Price Sustainability in the Irish Regional Housing Market

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VENUE
Economic and Social
Research Institute (ESRI)

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Motivation

- Number of studies have assessed

- Sustainability of the national market

- First programme output:

  - McQuinn, Kieran, (2017), [Irish house prices: Déjà vu all over again?](#)

- Given possible heterogeneity in price trends

- Extend this analysis to regional markets?

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Data Innovations:

- New regional house price data (CSO)

- Available from 2010 Q1 onwards

- Much more detailed rental data (ESRI/RTB)

- Available from 2007Q4 – 166 regional indicators!

- Combine this with

  - Regional unemployment data

  - Regional house price expectations

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Database

Variable	Source
House Prices	CSO
Rents	RTB/ESRI Standardised Averages
House Price Expectations	ESRI Survey
Unemployment Rate	Live Register; Interpolated labour force data for Census
Housing & Rental Supply	CSO Completions; DAFT listings

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What this paper does

- Using a new unique regional database

- Over the period 2013 to 2018

- Examines the role

    - house price expectations and

    - labour market developments

- Have had on regional housing indicators

- Proposes some new indicators

- Assess sustainability on a county level

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Price to rent and the user cost

- Housing markets can be characterised by
    - Underlying notion of arbitrage
- Returns to investing in housing compare with other assets
- Jorgensen (1963, 1967) Poterba (1984)
- Arbitrage between owner-occupied and rental housing ensures
- House rent to price ratio depends on the real user cost of capital.
- Himmelberg et al (2005) imputed
    - Annual rental cost of owning a home
- Measure compares
    - Value of living in a property for year, *imputed rent*, and
    - Income lost for not investing in an alternative investment
    - *opportunity cost of capital*.

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Modelling framework

- Use the house-price to rent ratio as

    - A measure of sustainability

- Model HP/Rent as a function of

    - User cost and

    - Labour market conditions

- Derive indicators

    - Based on the user cost approach

House price to rent ratio

- $$rent_t = hp_t \left(r_t^{RF} + r_t^{RP} + \sigma_t - \frac{\Delta hp_t^e}{hp_t} \right)$$

- Where

  - $rent_t$ = market rents,

  - hp_t = house prices,

  - $r_t^{RF} + r_t^{RP}$ = the risk free rate and the risk premium rate,

  - σ_t = the natural rate of depreciation and

  - $\frac{\Delta hp_t^e}{hp_t}$ = expected house price appreciation

- Doing some reconfiguring leads to

- Log($hp_t/rent_t$) = - log(user cost)

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House price to rents - nationally

