Does the market structure affect the supply of different types of bank loans in the EU?

Georgios P. Kouretas
Department of Business Administration
Athens University of Economics and Business

Malgorzata Pawlowska
Warsaw School of Economics
Narodowy Bank Polski

ERFIN 15.09.2017

Agenda

- Motivation
- Roadmap to European Union banking sector
- Literature review
- Econometric model
- Empirical results
- Conclusions

Motivation

- Motivation
  - Entry of foreign banks into local banking markets is a worldwide phenomenon during the last decades that has attracted much attention in the literature.
  - The depth of this entry has important financial and economic implications in host countries.
  - Foreign-owned banks are also evident in substantial numbers in developed EU countries as well as in the CEE country-members of EU

- Goal
  - To examine empirically the impact of foreign bank presence **on credit growth in EU-17 and CEE-11 countries after the crisis.**

Motivation (cont'd)

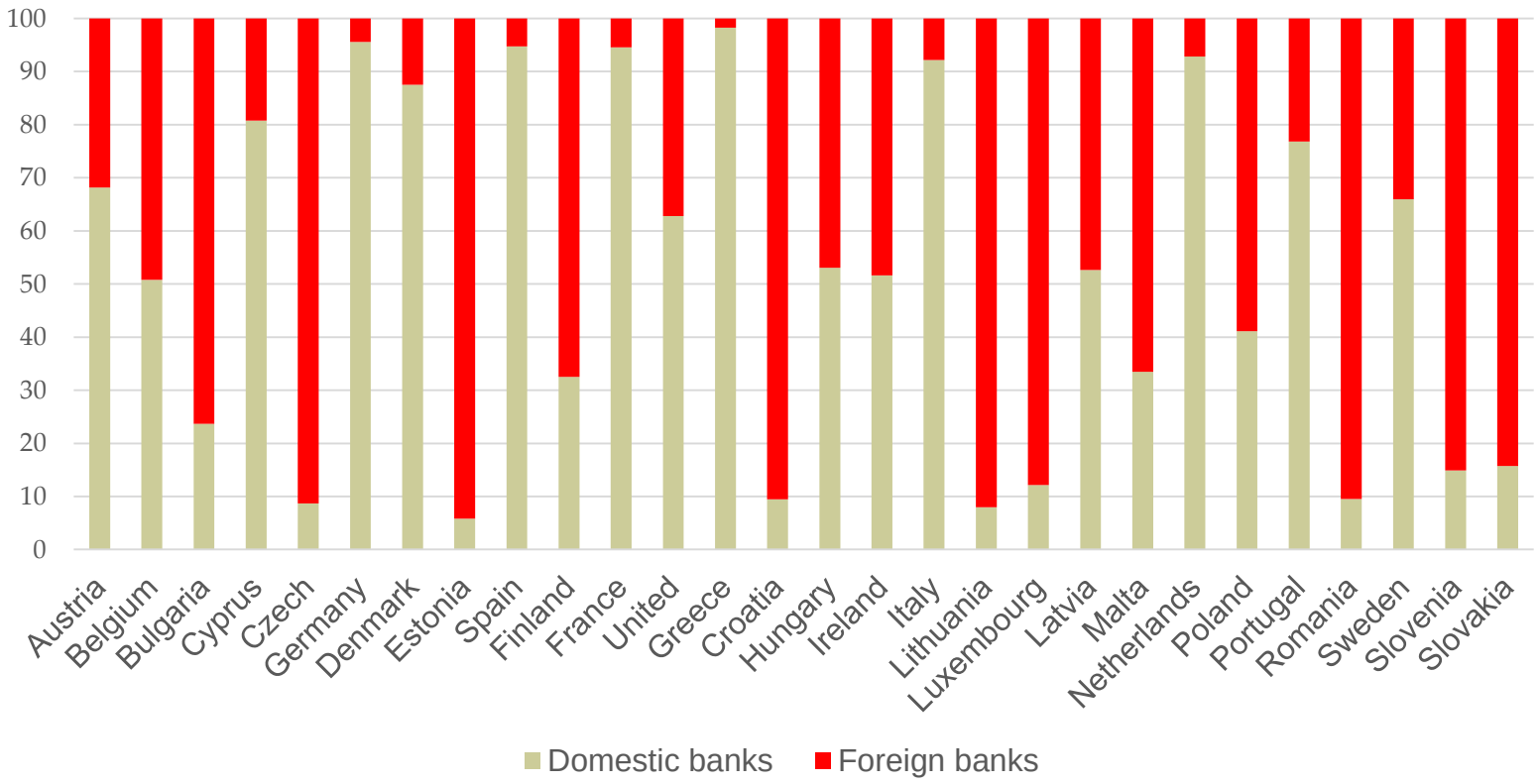
- Significant increase of foreign banks' presence in CEE countries during the last years (Arena et al., 2006; Fang et al. 2011)
- Foreign banks' ownership may be affected by:
  - Reforms and institutional quality in host country
    - Significant relationship found for CEE countries (Kouretas and Tsoumas, JFS, 2016); Drakos, Kouretas and Tsoumas (IRFA, 2016)
  - Institutional quality in home country
    - Question: Does stricter home country regulation lead banks to act "as if they are at home?"
    - Answer for CEE countries: Yes! (Ongena et al., 2011)
  - Monetary policy stance
    - Exogenous shocks in monetary policy may lead to:
    - lower informational asymmetries → trigger intensified competition and credit expansion → create incentives for banks to search for more risk

      Keeley (1990) and Dell' Ariccia and Marquez (2006)

Our focus

- Investigate potential asymmetry in total credit growth (also corporate, consumer and mortgage) in EU-17 and CEE-11 countries
- Explicitly control for the bank characteristics of host countries
- Why CEE countries?
  - Substantial changes in their banking sectors during the last decades
  - High level of concentration and foreign presence, as opposed to highly developed banking sectors in EU

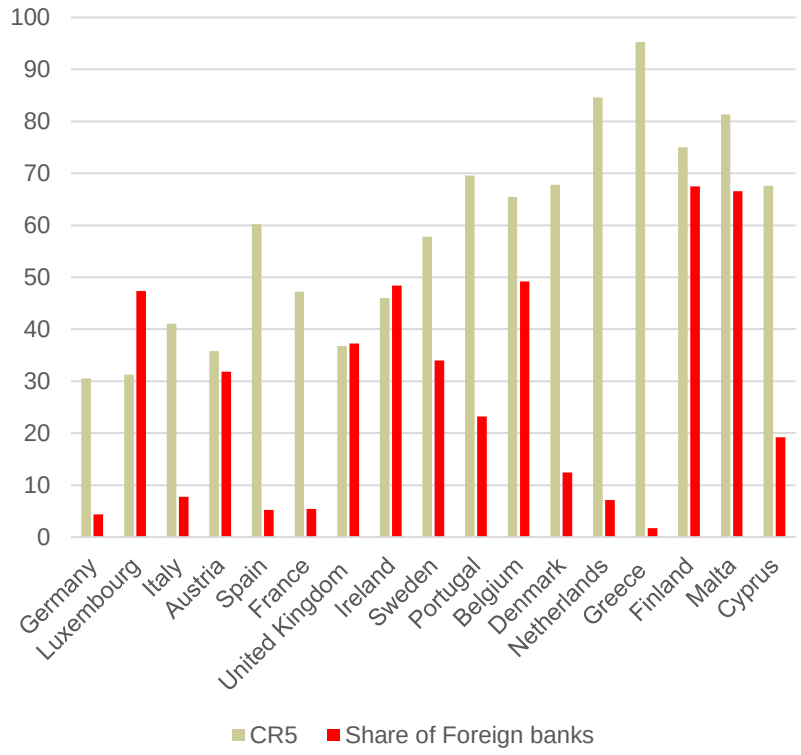
Domestic and Foreign banks in EU 2015 [%]



