Rent-Price Ratios in Sydney and Melbourne 1985-2014 – The Story So Far

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Outline

1.

Figure 1: Sydney Region Rent-Price Ratios1986-2014

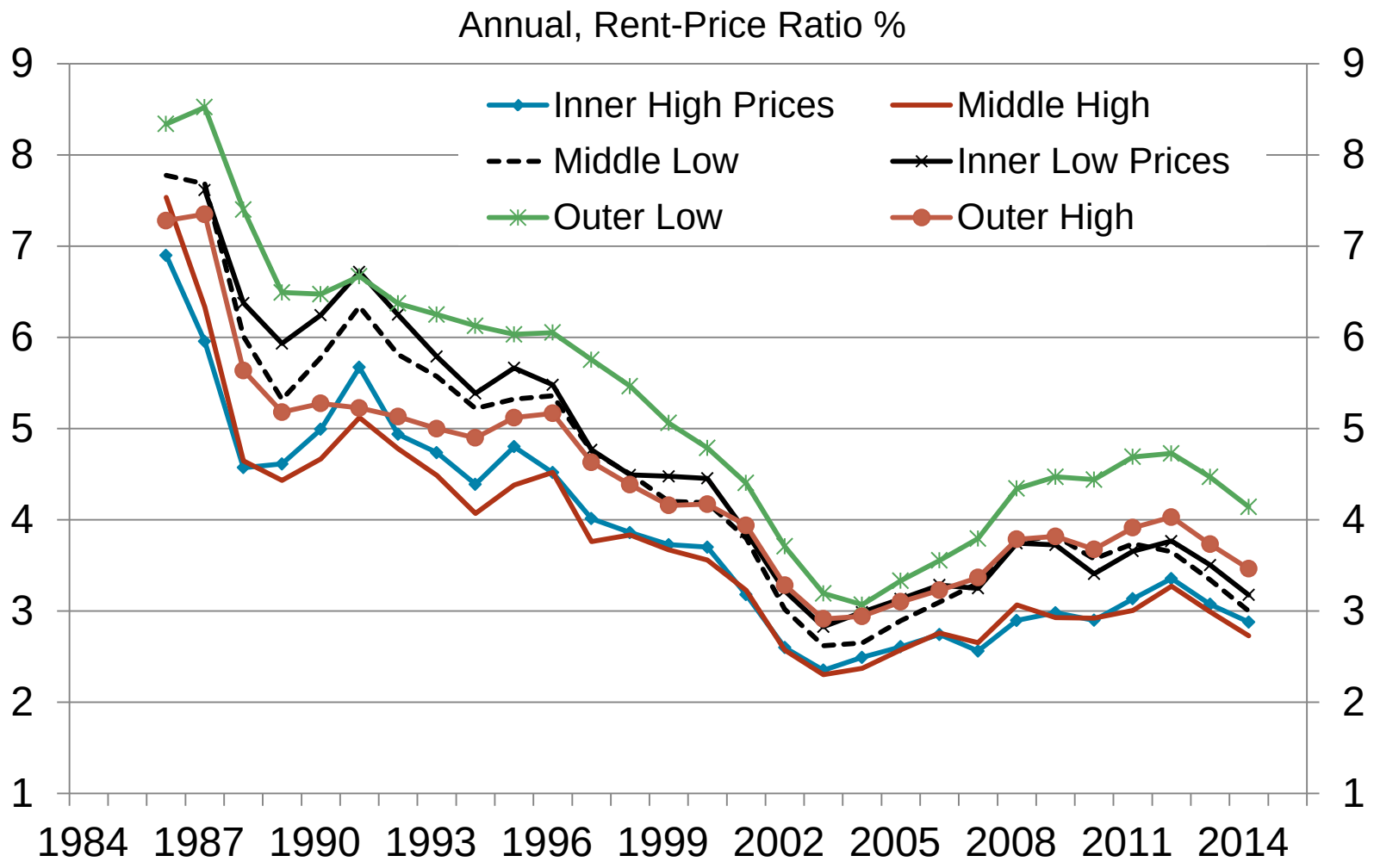


Figure 2: Melbourne Region Rent-Price Ratios1985-2014

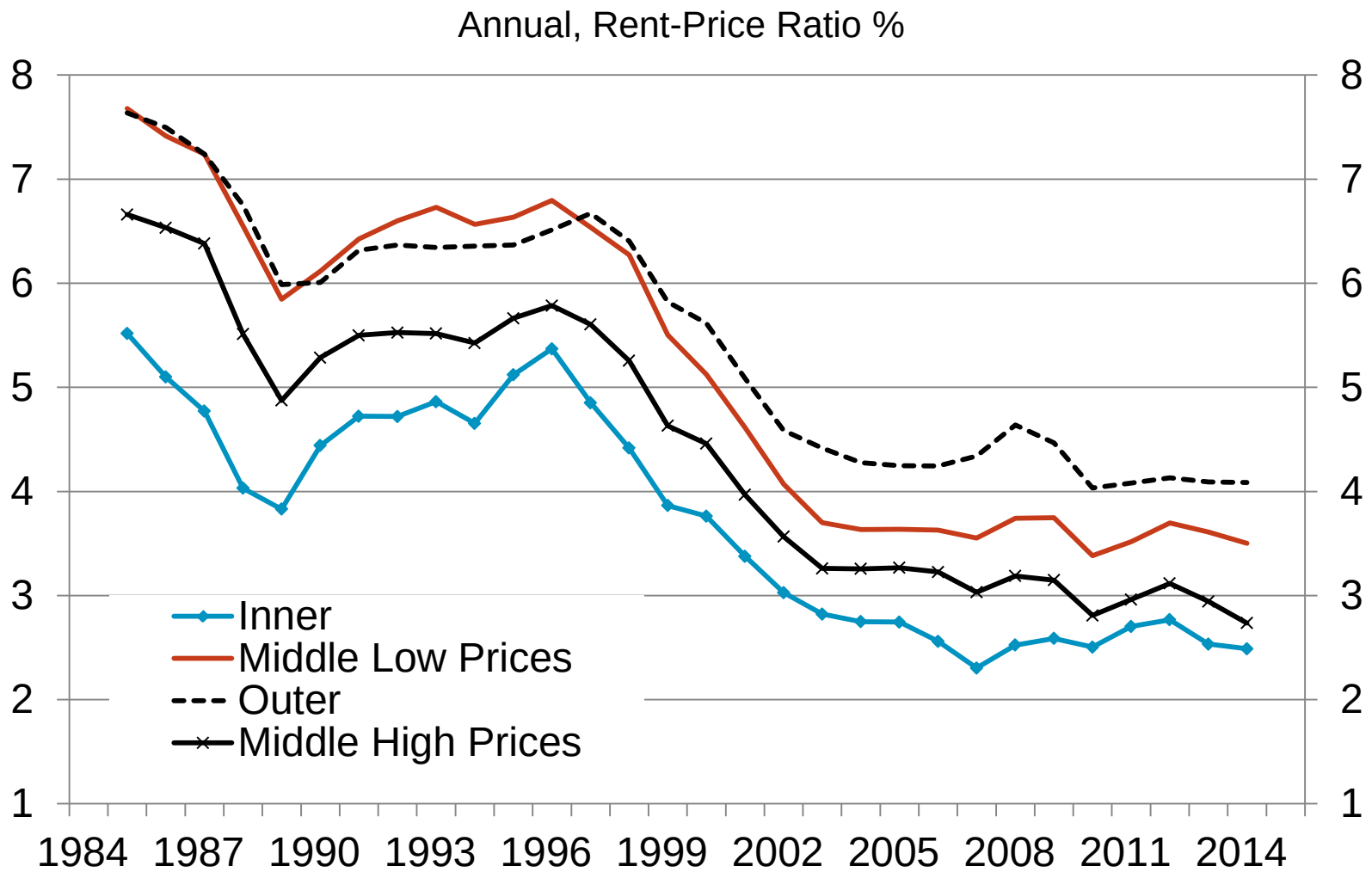
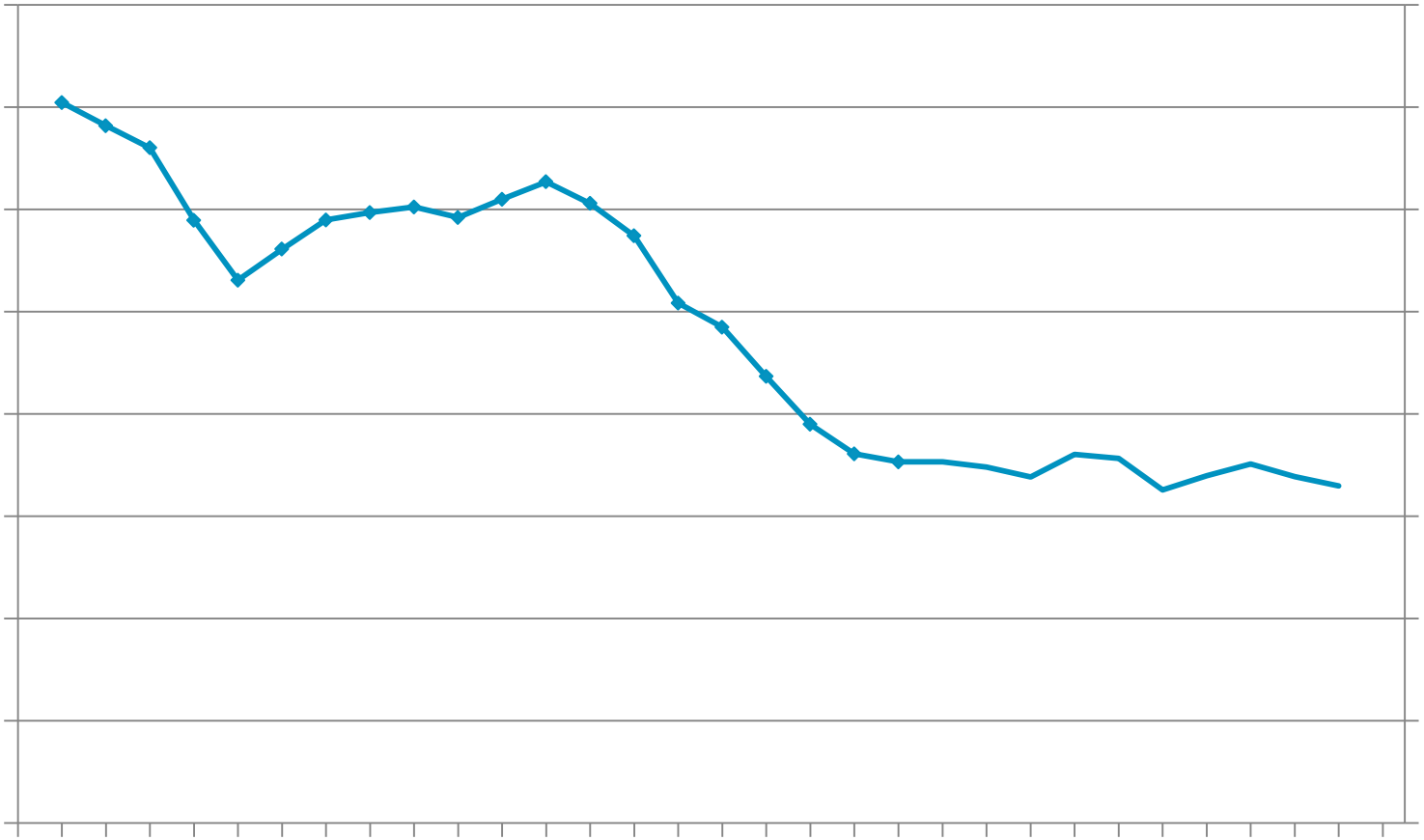


Figure 3: Sydney and Melbourne Average Rent-Price Ratios1985-2014



Standard Campbell-Shiller time-varying equation for dividend-

What does the housing rent-price ratio predict

Models to test equation (1) have the following basic form:

$$\grave{\omega}_{ست ض} \text{ سر } \grave{\omega}_{ض} = | \quad + \dagger \ (\grave{\upsilon}_{ض} \text{ سر } \grave{\eta}_{ض}) + \acute{o}_{ست ض} \qquad (2)$$

where the

Table 1: Regressions of Housing Returns on Rent-

Rent-price ratio as predictor of rent growth at long horizons

Results: Growth in rents is largely unpredictable at 1-2 year horizons, but predictability increases with longer horizons, and at 5-years close to 40%

Table 3: Regressions of Housing Rent Growth on Rent-to-Price Ratio – Averages for Sydney LGAs 1986-2014

h (years)	ᛏ	t-statistic	ʿYپ	Proportion of LGAs Reject ᛏ شي 0
1	0	-0.74	0.07	0.12
2	-0.01	-1.11	0.1	0.14
3	-0.02	-1.87	0.19	0.39
4	-0.04	-3.01	0.29	0.75
5	-0.05	**-4.45**	**0.38**	**0.90**

Notes: Figures in the first three columns are simple averages of estimates obtained for each individual LGA.

