

Determinants of house prices in CEE - Egert & Mihajlek (2007)

- ◆ Growing house prices before 2008
- ◆ Conventional fundamentals: GDP per capita, real interest rates, housing credit, demographic factors.
- ◆ Transition-specific factors: institutional development of housing markets and housing finance, quality effects, demand from other European countries

Determinants of house prices

- ◆ Demand: expected change in house prices, household income, the real reate on housing loans, financial wealth, demographic and labor mkt. conditions, the expected return on housing.
- ◆ Supply: expected change in house prices, profitability of construction (land price, wages, material costs)

Nominal growth of house prices

Four-quarter percentage changes, in national currency units; period averages

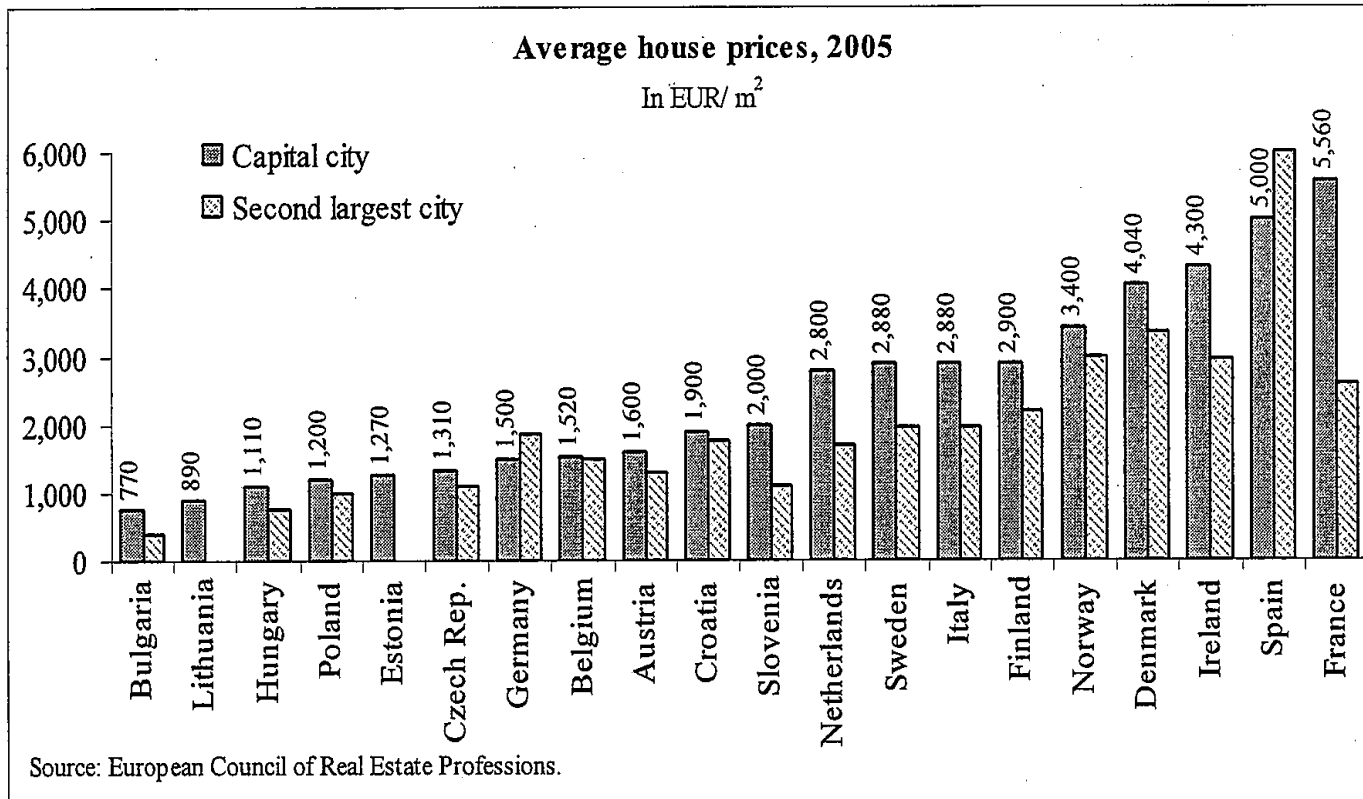
	Industrial countries		Central and eastern Europe	
	1995–2001	2002–2006	1990s–2001 ¹	2002–2006
Germany	−0.2	0.2	Poland (2000)	9.1 2.3
Japan	−2.0	0.5	Croatia (1997)	2.7 8.7
Portugal	4.6	1.2	Czech Republic (2000)	16.7 9.8
Austria	−1.4	2.3	Slovenia (1996)	6.1 9.9
Norway	9.6	6.1	Hungary (1998)	8.0 11.9
Finland	6.6	7.2	Bulgaria (2001)	... 23.5
United States	4.1	7.7	Lithuania (2000)	4.9 23.8
France	1.9	7.8	Estonia (1995)	13.8 36.4
Sweden	6.5	7.8		
Denmark	8.3	8.2		
Greece	8.8	8.9		
Canada	1.2	10.0		
Belgium	6.3	10.4		
Ireland	14.0	10.6		
Australia	5.7	10.8		
Netherlands	2.3	14.4		
New Zealand	4.0	14.7		
United Kingdom	8.2	14.8		
Spain	7.7	18.4		