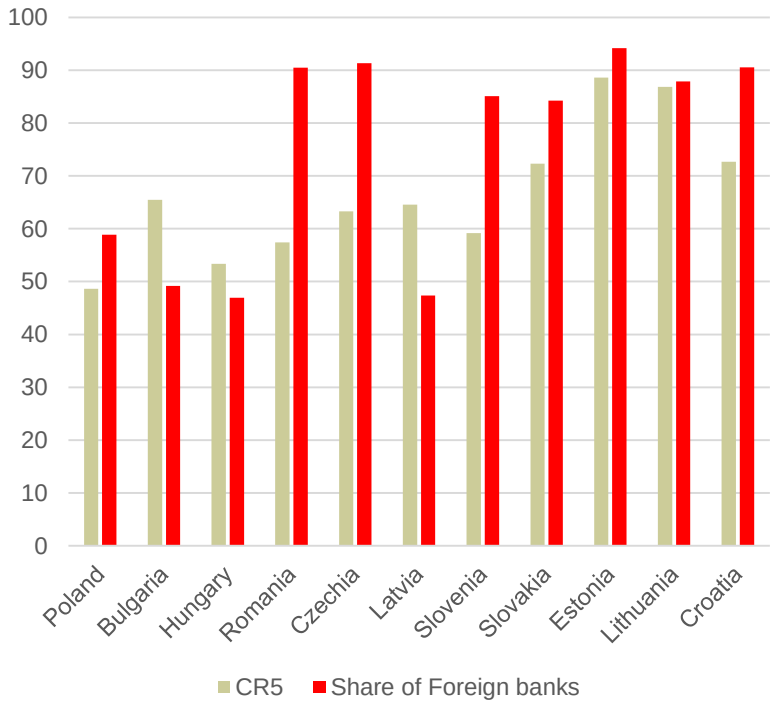
Source: ECB.

Banking Concentration and Foreign Presence for EU-28 [%]

EU-17



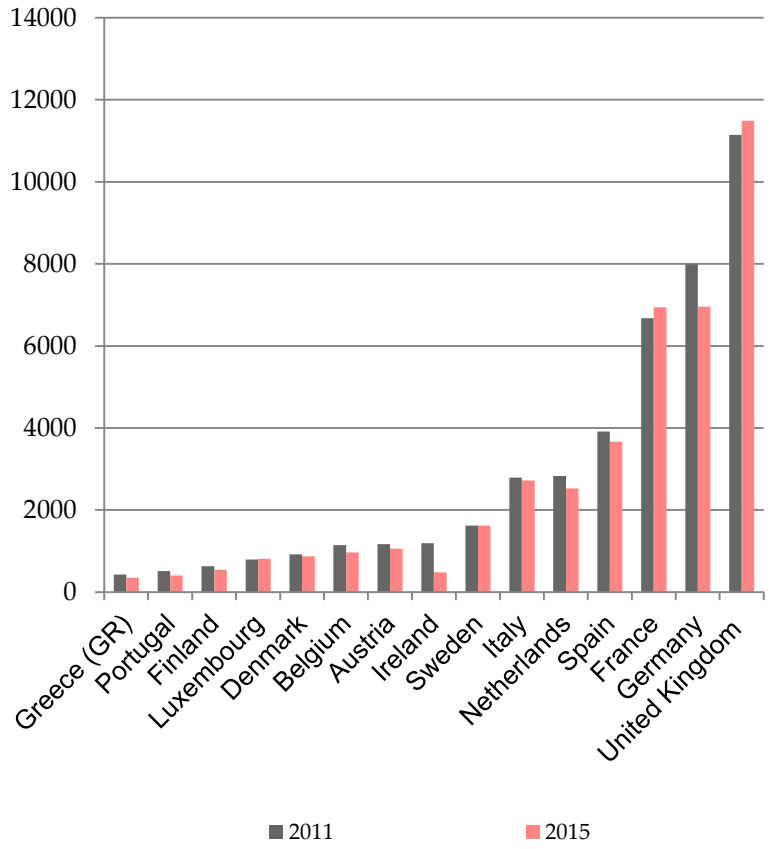
CEE-11



Source: ECB. Note: data for 2014.

