



# Urban and real estate economics

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# Urban and real estate economics

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## Week 11

The macroeconomics of the real estate  
market IV  
Forecast

Áron Horváth

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# 1. What do we expect of forecasts?

# What do we expect of forecasts?

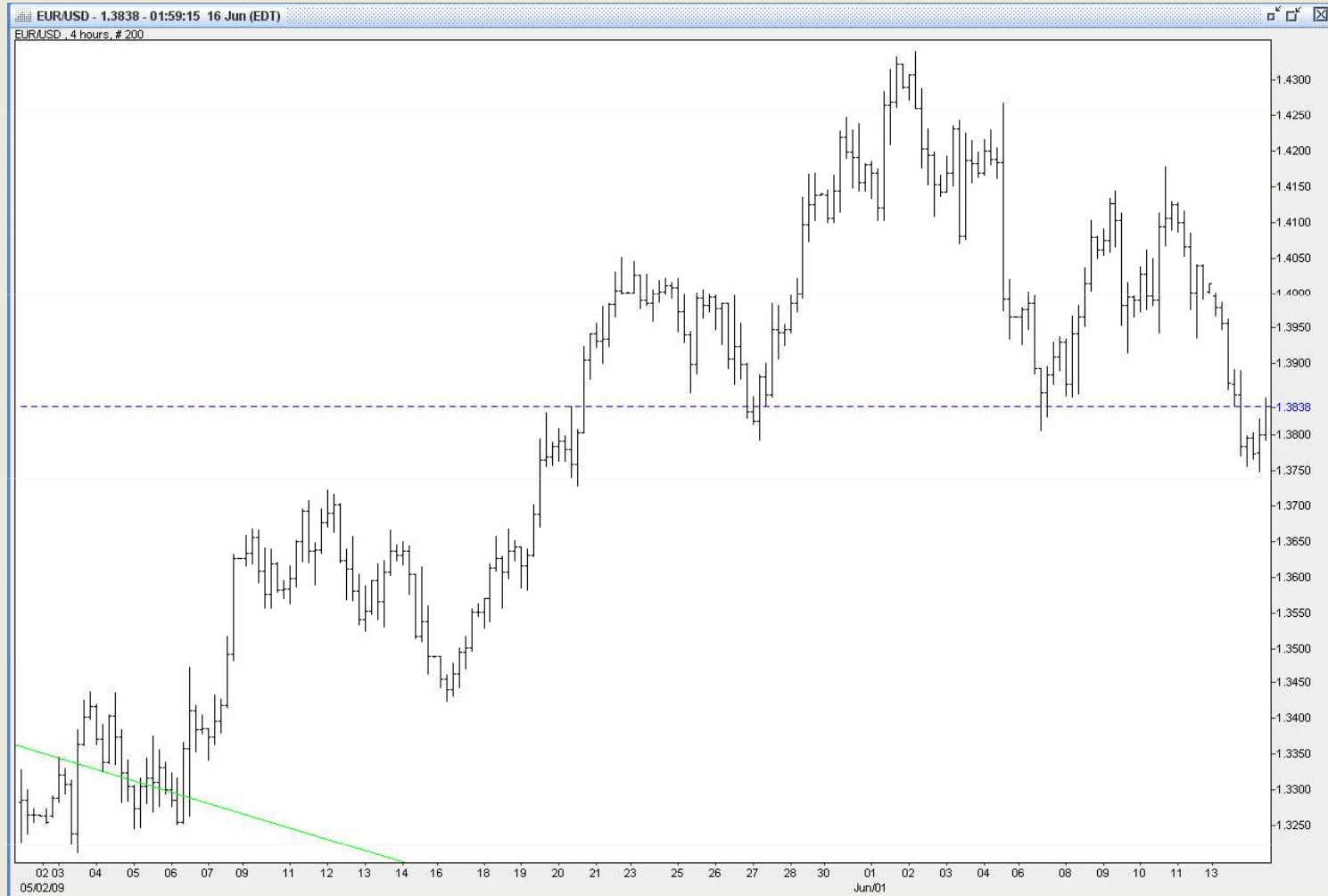
- We should be able to check its accuracy.
- It should be precise and have a good track record.
- It should be convincing, believable. It should take into account all the currently important market factors. Market players should see their possible actions in it.
- It should be transparent and replicable.

# Some examples of a forecast

- Nostradamus
- Weather forecast
- Technical analysis in the financial market
- IMF macroeconomic forecast.

Let's think through to what extent they fulfil the requirements.

# Technical analysis: head and shoulders





# Technical analysis: head and shoulders

- Accountability: its accuracy can be checked.
- Good track record (maybe because of evolution?)
- Not convincing at all: if everybody knew it, it wouldn't work (clashes with the theory of efficient markets).
- Looks transparent.

# Example: IMF macroeconomic forecast on Hungary

- Its accuracy can be checked.
- We don't know the accuracy for Hungary but we can check it for other countries.
- Convincing: based on formal economic reasoning.
- The reasoning gets clear during the negotiations.

# Forecast on the Hungarian real estate market

- "Housing market bottomed out in 2009 and following a drop in turnover of 30-40% last year, our optimistic forecast is a minimal expansion of 5% for the year 2010."
- "We expect stagnating prices in 2010, although forced auctions has not started yet, and the housing space coming from these sellouts can push down the market price."

# Questions

- How do we know the prices and the turnover?
- What is the analysis based on?
  - Both supply and demand decrease. Why should the overall effect on prices be neutral?