¹ Initial years for country data samples are shown in parentheses.

Source: Authors' calculations using house price data described in the Appendix.

House prices

Graph A1



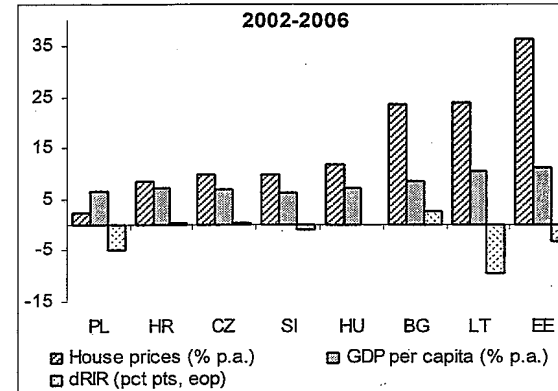
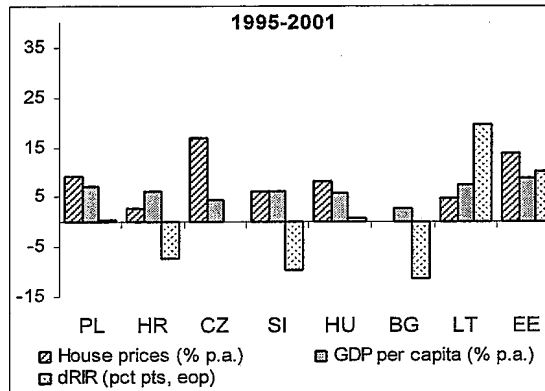
House prices: lessons from the table

- ◆ Lower in CEE than in Western Europe
- ◆ Differences smaller for capital cities
- ◆ Urban house prices increase much faster than house prices in country side

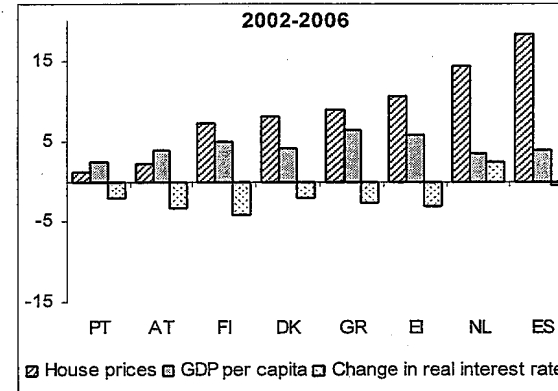
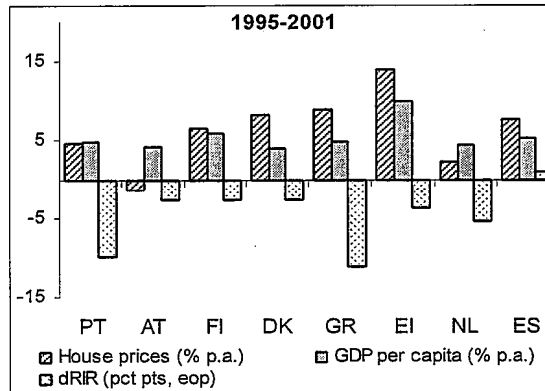
House prices and macro fundamentals

- ◆ 1995-2005: real GDP increase by 50% in Central European countries (CR, H, PL, SL), 40% in south-eastern Europe (BG, CR) and by 100% in LT, E.
- ◆ Nom. mortgage rates: 30% in 1995, 13% in 2000, 6 %in 2005
- ◆ Real rates 16% in 1995 (expect for E<), 3.5%in 2005

House prices and macroeconomic fundamentals



Selected industrial countries



Note: For CEE countries, real interest rates represent a weighted average of domestic and foreign currency long-term rates on household loans, deflated by the CPI.

