Determinants of institutional ownership in companies from CEE region: A country- and company-level analysis

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CINSC 2024, ICMA Reading

RESEARCH PROBLEM - MOTIVATION

Determinants of institutional ownership of public companies

Institutional investors (mutual funds, pension funds, insurance companies, etc.) are the largest investor category holding app. 43% of the world market capitalisation (OECD, 2021).

+

Previous research on allocation decisions of institutional investors indicates that factors at both, country- and company-level characteristics substantially explain variations in institutional ownership concentration (Li et al., 2006; Ferreira&Matos 2008, Leuz et al. 2009)

+

Previous studies tend to overlook the Central and Eastern Europe (CEE) region

The goal of our study is to identify factors that influence the ownership decision of (foreign) institutional investors in CEE

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LITERATURE REVIEW

**Previous findings on determinants of institutional ownership:**

Country-level:

- **Disclosure** standards [Aggarwal et al. 2005; Leuz et al. 2006; Li et al. 2006; Ferreira&Matos 2009]

- Quality of a country's **legal system** [Leuz et al. 2006; Li et al. 2006; Ferreira&Matos 2009]

- **Shareholder rights** protection [Aggarwal et al. 2005; Leuz et al. 2006; Li et al. 2006]

- Level of **market development** (+ / -)

Company-level:

- **Ownership structure (concentration)** [Leuz et al. 2006; Ferreira&Matos 2009]

- Company **size** [Leuz et al. 2006; Ferreira&Matos 2009]

- **Cross-listings** [Leuz et al. 2006; Ferreira&Matos 2009]

- Stock returns, profitability, dividend yields, cash holdings, financial leverage (+ / -)

