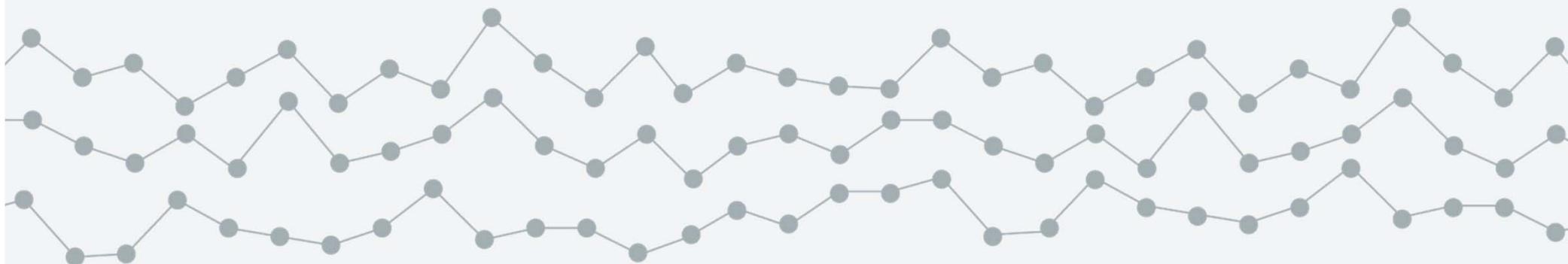


Australian Dwelling Prices and Tobin's q

Presentation to UNSW Business School Real Estate Symposium

Peter Jolly, Global Head of Research
September 2016



Tobin's q

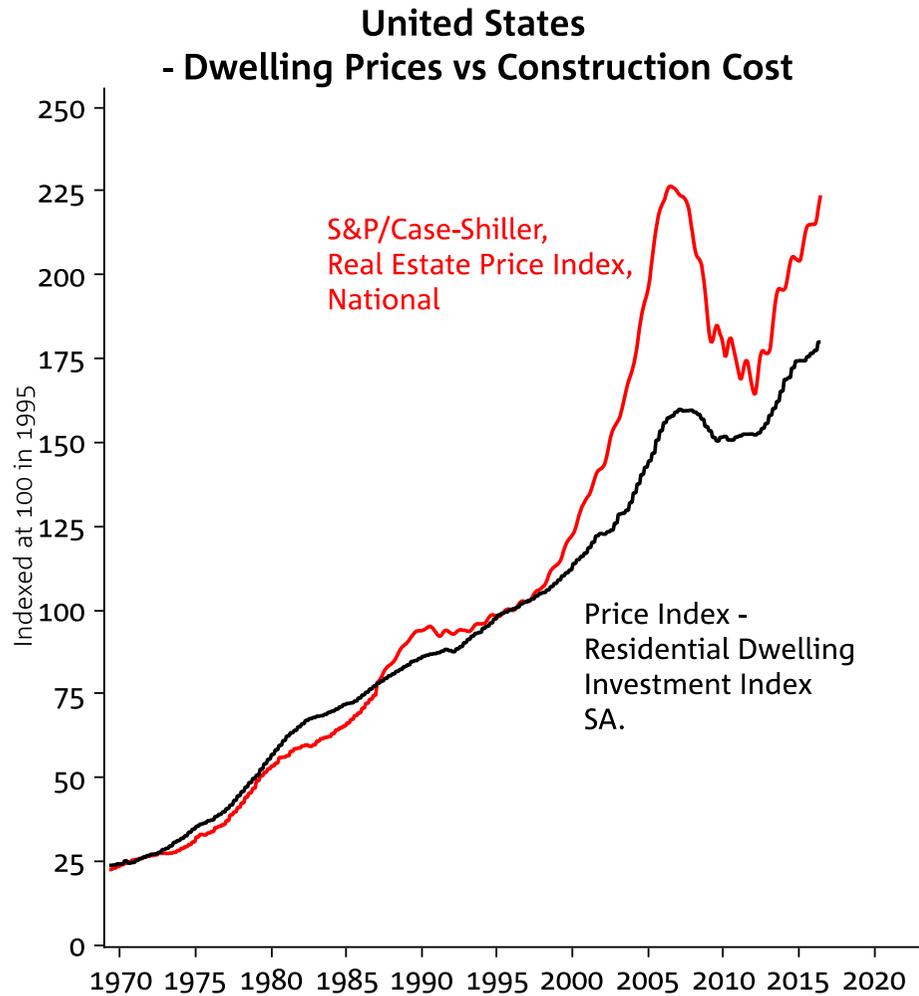
$$q = \frac{\text{Market Value for an asset}}{\text{Replacement Cost}}$$