# Fulfilling the criteria

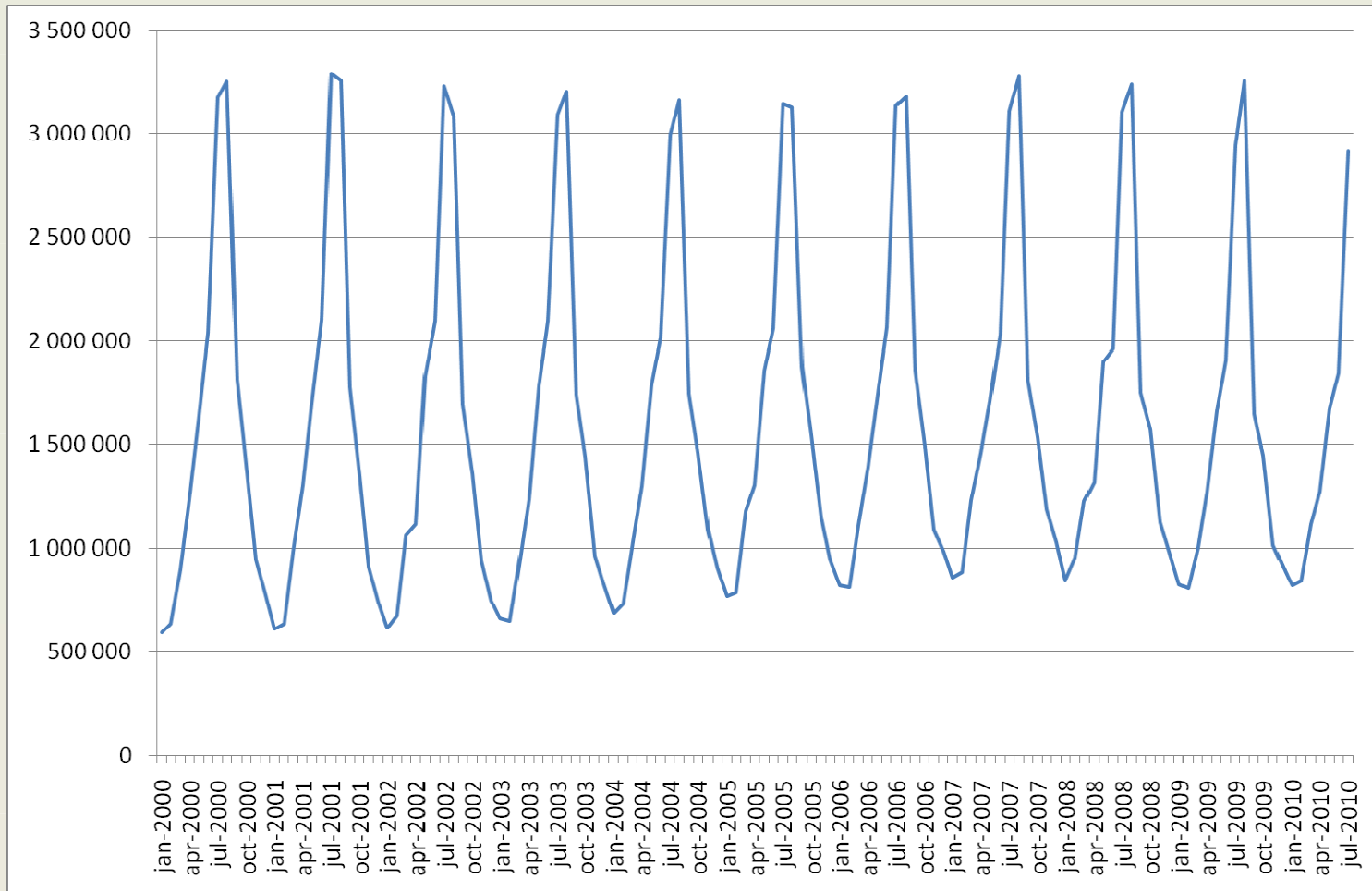
- **Accountability:** we have to prepare some data.
- **Track record:** we'll see it later.
- **Validity:** a properly built formal model but some topical factors can be included as well.
- **Transparency:** until the level of quantitative relations between the variables (i.e. the already shown formal model).

## 2. How is a forecast made?

# Expert forecast

- Quite often there is only little information available to base a decision on so the forecaster shapes the forecast very strongly.
- E.g.: even trend forecasts are not totally unambiguous.