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SAMPLE AND DATA

- **11 CEE countries**

- **app. 600 public companies**

- **Capital IQ (S&P Global)**

- **OECD Reports**
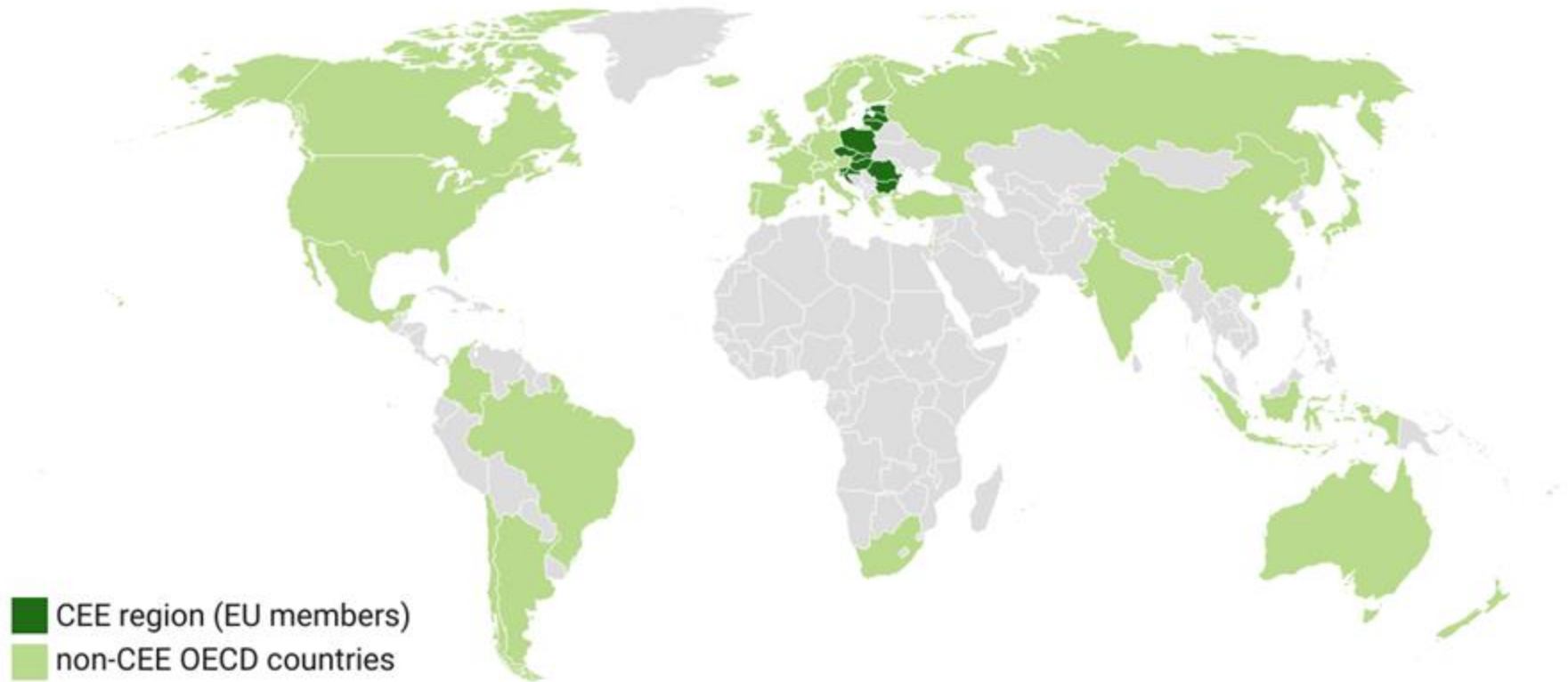
- **World bank**

- **2011 - 2020**
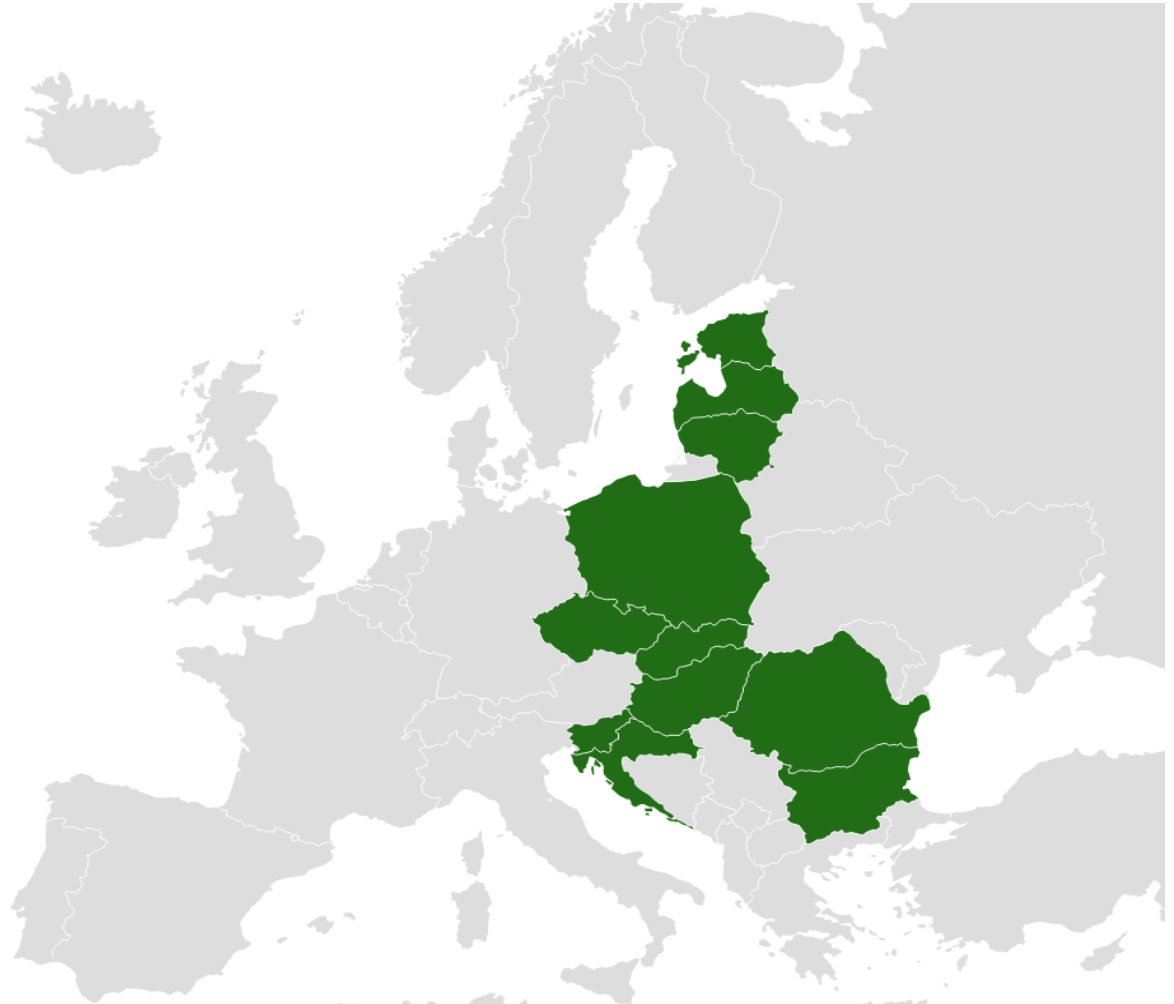
Table 1. Sample distribution by country and sector (as of 2020)

