

# **House Price Bubbles on the Major Polish Housing Markets**

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# Layout of the presentation

- Purpose of the research
- 'Bubble' definition
- Bubble identification and its measurement on the Polish housing markets
- Conclusions - financial stability and overall economic implications

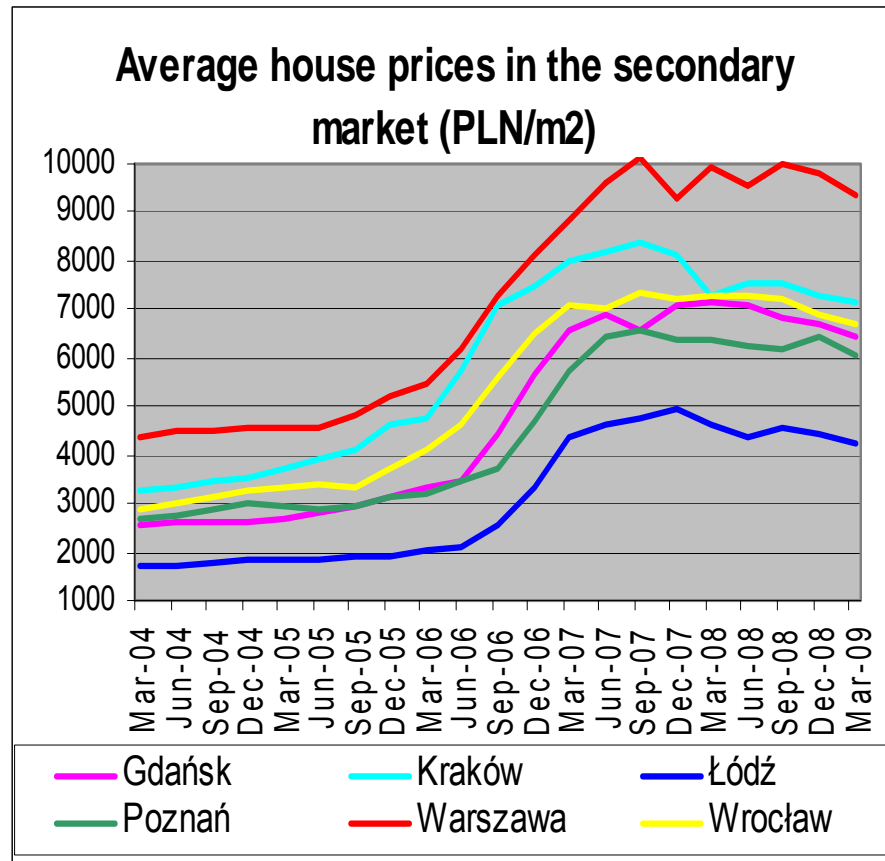
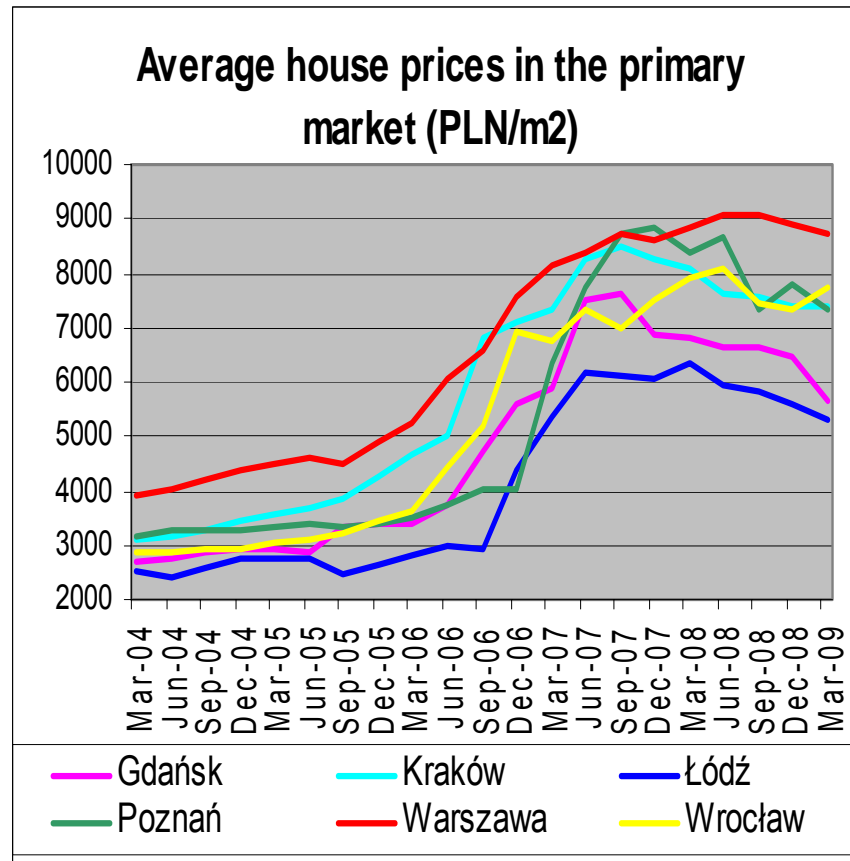
# The research purpose

- To identify and measure house price bubbles on the major Polish housing markets.
- Then also, to analyze and estimate the potential implications of house price bubbles for both financial stability, housing market and the entire economy.