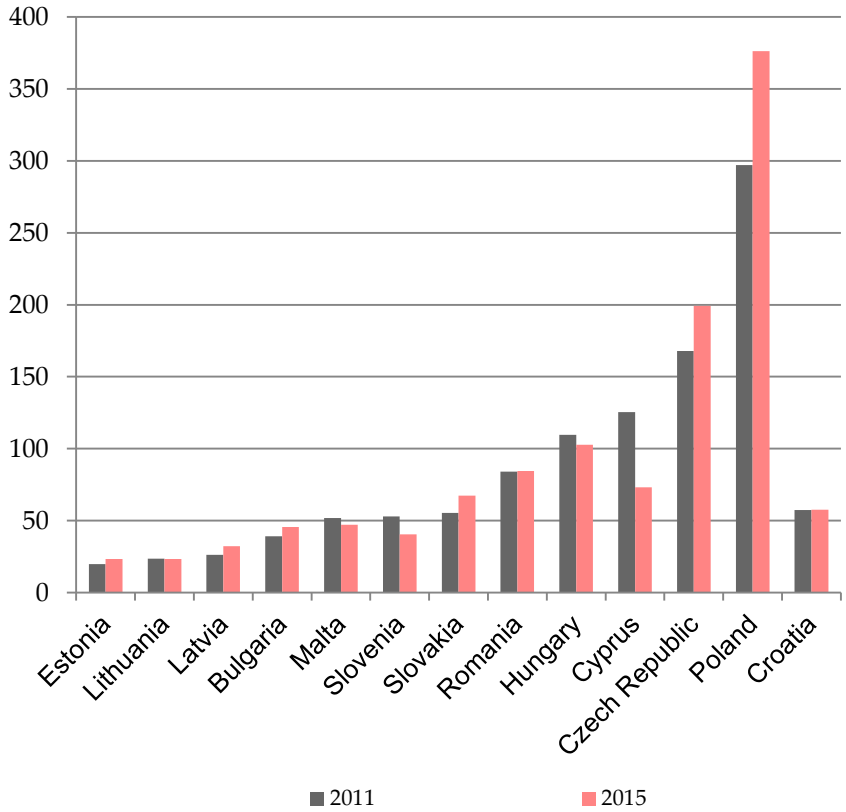
Size of EU-28 banking sector

EU-17



Total assets (in billions of euros) EU-15

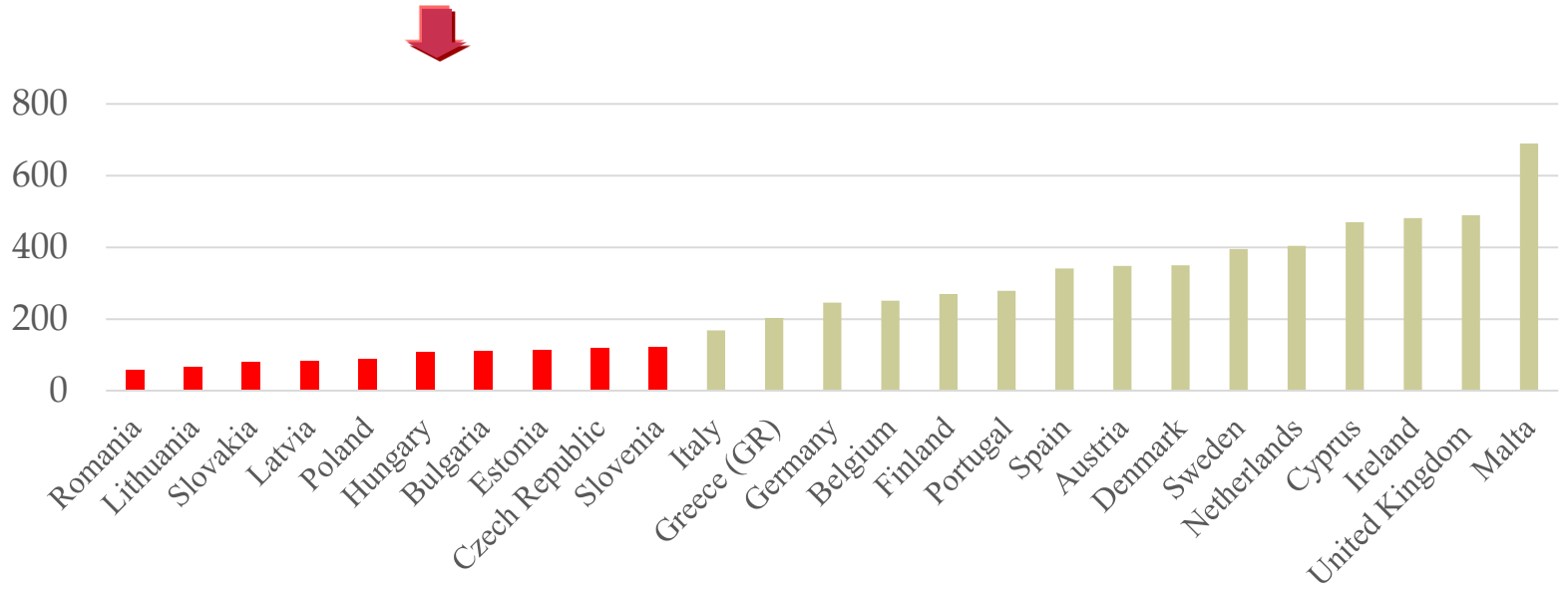
CEE-11



Total assets (in billions of euros) EU-13

Source: ECB.

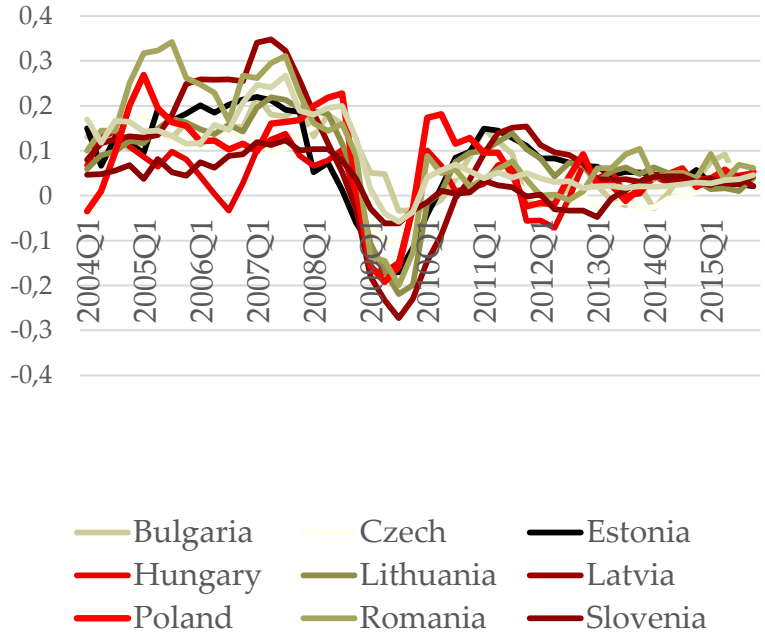
Size of the EU banking sector in relation to GDP [%]



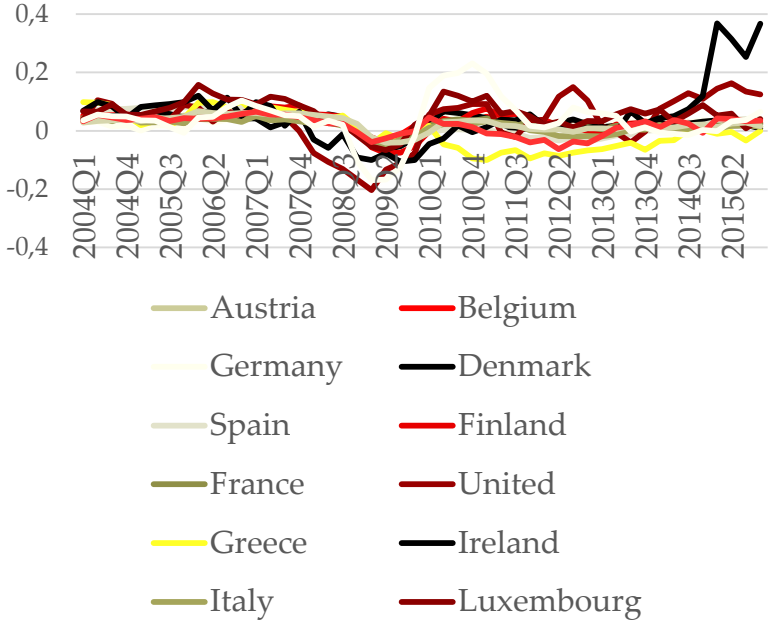
Source: own calculation based on ECB. Note: Luxemburg in 2011 about 2000%.