Sources: BIS; IMF; national data; authors' calculations.

Predictions

- ◆ 1995-2001: rapid growth of income + lowered real rates=faster growth of house prices in CEE
 - It did not happen
- ◆ 2002-2006: income growth+ lowered real rates= growth of house prices in CEE
 - but not that fast... something else matters

Specific factors for CEE

- ◆ Prior to 2000s, weak housing market institutions, no housing finance
- ◆ Then longer-term housing loans, higher loan-to-value ratios, lower interest rates = lifting credit constraints
- ◆ Limited supply of new homes
- ◆ Housing quality
- ◆ Higher external demand - expectations
- ◆ Initial undershooting of house prices

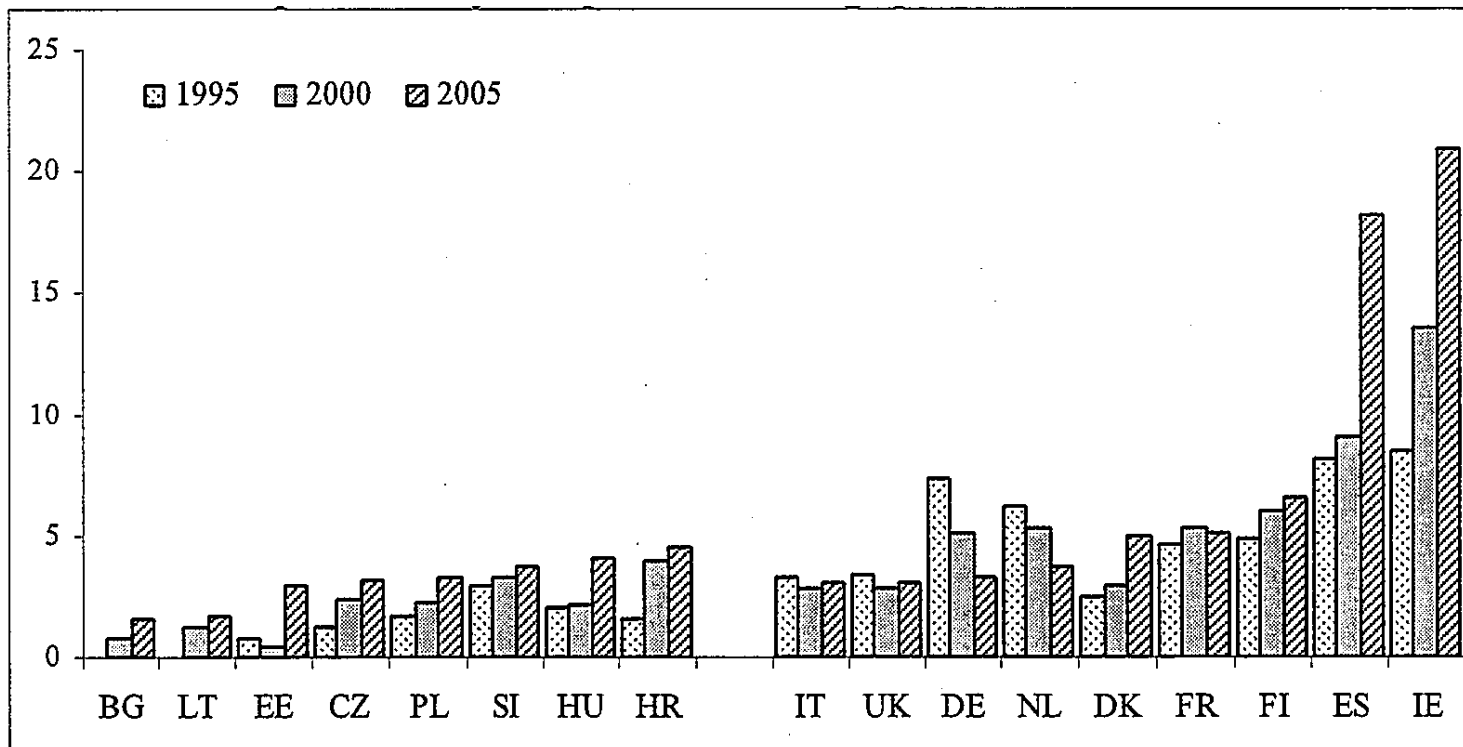
Commercial bank lending 2000-2006

Country	Total loans to households		Housing loans			Share of FX loans in total household loans, 2006 ⁴
	Growth rate ¹ (% per year)	Share in private sector credit, 2006 ² (%)	Growth rate ¹ (% per year)	Contribution to private sector credit growth ³	Share in private sector credit, 2006 ² (%)	
Central and eastern Europe						
Bulgaria	50.4	37	71.5	26	13	17
Croatia	26.6	56	24.9	29	20	80