Relevance of q

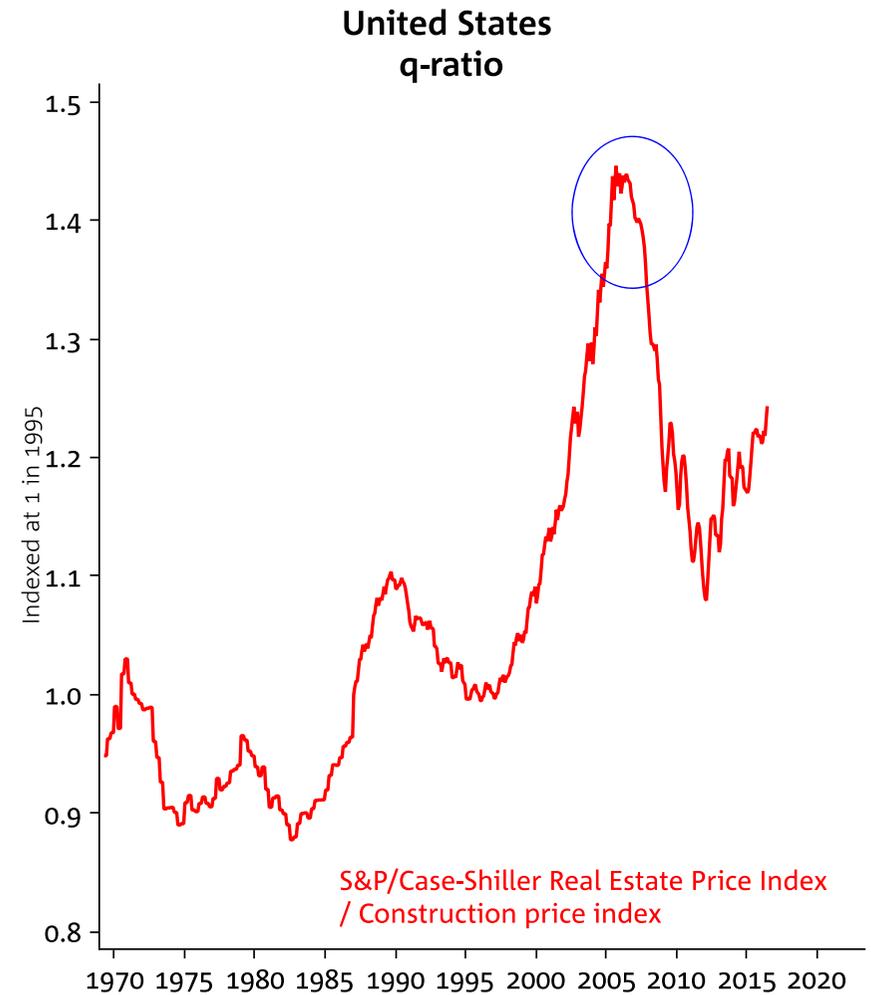
- If $q > 1$, market prices may be overvalued ($MV > RC$)
- If $q < 1$, market prices may be undervalued ($MV < RC$)
- The greater the deviation of q from 1, the stronger the signal (+ or -)