GDP growth (yoy) in EU-28

11 Central and Eastern Europe countries

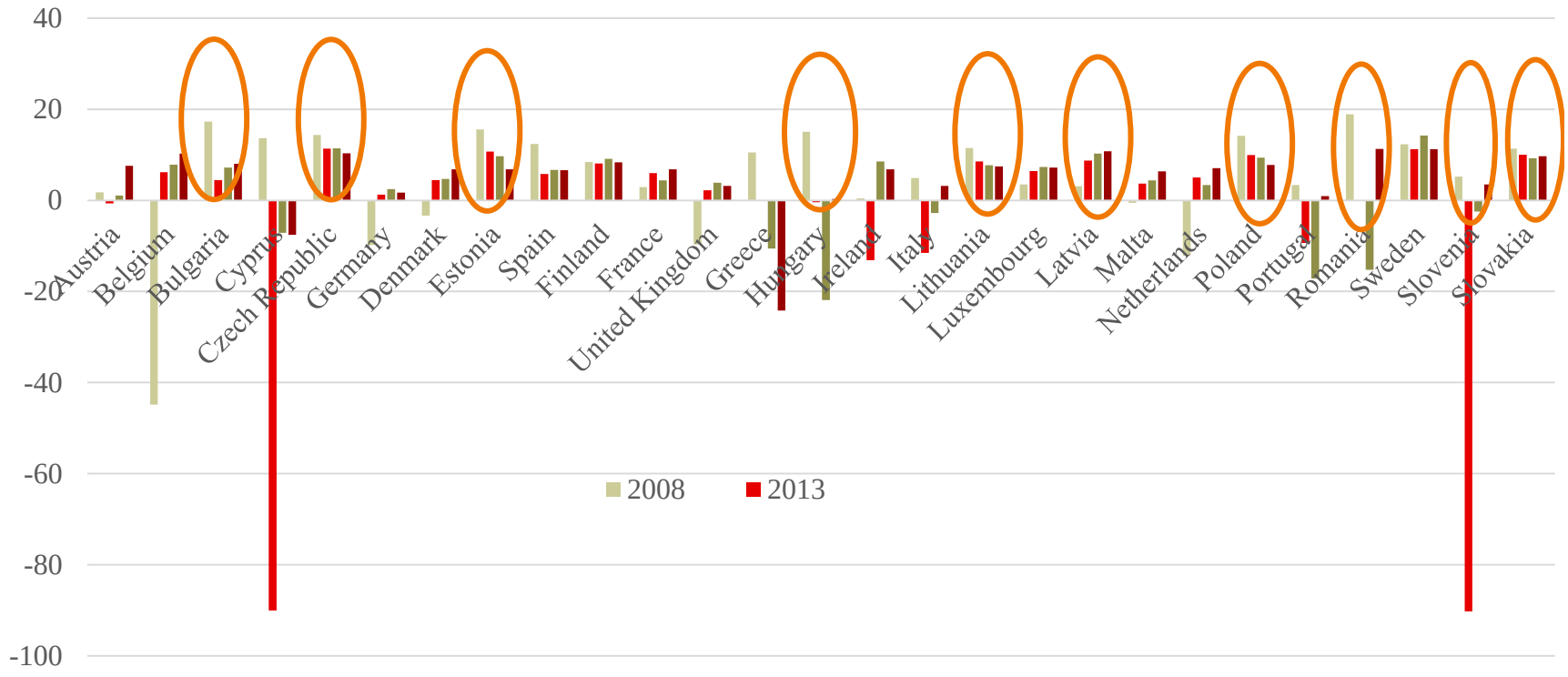


Western Europe countries



Source: ECB.

Profitability Indicators in EU ROE [%]



Source: ECB.

A short roadmap to CEE banking sectors' development

- Four stages of CEE countries' banking sector development:
  - First: Establishment of financial intermediaries in the early 1990s.
  - Second: Bank failures and systemic crises. This occurred mainly during the '90s and affected all transition economies.
  - Third: A process of restructuring through privatization and the entry of foreign banks. This lengthy process covers not just the banking sector but the overall financial sector. These changes are fully reflected in the development of the respective stock markets as well. Most banks were privatized in all transition economies by the end of last decade. Another important feature in the banking sector is that foreign banks dominate the banking sector.
  - Fourth: Substantial improvement of the regulatory framework.

Literature review

- On the one hand, the ***pre-global financial crisis*** evidence suggests that foreign bank participation brought many benefits to developing countries including financial stability. In the mid-1990s, foreign bank entry was a catalyst for change. In this view, the the banking sector can be attributed to foreign owners who brought modern technology, market oriented decision making and competition (Bonin et. al., 1998 and 2005; Bonin and Wachtel, 1999, Haselmann et. al. 2016).
- On the other hand, ***the recent Global Financial Crisis*** highlights the role of multinational banks in the transmission of shocks across countries. Also, during the global financial crisis of 2008, foreign banks reduced credit more sharply when compared to domestic banks, except when they dominated the host banking systems (Claessens and Van Horen, 2013, 2014).

Literature review (cont'd)

- Cull and Soledad Martinez Peria (JBF, 2013): Bank ownership and lending patterns, Latin America and CEE countries.
  - Findings: During GFC 2008-2009 foreign loan growth in CEE fell more than that of private domestic banks and also state-owned banks increased their loans during the crisis.

- Cull *et al*. (IMF WP, 2017) Examine the effects on bank ownership on several aspects.
  - Findings:
  - Positive: Foreign-owned banks are more efficient than domestic banks, promote competition in host banking sectors and stabilize credit in case of idiosyncratic shocks.
  - Negative: transmission of external shocks and might not always expand credit .

Literature review (cont'd)

- Allen, *et al*. (2017, JCF), Examine the interactions of bank lending dynamics, domestic, foreign and global crisis along with changes in ownership in CEE.
- Findings: Impact of ownership structure on bank's lending activities in CEECs was conditional upon the type of crisis. Furthermore, they argue that deposit growth and profitability ratios significant for credit growth during both normal economic times and crisis periods, regardless of the crisis type.
- Kouretas and Tsoumas (JFS, 2016): World data show that foreign bank presence exerts a positive impact on business regulations
- Delis and Kouretas (JBF, 2011): The low interest-rate environment increased risk-related bank assets in the Eurozone countries.
- Pawłowska et al. (IMFER, 2015): find intragroup links between banking institutions after the Lehman Brothers failure

Our focus

- First: investigate the impact of market structure measures on credit growth
- Second: we investigate the impact of foreign presence on credit growth but we also control for size and market power.

Two levels of analysis

- Panel A: Includes the EU-17 banks
- Panel B: Includes the CEE-11 banks
- Panel C: Includes all EU-28 banks

Measures of credit growth

- The Dependent variable under investigation is:
  - The growth of banks' total gross loans to the economy
  - Also the growth of banks' total gross corporate loans, consumer loans, or residential mortgage loans for each bank *i* and for each year *t*.

Explanatory variables

- Bank-level control variables
  - size (log of real assets)
  - market power index
  - capitalization (ratio of equity to assets)
  - profitability (ratio of profits to total assets)
  - net loans to total assets ratio
  - net loans to deposits ratio
  - liquidity
- Country-level control variables
  - concentration ratio CR5 and HHI
- Foreign bank ownership and presence variables
  - Foreign presence country-level data (Claessens and van Horen, 2014) two indices: (a) The percentage of foreign banks to total banks in a country and (b) The percentage of foreign bank assets to total bank assets.

- Macro variable
  - GDP growth rate

  Also:
    - Interest rates for different types of loans

Data

- Annual bank-level data are collected from the Bankscope-Orbis database and macroeconomic data on the growth of GDP from ECB.

- The (unbalanced) panel includes commercial banks, savings banks and cooperative banks that were operating in the EU-17 countries and CEE-11 countries over the period 2010-2016.

- The countries included are: EU-17 Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden, UK; CEE-11 Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia.