# Trend of nights spent in hotels and similar establishments



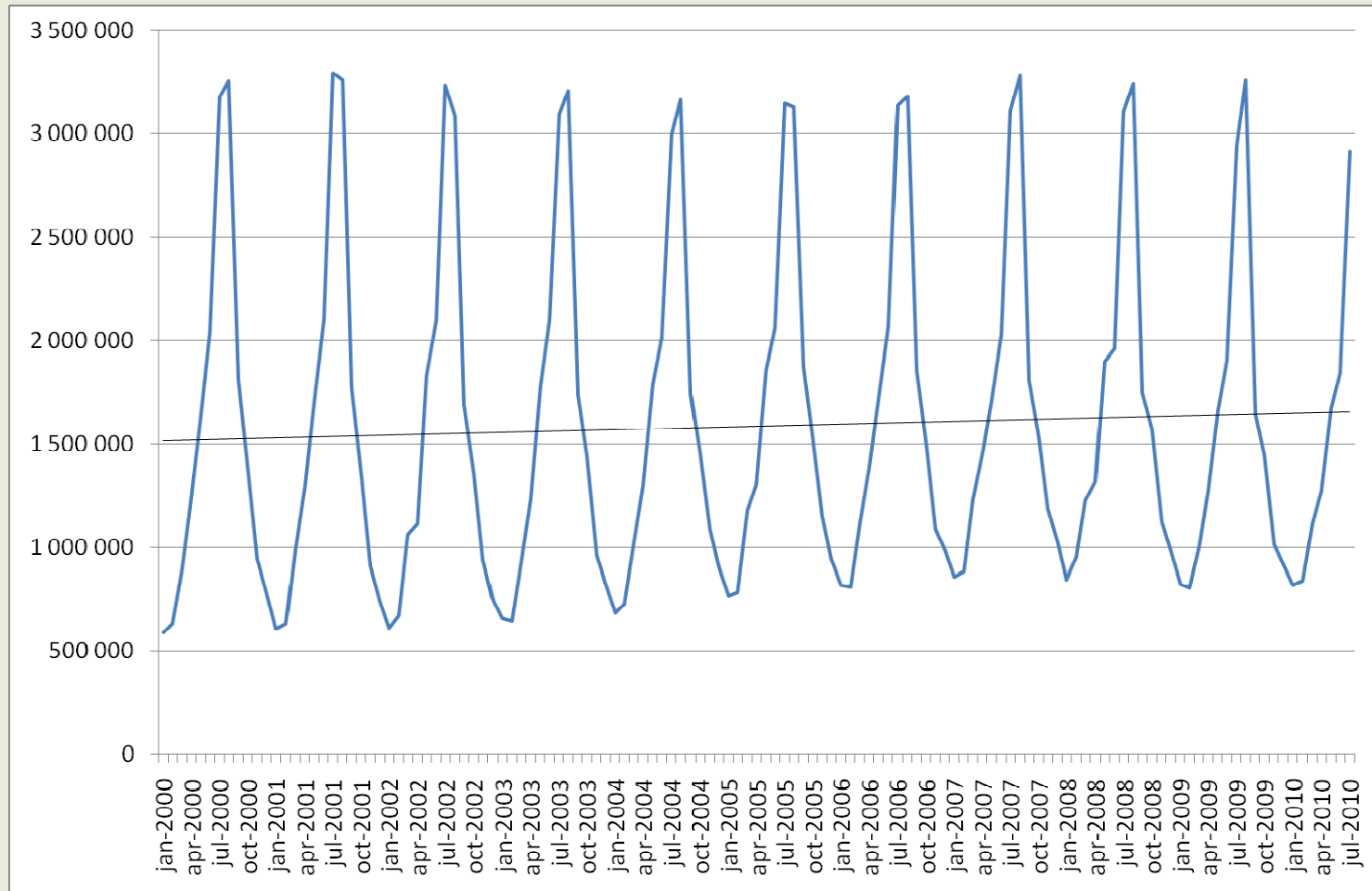


# Time series

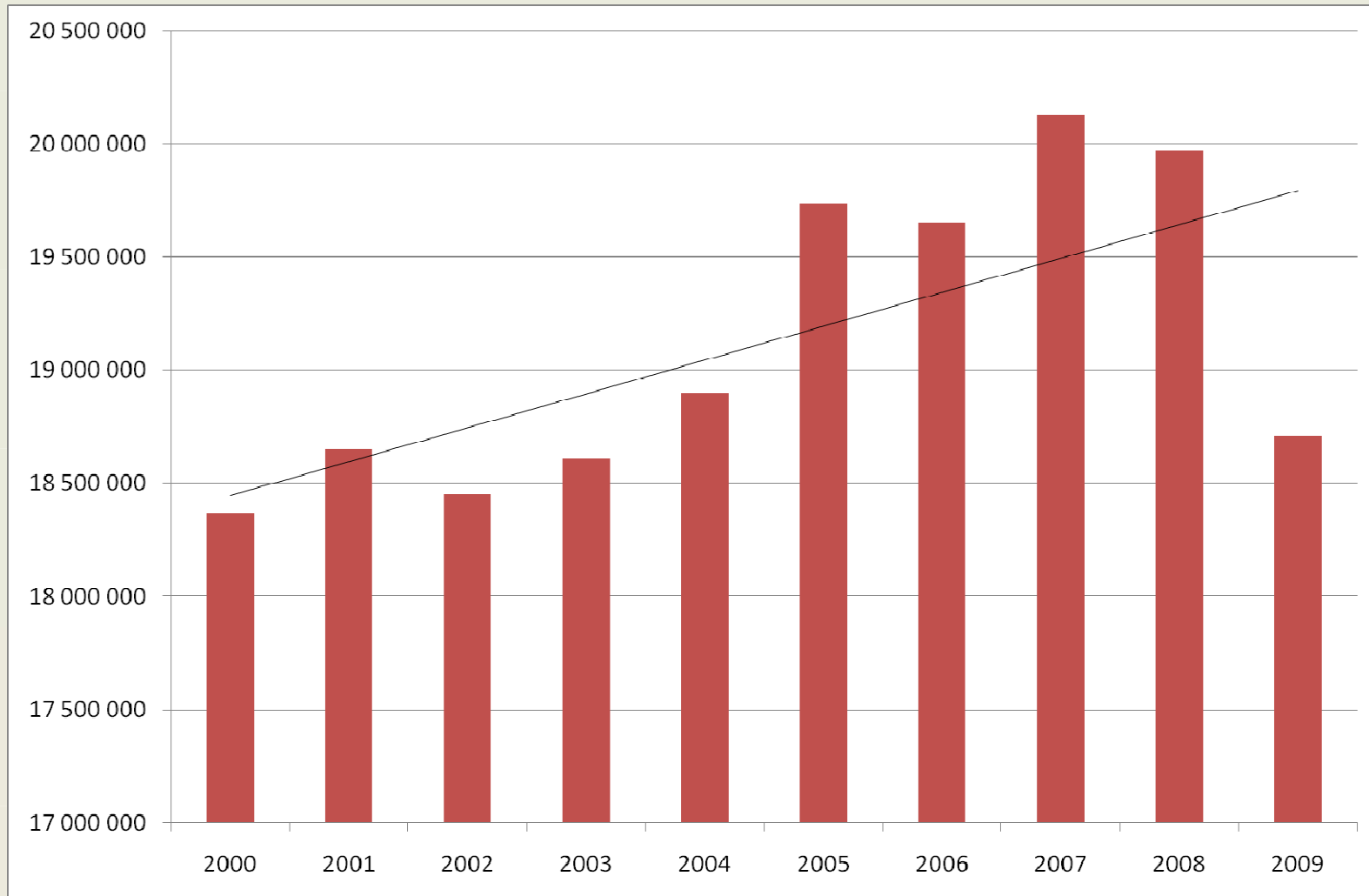
Separation based on "frequency" or timespan