# House price bubble – the idea

- Stiglitz (1990) provided a general definition of asset price bubbles:  
*„If the reason that the price is high today is only because investors believe that the selling price is high tomorrow – when ‘fundamental’ factors do not seem to justify such a price – then a bubble exists”.*
- As many researchers [Case and Shiller (2004) or Himmelberg, Mayer, Sinai (2005)], we think that: *„House price bubble is driven by home buyers who are willing to pay inflated price for housing today because they expect unrealistically high housing appreciation in the future”.*

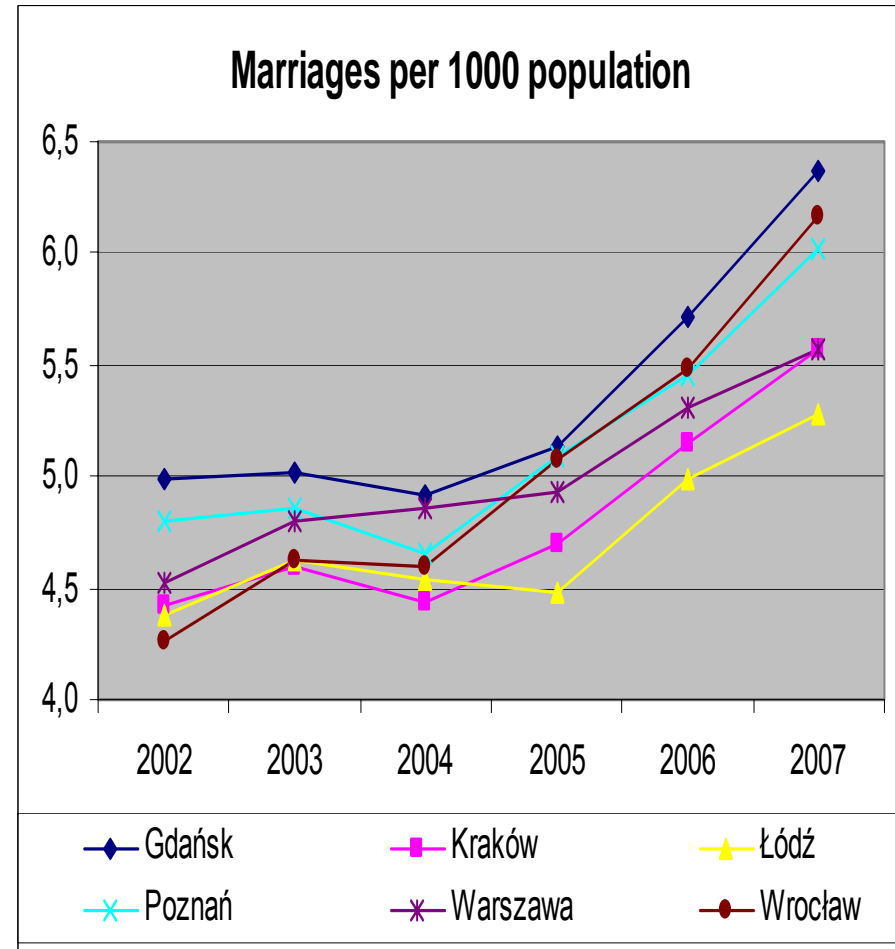
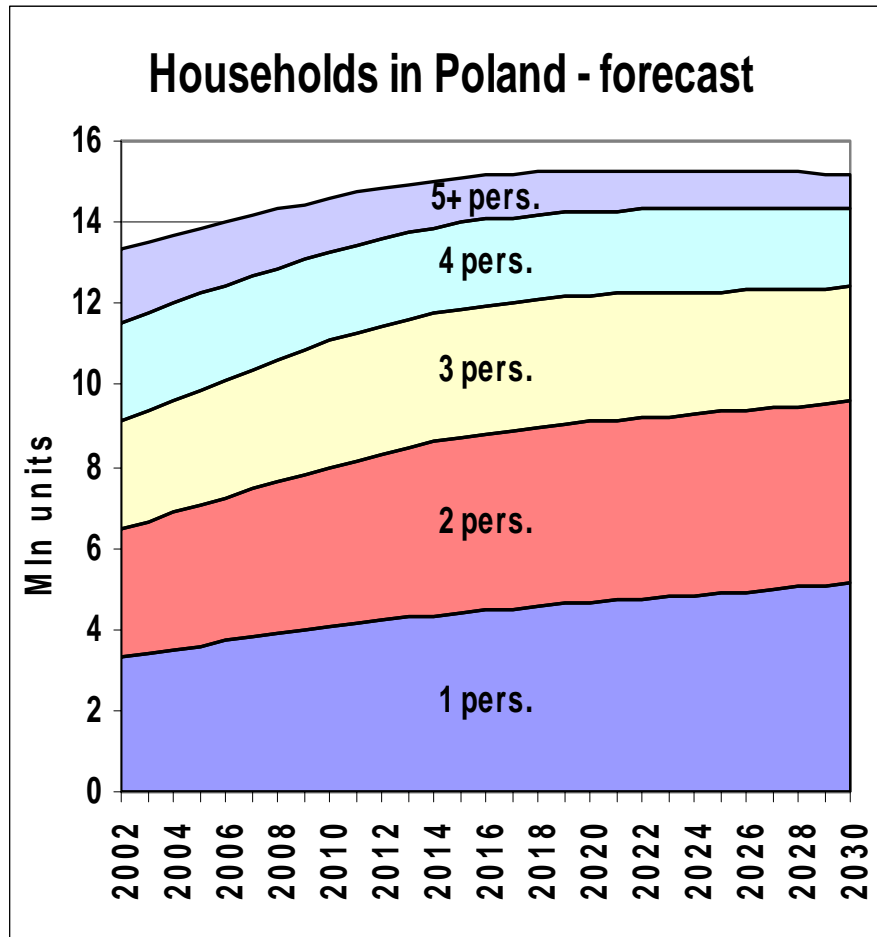
# Price Bubble Mechanism - Polish Case