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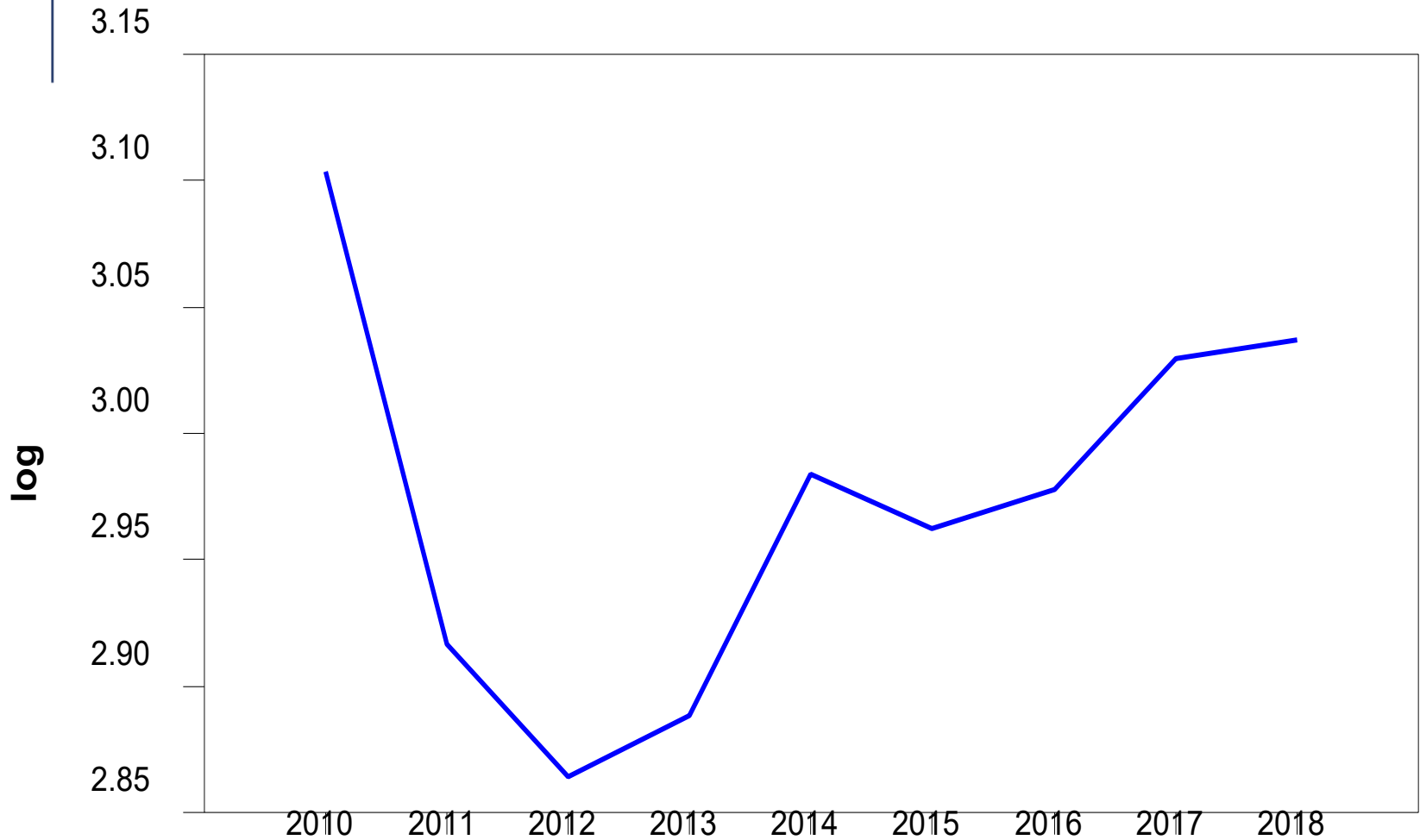
Regional house price to rent ratios