- Trend: long-run tendencies.
- Cycle: the time it takes to get back to the trend, roughly 1–3 years.
- Seasonality: frequent, regularly observable movements.
- Noise: the rest, not of the three above, "unpredictable" or at least zero on average.

# Trend of nights spent in hotels and similar establishments



# Trend of nights spent in hotels 2



# Trend estimation

- Even trend estimation is tricky:
  - linear: same increment (of levels) every year  
or
  - logarithmic: same percentage points  
increment every year?
- Choosing the right timespan: should we  
include 2009–2010?

# 3. Forecasting tools

# Forecasting tools

1. Data, indices
2. Links – models
3. Topical stories

# How are indices made?

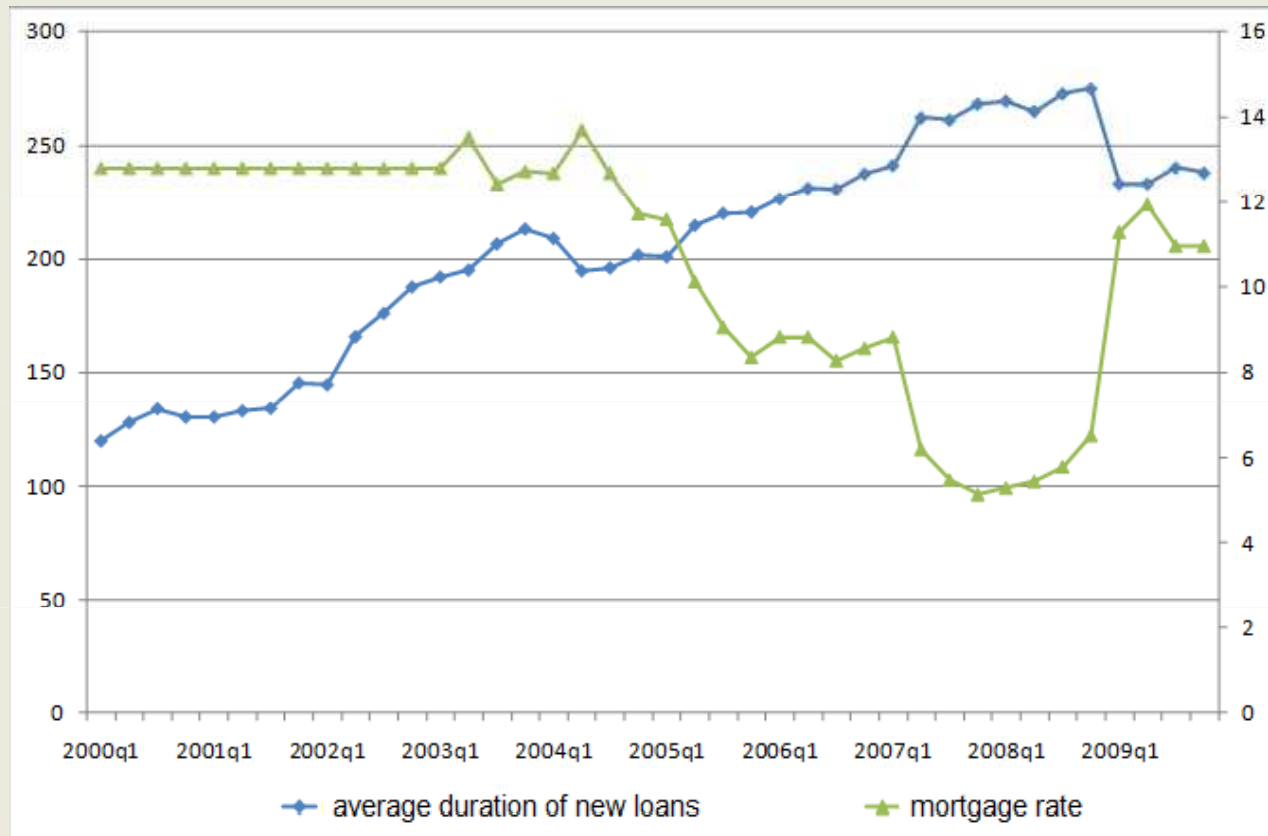
FHB House Price Index shows how house prices change.

