# Discussion of the paper

## „Small, Simple and Fine: The OeNB Forecast Model for CESEE"

by
Jesus Crespo-Cuaresma, Martin Feldkircher,
Tomas Slacik and Julia Woerz

Discussant: Jan Przystupa
National Bank of Poland

**Motivation**: construction of a small model to prepare the short-term(?) forecasts of the GDP and imports in CESEE and to check a consistency and plausibility of the expert judgement.

The model consists of 6 equations (six structural cointegration relationships):

$$c\_priv = \alpha_1 * gdp + \alpha_2 * (ir - cpi)$$

$$inv = \beta_1 * gdp + \beta_2 * (ir - ppi)$$

$$exp = \gamma_1 * (er * pc\_ea / pc) + \gamma_2 * gdp\_eu + \gamma_3 * exp\_eu + \gamma_4 * gdp$$

$$imp = \delta_1 * gdp + \delta_2 * (er * pc\_ea / pc)$$

$$er = \kappa_1 * (ir - ir\_ea) + \kappa_2 * (m3 - m3\_ea) + \kappa_3 * (gdp / er - gdp\_ea)$$

$$ir = \phi_1 * cpi + \phi_2 * gdp + \phi_3 * er + \phi_4 * ir\_ea$$

and 11 variables modelled by the AR(1) processes:

inflation in euro area, inflation in resp. country, money supply in euro area, money supply in resp. country, GDP in EU27, exports in EU27, GDP in euro area, interest rates in euro area, producer prices, stock changes, and public consumption.

**Method:** error correction (EC) model estimated by means of seemingly unrelated regressions (6 structural equations + 11 AR(1) processes).

To check the cointegration assumptions and the long-run relationships, the dynamic ordinary least squares (DOLS) method was used.

Method of testing, estimating and validating the model seems to be well matched.

QUESTIONS:

If we are thinking in terms of the long-run equilibrium, then how to explain e.g. **nominal** equilibrium exchange rate?

Does the EC adjustment parameter over 1 mean a permanent disequilibrium? (Croatia)

**Data:** quarterly data from the Q1 1995 till now.

A surprise coming from tests: „…there are no major obvious structural breaks in the estimation sample". Despite the structural and major policy changes in Czech Republic, Hungary and Poland that took place after 1995?

**General remarks:**

A key question on horizon of the forecasts: less or more than two quarters?

The question arises from the structure of the model:

if some GDP components, *ir* and *er* are predicted from the structural model and *cpi* (which depends on excesive demand or costs) is generated by an *AR(1)* then the longer horizon of the forecasts the bigger inconsistency between figures coming from these two different models - unless we assume that the structural model perfectly follows the *AR(1)* processes. But if so, then it would be simpler to estimate *AR*s processes only.