Shiller's simple q for the United States

– Compare dwelling prices to dwelling construction costs from national accounts



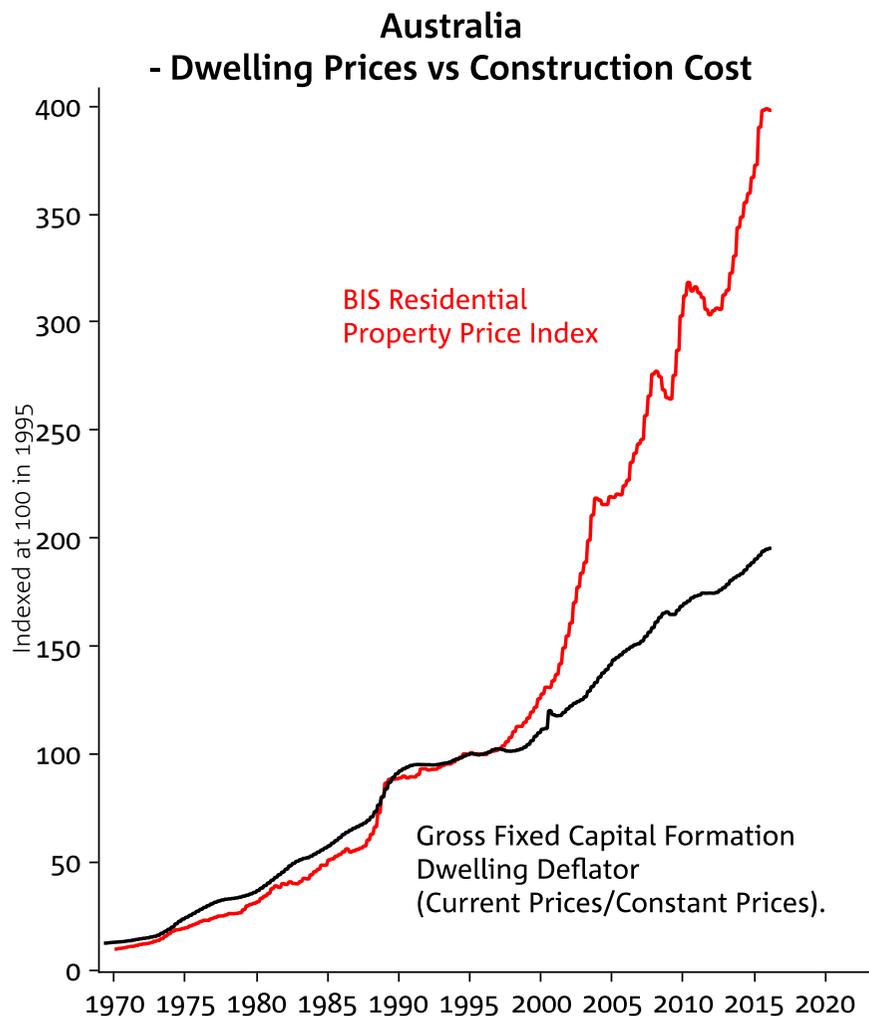
Source: National Australia Bank, Macrobond



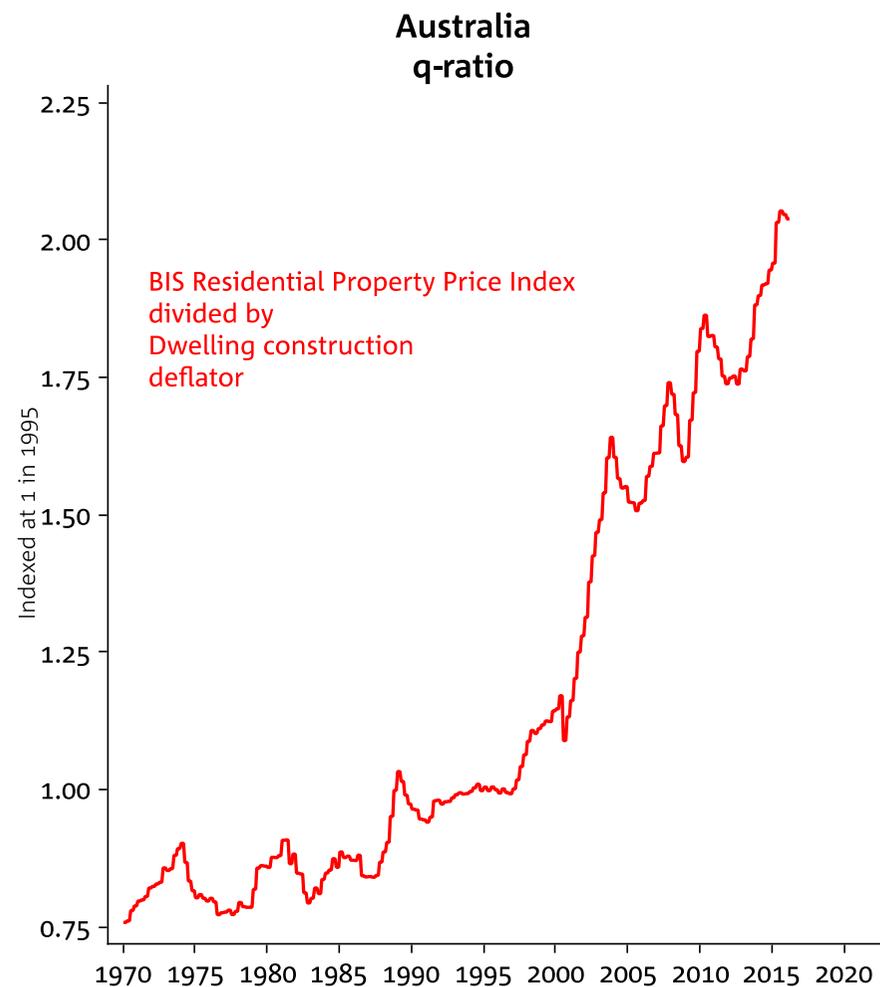
Source: National Australia Bank, Macrobond