[fhbindex.hu](http://fhbindex.hu)

problem: database is not public

1. data collection
2. reviewing methodology
3. collecting references
4. access to data
5. calculation
6. improving data quality, lobbying

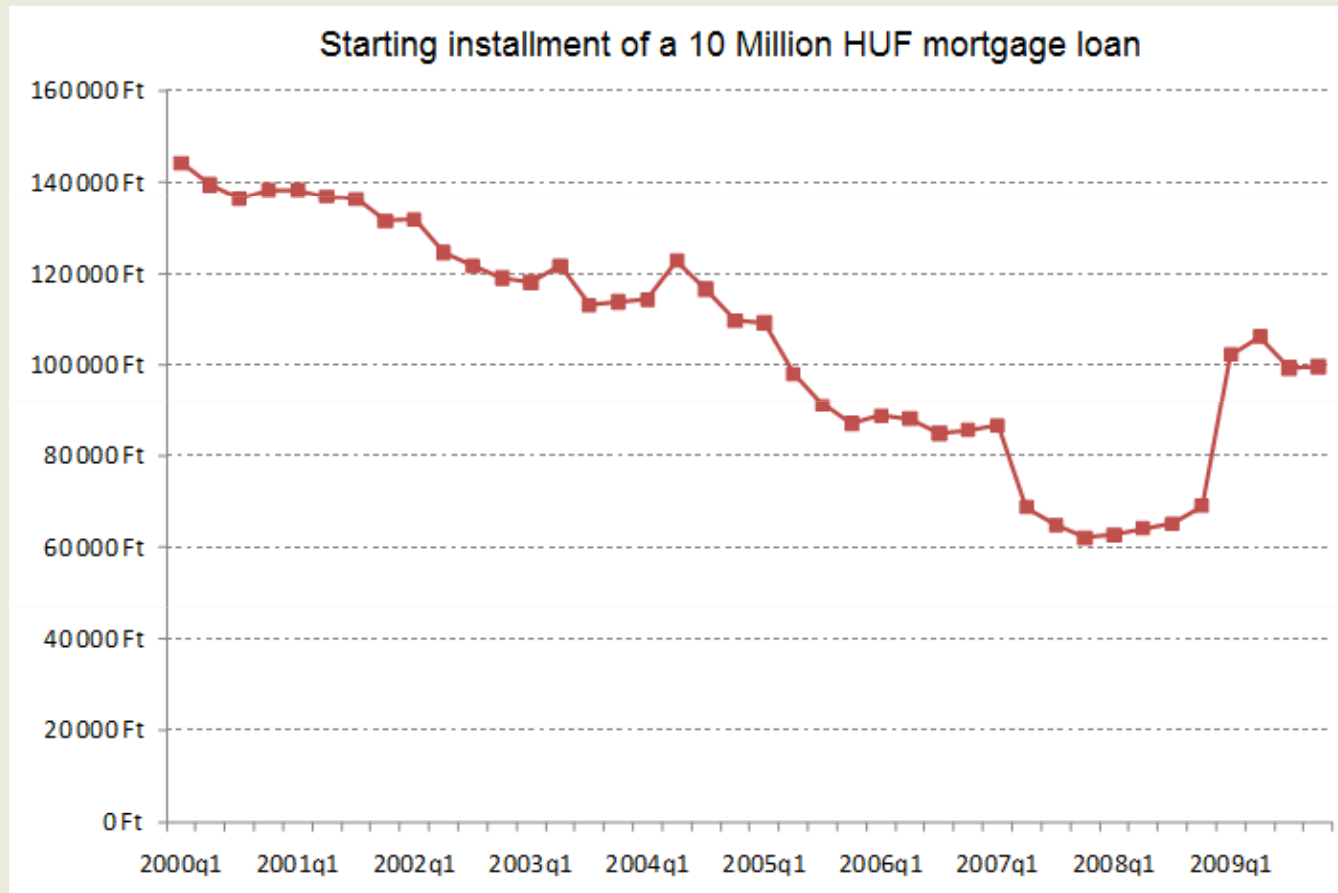
# Demand index



Affordability: the size of installments for a new house is a factor that affects demand.



# Demand index



The time series of installments (calculation based on interest rates and maturity).

# Links – model

- Using the textbook modelling framework:
  - Denise DiPasquale–William Wheaton  
[‘96]: *Urban Economics and Real Estate Markets*
- Endogenous (explained) variables:
  - house prices
  - construction of new houses

# Expectations play a major role

- Due to the investment (asset) nature of the real estate market the opinions about the future are a major factor.
- There are some events on the market that are hard to explain qualitatively.
- Handling expectations may help to describe these outcomes.

# The expected price change

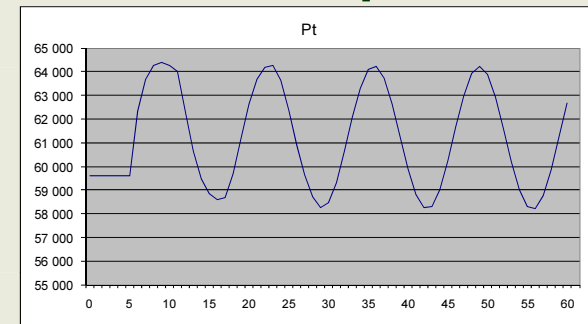
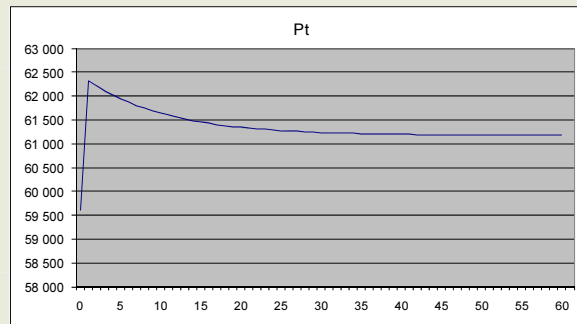
- If the model is useful, we might think that it has to do something with the way how the prices evolve in the model.
- The actors think the price change is persistent : adaptive expectations.
- Model-consistent expectations: if the model describes the reality well, there is no systematic bias in the judgement of the actors.