Czech R.	33.0	38	69.8	39	27	0
Estonia	45.3	50	45.6	51	49	78
Hungary	45.5	34	68.7	22	20	40
Lithuania	58.7	38	81.6	33	27	49
Poland	24.0	40	48.8	45	21	39
Slovenia	14.2	28	...	26	...	42
Average	37.2	40	58.7	34	25	43
Selected industrial countries						
Austria	19.4	47	14.4	40	25	22
Denmark	11.1	68	11.4	61	58	...
Finland	13.8	64	15.6	56	45	...
Greece	27.0	52	26.0	47	34	...
Ireland	26.6	49	29.5	41	39	...
Netherlands	8.3	63	9.0	64	55	...
Portugal	8.7	55	9.2	62	44	...
Spain	21.4	50	24.7	40	36	...
Average	17.0	56	17.5	52	42	...

¹ Annual averages, based on monthly data. CEE data for 2006 are mostly through August. ² Private sector credit comprises loans to households and non-financial corporations. ³ Percentage contribution of housing loans to total private sector credit growth, average for 2005 and 2006. ⁴ For Croatia, including foreign currency-linked loans.

Sources: IMF; central banks; authors' estimates.

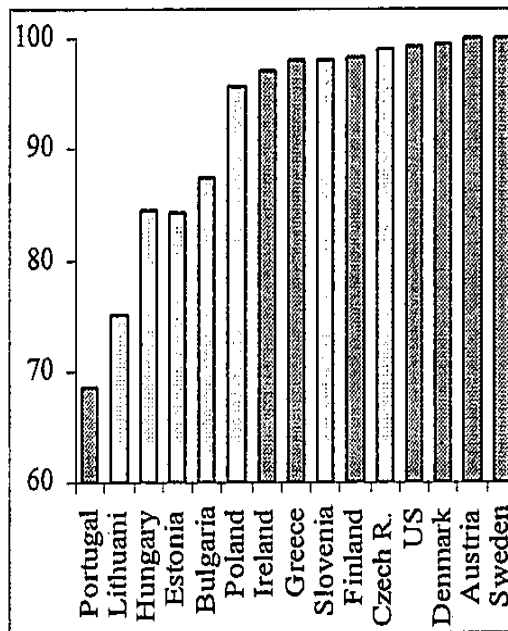
Newly completed dwellings per 1000 inhabitants



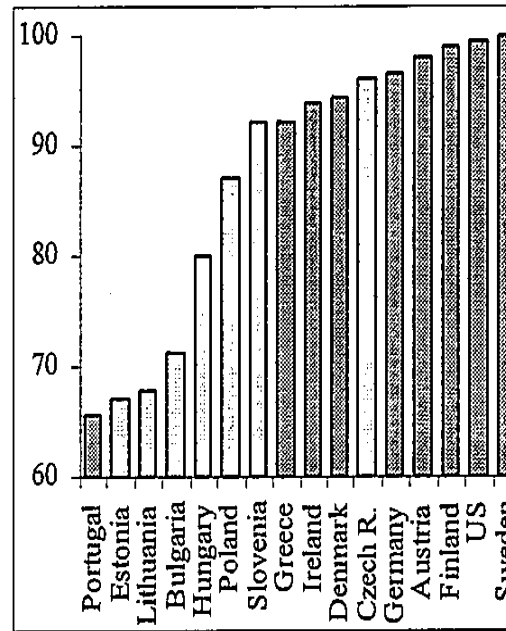
Sources: National statistical offices; UN Economic Commission for Europe.