Figure 12: Sydney Region House Rents 1985-2014

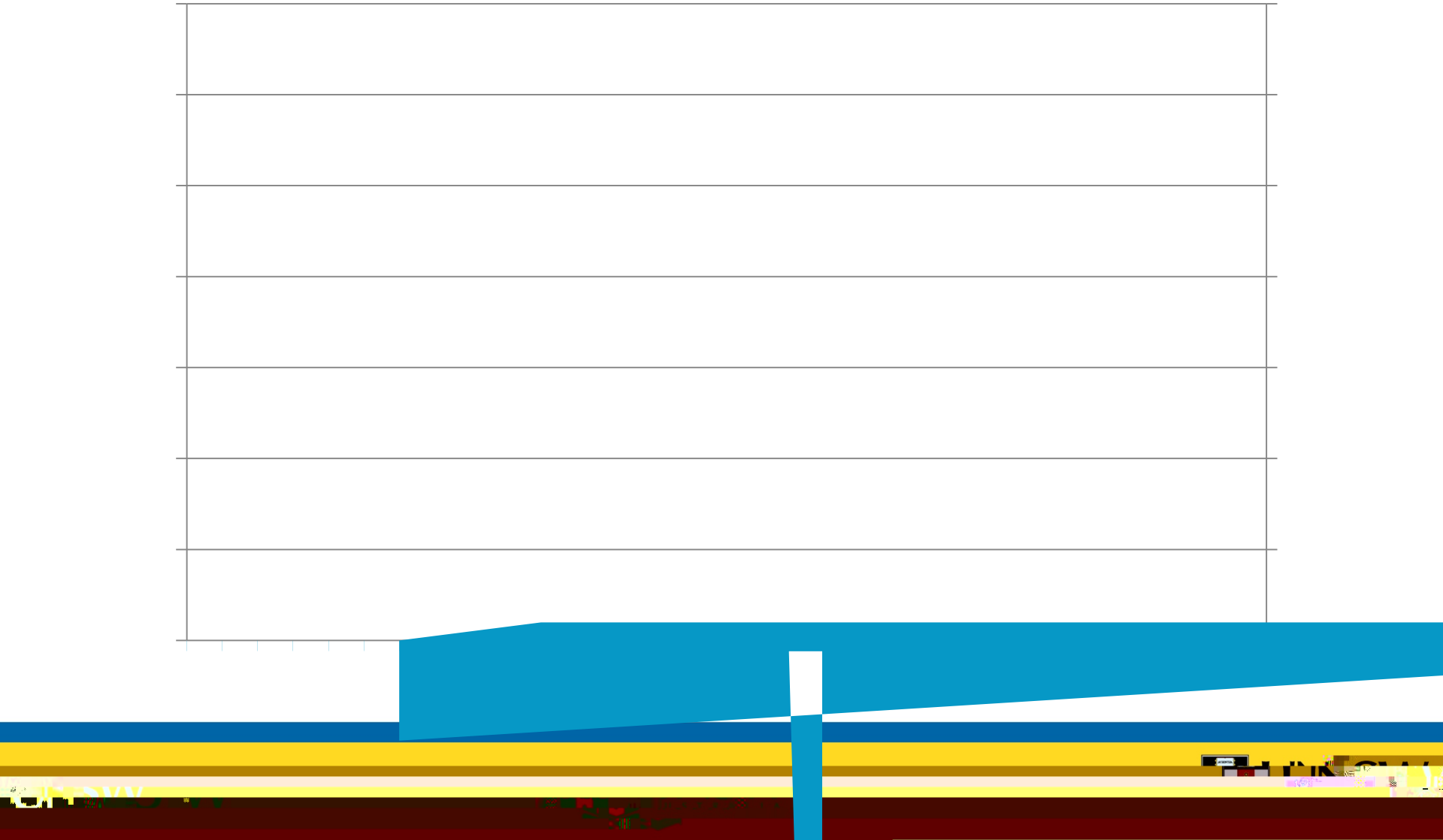
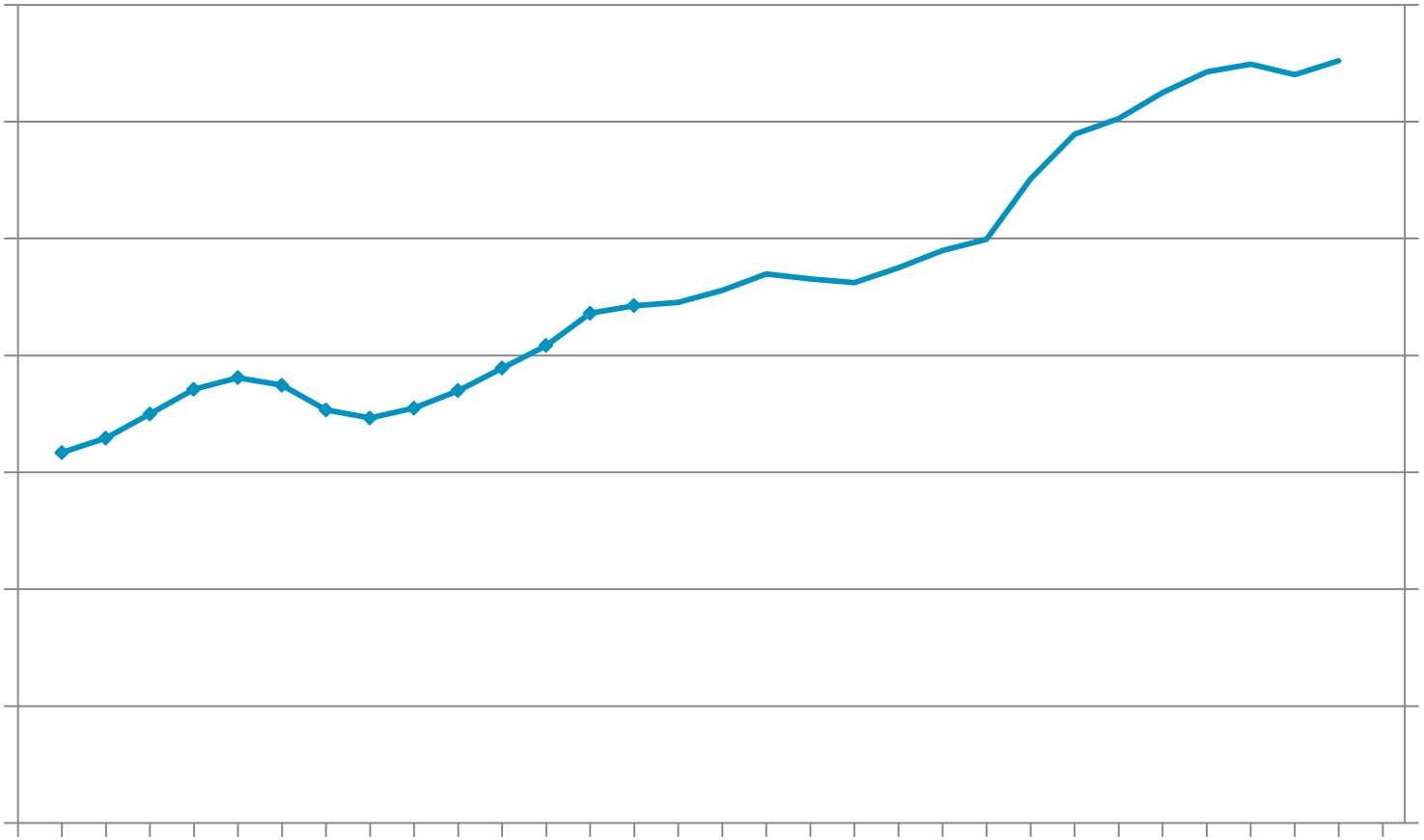


Figure 13: Melbourne Region House Rents 1985-2014



Explaining observed differences in rent-price ratios across LGAs

$$\left(\frac{\text{rent}_{i}}{\text{price}_{i}} - \frac{\text{rent}_{j}}{\text{price}_{j}}\right) = \left(\frac{\text{rent}_{i}}{\text{price}_{i}} - \frac{\text{rent}_{k}}{\text{price}_{k}}\right)$$

What do we observe?

Rent-price ratios are positively related to prices. High priced LGAs tend to have low rent-price ratios. (Figure 4)

Variation in rent-price ratios is strongly persistent. (Figure 5)

Do we observe that differences in rent-price ratios are related to differences in rent growth? Yes, but only weakly so. (Figure 6)

Differences in rent-price ratios are more strongly related to differences in capital growth. (Figure 7)

Observe that rent growth is reasonably correlated with capital growth. (Figure 8)

When rent-price ratio is stable, price growth is function of rent growth. But in this period not stable, with significant structural decline in the rent-price ratio a major cause of capital gains. Hence, these relationships (Figures 6-8) arguably not as strong as we might expect.

Very similar results for Melbourne.