INDUSTRY / COUNTRY	BGR	CRO	CZE	EST	HUN	LVA	LTU	POL	ROU	SVK	SVN	TOT	TOT(%)
Communication Services	0	2	1	1	1	0	1	26	1	0	1	34	5.5
Consumer Discretionary	4	17	1	2	1	0	5	40	6	1	3	80	12.9
Consumer Staples	5	14	2	3	1	2	6	22	1	0	1	57	9.2
Energy	1	2	0	0	1	0	1	6	7	0	0	18	2.9
Financials	16	10	3	3	5	0	3	44	10	3	7	104	16.7
Health Care	3	1	0	0	1	2	0	20	4	2	2	35	5.6
Industrials	19	16	1	6	6	1	2	83	7	1	3	145	23.3
Information Technology	2	1	1	0	2	2	0	31	1	0	0	40	6.4
Materials	4	1	0	0	0	0	1	32	7	0	2	47	7.6
Real Estate	4	0	0	2	4	0	1	20	1	0	0	32	5.2
Utilities	2	0	1	1	5	1	6	10	3	0	0	29	4.7
TOT	60	64	10	18	27	8	26	334	48	7	19	621	100.0
TOT (%)	9.7	10.3	1.6	2.9	4.3	1.3	4.2	53.8	7.7	1.1	3.1	100.0	

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SAMPLE AND DATA CONT.

CEE region (EU members)
non-CEE OECD countries

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Market capitalisation weighted average ownership held by **all institutional investors** in CEE countries as of the end of 2020