- We estimated two models. The first model to examine the impact of market structure measures on credit growth. The second model to examine the impact of foreign presence on credit growth. We used the GMM estimator with robust standard errors (xtabond2 *procedure*).

Econometric model

The first version of the model examines the impact of market structure measures on credit growth and follows equation):

$$\Delta Loans_{itc} = \alpha + \varphi * \Delta Lonas_{i,c,t-1} + \mu * market\ structure_{t-1,c} + \sum_{j=1}^{N} \beta_j * Bank\text{-}Specific\ Variables_{itc}$$

$$+ \lambda * macro\ variables_{tc} + \varepsilon_{itc} \quad (1)$$

where the dependent variable Δ*Loans* is the growth of log of total gross loans to particular sector (or corporate, consumer, or residential mortgage loans for each bank *i* and for each year *t,* loans are express in euro.

Market structure is defined as follows:

- As market structure measures *(market structure*) is determined by taking the variable indicating concentration ratio $CR5_{tc}$ for each year *t* in country *c* or *HHI index* for each year *t* in country *c.*

Bank-Specific Variables$_{itc}$ are defined *variables as follows*:

- Net loans to deposits ratio (LTD_{itc}) for each bank *i* for each year *t* in country *c.*

Econometric model, (cont'd)

- The liquidity ratio as the share of liquid assets in the total assets (LIQ_{itc}) for each bank *i* for each year *t* in country *c.*
- The core capital ratio (core-capital to risk-weighted assets, CAR_{itc}) as an indicator of a bank's risk behavior (the higher the capital ratio, the greater the risk aversion) for each bank *i* for each year *t* in country *c.*
- ROA_{itc} denotes the return on assets ratio for each bank *i* and for each year *t* in country *c.*
- the variable indicating efficiency of banks define as interest cost divided by total interest income (CTI_{itc}) for each banks *i* for each year *t* in country *c*.

The model also tests the effect of the macroeconomic situations on bank loans. The *macro variables* is defined as follows:

- GDP_{tc} growth (yoy) for each year *t* in country *c*.

- Interest rates for different types of loans (corporate, consumer, or residential mortgage loans) for each year *t* in country *c*

Econometric model, (cont'd)

The second model to examine the impact of foreign presence on credit growth but we also control the size and market power for each banks follows equation (2).

We also estimate the following model:

$$\Delta Loans_{itc} = \alpha + \varphi * \Delta Lonas_{i,c,t-1} + \mu * foreign\ presence_{t-1,c} + \sum_{j=1}^{N} \beta_j * Bank\text{-}Specific\ Variables_{itc} +$$

$$\lambda * macro\ variables_{tc} + \varepsilon_{itc} \quad (2)$$

- *Foreign presence* $_{t-1,c}$ is defined followed by Claessens and Van Horen (2014)

- As the *Bank-Specific Variables* we also use the size of each banks, which was defined as follows:
- The log of total assets (LA_{itc}) for each bank *i* for each quarter *t* in country *c*.
- Also, as the size of each banks we use measure of relative market power which was defined as follows: the share of bank assets in the total assets (MP_{itc}) for each bank *i* and each year *t* in country *c*.

❖ We estimated the model using the Arellano-Bover/Blundel-Bond GMM system estimator (xtabond2). We also employ depending on the case under examination well-define instruments.

❖We used Hansen&Sargan tests of over-identifying restrictions and the Arellano-Bond tests for AR(1) and AR(2) in first differences.

Explanatory variables, (cont'd)

Foreign bank ownership bank-level data (Claessens and van Horen, 2014).

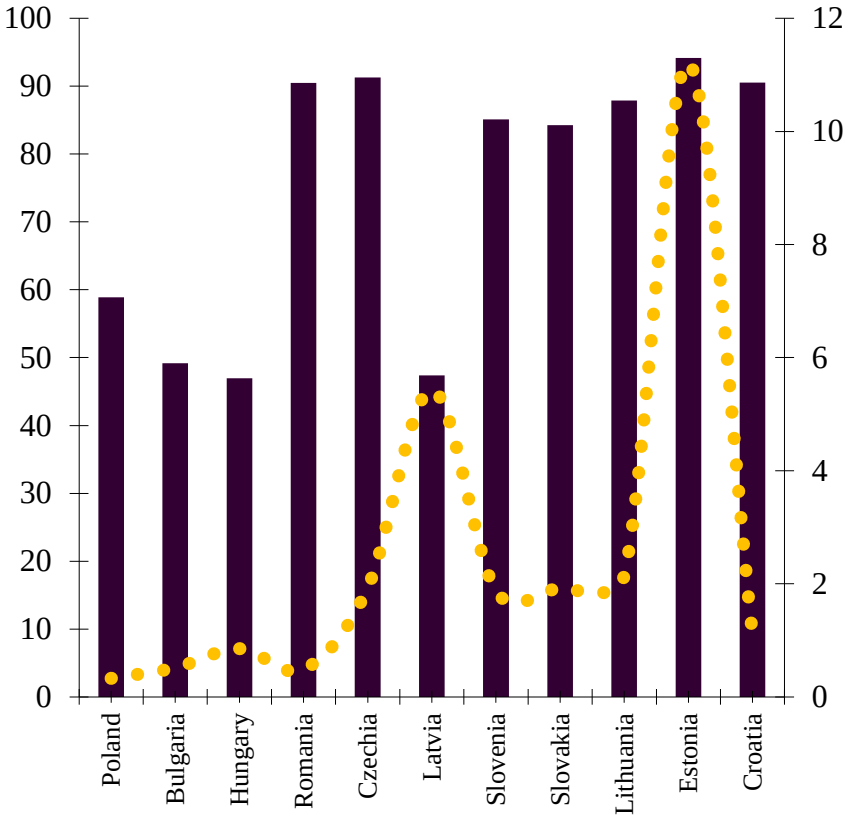
Foreign-owned banks are identified as those with 50% of their shares owned by foreigners.

Foreign presence country-level data two indices:

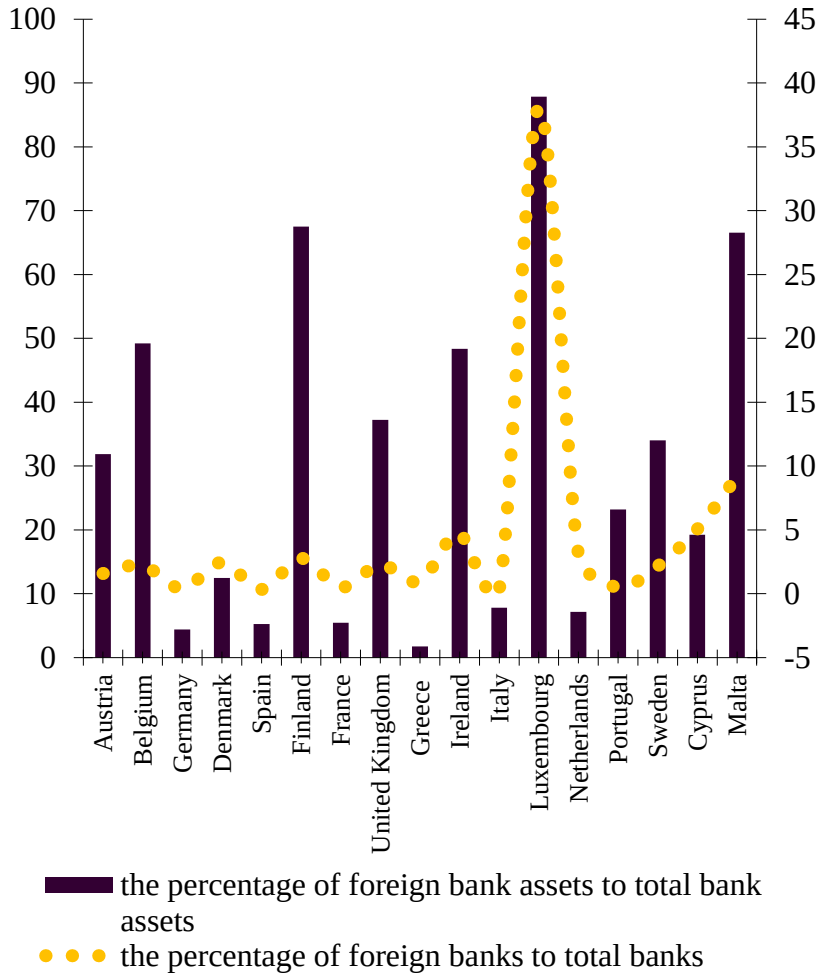
- the percentage of foreign banks to total banks in a country *c*, in time *t*
- the percentage of foreign bank assets to total bank assets in a country *c*, in time *t.*

Foreign bank presence variables in EU- (2015)

CEE-11



EU-17



Source: ECB.

Table 1. Descriptive statistics _EU – 28

	Mean	St. deviation	Max	Min
Total gross loans	12.85	2.56	20.89	0.000
Mortgage loans	12.37	2.53	19.87	0.693
Consumer loans	11.96	3.50	19.13	0.000
Corporate loans	12.73	3.13	19.92	0.000
Capitalization	18.15	22.66	7.29	-6.722
Profitability	4.02	30.14	979.76	-977.88
Cost to income	75.01	43.83	980.99	0.000
Liquidity	22.21	22.49	100	0.000
Net loans to total assets	79.34	67.33	991.15	0.000
CR5	42.01	13.16	95.23	30.56
Foreign presence (1)	19.26	20.73	96.40	1.73
Foreign presence (2)	1.66083	5.01035	39.12	0.3059
Size	13.59	2.34	21.54	1.61
Market power	0.020	0.35	26.31	0.000
GDP growth	0.56	1.55	25.67	-0.092

Table 1. Descriptive statistics _CEE – 11

	Mean	St. deviation	Max	Min
Total gross loans	13.41	2.21	17.66	2.07
Mortgage loans	12.25	2.74	16.95	2.19
Consumer loans	12.07	2.69	16.81	1.79
Corporate loans	12.73	2.05	16.72	3.29
Capitalization	18.90	11.87	79.19	0.43
Profitability	-1.08	59.88	423.08	-924.94
Cost to income	76.86	65.06	800.37	3.11
Liquidity	21.34	18.87	95.08	0.004
Net loans to total assets	78.55	62.43	766.03	0.000
CR5	60.76	11.38	90.63	43.68
Foreign presence (1)	74.87	19.65	96.45	6.91
Foreign presence (2)	1.608	1.895	10.810	0.33
Size	14.14	1.87	6.80	18.94
Market power	0.58	0.13	2.06	0.000
GDP growth	0.13	0.31	1.47	-0.028

Table 1. Descriptive statistics _EU – 17				
	Mean	**St. deviation**	**Max**	**Min**
Total gross loans	12.81	2.56	20.89	0.0000
Mortgage loans	12.38	2.51	19.87	0.69
Consumer loans	11.94	3.68	19.13	0.000
Corporate loans	12.75	3.37	19.92	0.000
Capitalization	18.10	23.10	729.15	-6.7
Profitability	4.29	27.39	979.76	-977.88
Cost to income	75.00	41.76	980.99	0.000
Liquidity	21.79	22.28	100	0.000
Net loans to total assets	80.12	67.80	991.15	0.000
CR5	40.71	12.25	95.23	30.56
Foreign presence (1)	15.16	14.36	79.85	1.73
Foreign presence (2)	0.9766	5.010	13.00	0.306
Size	13.54	2.36	21.54	1.61
Market power	0.007	0.035	0.53	0.000
GDP growth	0.558	1.27	8.40	-0.000

Interest rates for different types of loans

Descriptive statistics _CEE – 11				
	Mean	**St. deviation**	**Max**	**Min**
Mortgage loans	4.818545	2.21	11.06	1.64
Consumer loans	9.71	2.69	17.26	2.75
Corporate loans	4.58	2.05	10.24	2.1

Descriptive statistics _EU – 17				
	Mean	**St. deviation**	**Max**	**Min**
Mortgage loans	3.214	0.745	5.24	1.069
Consumer loans	5.011	0.905	10.218	3.041
Corporate loans	2.987	2.05	7.59	1.28

Cross correlation matrix

	lgross~s	lmortg~s	lconsu~s	lcorpo~s	tier1r~o	roe	roa	costto~o	NPL	LIQ1	netloa~g	cr51	sfb	la	mp	gdp
lgrossloans	1,000															
lmortgloans	0,957	1,000														
lconsumerl~s	0,897	0,827	1,000													
lcorporate~s	0,883	0,818	0,818	1,000												
tier1ratio	-0,173	-0,102	-0,181	-0,204	1,000											
roe	0,043	0,024	0,038	0,023	0,170	1,000										
roa	-0,153	-0,157	-0,115	-0,133	0,299	0,864	1,000									
costtoinco~o	0,031	0,036	0,033	0,027	-0,198	-0,533	-0,558	1,000								
NPL	-0,351	-0,384	-0,209	-0,207	-0,188	-0,370	-0,255	0,012	1,000							
LIQ1	0,111	0,092	0,067	0,160	0,072	0,016	-0,026	0,199	-0,197	1,000						
netloanstso~g	0,185	0,248	0,116	0,078	0,080	0,115	0,109	-0,218	-0,196	-0,538	1,000					
cr51	-0,362	-0,356	-0,286	-0,273	0,106	0,009	0,053	-0,110	0,213	-0,263	0,146	1,000				
sfb	-0,469	-0,404	-0,365	-0,359	0,266	-0,029	0,133	-0,062	0,170	0,025	-0,066	0,064	1,000			
la	0,990	0,934	0,891	0,874	-0,180	0,042	-0,159	0,059	-0,366	0,181	0,093	-0,387	-0,482	1,000		
mp	0,651	0,589	0,686	0,700	-0,070	0,039	-0,052	-0,130	0,051	0,054	0,067	0,114	-0,090	0,646	1,000	
gdp	0,221	0,221	0,225	0,232	-0,060	-0,008	-0,058	0,063	-0,107	0,078	0,009	-0,310	0,240	0,222	0,156	1,000