Figure 4: Sydney Region LGA Price 2014 vs Rent-Price Ratios 2010-2014

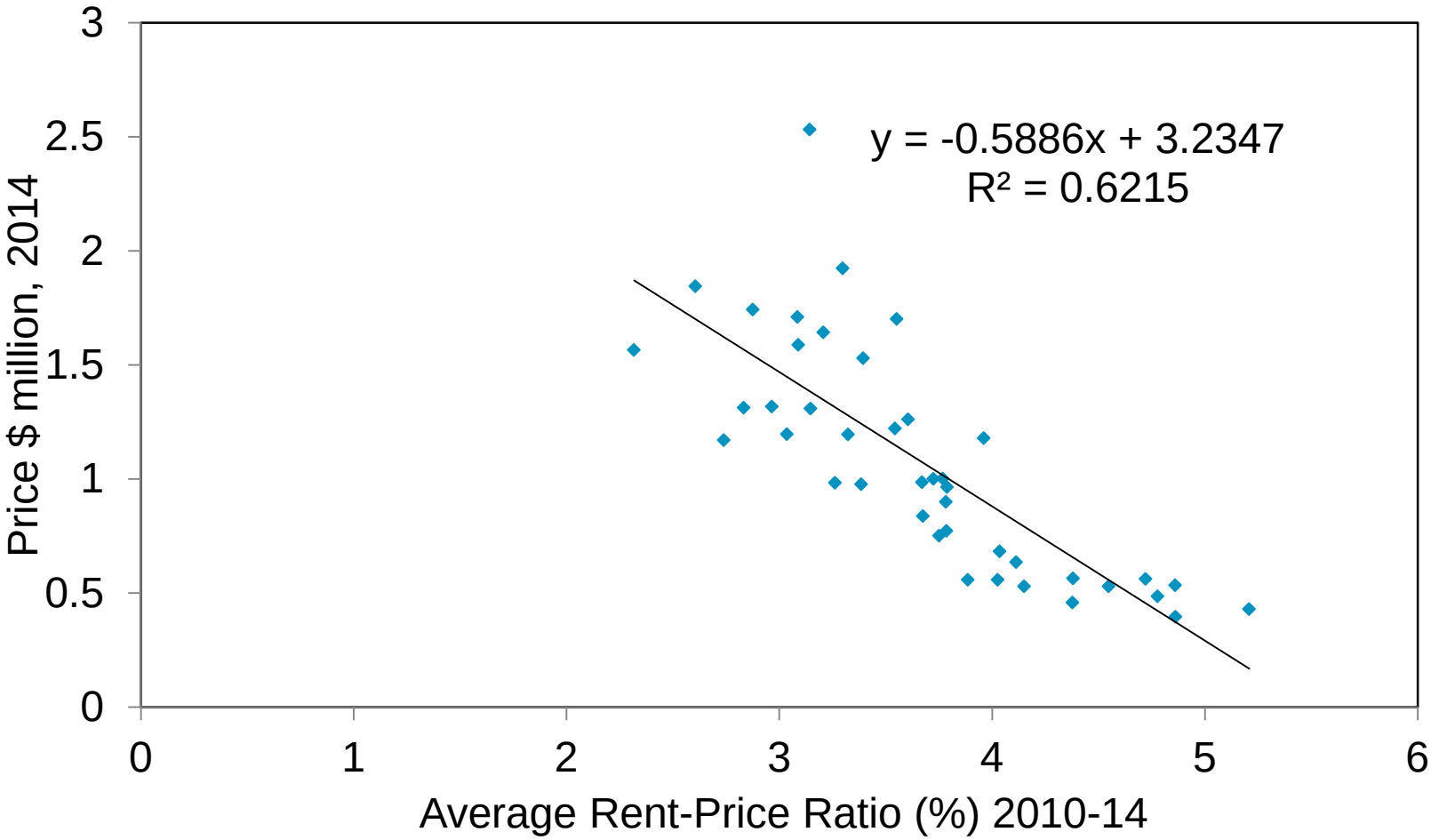


Figure 5: Sydney Region LGA Rent-Price Ratios 1991-96 vs 2010-14

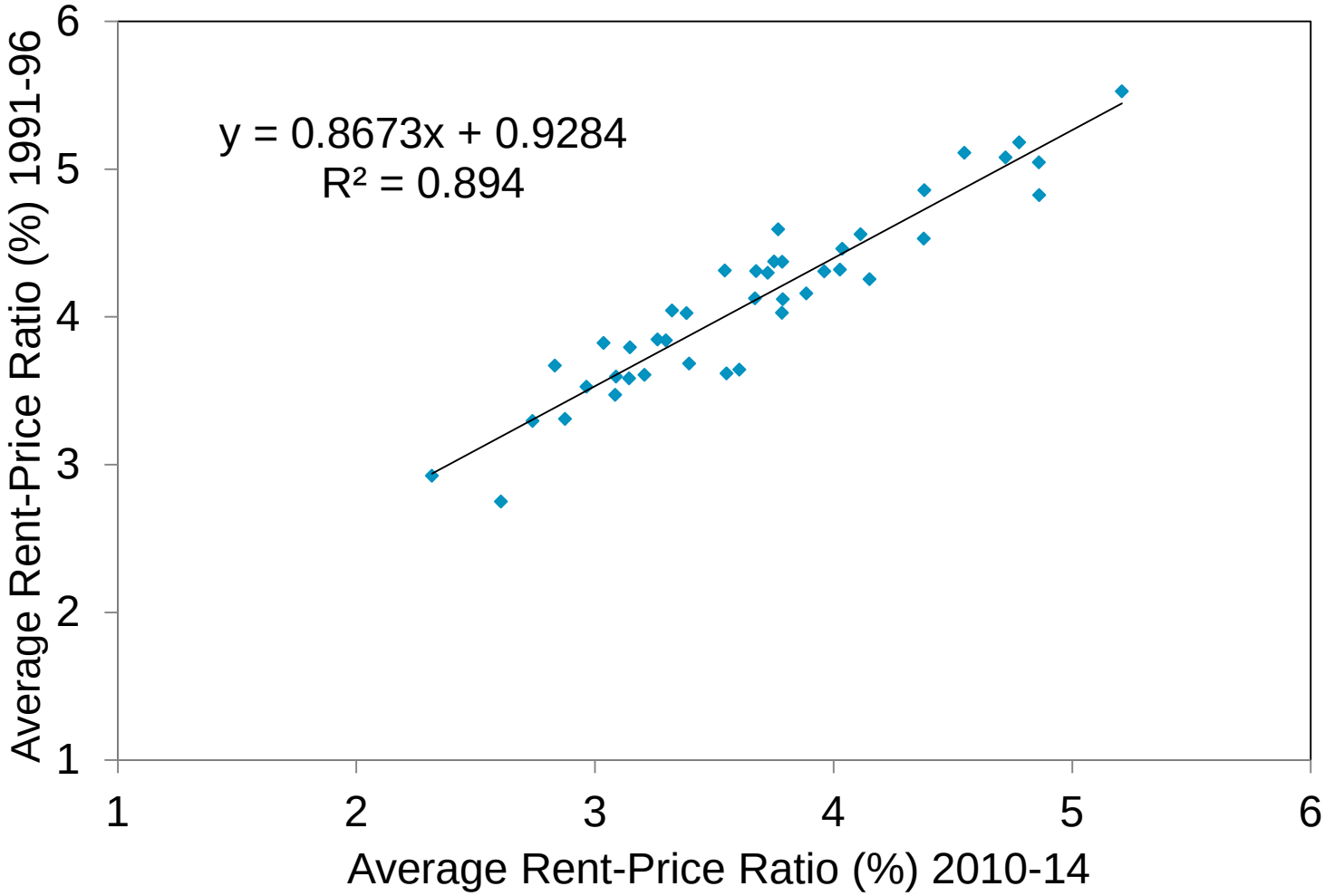


Figure 6: Sydney Region Rent-Price Ratios 2010-14 vs Real Rental Growth 1986-2014