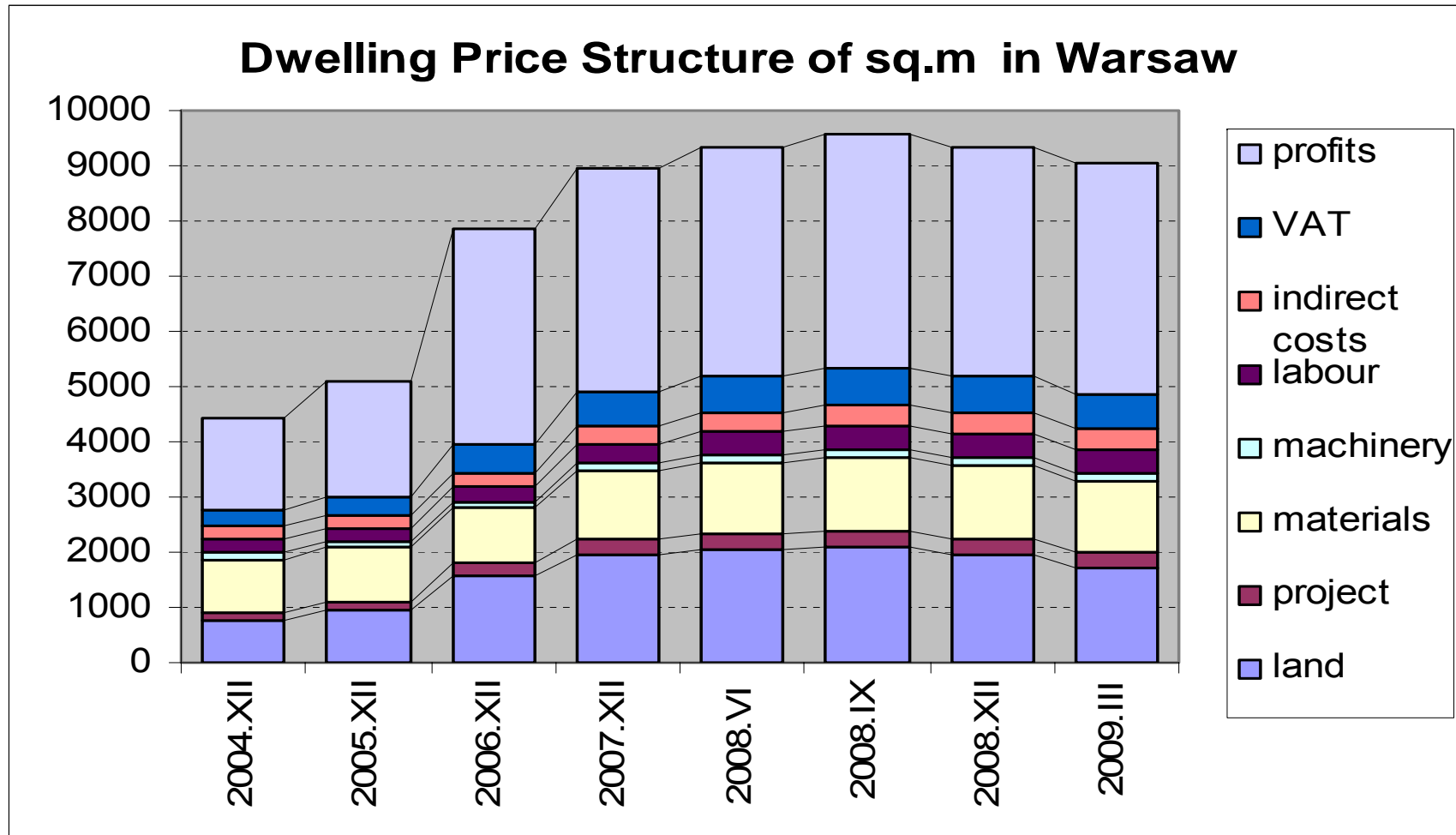
# When does a house price bubble exist?

- High price growth is not evidence *per se* that housing is overvalued.
- Cited 'bubble' definition requires proving that that the level of prices has been bid up beyond a level consistent with underlying fundamentals (income, sustainable lending terms, demographic trends, construction costs, availability of building sites).