Cross correlation matrix

	lgross~s	lmortg~s	lconsu~s	lcorpo~s	tier1r~o	roe	roa	costto~o	NPL	LIQ1	netloa~g	cr51	sfb	la	mp	gdp
lgrossloans	1,000															
lmortgloans	0,925	1,000														
lconsumerl~s	0,904	0,813	1,000													
lcorporate~s	0,933	0,811	0,804	1,000												
tier1ratio	-0,043	0,020	-0,092	0,007	1,000											
roe	0,335	0,194	0,363	0,386	0,185	1,000										
roa	0,395	0,269	0,387	0,456	0,280	0,968	1,000									
costtoinco~o	-0,506	-0,352	-0,454	-0,578	-0,154	-0,579	-0,628	1,000								
NPL	-0,109	-0,087	-0,100	-0,079	-0,053	-0,469	-0,434	-0,003	1,000							
LIQ1	-0,490	-0,387	-0,422	-0,438	0,324	-0,022	-0,041	0,151	0,167	1,000						
netloansto~g	0,531	0,500	0,370	0,490	-0,007	0,073	0,158	-0,102	-0,364	-0,558	1,000					
cr51	-0,440	-0,379	-0,482	-0,378	0,408	0,036	0,069	0,118	-0,279	0,263	-0,142	1,000				
sfb	-0,426	-0,359	-0,422	-0,432	0,276	-0,029	-0,021	0,186	-0,216	0,236	-0,245	0,606	1,000			
la	0,986	0,919	0,907	0,914	-0,026	0,344	0,392	-0,511	-0,081	-0,425	0,446	-0,441	-0,437	1,000		
mp	0,757	0,694	0,627	0,800	0,210	0,428	0,513	-0,608	-0,063	-0,152	0,287	-0,055	-0,226	0,782	1,000	
gdp	0,146	0,108	0,136	0,117	-0,204	0,032	0,019	0,037	-0,063	-0,116	-0,003	-0,036	0,018	0,154	0,057	1,000

Cross correlation matrix

	lgross~s	lmortg~s	lconsu~s	lcorpo~s	tier1r~o	roe	roa	costto~o	NPL	LIQ1	netloa~g	cr51	sfb	la	mp	gdp
lgrossloans	1,000															
lmortgloans	0,947	1,000														
lconsumerl~s	0,876	0,787	1,000													
lcorporate~s	0,893	0,814	0,792	1,000												
tier1ratio	-0,120	-0,029	-0,139	-0,172	1,000											
roe	-0,035	-0,019	-0,074	-0,059	0,170	1,000										
roa	-0,178	-0,145	-0,187	-0,196	0,295	0,843	1,000									
costtoinco~o	0,128	0,099	0,136	0,146	-0,211	-0,515	-0,545	1,000								
NPL	-0,195	-0,262	-0,064	-0,087	-0,312	-0,358	-0,312	0,058	1,000							
LIQ1	0,300	0,233	0,206	0,320	-0,007	0,022	-0,006	0,213	-0,218	1,000						
netloanstog	0,011	0,129	-0,026	-0,069	0,121	0,126	0,130	-0,266	-0,160	-0,541	1,000					
cr51	-0,285	-0,287	-0,193	-0,192	-0,008	-0,002	-0,007	-0,148	0,261	-0,352	0,195	1,000				
sfb	-0,053	0,038	-0,032	-0,055	0,297	0,010	0,081	-0,106	-0,179	0,020	0,114	-0,255	1,000			
la	0,980	0,899	0,868	0,878	-0,147	-0,048	-0,199	0,186	-0,200	0,395	-0,109	-0,323	-0,081	1,000		
mp	0,759	0,671	0,749	0,746	-0,134	-0,075	-0,220	0,000	0,104	0,102	0,014	0,176	-0,098	0,751	1,000	
gdp	0,339	0,326	0,298	0,295	-0,039	-0,035	-0,110	0,105	-0,132	0,120	0,017	-0,355	0,306	0,342	0,162	1,000

Hypothesis &Empirical results:

Based on panel data analysis we positive verify the following hypothesis:

- H1: The relation between the bank concentration and the growth of mortgage loans is positive mainly for EU-17 states.
- H2: The foreign bank presence has positive impact on the growth of mortgage loans for EU-17 states.
- H3: The foreign bank presence has positive impact on the growth of consumerloans loans for CEE countries (EU-11 transitions countries).
- H4: The size and market power of banks have positive impact on growth corporate loans and mortgage loans for CEE countries (EU-11 transitions countries).

Table 1. Mortgage loans – III estimations for (Δ) Mortgage loans EU-17 and EU-11

	(Δ) Mortgage loans EU-17			**(Δ)** Mortgage loans EU-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged dependent variable	0.1763071** (8.161)	0.284** (8.751)	0.277** (8.087)	0.234** (3.211)	0.233** (3.320)	0.226*** (2.957)
(Δ)Deposit funding ratio	0.014 (1.220)	0.013 (1.194)	0.013 (1.097)	-0.039 (-8.671)	-0.039 (-8.504)	-0.038 (-8.513)
(Δ)Capitalization	-0.086 (-3.159)	-0.088* (-3.525)	-0.093 (-3.605)	0.026 (1.069)	-0.012* (0.586)	0.020 (0.897)
(Δ)Profitability (ROA)	-0.001 (-0.018)	-0.004 (-0.099)	0.017 (0.346)	-0.136 (-1.364)	-0.117 (-1.225)	-0.128 (-1.428)
(Δ)Liquidity ratio	-0.011* (1.797)	-0.013 (2.408)	-0.013 (2.198)	-0.003 (0.519)	-0.003 (0.437)	-0.003 (0.479)
Foreign presence1t-1		-	-	0.284 (0.648)	-	-
Foreign presence2t-1	-	0.017** (0.007)	0.05623 (0.023)	-	0.0011 (0.005)	-0.291 (-8.713)
(Δ)market power	-	-	0.308 (7.715)	-	-	0.132** (3.376)
(Δ)Size	-	0.264 (-2.972)	-	-	0.273** (2.385)	0.158 (0.384)
(Δ)GDP Growth	-1.215 (-1.384)	-0.0046 (0.02136)	0.656 (1.574)	0.308 (1.387)	0.359 (0.585)	-0.975 (-0.469)
$CR5_{t-1}$	0.014*** (0.0150)	-	-	0.0946 (0.591)	-	
(Δ) *Interest rates of morg.*	-0.529	-0.000	-0.000	-0.529	-0.000	0-.001
	(2.817)	(0.1686)	0.178	2.817	0.1686	0.122
Diagnostics						
Hansen test	(0.837)	(8.882)	(5.754)	(0.977)	(0.5710	(0.999)
AR(1)	0.562	0.977	0.071	0.999	0.962	0.071
AR(2)	0.949	0.059	0.171	0.649	0.515	0.171
Number of obser.	1674	1827	1827	67	68	68