# Effect of a demand shock

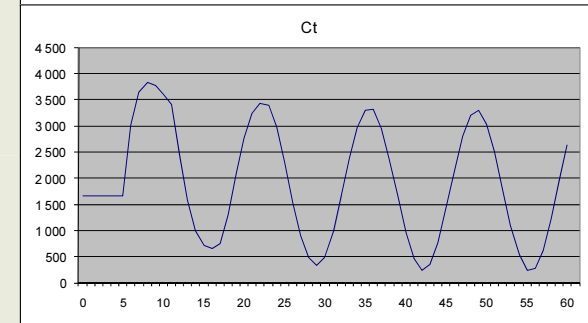
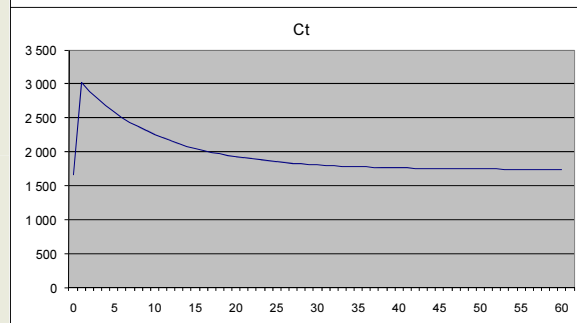
rational

adaptive

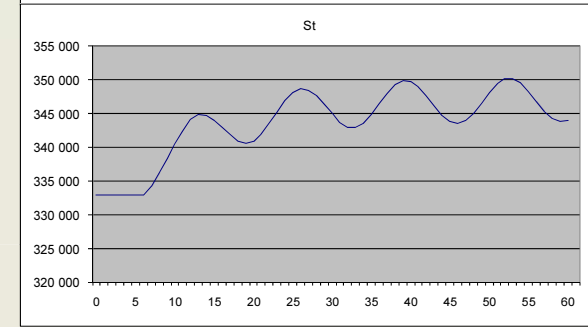
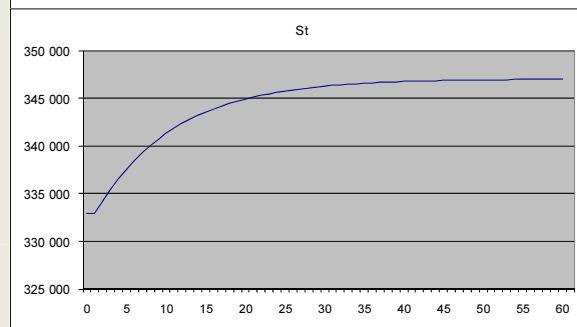
price



construction



stock



# What have we learnt by working with expectations?

- Cyclical movement is not an inherent characteristic of the real estate market.
- In case of exogenous expectations the model will overshoot before coming to an equilibrium.
- In case of rational (model-consistent) expectations the adaptations are faster and the overshoot is smaller. This class of models will describe the market well if the exogenous factors governing the market are cyclical as well.
- In case of adaptive expectations a real estate cycle can develop endogenously.

# E.g.: What expectations can be seen in the following statement?

**House prices on the rise? – The government is to decide,**

2011.04.11 12:40

Should the government choose to make market-friendly decisions to support those debtors who cannot pay their mortgage loans, house prices could rise from their trough, but if the banks were forced to sell out the properties backing up mortgages, real estate prices would drop further, according to the analysts of Duna House, a franchise-based chain of real estate brokers.

In their statement published by the Hungarian News Agency (MTI) on Monday, they argue that fixing the exchange rate of the Swiss franc (thus fixing the amount of monthly installments), or giving the opportunity for debtors still defaulting to re-lease their houses would lead to a change of market sentiment. Buyers would no longer expect falling prices, thus acquisitions would start again, meaning rising prices.

# E.g.: What expectations can be seen in the following statement?

If no governmental help comes before the end of country-wide eviction ban then a large number of houses (serving as collaterals) will flood the market, sending prices to another nosedive. The report stresses out that to avoid this scenario (obviously in their own interests), banks will be slow to sell out these properties.