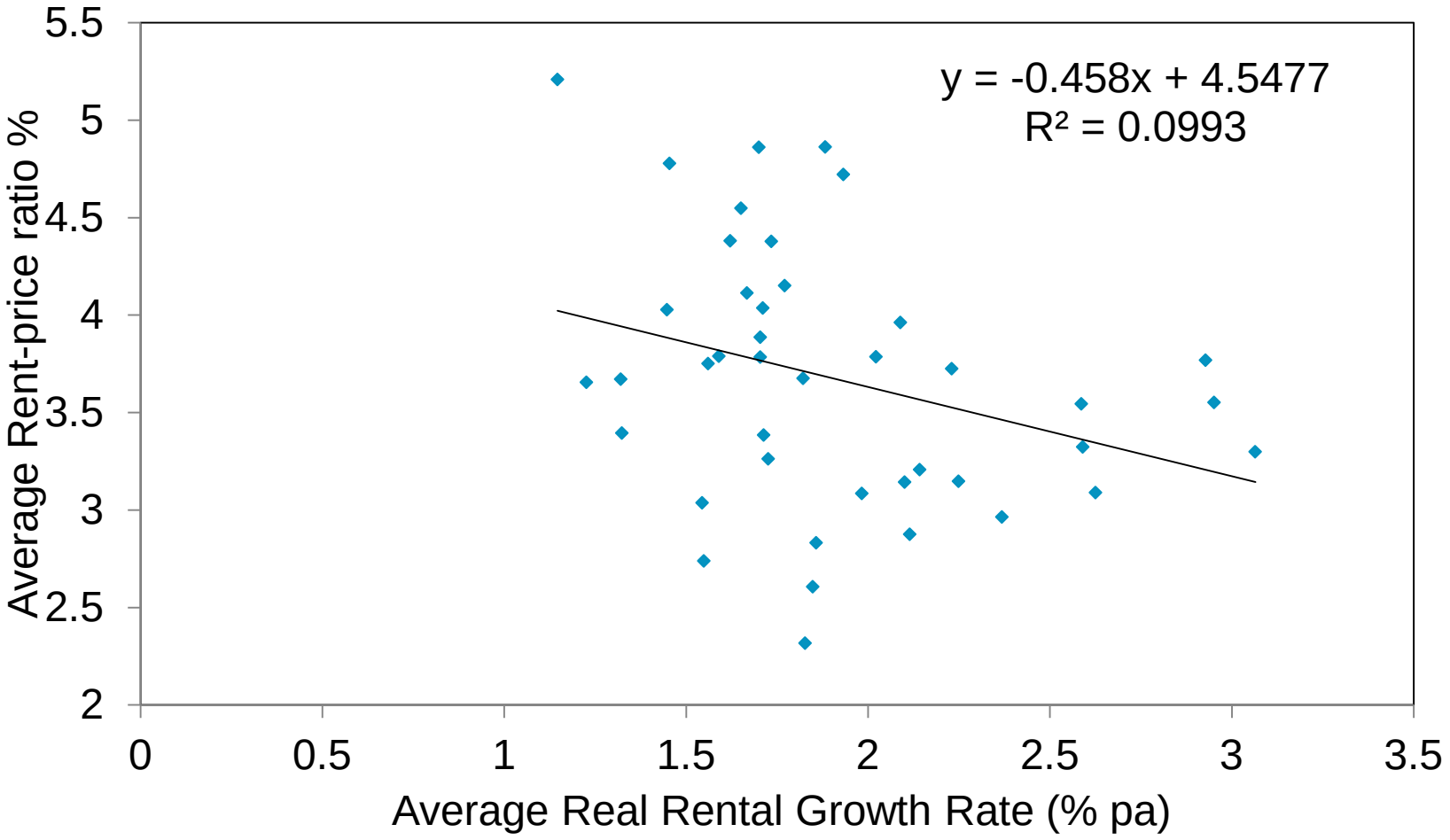


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Figure 7: Sydney Region Rent-Price Ratios 2010-14 vs Real Price Growth 1986-2014