2.3% — 33.6%
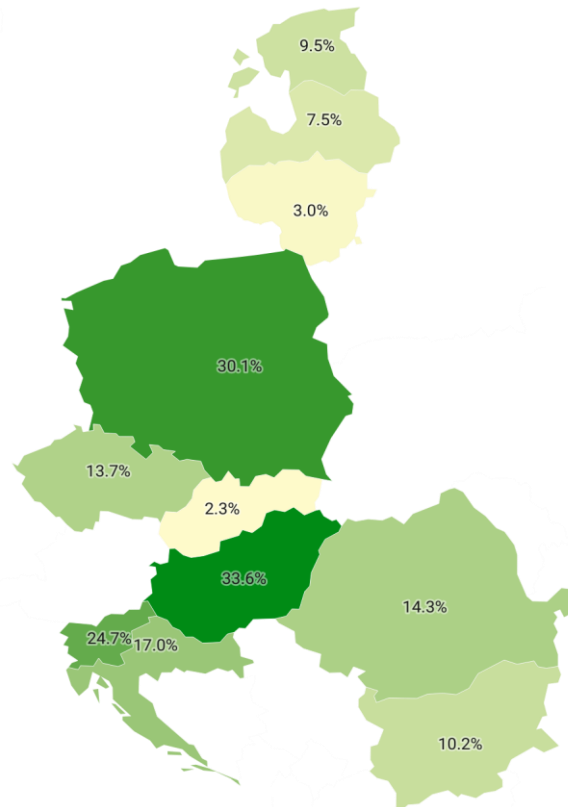
Market capitalisation weighted average ownership held by **foreign institutional investors** in CEE countries as of the end of 2020
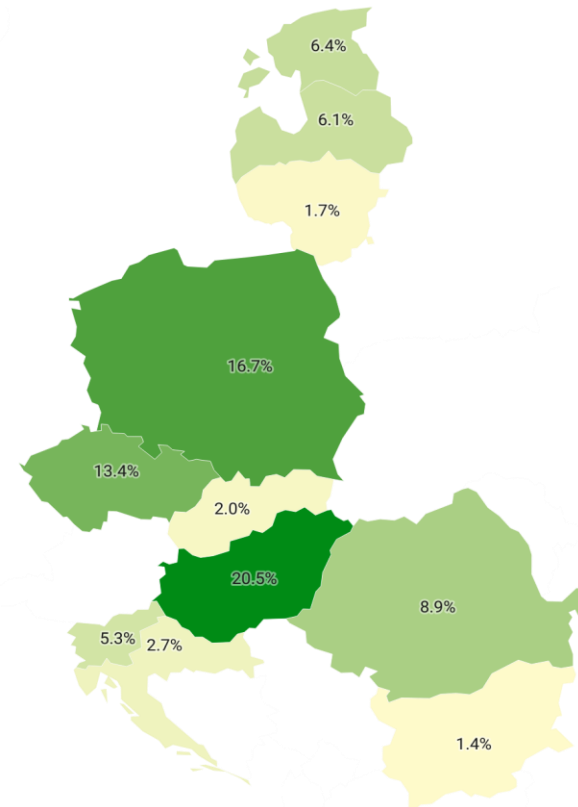
1.4% — 20.5%

VARIABLES	All countries	CEE countries	Non-CEE countries
Institutional ownership			
IO_MCAP	24.8%	13.7%	27.0%
FIO_MCAP	15.0%	6.1%	16.0%
DIO_MCAP	7.0%	5.4%	7.0%
Market-related variables			
STMCAP (billions $)	324.7	17.7	694.7
STMCAP/GDP	57.0%	11.3%	71.7%
STM_CONCTR	13.6%	41.4%	11.3%
AV_OWN_CONCTR	57.0%	64.1%	51.1%
Corporate governance – country level			
RULE_LAW	1.02	0.67	1.32
PROT_MIN	70.0	66.0	70.0

The table presents the medians of the variables taken from the country samples. A detailed description of the variables can be found in the Appendix.

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COUNTRY-LEVEL ANALYSIS

Company-level analysis – specifications:

$$IO\_MCAP_{j,t} = \alpha + \sum_{k=1}^{n} \beta_k \times MARKET_{k,j,t} + \sum_{l=n+1}^{w} \beta_l \times COUNTRY\_CG_{l,j,t} + CEE_j + \varepsilon_{j,t}$$

$$FIO\_MCAP_{j,t} = \alpha + \sum_{k=1}^{n} \beta_k \times MARKET_{k,j,t} + \sum_{l=n+1}^{w} \beta_l \times COUNTRY\_CG_{l,j,t} + CEE_j + \varepsilon_{j,t}$$

$$DIO\_MCAP_{j,t} = \alpha + \sum_{k=1}^{n} \beta_k \times MARKET_{k,j,t} + \sum_{l=n+1}^{w} \beta_l \times COUNTRY\_CG_{l,j,t} + CEE_j + \varepsilon_{j,t}$$

