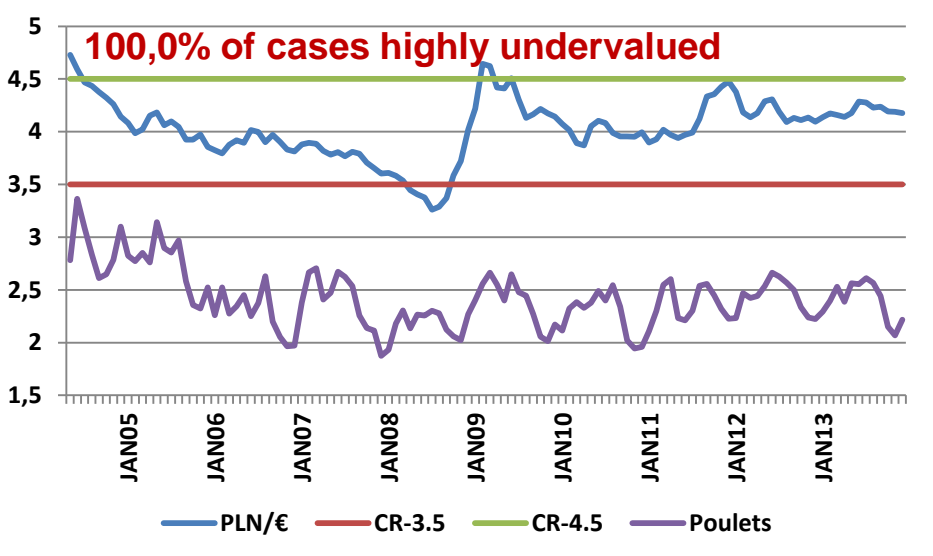
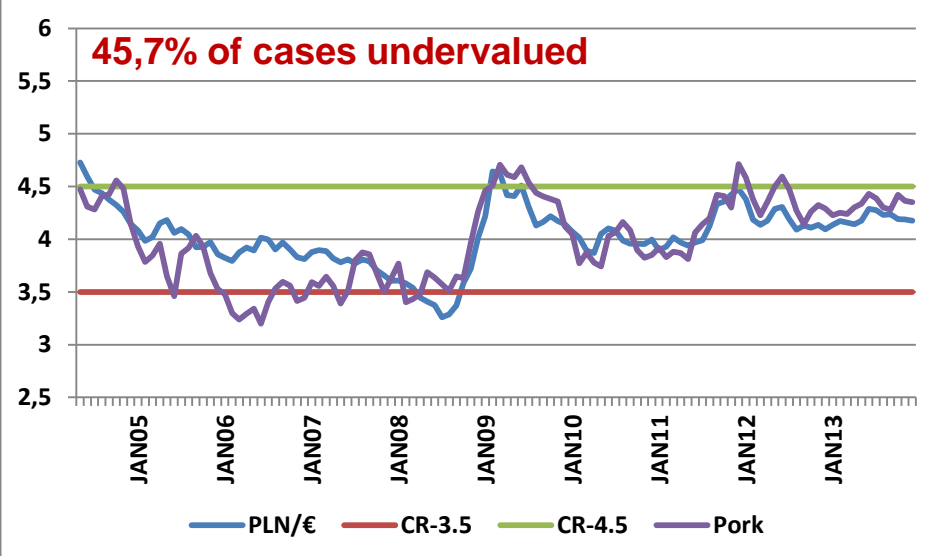
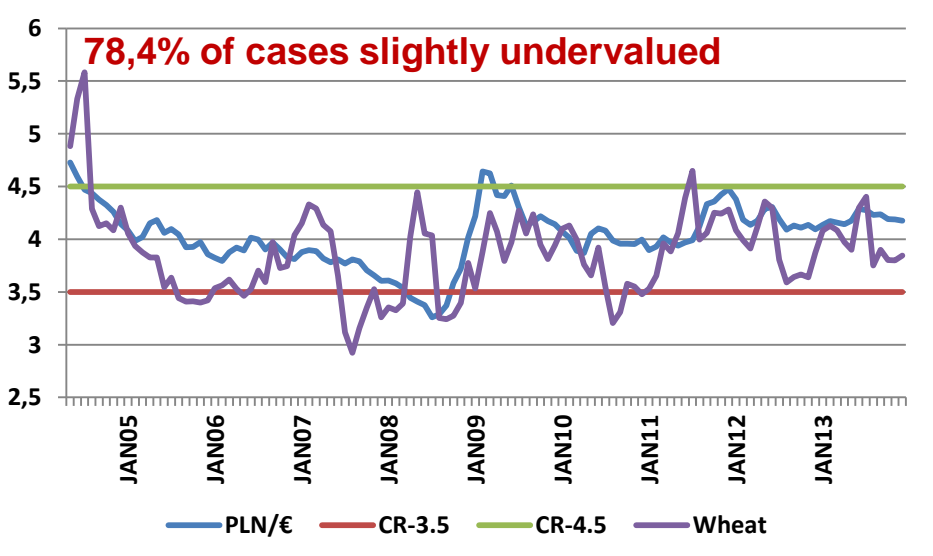
$$E_{\text{PLN}/\text{€}} = P_{\text{PLN}} / P_{\text{€}} [\beta P_{\text{€}}^N / P_{\text{€}}^T + (1 - \beta)] / [\alpha P_{\text{PLN}}^N / P_{\text{PLN}}^T + (1 - \alpha)]$$



Equilibrium Exchange Rate – Optimal Level (?)

- Two major approaches to estimate an equilibrium exchange rate:
 - Purchasing power parity;
 - Monetary models augmented with productivity trends;
- Undervalued vs. overvalued and an optimal currency exchange rate (*The Exchange Rate and U.S. Agriculture by G.E. Shuch, AJAE, 1974, pp.1-13*):
 - Relative price may stimulate or dampen exports,
 - Undervalued currency – implicit export subsidies,
 - Overvalued currency – implicit export taxes,
 - Lagged effects of realignments in currency values.

Relative Prices of the Selected Agro-food Products (PLN/€) and Potential Currency Conversion Levels



Source: Own calculations based on the NBP and the EC data



Final Remarks & Conclusions

- In the analyzed period almost Polish agro-food export exhibited a very strong growing trend (to the world almost 90%, and to the EU-28 around 87% of its variability);
- Sources of the Polish agro-food export success are successful adjustment in the period of economic transformation, opened foreign markets, and growing demand for Polish products meeting international quality requirements and standards;
- Despite a quite common perception very little of the export variability can attributed to the PLN exchange rate movements, although periods of lower and higher export dynamics were accompanied by appreciation and depreciation of the PLN;



Final Remarks & Conclusions

- Based on comparison of relative prices, reflecting PPP concept in a very simple manner, mostly undervaluation and price convergence can be observed (relative losers and winners? some branches better off than the other?);
- Current market exchange rate as a conversion rate would rather be favorable for the Polish agro-food export (stabilization and lower volatility)
- Further studies using autoregressive distributed lag error correction model (ARDL-ECM) and logistic regression.



Thank you for your attention