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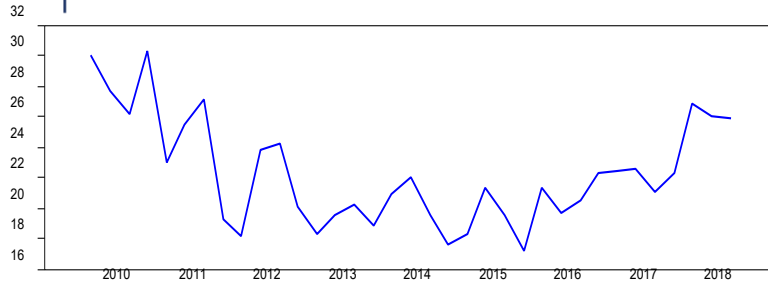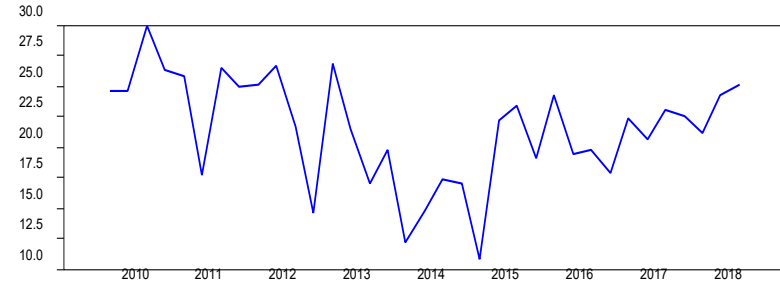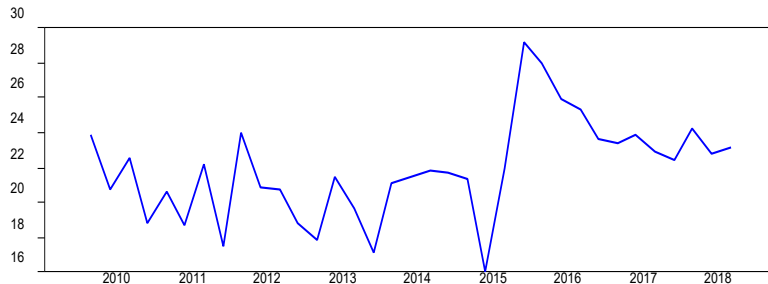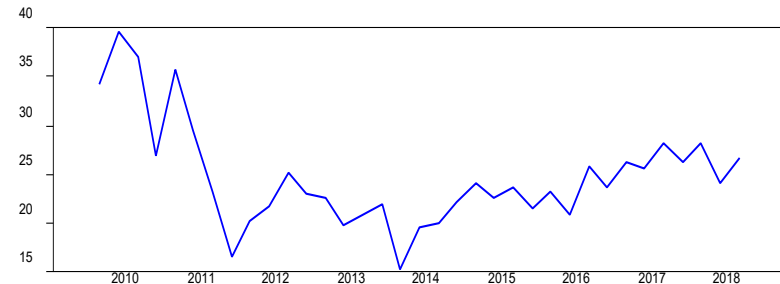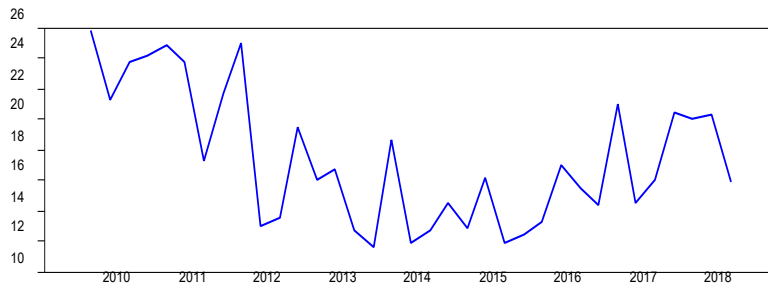
Compared with cross-sectional mean