# Price Bubble Mechanism - Polish Case

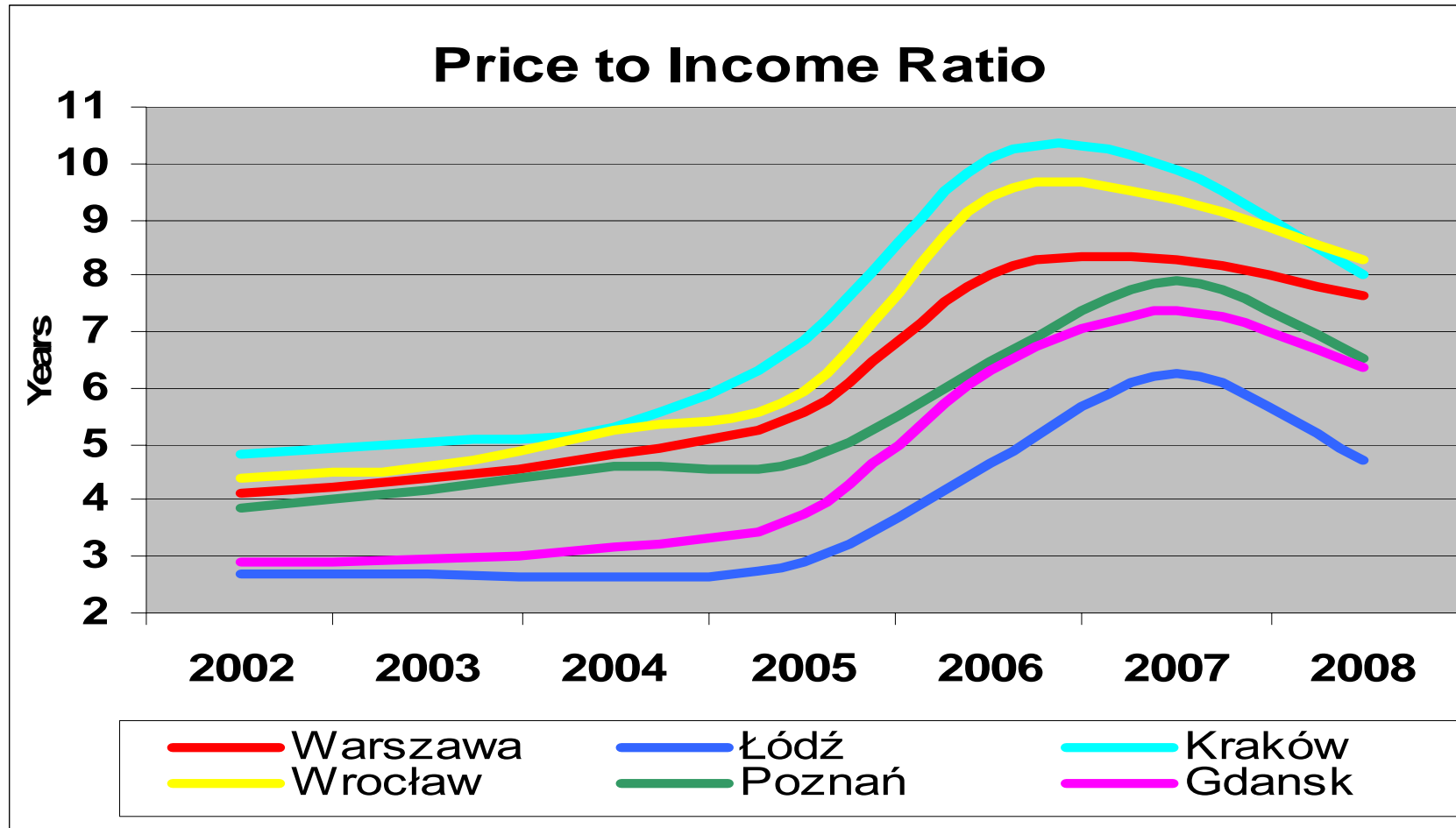


# Price Bubble Mechanism - Polish Case

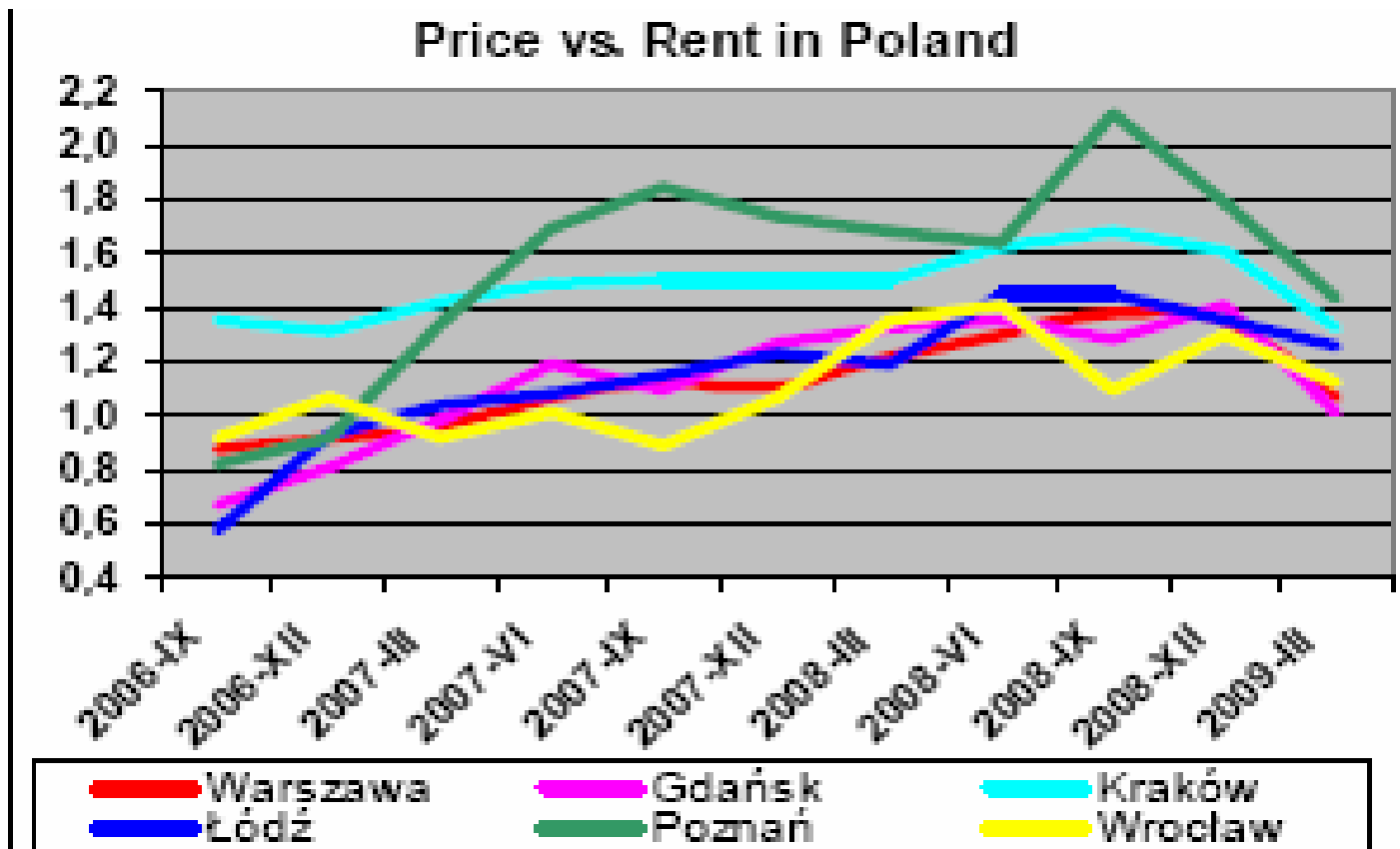




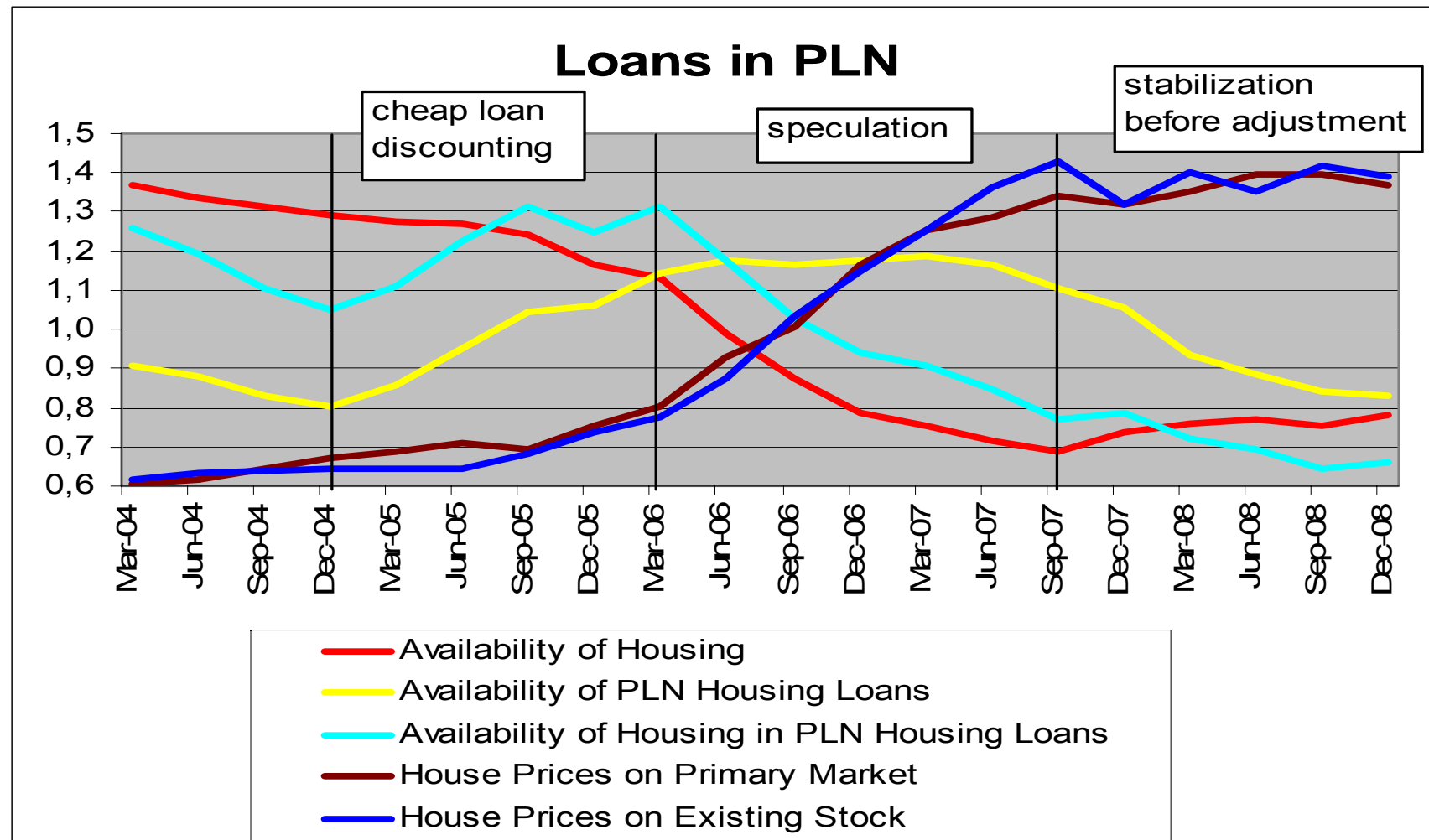
