

# Do reported rent and yield levels reflect commercial property values?

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May 10-11, 2012

Conference on Commercial Property Price Indicators, Frankfurt

# Outline

- 1 Introduction
- 2 Capital market
- 3 Space market

# Space and Capital Market

## Commercial Property Price Indicators What is the aim?

- 1 Which markets?
- 2 Which sectors?

Markets	Space (User)	Capital (Asset)		
		Public markets	Private Markets	
Measures	Rent level Vacancy rate New construction Absorption rate	daily price quotes	income return capital return	
			valuation	transaction
Issues	representativeness incentives	liquid (+) excess volatility (-) indirect measure	lagging smoothing	noisy ( $n$ small)
Examples	Reports from BNP, C&W, DTZ, JLL,...	GPR 250 index GPR Reit index	IPD index	NCREIF TBI

# Capital market: transaction based indices

“Research has shown there is little that can be done to replace valuations as the core information source for a performance measurement index for direct property markets.” (IPD Index Guide)

1 TBIs use valuations as explanatory variable in hedonic model

2 Noisy index estimates when  $n$  is small;

⇒ smoothing techniques

(Goetzmann, JREFE, 1992; Francke and Vos, JREFE, 2004; Francke, JREFE, 2010)

3 Sample selection bias and changing liquidity:

⇒ Heckman procedure involving probit model of property of sale

(Fisher, Geltner, and Pollakowski, JREFE 2007; Goetzmann and Peng, RES, 2006;

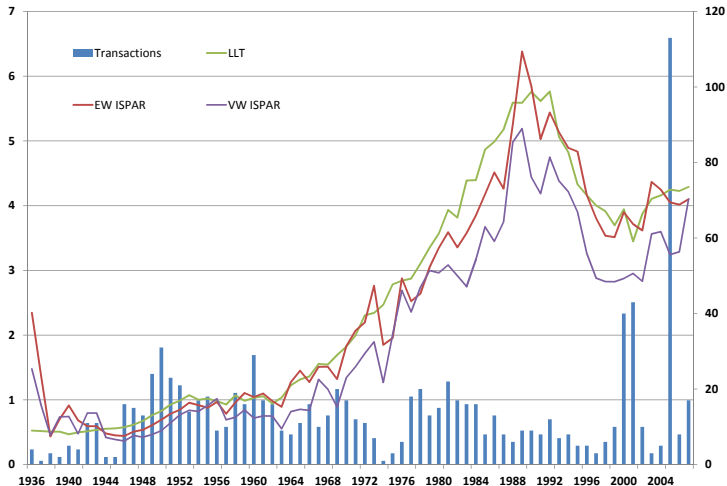
Devaney and Martinez Diaz, ERES conference, 2010)

# Asset Market: TBI smoothing

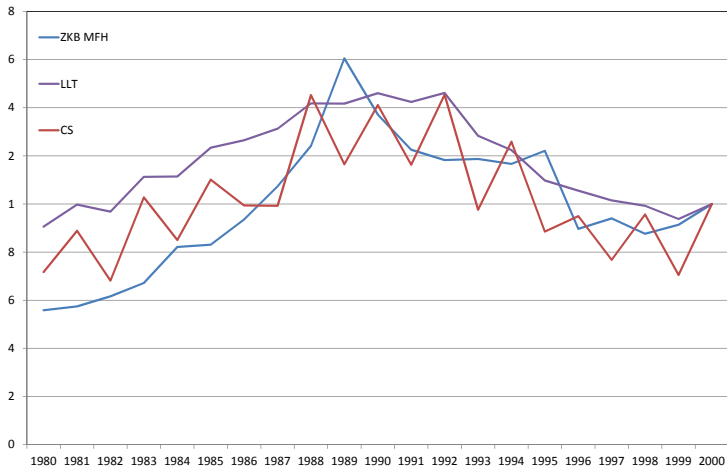
Example for transactions from institutional investor in residential properties in Switzerland (Constantinescu and Francke, 2011)

- 994 transactions in 1901–2007
- valuations available for all transacted properties, price level 2007
- price indices calculated by a
  - ▶ reverse time SPAR method (ISPAR) and
  - ▶ repeat measurement model
    - (a) standard Case and Shiller (CS)
    - (b) combined with local linear trend model (LLT)  
current price level depends on previous price levels by a LLT model