Shiller's simple q for Australia

- Compare dwelling prices to dwelling construction costs from national accounts

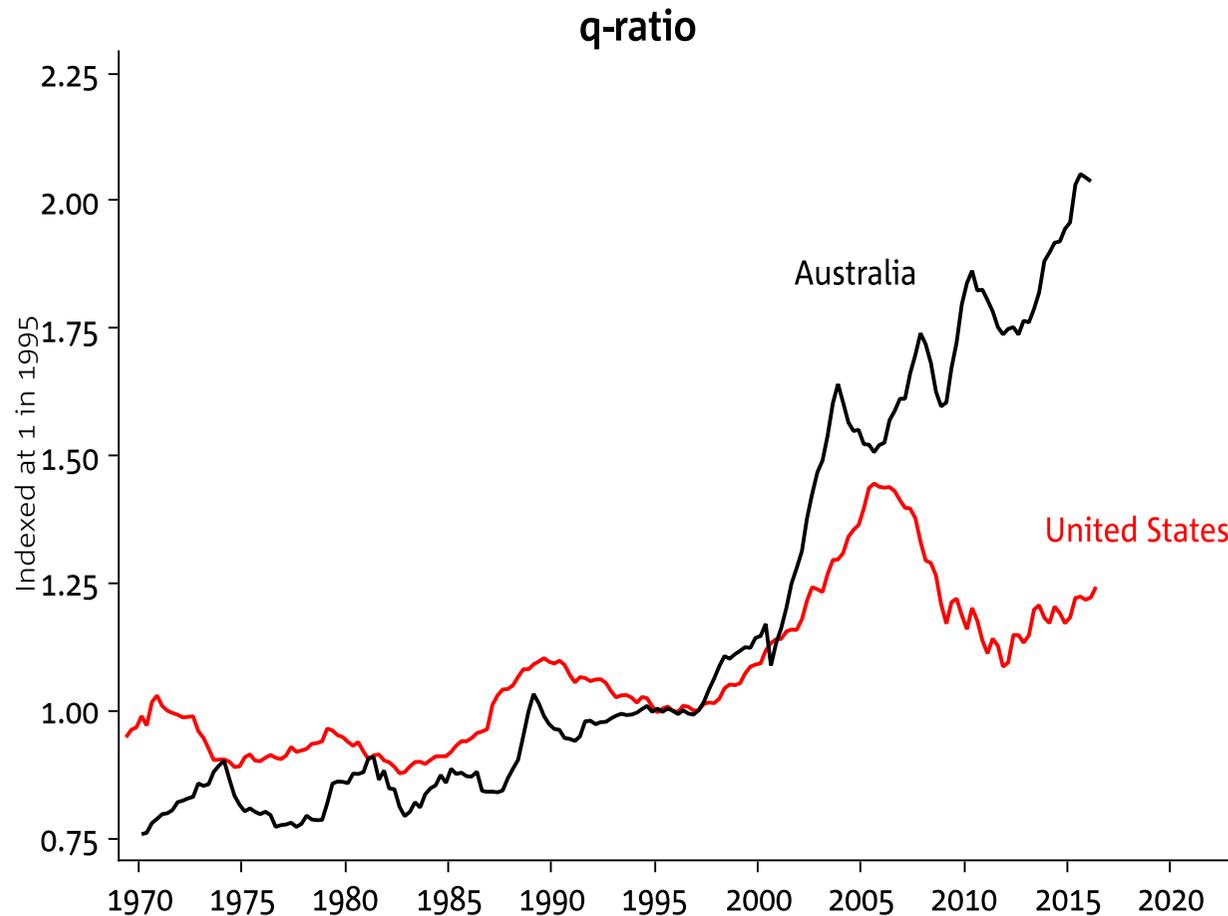


Source: National Australia Bank, Macrobond



Source: National Australia Bank, Macrobond

Shiller's simple q for the United States and Australia



Source: National Australia Bank, Macrobond

Issues:

Why q's have an upward slope?