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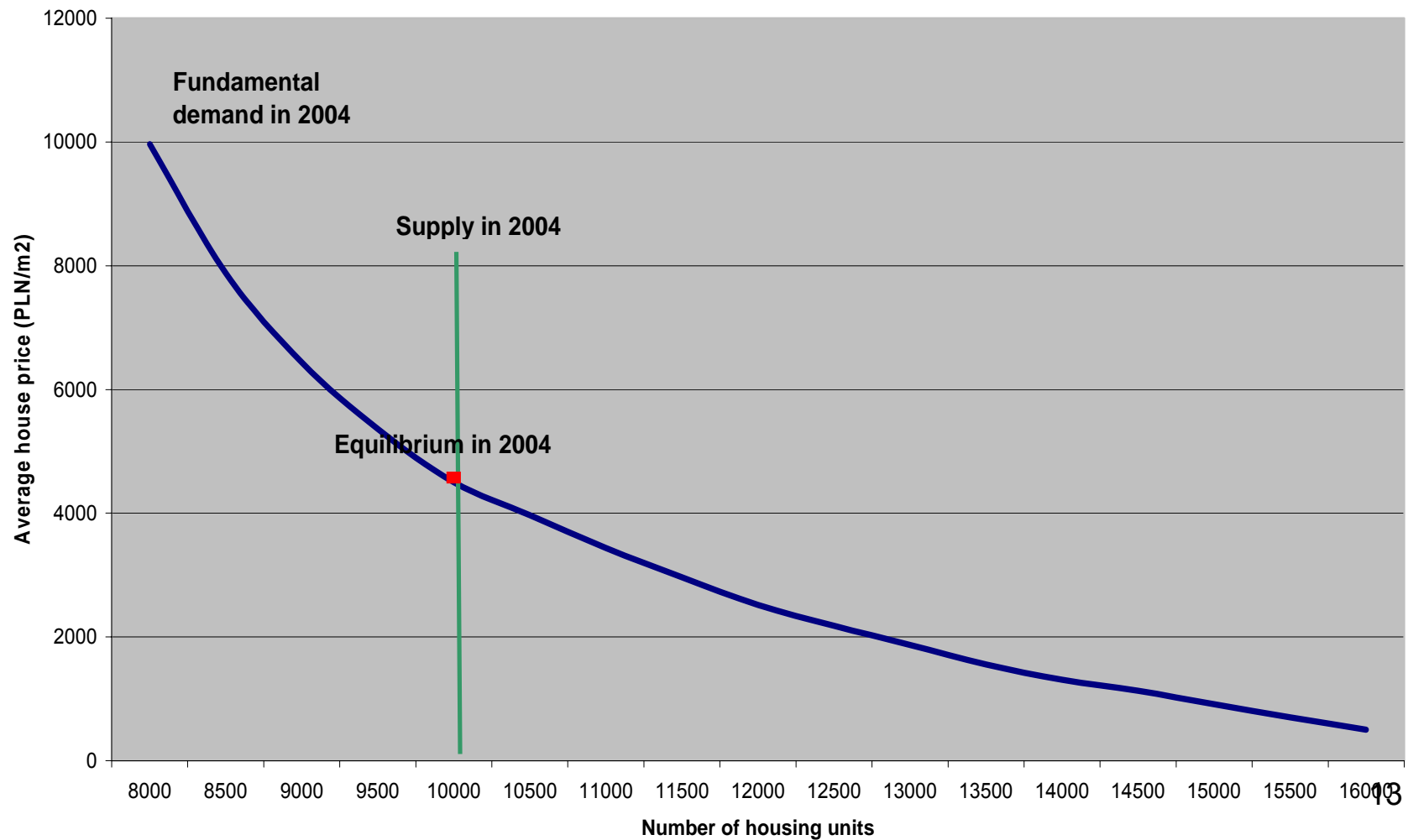
# **Price Bubble Mechanism**