Suggestion:
To avoid inconstistency, the CPI equation in a shape of the Phillips curve shall be incorporated to the structural part of the model, where e.g. excessive demand would be calculated from the detrended GDP
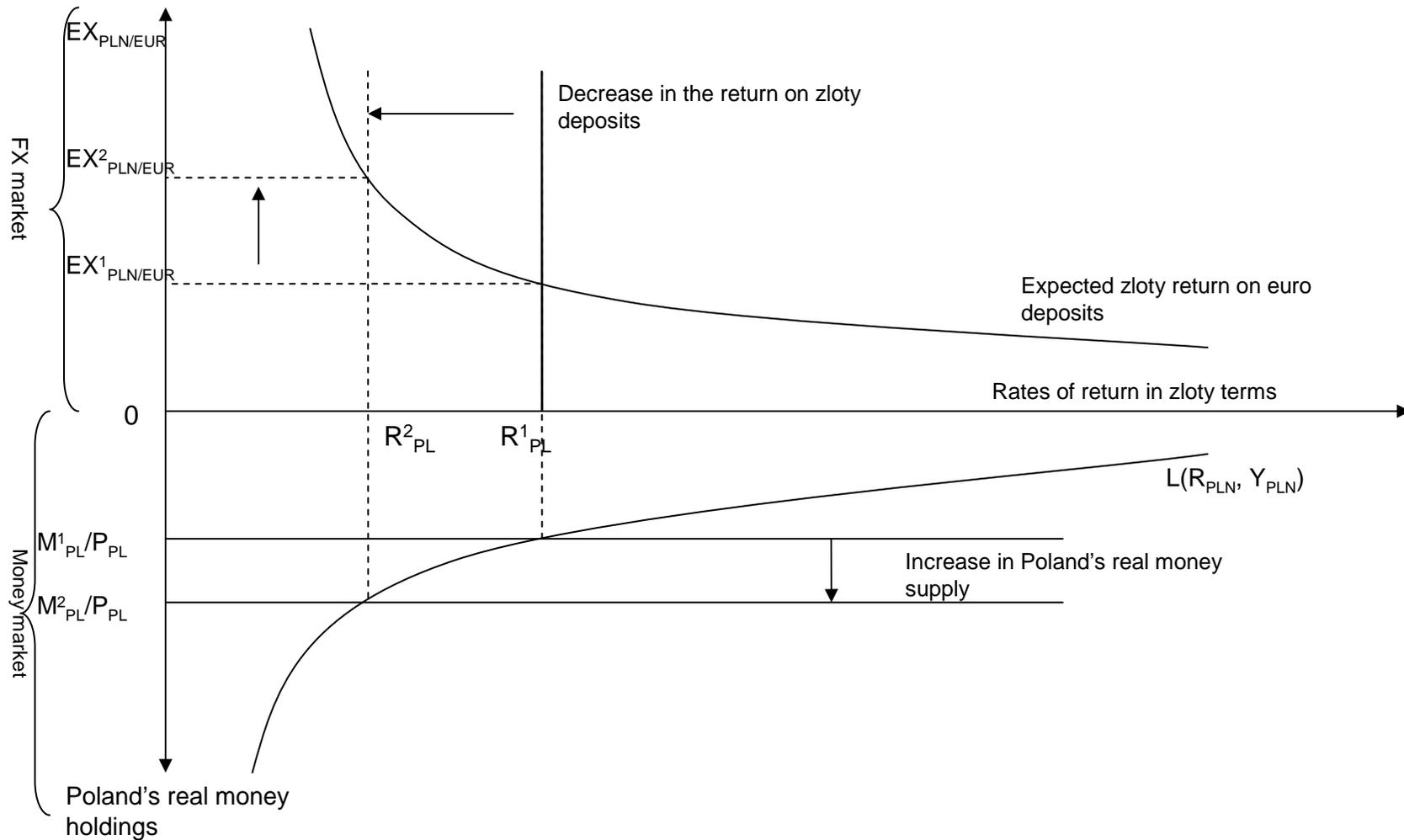or
if there is a need to produce forecasts of the GDP and imports only then, maybe, it would be more efficient to build a single equation (non-linear) models?

# Remarks on the specification of equations:

$$er = \kappa_1 * (ir - ir\_ea) + \kappa_2 * (m3 - m3\_ea) + \kappa_3 * (gdp/er - gdp\_ea)$$