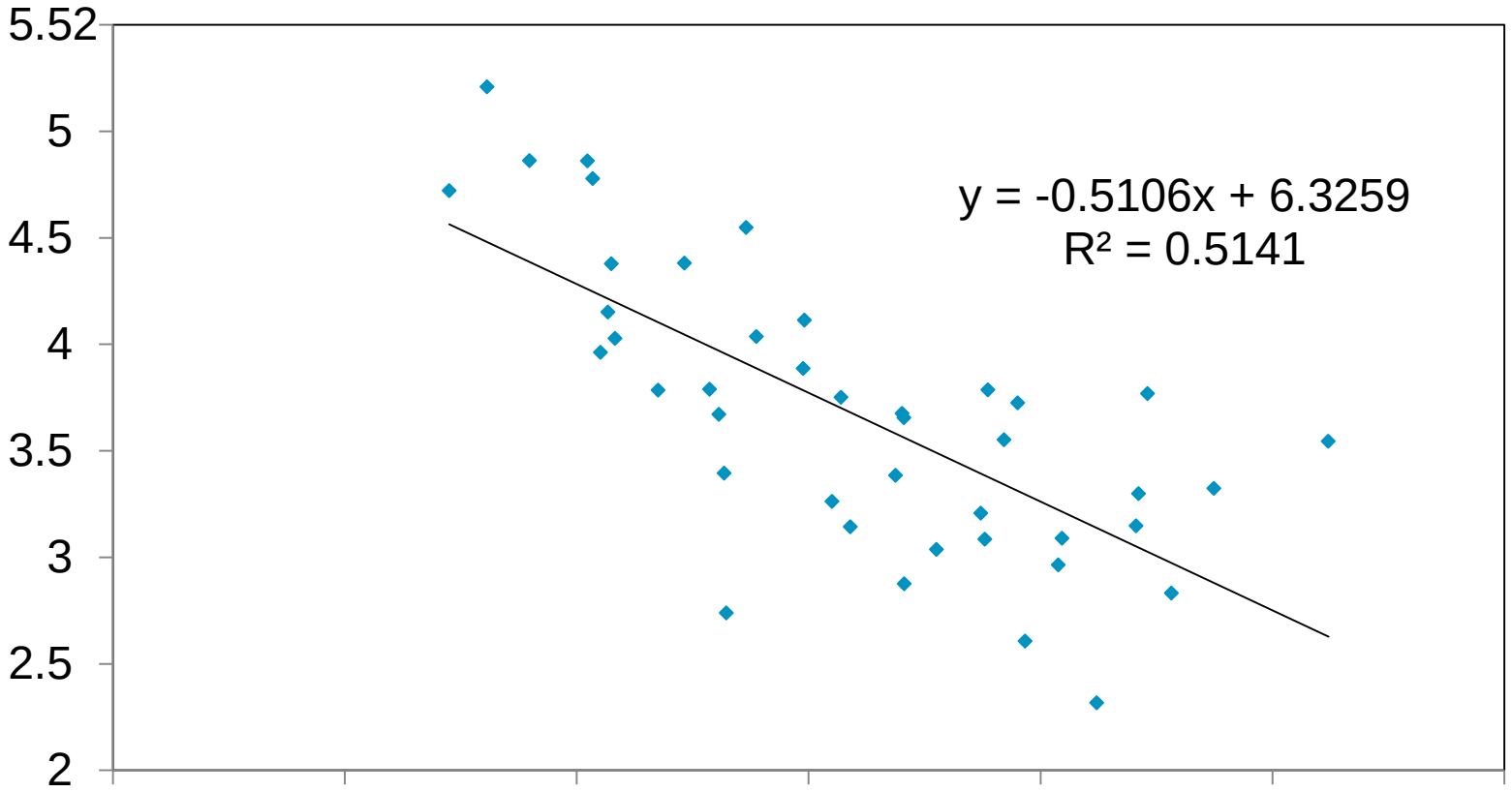
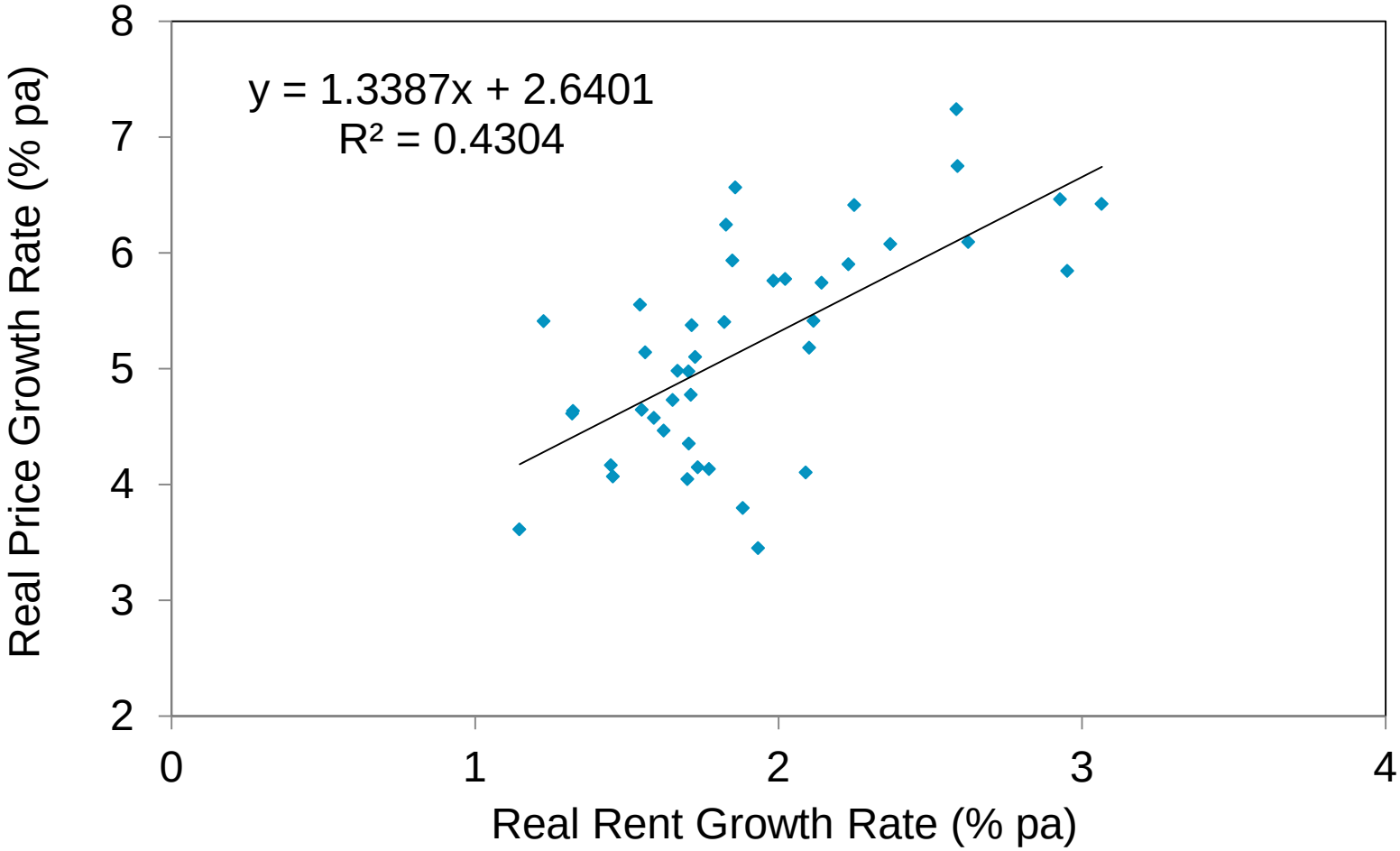


Figure 8: Sydney Region LGA Price vs Rental Growth 1986-2014



Equilibrium in the housing market

$$(\dot{u}_{ض} \text{ سر } \dot{ɳ}_{ض}) \text{ سر } {}^{N}{}_{ض}(\dot{u} \text{ سر } \dot{ɳ}) = {}^{ɲ}$$

$${}^{N}{}_{ض}(\dot{u} \text{ سر } \dot{ɳ}) =$$

$${}^{N}{}_{ض}\left[B^{ا} \text{ ”}_{ش}(\text{سر}\check{y}\dot{u}_{ضتپتش})\right]$$

Equilibrium Rent-Price Ratios with Risk Free Rate

Assume that long-term averages of rent growth and excess returns are reasonable starting assumptions.

Then $^{N}_{\circ}$ (ù سر ή) a function of risk free rate.

What risk free rate? Use inflation-indexed long-term bond yield as proxy measure, not short-term rate. Investors/buyers' decisions build in expectations of future path of rates. Long-term bond prices in markets' expectations which we attribute to buyers.

In Figure 10 and 11, we observe that this seems to explain a significant part of the movement in the rent price ratio. It strongly suggests/explains a structural fall in the rent-price ratio.

It also tells us that a simple mean of the rent-price ratio for the period 1985-2015 would not be a good measure of equilibrium, on either theoretical or empirical grounds.

If we take the this measure, one implication is that actual rent-price ratios in 2014 were too high! (Prices too low).

Equilibrium Rent-Price Ratio with Credit Spread Added

The post-GFC decline in the real long-term rate has not been matched by a comparable decline in rates for borrowers.