## **- Warsaw Case**

- For Warsaw, we estimated the demand curve using annual household budget survey. The curve reflects the highest house price per sq. meter available for a household. We estimated the price using the disposable income of each household and assuming standard mortgage product, lending criteria and an average housing unit.
- The supply curve is the number of newly constructed housing units.
- We look at the difference between the price suggested by the demand and supply curve and the observed market price in the same period.

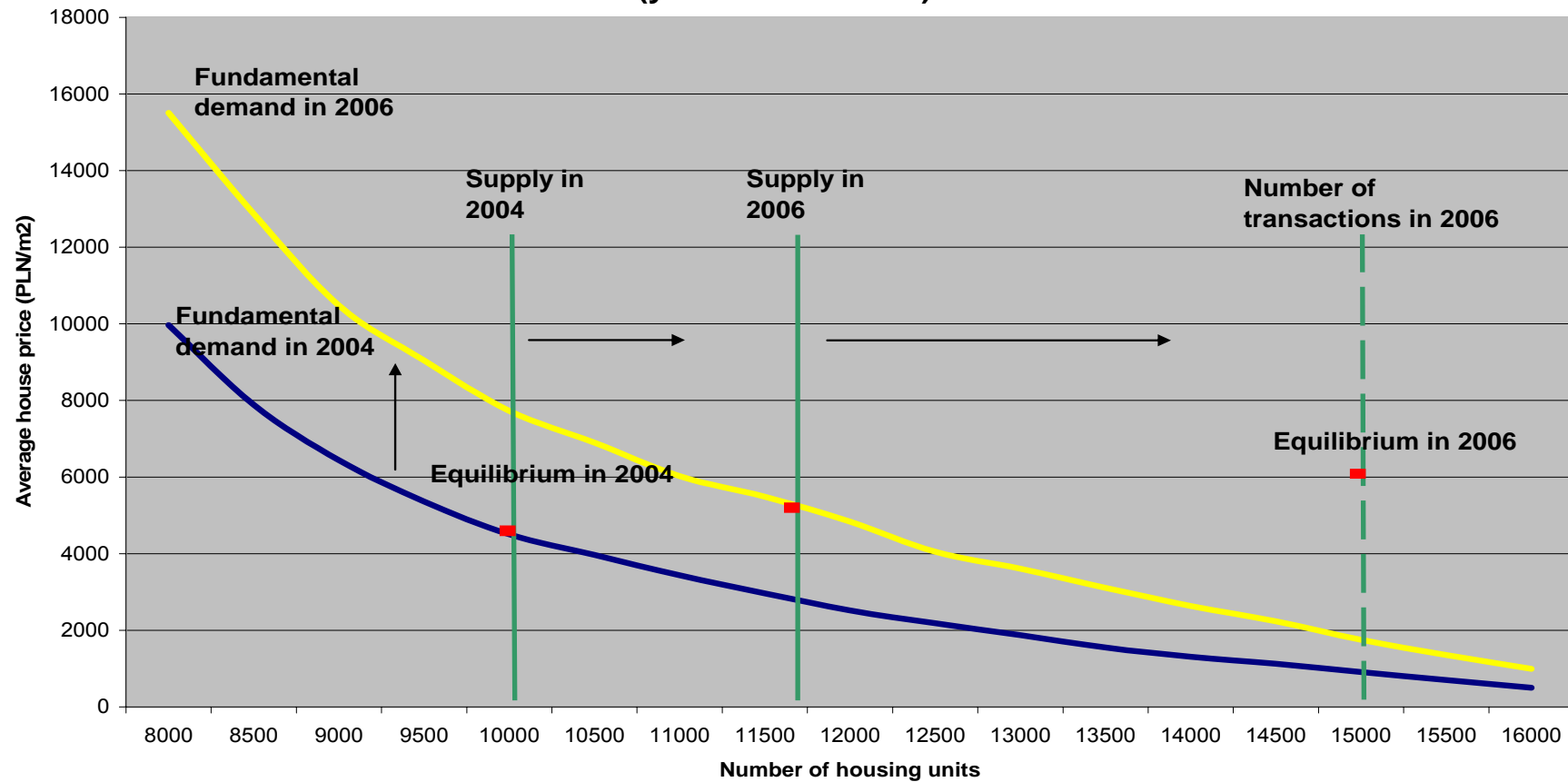
# Price Bubble Mechanism - Warsaw Case

Housing demand and supply in 2004



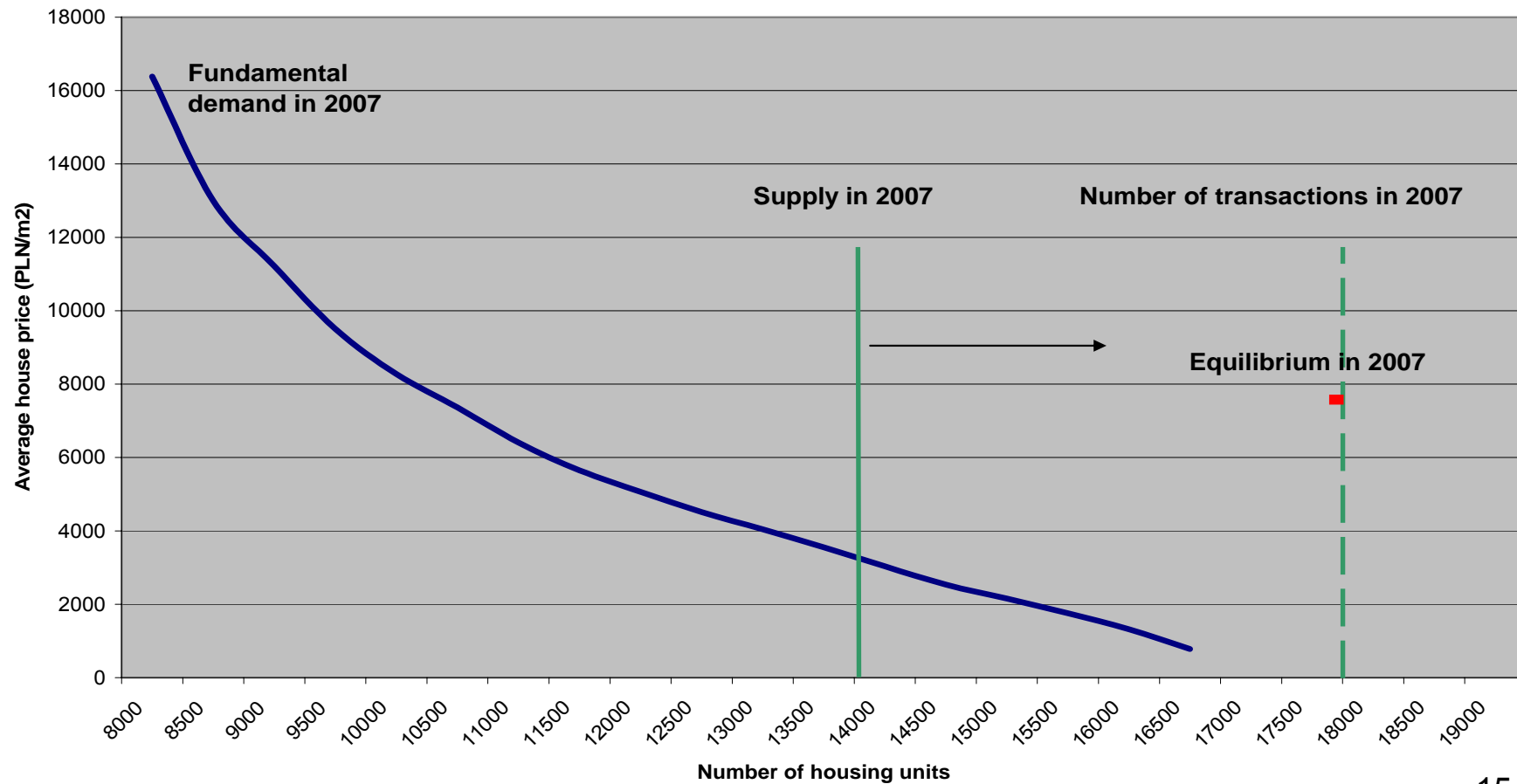
# Price Bubble Mechanism - Warsaw Case

Changes in housing demand and supply  
(years 2004 - 2006)