Table 2. Consumer loans – III estimations for (Δ) Consumer loans EU-17 and EU-11

	(Δ) Consumer loans EU-17			**(Δ)** Consumer loans EU-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged dependent variable	0.61115** (1.008)	0.684** (8.751)	0.677** (8.087)	0.234* (3.211)	0.233* (0.410)	0.226** (2.957)
(Δ)Deposit funding ratio	0.014 (1.220)	0.013 (1.194)	0.013 (1.097)	-0.039 (-8.671)	-0.039 (-8.504)	-0.038 (-8.513)
(Δ)Capitalization	-0.086 (-3.159)	-0.088 (-3.525)	-0.093 (-3.605)	-0.026 (1.069)	-0.034 (0.485)	-0.020 (0.897)
(Δ)Profitability (ROA)	-0.001 (-0.018)	-0.004 (-0.099)	0.017 (0.346)	-0.136 (-1.364)	-0.117 (-1.225)	-0.128 (-1.428)
(Δ)Liquidity ratio	-0.011* (1.797)	-0.013 (2.408)	-0.013 (2.198)	-0.003 (0.519)	-0.003 (0.437)	-0.003 (0.479)
Foreign presence1t-1		-	0.05623 (0.023)		-	-0.0390 0.0372
Foreign presence2t-1	-	0.00123 (0.008)		-	0.050** (0.0269)	
(Δ)market power	-	-	0.308 (7.715)	-	-	-0.029* (-8.713)
(Δ)Size	-	0.264 (-2.972)	-	-	0.273** (2.385)	
(Δ) GDP Growth	-0.118 (-0.036)	-0.00466 (0.607)	-0.656 (0.072)	0.308 (1.387)	0.359 (0.585)	0.158 (0.384)
$CR5_{t-1}$	0.514 (0.150)	-	-	0.0946 (0.591)		
(Δ) *Interest rates of consumer.*	-2.355	-2.22	-2.344	-0.285	-0.288	-0.289
	(6.22)	(6.34)	(6.22)	(0 .953)	(0 .955)	(0 .999)
Diagnostics						
Hansen test	(0.913)	8.882	5.754	6.671	13.799	7.350
AR(1)	1,010	1,019	997	929	936	921
AR(2)	65.59	120.44	26.72	79.65	100.78	12.37
Number of obser.	492	180.67	13.84	142	142	142

Table 3. Corporate loans – III estimations for (Δ) Corporate loans EU-17 and EU-11

	(Δ) Corporate loans EU-17			**(Δ)** Corporate loans EU-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged dependent variable	-0.0906606** (8.161)	-0.1885623** (8.751)	0.5157781 ** (8.087)	-.0563449 ** (3.211)	.0498697 ** (3.320)	.3549395*** (2.957)
(Δ)Deposit funding ratio	0.014 (1.220)	0.013 (1.194)	0.013 (1.097)	-0.039 (-8.671)	.0055 (-8.504)	-0.038 (-8.513)
(Δ)Capitalization	-0.086 (-3.159)	-0.088 (-3.525)	-0.093 (-3.605)	0.026 (1.069)	-0.0453* (.0267)	0.020 (0.897)
(Δ)Profitability (ROA)	-0.001 (-0.018)	-0.004 (-0.099)	0.017 (0.346)	-0.136 (-1.364)	.0431988 (-1.225)	-0.128 (-1.428)
(Δ)Liquidity ratio	-0.011* (1.797)	-0.013 (2.408)	-0.013 (2.198)	-0.003 (0.519)	.0012 (0.437)	-0.003 (0.479)
Foreign presencet-1	0.522 (1.876)	-	0.05623 (0.023)	0.284 (0.648)	-	-0.0058 (0.007)
Foreign presencet-1	-	0.00123 (0.008)		-	-0.0064 (0.009)	
(Δ)market power	-	-	0.308 (7.715)	-	-	14.9618** (8.465)
(Δ)Size	-	0.264 (-2.972)	-	-	1.402 *** (0.370)	
(Δ) GDP Growth	0.044 0.062)	-.00466 (0.02136)	0.656 (1.574)	0.308 (1.387)	-0.459 (0.585)	0.415** (.250)
$CR5_{t-1}$	-0.006 (.0613)	-	-	0.0946 (0.591)	-	-
(Δ) *Interest rates of corporate*	-0.140	-0.144	-0.140	-0.30	-0.31	-0.32
	(0.183)	(0.198)	(0.183)	(0.447)	(0.456)	(0.46)
Diagnostics						
Hansen test	(0.913)	(0.913)	(0.913)	(0.913)	(0.913)	(0.913)
AR(1)	1,010	1,019	997	929	936	921
AR(2)	65.59	120.44	26.72	79.65	100.78	12.37
Number of obser.	445	445	445	139	139	139

Table 4. Total gross loans – III estimations for (Δ) total gross loans EU-17 and EU-11

	(Δ) Total gross loans EU-17			(Δ) Total gross loans loans EU-11		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged dependent variable	0.5186743** (0.1156)	0.444138** (0.325)	0.7502** (8.087)	0.6456767 ** (0.289)	0.42318** (3.320)	.7318246** (2.957)
(Δ)Deposit funding ratio	0.014 (1.220)	0.013 (1.194)	0.013 (1.097)	-0.039 (-8.671)	-0.039 (-8.504)	-0.038 (-8.513)
(Δ)Capitalization	-0.086 (-3.159)	-0.088 (-3.525)	-0.093 (-3.605)	0.026 (1.069)	0.012 (0.586)	0.020 (0.897)
(Δ)Profitability (ROA)	-0.001 (-0.018)	-0.004 (-0.099)	0.017 (0.346)	-0.136 (-1.364)	-0.117 (-1.225)	-0.128 (-1.428)
(Δ)Liquidity ratio	-0.011* (1.797)	-0.013 (2.408)	-0.013 (2.198)	-0.003 (0.519)	-0.003 (0.437)	-0.003 (0.479)
Foreign presence1t-1		-	0.05623 (0.023)		-	0.057 (0.023)
Foreign presence2t-1	-	0.00123 (0.008)		-	-0.0011 (0.005)	
(Δ)market power	-	-	0.308 (7.715)	-	-	0.291 (8.713)
(Δ)Size	-	0.762** (0.322)	-	-	0.273** (2.385)	-
(Δ) GDP Growth	0.0067** (0.004)	-0.030 (0.158)	0.656 (1.574)	-0.132 (0.175)	0.359 (0.585)	0.558 (0.484)
$CR5_{t-1}$	0.009** (0.0037)	-	-	0.0147 (0.029)	-	
(Δ) *Interest rates*	-2.27*	-2.05*	-2.11*	-0.040	-0.042	-0.041
	(1.32)	(1.02)	(1.12)	(0.15)	(0.17)	(0.16)
Diagnostics						
Hansen test	(0.913)	8.882	5.754	6.671	13.799	7.350
AR(1)	1,010	1,019	997	929	936	921
AR(2)	65.59	120.44	26.72	79.65	100.78	12.37
Number of obser.	3874	3576	3576	176	176	176

Conclusions

This study has aimed to examine the issue of asymmetry of the credit market determinants between the CEE countries and the EU-17 states.

The determinates of banks loans included size, market power, concentration (indicators CR5) and ownership presence

- The relation between the bank concentration and the growth of mortgage loans is positive mainly for EU-17 states.
- The foreign bank presence has positive impact on the growth of mortgage loans for EU-17 states.
- The foreign bank presence has positive impact on the growth of consumerloans loans for CEE-11 countries.
- The size and market power of banks have positive impact on growth corporate loans and mortgage loans for CEE-11 countries.

Thank you for the attention