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OLS REGRESSION; (Y): FIO_MCAP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
INTERCEPT	0,308*	0,448**	0,398**	0,369**	0,278*	0,285*	0,351***
	(1,950)	(2,373)	(2,187)	(2,089)	(1,753)	(1,765)	(2,926)
LN_MCAP	0,002	-0,008	-0,002	0,001	0,001	0,002	
	(0,178)	(-0,709)	(-0,220)	(0,095)	(0,161)	(0,197)	
MCAP/GDP	-0,008	-0,001	-0,008	-0,013	-0,009	-0,007	-0,003
	(-0,280)	(-0,038)	(-0,299)	(-0,435)	(-0,307)	(-0,256)	(-0,118)
OWN_CONCTR	**-0,288***	**-0,327****	**-0,348****	**-0,365***	-0,248	-0,262	**-0,361****
	(-1,757)	(-2,089)	(-2,028)	(-1,946)	(-1,538)	(-1,608)	(-2,099)
RULE_LAW_BIN	**0,045***	**0,043***	0,041	0,039	**0,064***	**0,049***	0,025
	(1,690)	(1,921)	(1,625)	(1,645)	(2,014)	(1,832)	(0,824)
PROT_MIN_BIN	-0,033	-0,037	-0,046	-0,038	-0,030	-0,025	-0,035
	(-1,285)	(-1,511)	(-1,636)	(-1,502)	(-1,165)	(-0,789)	(-1,403)
CEE	**-0,068***	**-0,486****	**-0,134****	-0,277	-0,050	-0,057	0,008
	(0,040)	(0,186)	(0,060)	(0,200)	(0,040)	(0,044)	(0,042)
CEE x LN_MCAP		**0,042****					
		(2,525)					
CEE x MCAP/GDP			**0,335***				
			(1,829)				
CEE x OWN_CONCTR				0,332			
				(1,160)			
CEE x RULE_LAW_BIN					-0,064		
					(-1,472)		
CEE x PROT_MIN_BIN						-0,036	
						(-0,847)	
STM_CONCTR							0,182
							(1,140)
CEE x STM_CONCTR							**-0,322***
							(-1,797)
N	46	46	46	46	46	46	46
Adj. R²	0,35	0,41	0,37	0,35	0,35	0,34	0,38

OLS REGRESSION; (Y): DIO_MCAP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
INTERCEPT	0,132	0,204	0,224	0,180	0,119	0,154	0,291**
	(0,348)	(0,422)	(0,399)	(0,387)	(0,345)	(0,355)	(0,137)
LN_MCAP	0,010	0,005	0,006	0,009	0,010	0,010	
	(0,020)	(0,026)	(0,023)	(0,020)	(0,020)	(0,021)	
MCAP/GDP	-0,005	-0,002	-0,006	-0,010	-0,006	-0,006	0,004
	(0,023)	(0,024)	(0,023)	(0,026)	(0,023)	(0,023)	(0,033)
OWN_CONCTR	**-0,375***	**-0,396***	**-0,437***	-0,437	**-0,358***	**-0,400***	**-0,433***
	(0,217)	(0,221)	(0,228)	(0,271)	(0,211)	(0,212)	(0,235)
RULE_LAW_BIN	0,004	0,003	-0,000	-0,001	0,012	0,000	-0,006
	(0,026)	(0,025)	(0,023)	(0,026)	(0,032)	(0,026)	(0,035)
PROT_MIN_BIN	**0,074***	**0,072**	**0,061**	**0,070***	**0,075**	**0,066***	**0,073***
	(0,027)	(0,027)	(0,028)	(0,025)	(0,028)	(0,033)	(0,026)
CEE	0,061	-0,154	-0,007	-0,105	0,069	0,050	**0,102***
	(0,076)	(0,351)	(0,124)	(0,275)	(0,075)	(0,081)	(0,056)
CEE x LN_MCAP		0,021					
		(0,028)					
CEE x MCAP/GDP			0,343				
			(0,266)				
CEE x OWN_CONCTR				0,264			
				(0,354)			
CEE x RULE_LAW_BIN					-0,028		
					(0,042)		
CEE x PROT_MIN_BIN						0,034	
						(0,043)	
STM_CONCTR							0,019
							(0,300)
CEE x STM_CONCTR							-0,200
							(0,333)
N	46	46	46	46	46	46	46
Adj. R²	0,26	0,26	0,27	0,25	0,25	0,25	0,26

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COMPANY-LEVEL ANALYSIS

Company-level analysis – differences:

- **sample** limited to 599 public companies from the **CEE countries**

- extended period (**2011 – 2020**)

- total numer of **4,302 firm-year observations**

- additional dimension added – **institutional investor horizon**

Institutional investor horizon

Using the Capital IQ database, we identified **2,190** institutional investors holding equity stakes in our sample companies during the period 2011-2020. We then limited the institutional investors sample to those institutions that hold equity stakes in at least **10** companies from the CEE region. This subsample consists of **612** institutional investor.