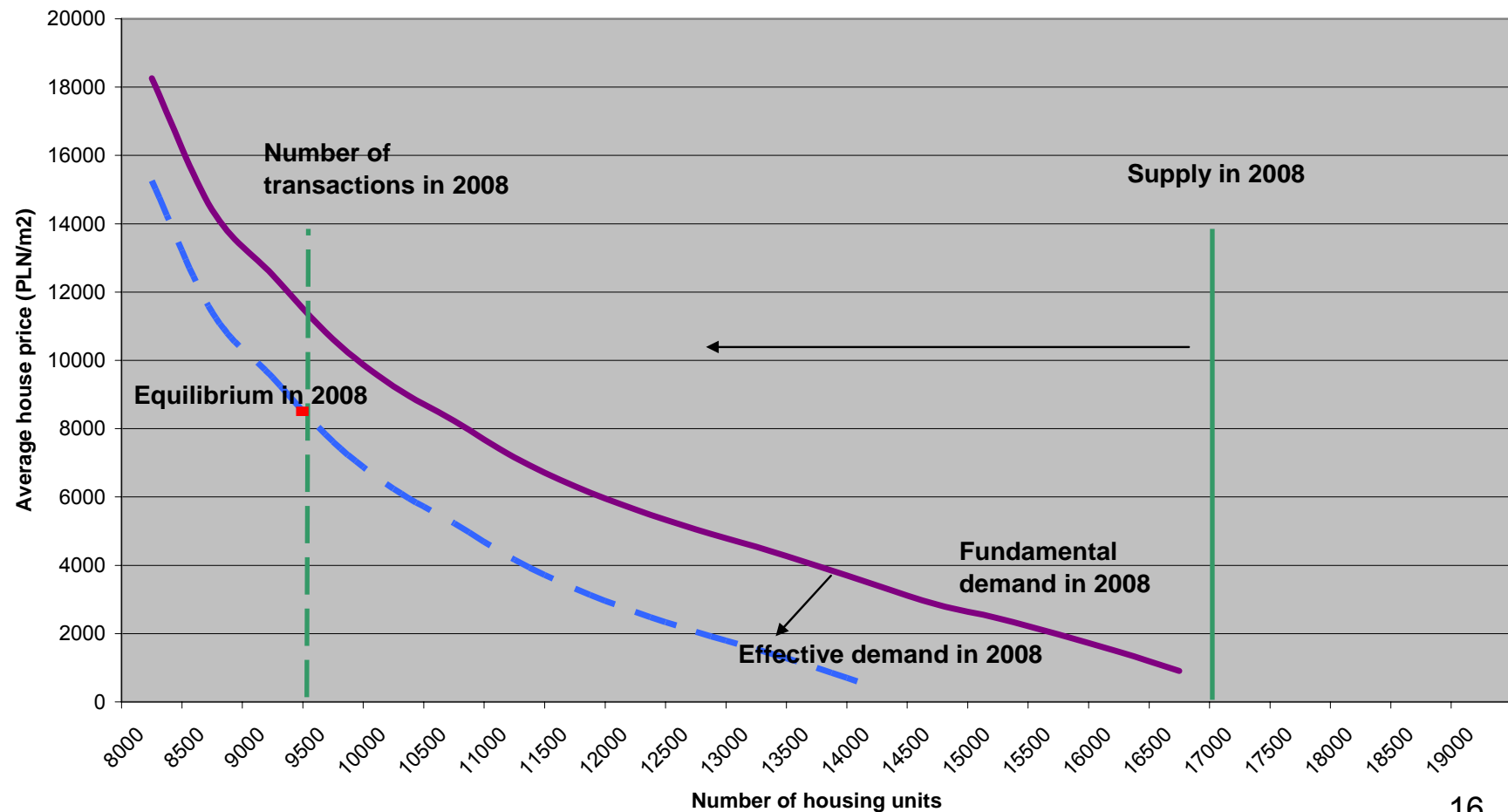
# Price Bubble Mechanism - Warsaw Case

Housing demand and supply in 2007



# Price Bubble Mechanism - Warsaw Case

Housing demand and supply in 2008





# Bubbles in the Major Polish Housing Markets

<i>Bubble Indices</i>	Warsaw	Gdańsk metropolitan area	Cracow	Wrocław	Poznań	Łódź
Rapid price growth	1	1	1	1	1	1
Expectations of price growth and related behaviour	1	1	1	1	1	1
Credit expansion	1	1	1	1	1	1
P/I ratio – level and growth	1	0,5	1	1	0,5	0,5
P/R ratio – level and growth	0	0	1	0	0	0
Price as discounted rental yield	0	0	1	0	1	0
Share of profit	1	0,5	1	1	1	0,5
International comparisons	1	1	1	No data (0)	No data (0)	No data (0)
Fundamental factors	-1	-1	-1	-1	-1	1
Sum	4	3	6	4	3,5	4
<b>Ranking according to the risk level</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b> 17

# Implications for the Economy and Financial Stability of the Banking System.

Years	2002	2004	2006	2008
Housing loans in the assets of the banking sector	4,3	6,6	11,4	18,5
Doubtful housing loans in regular mortgage		2,7	1,2	1,0
Capitalisation of the banking sector in Poland		15,4	13,2	11,2
Housing loans to GDP	2,6	3,9	7,3	15,1
Housing construction in GDP		1,6	1,6	2,2
Projects made by Developers in GDP		0,2	0,3	0,4

# Conclusions

- Comparison of different indices leads us to assume that in case of the major Polish housing markets price bubbles occurred.
- However, we do not see that it may bring about any important consequences for neither financial stability nor overall economic situation in Poland.

Thank you for your attention