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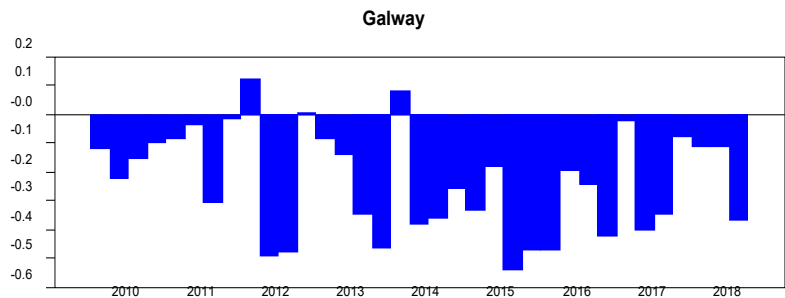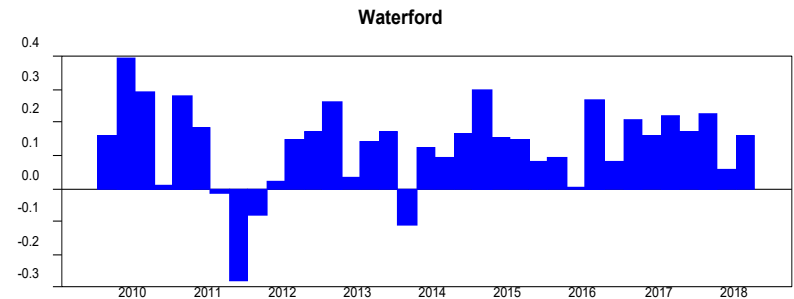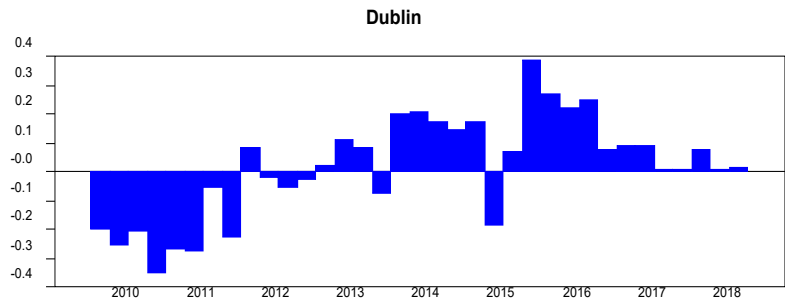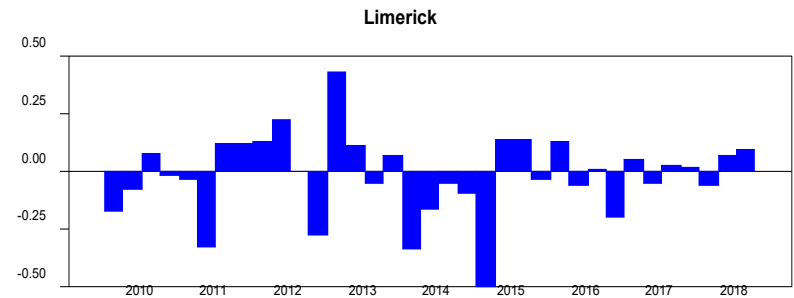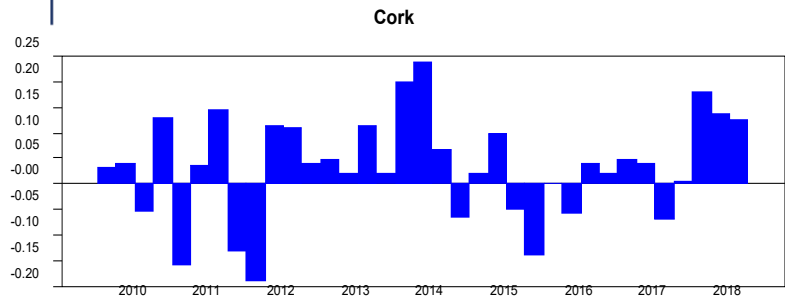
Estimated model

- $l\left(hp_{t,i}/rent_{t,i}\right) = -\beta_1 l\left(r_t - \frac{\Delta hp_{t,i}^e}{hp_{t,i}}\right) + \epsilon_{t,i}$

- $l\left(hp_{t,i}^e\right) = \alpha_1 \, lurx_{t,i} + \varepsilon_{t,i}$

- Key issue: we model price expectations

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Summary of results

Dependent variable	$l\left(hp_{t,i}/rent_{t,i}\right)$		$l\left(hp_{t,i}^{e}\right)$	
	Coefficient	T-Stat	Coefficient	T-Stat
$RUSER_{t,i}$	-0.59	-21.47		
$lurx_{t,i}$			-0.65	-18.45

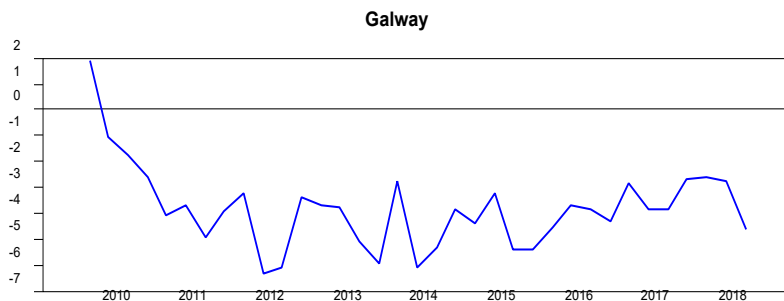Note: N = 546. All variables except dummies are logged. Cross-sectional dummies are suppressed