612 classified as **long-term**, **mid-term** or **short-term** on the basis of their year-specific **portfolio turnover**.

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$$IO_{i,t} = \alpha + \sum_{k=1}^{n} \beta_k \times COMP\_LVL\_DET_{k,i,t-1} + \sum_{l=1}^{11} \beta_l \times COUNTRY_{l,i} + \sum_{m=1}^{10} \beta_m \times IND_{m,i} + \alpha_t + \varepsilon_{i,t}$$

REGRESSIONS – COMPANY-LEVEL ANALYSIS

POOLED OLS

WITH

- **COUNTRY**
- **INDUSTRY**
- **YEAR**

DUMMIES

	IO	FIO	DIO	LTIO	MTIO	STIO	NLTIO
INTERCEPT	0.149*	-0.133***	0.284***	-0.102	0.205***	0.049***	0.254***
	(1.819)	(-3.044)	(4.265)	(-1.622)	(4.759)	(3.697)	(5.306)
OWN_CONCTR	-0.086***	-0.039***	-0.048**	-0.052**	-0.035***	-0.011***	-0.050***
	(-3.184)	(-2.847)	(-2.300)	(-2.354)	(-2.809)	(-2.651)	(-3.318)
INDIV_CNTRL	-0.067***	-0.020**	-0.048**	-0.052***	-0.020**	0.003	-0.017
	(-3.517)	(-2.086)	(-3.298)	(-3.717)	(-2.216)	(0.606)	(-1.635)
SIZE	0.020***	0.234***	-0.004	0.023***	0.001	-0.003***	-0.003
	(2.988)	(5.418)	(-0.775)	(4.043)	(0.157)	(-3.092)	(-0.782)
LEV	0.095**	0.073***	0.020	0.095***	-0.008	0.002	-0.006
	(2.043)	(2.741)	(0.589)	(2.790)	(0.317)	(0.263)	(-0.207)
ROE	-0.007	-0.006	-0.001	-0.009	0.002	-0.001	0.001
	(-1.189)	(-0.887)	(-0.609)	(-1.349)	(1.400)	(-0.416)	(0.868)
DIV_DUMMY	0.028**	0.006	0.022**	0.014	0.013*	0.003	0.016**
	(2.131)	(0.804)	(2.122)	(1.342)	(1.908)	(1.136)	(2.134)
BM	0.001	0.005	-0.005	0.001	0.003	-0.004***	-0.001
	(0.067)	(1.322)	(-0.802)	(0.246)	(0.615)	(-3.549)	(-0.239)
RET_3Y	0.007	-0.005	0.012***	-0.002	0.008**	0.001	0.009***
	(1.092)	(-1.639)	(2.798)	(-0.432)	(2.216)	(0.755)	(2.637)
SHARE_TURN	0.022	0.021	0.001	-0.022	0.046***	-0.003	0.043**
	(0.694)	(1.292)	(0.009)	(-1.046)	(2.943)	(-0.544)	(2.469)
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES
N	3,625	3,625	3,625	3,625	3,625	3,625	3,625
Adjusted R²	0.17	0.18	0.15	0.17	0.13	0.08	0.14

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2SLS – Instrumental variables analysis