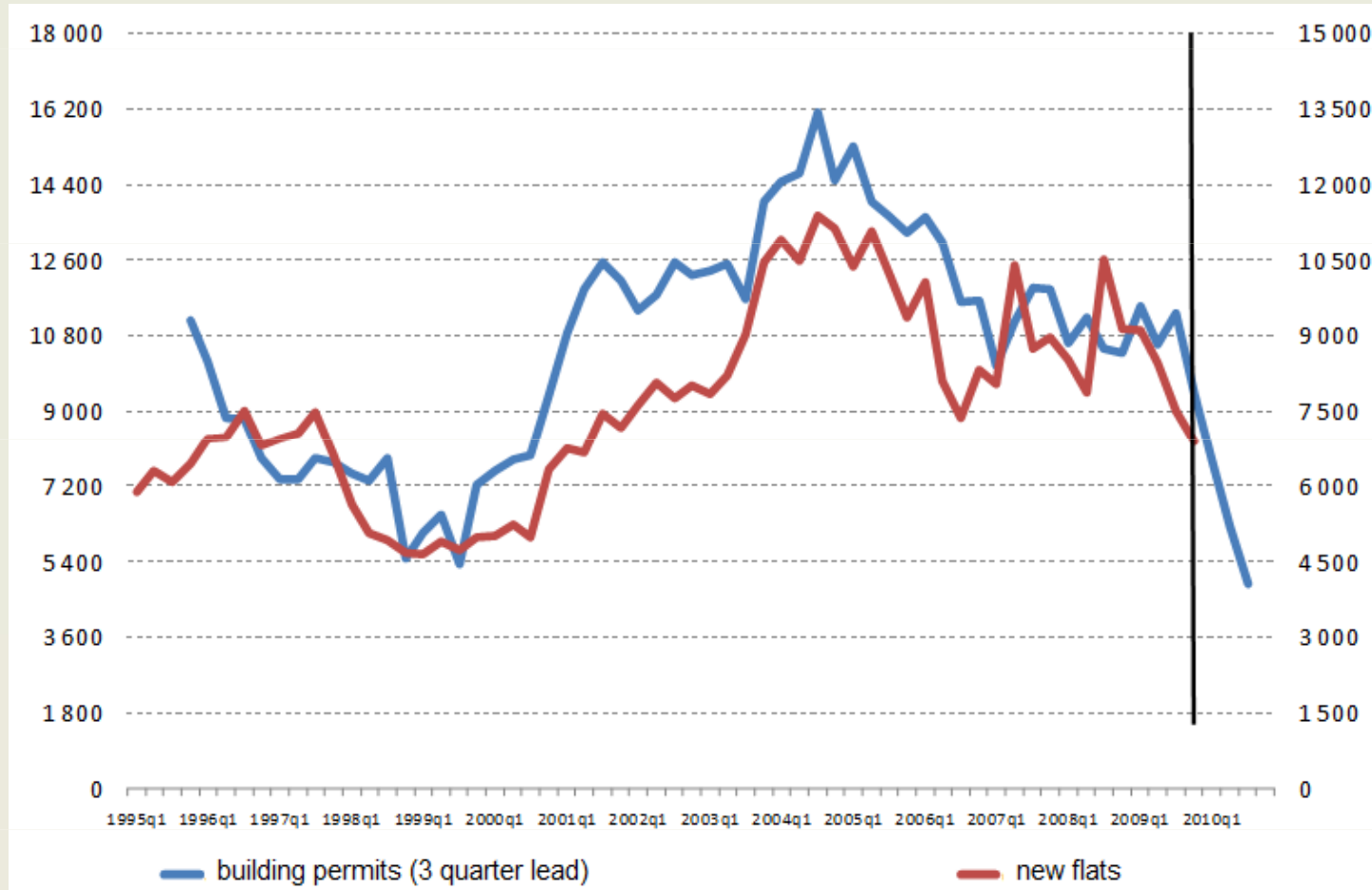
The housing market stagnated this January and February: potential buyers waited for further price drops. In March the government published new plans to alleviate the problems of bad debtors, transaction counts surged throughout March and April, said the experts at the real estate agency.



# Quantification

- Due to the lack of data it is often hard to estimate parameters.
- So we should find some other methods to quantify.
- Shocks can be used to identify some parameters.
- Credible alternative scenarios should be prepared to strengthen the specification.

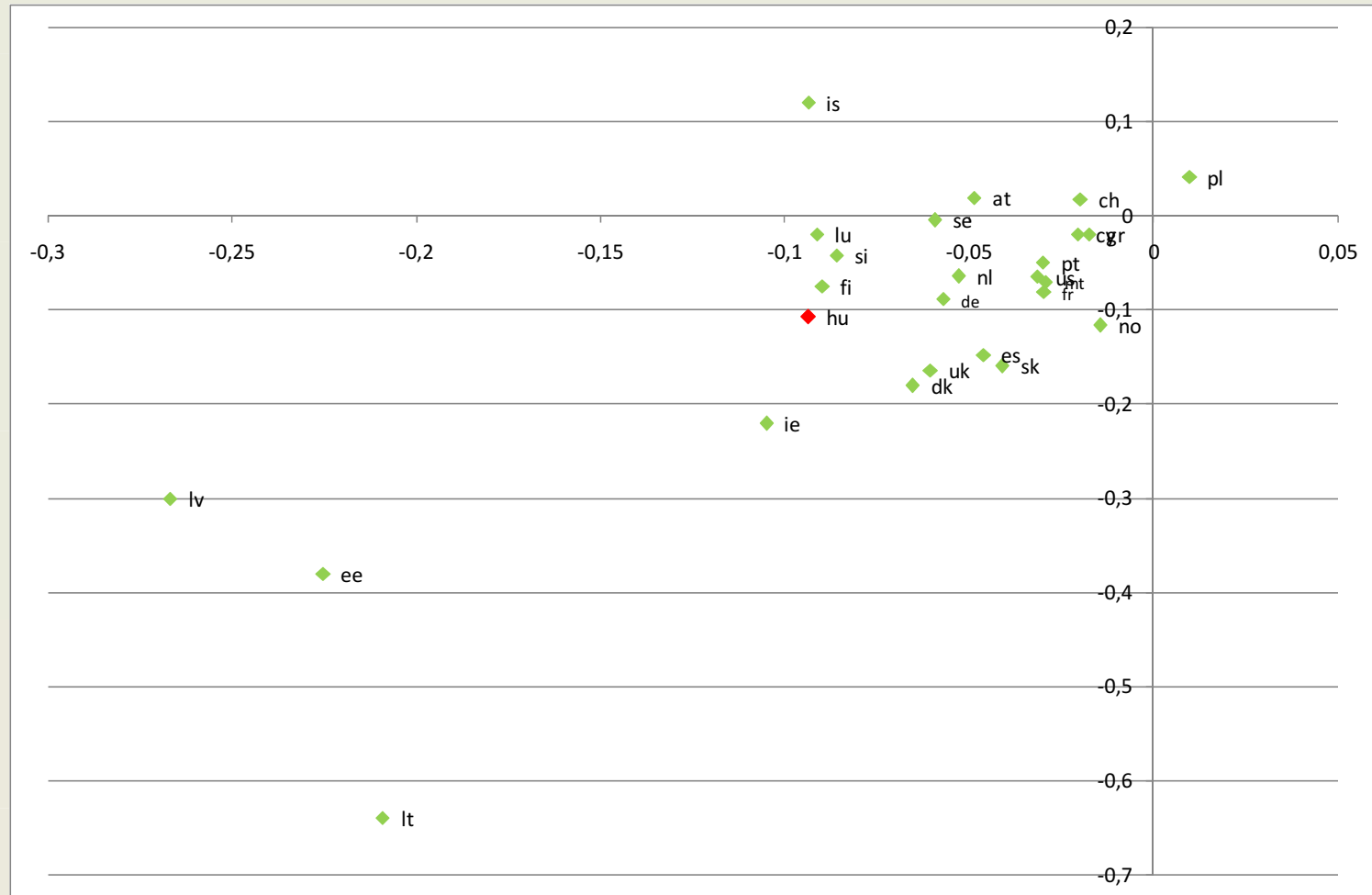
# An example of quantification: lagging reaction to a shock