Indicators of housing quality 2002

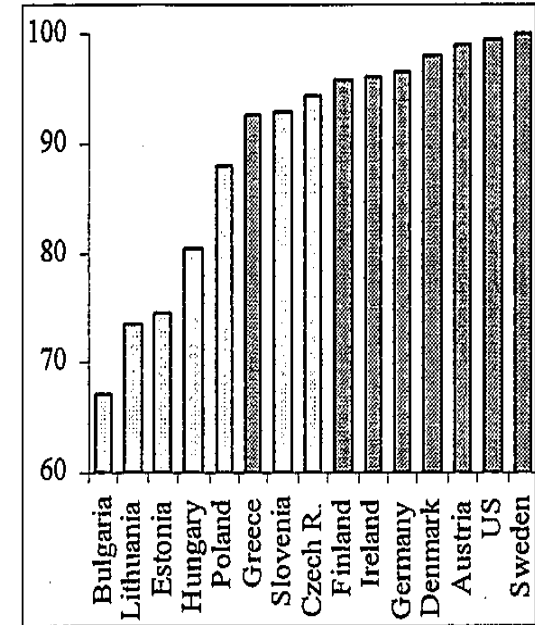
Dwellings with piped water (%)



Dwellings with fixed bath (%)



Dwellings with flush toilet (%)



Source: Czech Statistical Office.

Zemcik (2008): Residential real estate market in the CR still going strong

- ◆ The average price of a standard 68 m² apartment in CR increased by 27.6% in the 2001–2003 period and by 49.5% in the 2004–2007 period
- ◆ The growth for prices in Prague for the same periods was 47.2% and 35.7%, respectively.
- ◆ The shock from entering EU was anticipated and absorbed ex-ante since the rate of change in apartment prices slowed down significantly in the period 2004–2006. Prices then accelerated in 2007; they grew by 33.6% in the Czech Republic overall and by 23.0% in Prague, respectively.

Prices and rents for existing apartments 68m²

	2001	2002	2003	2004	2005	2006	2007
Prices – CR							
Average 335 Regions, 1,000 CZK	408	437	520	604	620	675	902
Annual Growth Rates %		7.23	18.98	16.06	2.74	8.89	33.62
Growth 2001–2003 %			27.58				
Growth 2004–2007 %							49.48
Prices – Prague							
in 1,000 CZK	1,252	1,437	1,843	1,855	1,809	2,047	2,517
Annual Growth Rates %		14.78	28.25	0.65	-2.48	13.16	22.96
Growth 2001–2003 %			47.2				
Growth 2004–2007 %							35.69
Rents – CR							
Average 335 Regions, CZK	3,565	3,732	4,206	4,598	4,627	4,565	4,911
Annual Growth Rates %		4.67	12.72	9.32	0.62	-1.34	7.58
Growth 2001–2003 %			17.98				
Growth 2004–2007 %							6.8
Rents – Prague							
CZK	7,526	8,443	10,252	9,893	9,204	9,139	9,275
Annual Growth Rates %		12.19	21.42	-3.5	-6.96	-0.7	1.48
Growth 2001–2003 %			36.22				
Growth 2004–2007 %							-6.25

Source: Institute of Regional Information, Brno

Present value model

- ◆ This model views a house or an apartment as an investment vehicle with future rents determining the current prices. Predictions of this model are similar to yet another view which considers market segmentation, with apartments for rent on the one hand and apartments for purchase on the other.
- ◆ Both alternatives suggest that higher rents imply higher prices (either because a purchase is a good investment or because renters purchase their own apartments) and vice versa.

Supply and demand model

- ◆ The increase of net disposable income and construction costs in 2001–2003 was 6.2% and 4.9%, respectively. Both the leftward shift of the supply curve and the rightward shift of the demand curve increased the prices of housing.
- ◆ Putting together these numbers with the growth in rents implies $6.2\% + 4.9\% + 18.0\% = 29.1\%$, which is comparable with the 27.6% apartment price growth from 2001 to 2003. This supports the conclusion that the growth of apartment prices was in line with the fundamentals from 2001 to 2003.
- ◆ The numbers for the 2004–2007 period are $19.9\% + 9.6\% + 6.8\% = 36.3\%$, much lower than the increase of 49.5% in the apartment prices.
- ◆ Mortgage volume rose by 56.4% in 2007