	2SLS; (Y): FIIO_MCAP		2SLS; (Y): FIIO_MCAP
	Instrumented: LN_MCAP; CEExLN_MCAP Instruments: IV_LN_DOM_COM; CEE_IV_LN_DOM_COM		Instrumented: MCAP/GDP; CEExMCAP/GDP Instruments: IV_STOCKS_TRADED_PERCAP; CEE_IV_STRADED_PERCAP
CONST	0,623**	CONST	0,631
	(2,243)		(1,645)
LN_MCAP	-0,021	LN_MCAP	-0,015
	(-1,334)		(-0,855)
MCAP/GDP	0,015	MCAP/GDP	0,011
	(0,734)		(0,323)
OWN_CONCENTR	-0,346*	OWN_CONCENTR	-0,464
	(-1,982)		(-1,586)
RULE_LAW_BIN	0,040	RULE_LAW_BIN	0,004
	(1,785)		(0,100)
PROT_MIN_BIN	-0,040	PROT_MIN_BIN	-0,085*
	(-1,616)		(-1,808)
CEE	-0,653**	CEE	-0,281*
	(-2,619)		(-1,732)
CEExLN_MCAP	0,055**	CEExMCAP/GDP	1,120*
	(2,637)		(1,919)
N	46		32

ROBUSTNESS TESTS – COMPANY-LEVEL ANALYSIS

TOBIT

REGRESSION

WITH

- **COUNTRY**
- **INDUSTRY**
- **YEAR**

DUMMIES

	IO	FIO	DIO	LTIO	MTIO	STIO	NLTIO
INTERCEPT	0.087**	-0.276***	0.217***	-0.259***	0.149***	-0.016	0.202***
	(2.086)	(-10.730)	(5.957)	(-6.935)	(6.316)	(-1.328)	(7.942)
OWN_CONCTR	-0.076***	-0.040***	-0.037***	-0.045***	-0.027***	-0.014**	-0.038***
	(-4.371)	(-3.643)	(-2.577)	(-2.693)	(-2.923)	(-2.547)	(-3.731)
INDIV_CNTRL	-0.066***	-0.017***	-0.049***	-0.053***	-0.019***	0.006*	-0.015***
	(-7.596)	(-3.183)	(-6.939)	(-7.008)	(-3.976)	(1.717)	(-2.832)
SIZE	0.024***	0.036***	-0.001	0.037***	0.005***	0.002**	0.001
	(7.773)	(16.400)	(-0.112)	(12.630)	(3.011)	(2.332)	(0.448)
LEV	0.111**	0.106***	0.036*	0.129***	-0.005	0.011	-0.001
	(4.519)	(6.419)	(1.815)	(6.011)	(0.341)	(1.356)	(-0.024)
ROE	-0.008	-0.008	-0.002	-0.012**	0.001	-0.001	0.001
	(-1.537)	(-1.271)	(-0.996)	(-1.969)	(0.846)	(-0.280)	(0.547)
DIV_DUMMY	0.034**	0.020***	0.030***	0.211***	0.021***	0.009***	0.023***
	(4.224)	(3.632)	(4.557)	(2.870)	(4.605)	(3.955)	(4.647)
BM	0.002	0.008***	-0.003	0.005	0.008*	-0.003***	0.001
	(0.488)	(3.091)	(-1.009)	(1.586)	(1.852)	(-2.842)	(0.198)
RET_3Y	0.007	-0.024***	0.012***	-0.003	0.008**	0.001	0.009**
	(1.310)	(-4.235)	(2.710)	(-0.760)	(2.294)	(0.170)	(2.494)
SHARE_TURN	0.036*	0.035***	0.017	-0.007	0.063***	-0.001	0.058***
	(1.727)	(2.785)	(1.066)	(-0.435)	(5.363)	(-0.154)	(4.525)
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES
N	3,625	3,625	3,625	3,625	3,625	3,625	3,625

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CONCLUSIONS

- Substantial **dispersion** in institutional ownership among CEE countries

- Huge **differences** in the **foreign/domestic** institutional ownership

- **Foreign** institutional investors tend to **avoid** companies form **CEE** countries

- **Foreign** institutional investors prefer countries with **larger stock markets; more developed markets; lower stock market concentration**

- **Foreign** institutional investors prefer **larger companies** with **more dispersed ownership, and avoid companies controlled by individuals**

- **Non-long term** institutional investors prefer companies with higher **stock liquiduty**, higher **stock returns** and **lower book-to-market** ratio

- Long-term institutional investors – **voice** channel, Non long-term – **exit** threat

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Thank you for your attention!