# Swiss residential index: comparison SPAR and LLT



# Swiss residential index: comparison LLT and CS

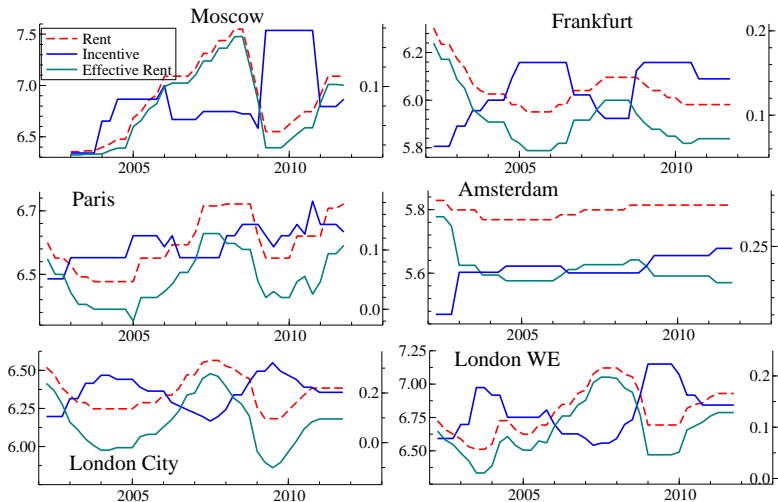


# Space Market: rent levels

- Real estate market are not fully transparent
- Rent levels do not fully adjust for market conditions
- Incentives:
  - ▶ rent free period
  - ▶ new interior of property
  - ▶ cash allowances such as a lease buyout or moving allowance
- Incentives expressed in terms of rent level  $\Rightarrow$  effective rent
- Incentives are higher (lower) in bearish (bullish) markets



# (Effective) Rents and Incentives



Source: based on figures from JLL

# Statistics (Effective) Rents

- Overestimation of averages
- Underestimation of volatility

Quarterly changes in log (effective) rent levels 2002Q2–2011Q4

	$\Delta$ Rent		$\Delta$ Effective	
	mean	sd	mean	sd
Moscow	0.021	0.127	0.019	0.137
Frankfurt	-0.005	0.023	-0.007	0.033
Paris	0.005	0.036	0.004	0.038
Amsterdam	0.000	0.007	-0.002	0.011
London City	0.001	0.048	0.001	0.064
London WE	0.010	0.071	0.009	0.088

# Supply ratio and incentives

Incentives depend on

- Supply ratio: total office offered for rent / total stock of office space (Vacancy rate)
- Lettable floor area
- Location

Example Amsterdam office market

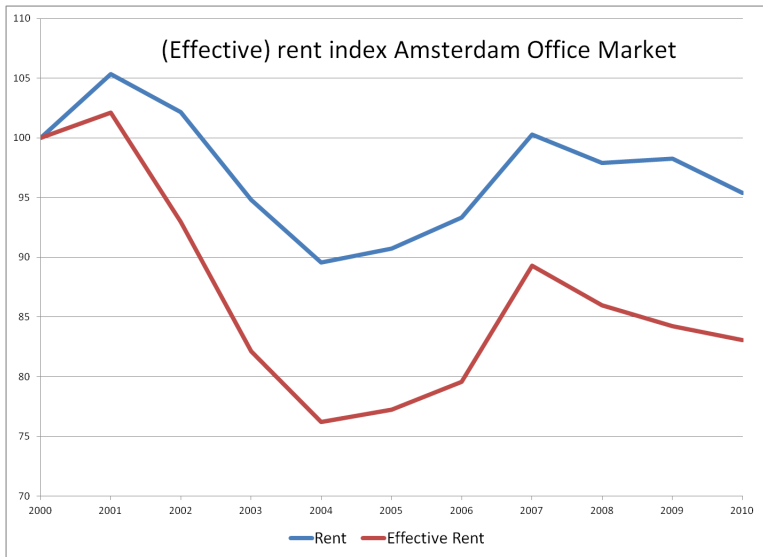
- Dependent variable: average incentives ( $n=90$ )
  - ▶ 5 years
  - ▶ 3 floor area categories
  - ▶ 6 locations
- Good model fit:  $R^2 \text{ adj} = 0.94$ ,  $\hat{\sigma} = 0.024$

# Hedonic model (effective) office rent levels Amsterdam

## Amsterdam office market

- 1054 office rents per square meter in 2000–2010 (in logs)
- effective rents calculated
- explanatory variables
  - ▶ floor area
  - ▶ office classification
  - ▶ location (dummy variables)
  - ▶ year rental contract(dummy variables)
- Model fit for effective rent:  $R^2 \text{ adj} = 0.80$ ,  $\hat{\sigma} = 0.178$

# Hedonic (effective) Rent index



# Hedonic (effective) Rent changes (yearly)

- Statistics for yearly changes in (effective) rent levels

	Rent	Effective Rent
Avg	-0.4%	-1.6%
Stdev	4.7%	6.9%

- Alternative for yearly time dummy variables: chained index technique

# Summary

- Capital market:
  - ▶ combine different indices
    - ★ public market
    - ★ private market (valuation and transaction based)
  - ▶ Issues in transaction based indices (sample selection bias; changing liquidity; small number of observations) can (partly) be dealt with
- Space market:
  - ▶ prime rents are not representative for the total market
  - ▶ correct rents for incentives (depending on supply ratio, location and floor area)