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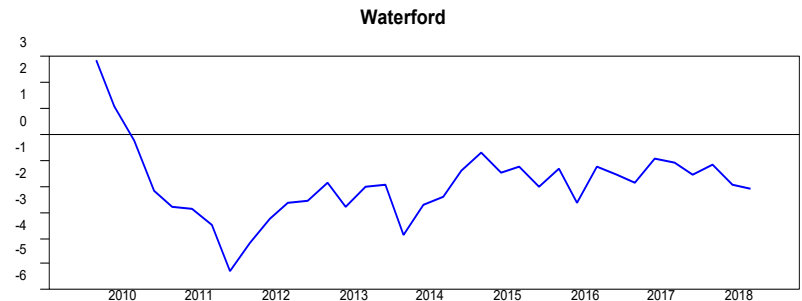
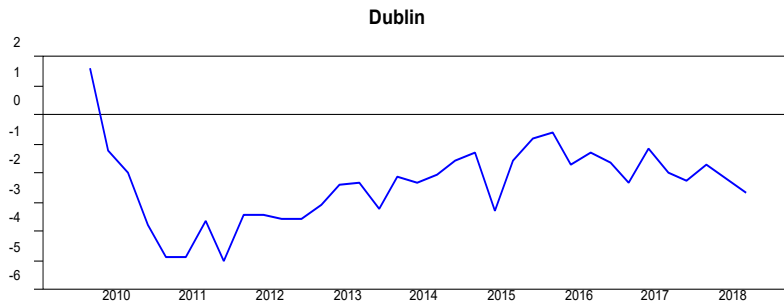ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE
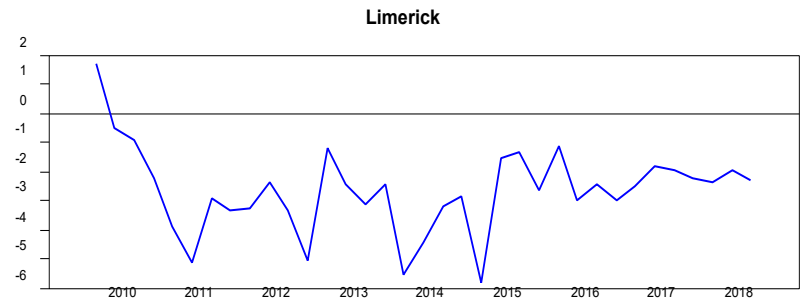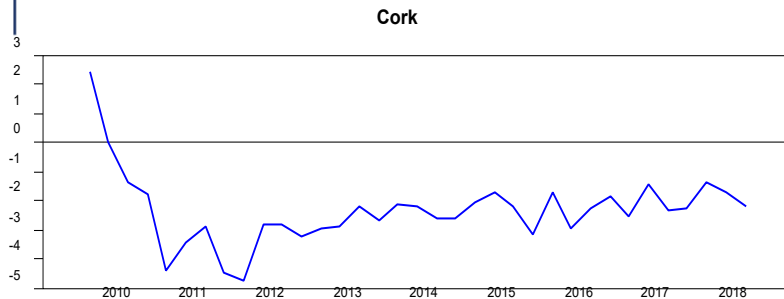
Evaluation sustainability in the housing market

- Recall rent price ratio:

- $rent_t/hp_t = \left(r_t^{RF} + r_t^{RP} - \frac{\Delta hp_t^e}{hp_t} \right)$

- Ratio can be low:
    - Interest rates are low or
    - Expectations prices will grow quickly or
    - People feel good about risk

- Overvaluation occurs when
    - Forecasts of prices are too high or
    - Risk premium is too low

A "heat" index of the housing market

- Combine these two concepts

- Heat index: $\frac{\Delta hp_t^e}{hp_t} - r_t^{RP} = r_t^{RF} - rent_t/hp_t$

- House prices more likely to be overvalued when

- The index is high

  - When rents yields are low relative to the interest rate

- When overvalued

- Expectations of house price too high and/or

- Households risk premiums are too low

- Eventually, estimates of risk increase causing

- Both housing demand and prices to fall

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Regional heat indices

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Heat index and degree of urbanisation