**Why M3?**

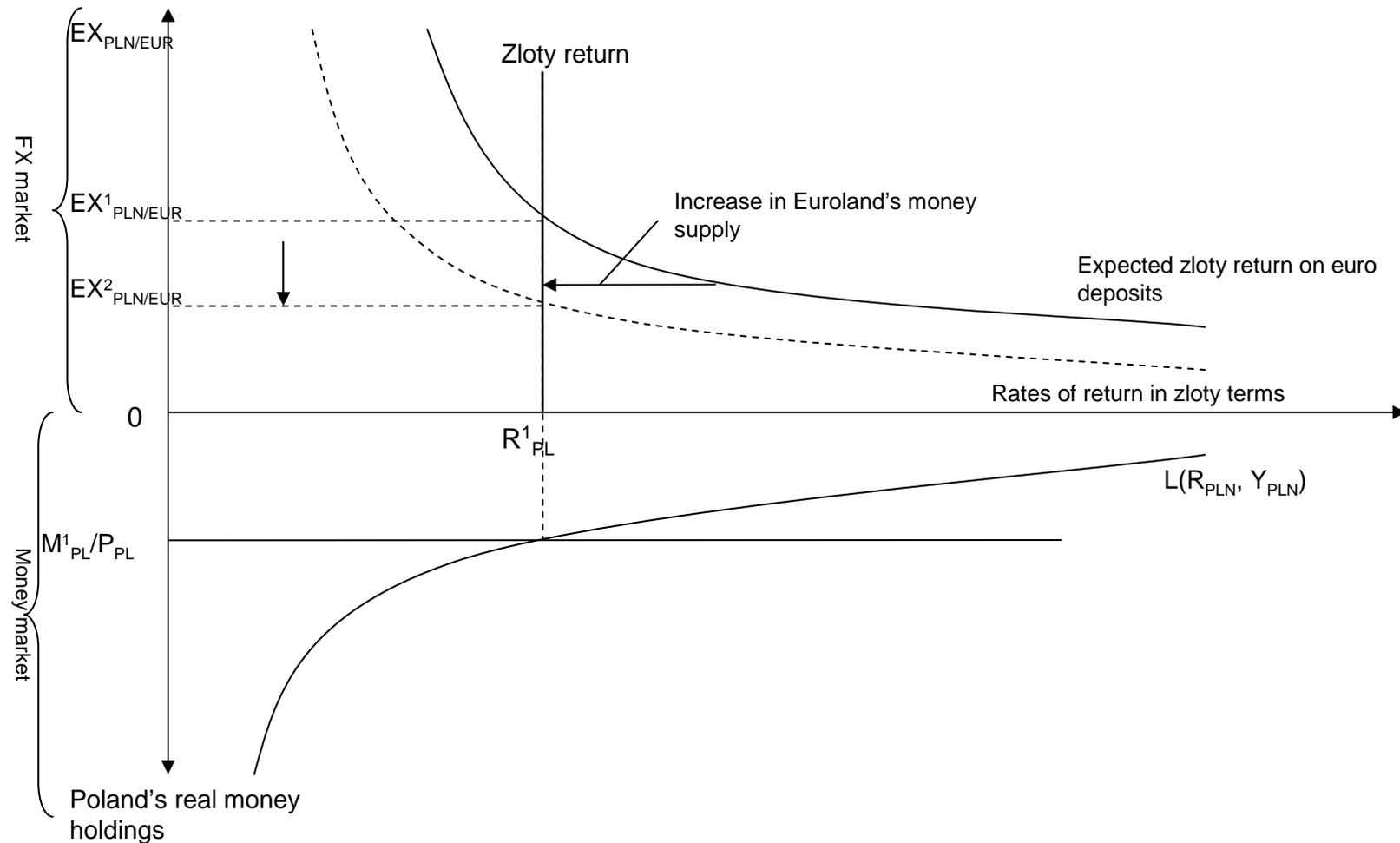Effect on $EX_{PLN/EUR}$ and $R_{PLN}$ of an increase in Poland's money supply

# Remarks on the specification of equations:

$$er = \kappa_1 * (ir - ir\_ea) + \kappa_2 * (m3 - m3\_ea) + \kappa_3 * (gdp/er - gdp\_ea)$$

**Why M3_ea?**

Effect on $EX_{PLN/EUR}$ and $R_{PLN}$ of an increase in Euroland's money supply

**Remarks on the specification of equations:**

$$\exp = \gamma_1 * (er * pc\_ea / pc) + \gamma_2 * gdp\_eu + \gamma_3 * \exp\_eu + \gamma_4 * gdp$$

Exports consist of the industrial goods in ~80%, hence, competitiveness depends on ULC rather. ULC can be approximated by the PPI.

Suggestion: to replace *pc* by *ppi*.

About 70% of exports goes to the Euro Area, hence, demand of the EA seems to be sufficient in the equation. Due to the high import intensity of exports, import volume becomes a useful explaining variable.

$$imp = \delta_1 * gdp + \delta_2 * (er * pc\_ea / pc)$$

Imports consist of the consumption goods in ~20%.The intermediate goods make the biggest part of imports. Competitiveness of imported goods on the domestic market depends on PPI or CPI rather.
Suggestion: to replace *pc* by *cpi* or *ppi*.

**Final remarks:**

If a CPI equation is included into the structural part of the model and M3, $M3_{ea}$, PC, $PC_{ea}$, $EXP_{eu}$, $GDP_{eu27}$ are deleted then the model becomes even smaller and simpler and consists of:

7 coherent structural equations (or 8, if PPI is related to CPI);

6 (or 5) AR processes;

the GDP trend equation.