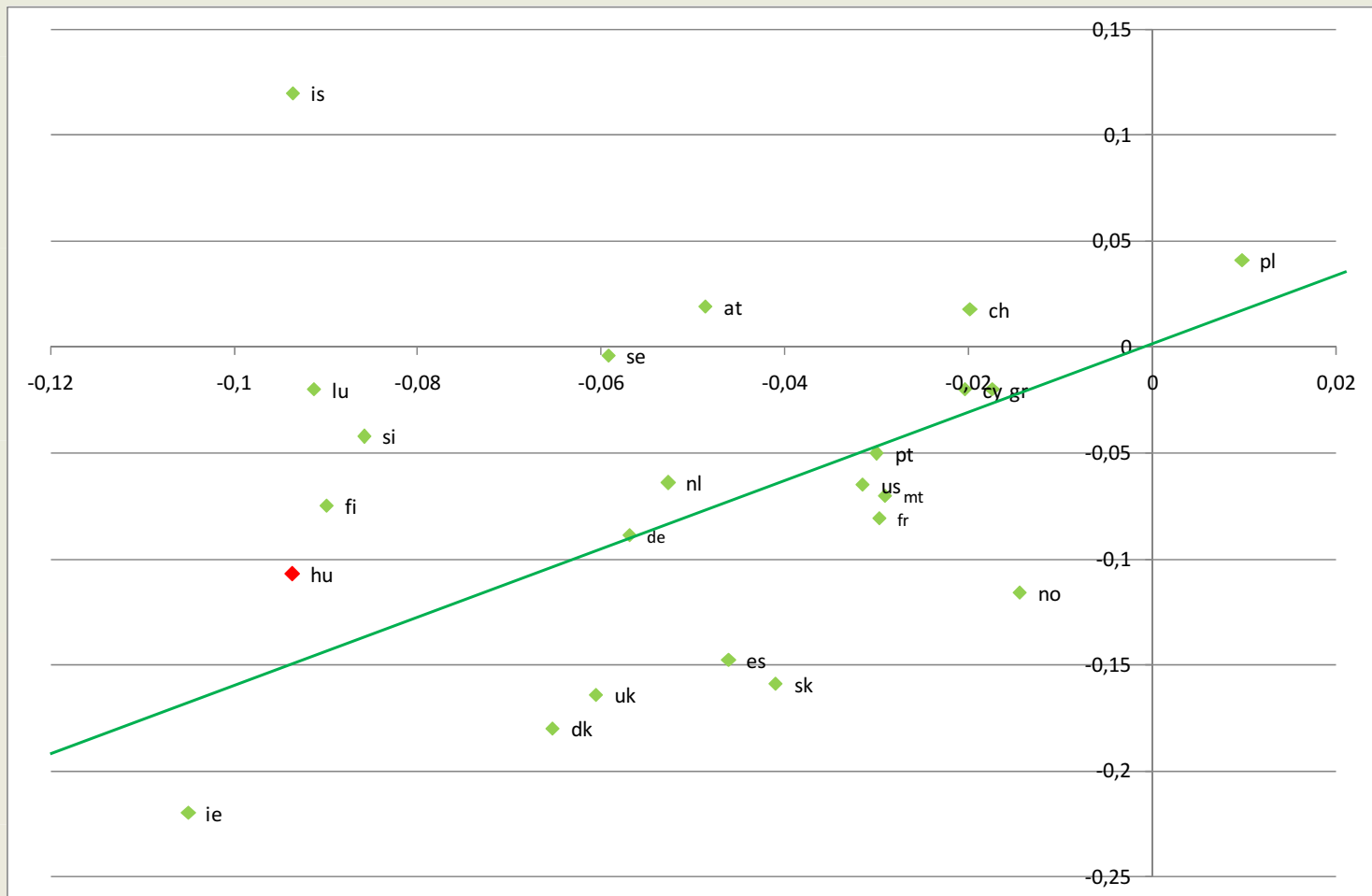
# Topical stories

- Hard to fine-tune when in crisis.
- We should find other methods to rely on (apart from the cyclical model).
- E.g. experiences with the crisis around the world.

# House prices and gdp growth during the crisis



# House prices and gdp growth during the crisis



# Forecasting and economics

- Economics is not too good at forecasting (see the crisis).
- Forecasting shocks (the noise) is hopeless.
- But epidemiology can't tell the exact location and a cause of the next epidemic either.
- It still can help a lot to analyse the movement of the crisis and to stop it.

# So why are there that many forecasts?

- There's demand for it.
- It's a good way to communicate your worldview.
- Trying out your worldview "for real" can give you a good feedback.

# Curriculum

- Denise DiPasquale–William C. Wheaton [1996]: *Urban Economics and Real Estate Markets*. Chapter 10.
- David M. Geltner – Norman G. Miller – Jim Clayton – Piet Eichholtz [2007]: *Commercial Real Estate Analysis and Investments*. Chapter 6.