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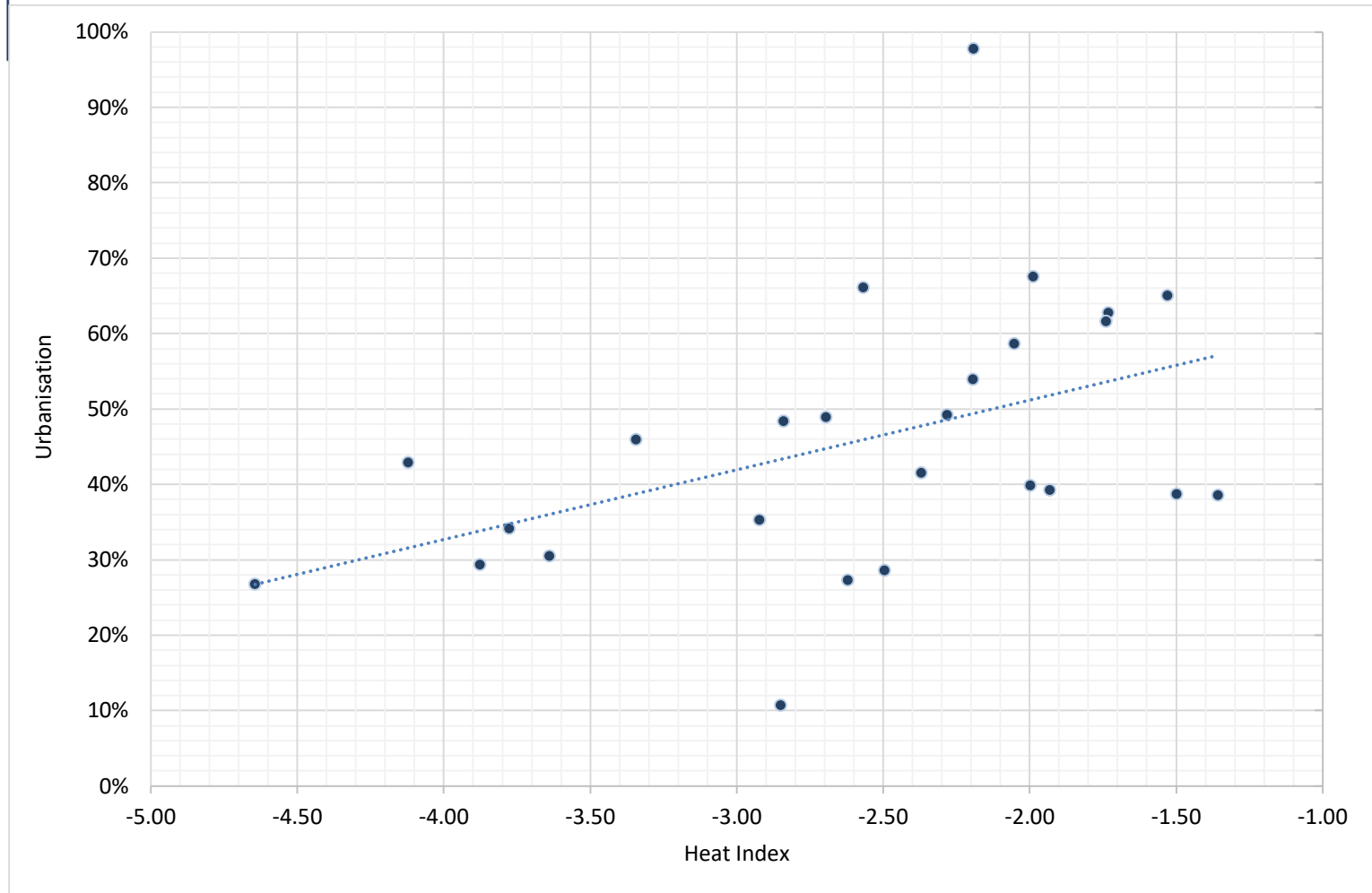
Convergence in housing indicators?