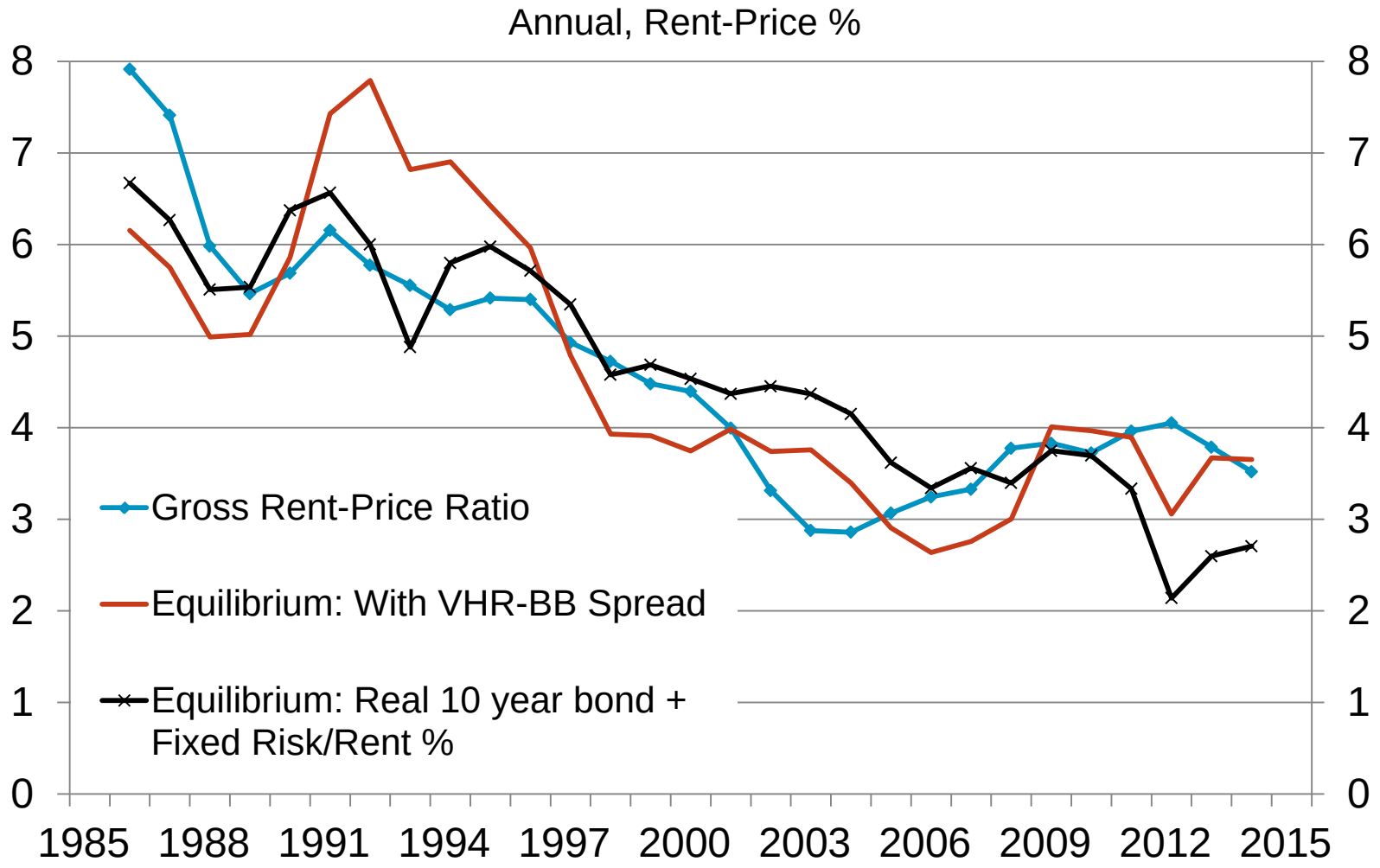
If we add the housing spread (VHR less bank-bill rate) to the real long-term rate (Figure 9), we are incorporating some of the risk associated with the market.

On this measure, the Equilibrium Rent-Price Ratio is still showing variation in the period 2001-2015 but around a largely sideways trend movement.

And significantly the rent-price ratio in 2014 looks “about right”.

In all this well to note that estimates of equilibrium rate will come with a large confidence interval. Not least because there large confidence intervals around the equilibrium rate for the real risk free rate.

Figure 10: Sydney Region Actual and Equilibrium Rent-Price Ratio 1986-2014



Conclusions or Questions

Significant structural decline in rent-price ratios, chiefly due to decline in equilibrium interest rates. This generated significant 'structural' or one-off rise in house prices. Does the market appreciate that one–off?

Actual rent-price ratios appear in ball park of equilibrium – allowing for a wide confidence interval.

We have observed that the low rent-price ratio 'predicted' higher growth in rents. But was it luck?

After the high rent growth of the resource boom period, are expectations of rent growth built into the rent-price ratio too high?

Or has the high rent growth of the resources boom (Figure 12, 13), in saving the market from a period of lower returns, inflated confidence in the property market?

After25 years without a serious downturn in the housing market, even allowing for larger credit spread, is the risk premium too low?