- Examine this both

- Across time (2010 to the present) and

- Across space (all counties)

- To do this we essentially explore

- Sigma convergence:

    - Degree of diversion of housing indicators

- Coefficient of variation:

    - Standard deviation / Mean

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Sigma convergence – prices

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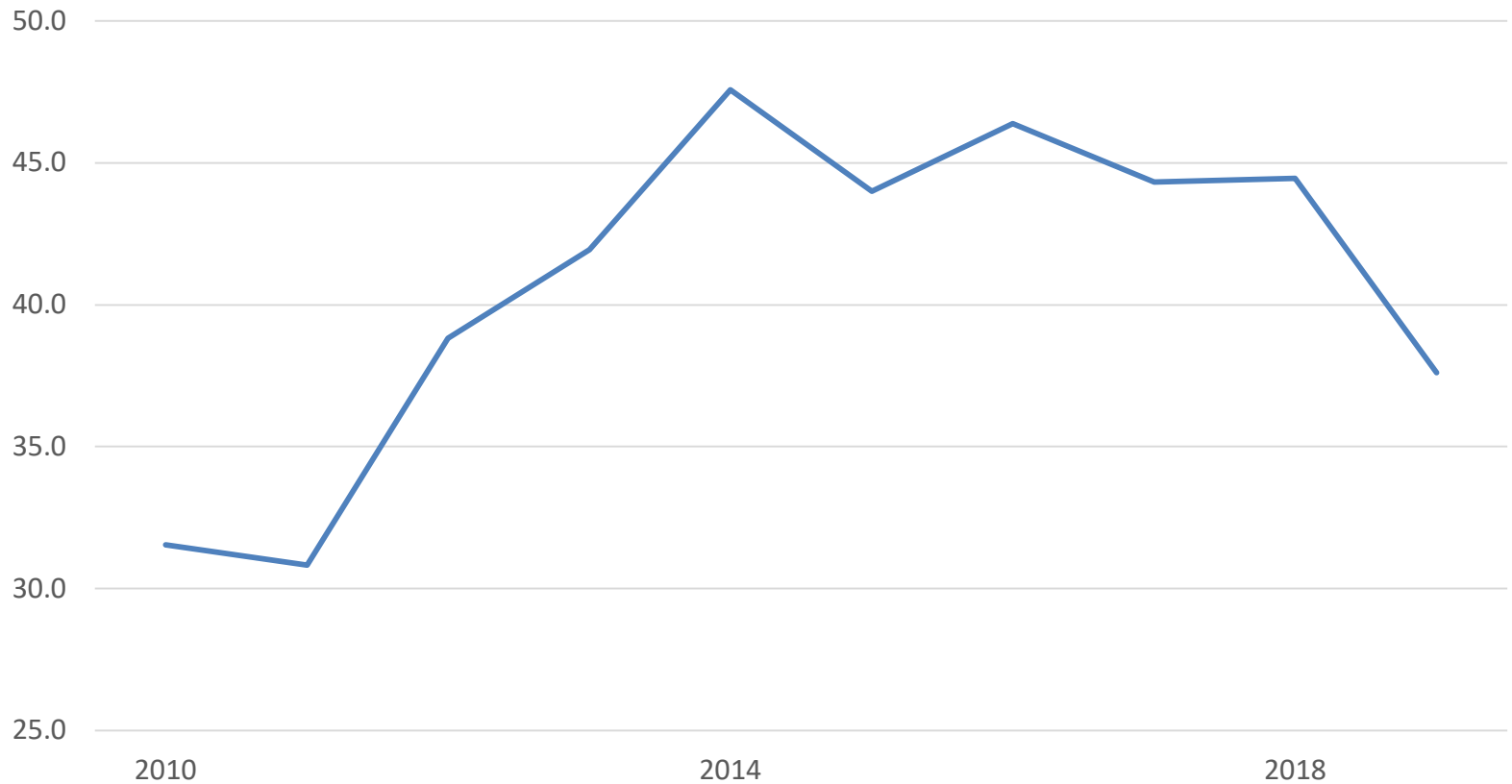
Sigma convergence – house price to rents

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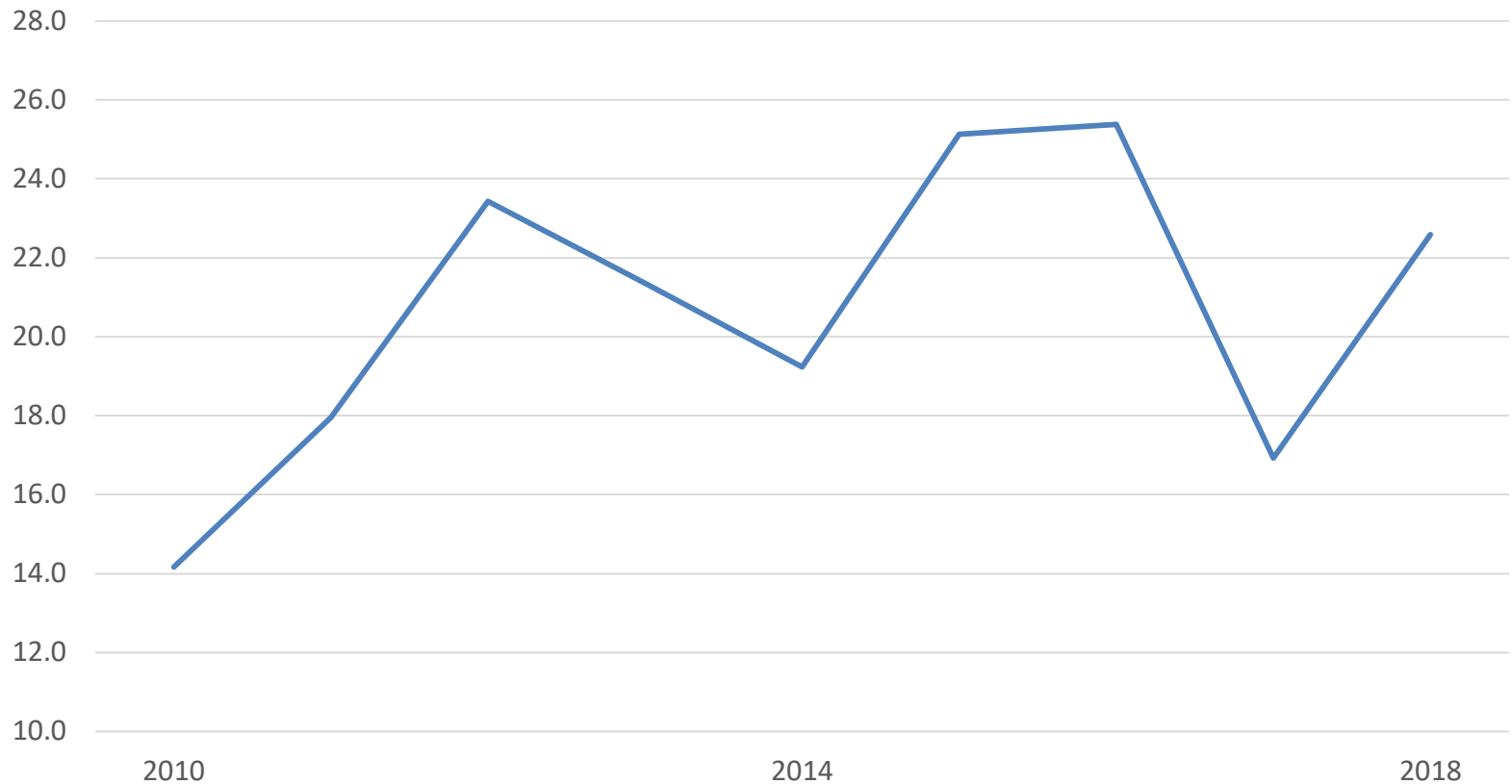
Concluding thoughts

- Using a new unique regional database
- Examine house price and rental trends
    - Across counties between 2010 and 2019
- Rental yields:
    - Declined by 1% between 2013 and 2018
    - Decline most significant in south east / west
- House price expectations appear
    - To be related to "market fundamentals"
- "Heat index" is drifting upwards
    - Still somewhat below levels pre 2010
- Evidence suggests significant divergence in prices

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Beta convergence – regression analysis

Dependent Variable: Average Change in House Prices (2010 – 2019)

Variable	Coefficient	T-Stat
Constant	0.153	0.029
House Prices (2010Q1)	0.006	0.014

- Beta convergence suggests
  - Coefficient on house prices should be – and significant

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