Supplementary Slides

Figure 12: Sydney Region House Rents 1985-2014

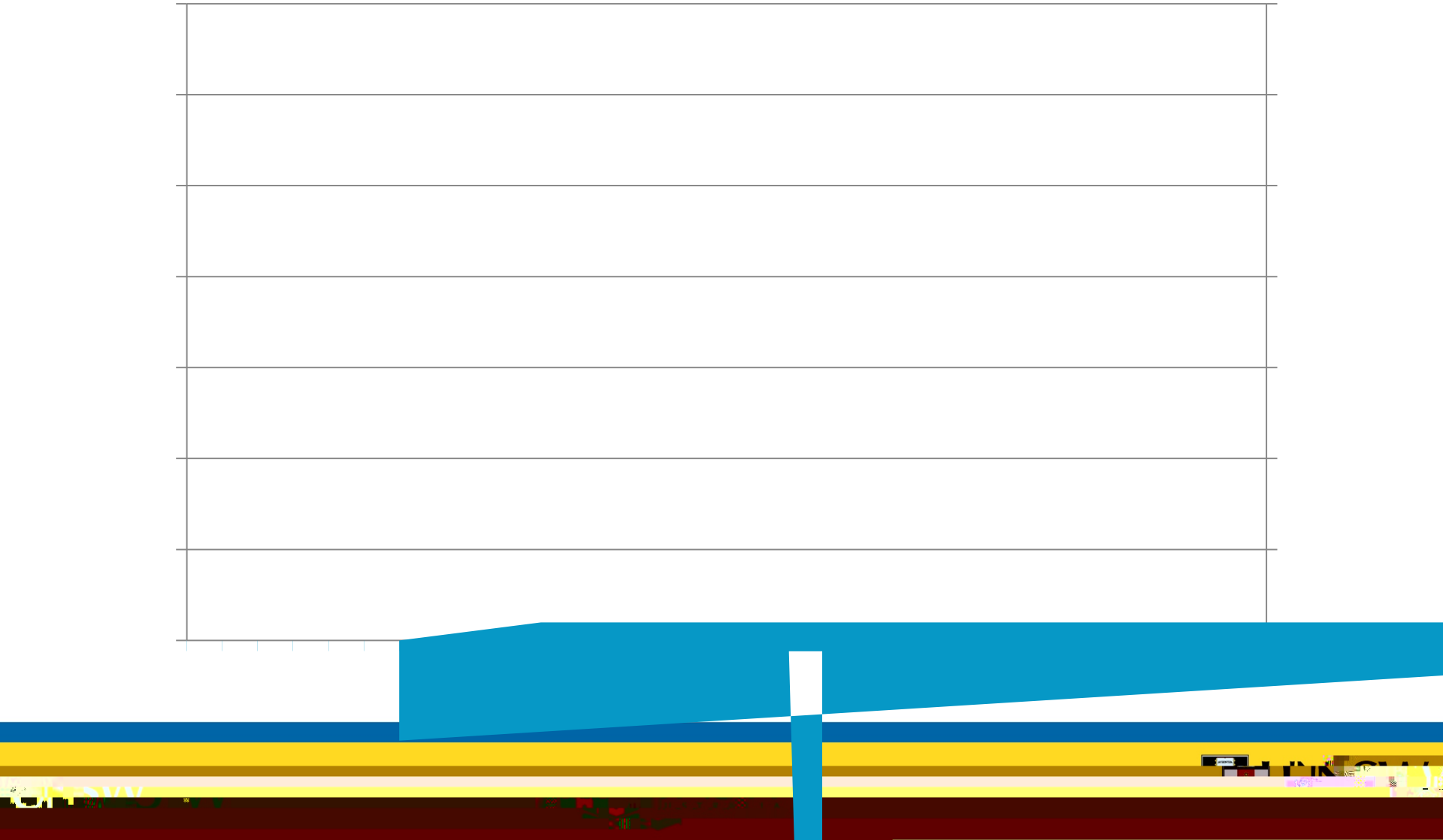


Figure 13: Melbourne Region House Rents 1985-2014

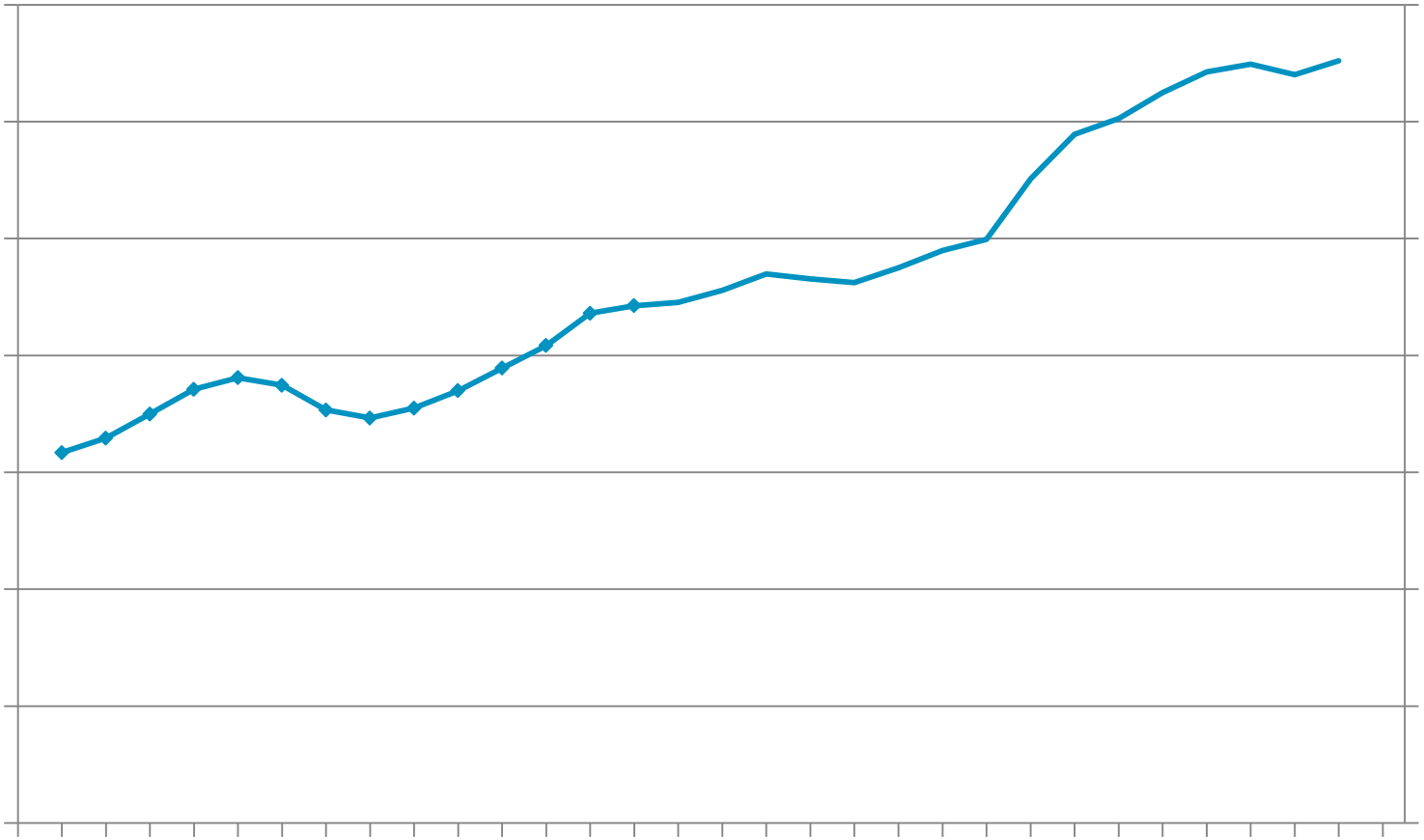
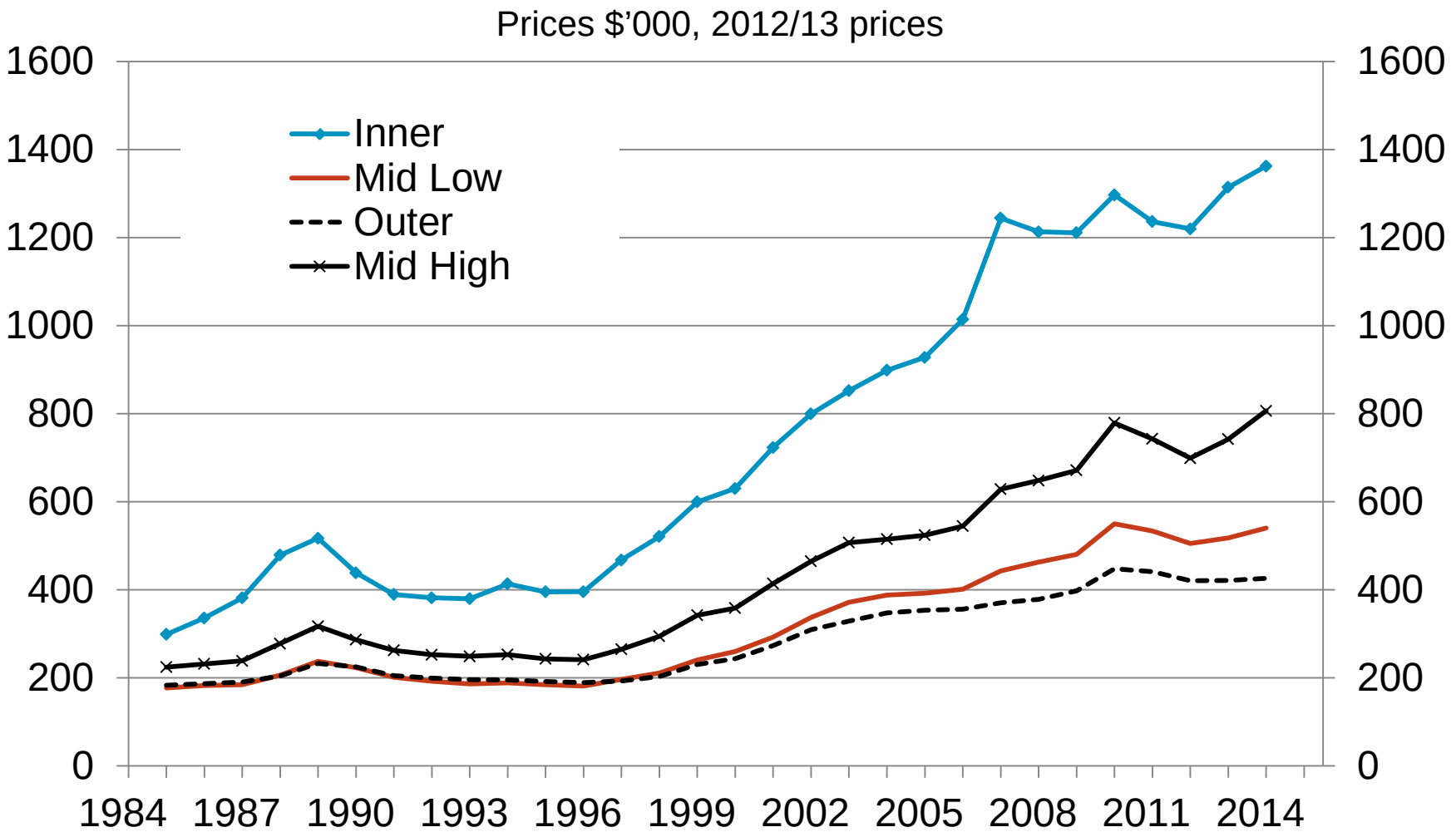


Figure 14: Sydney Region House Prices 1985-2014

Figure 15: Melbourne Region House Prices 1985-2014



The Data - Sydney

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Rent-Price ratios

- Gross Rents –