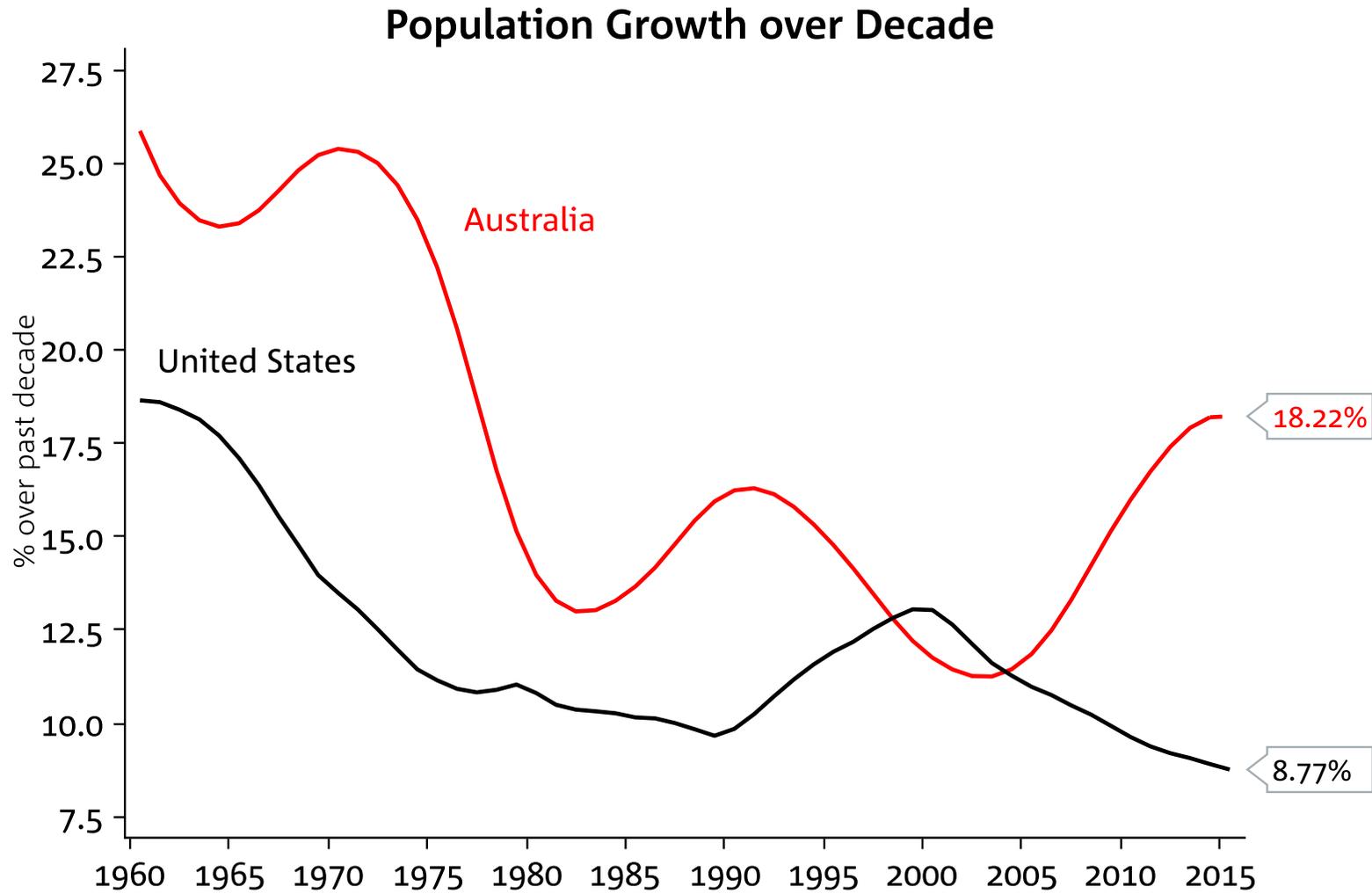
Why has Australia gone up much more than the US?

Potential answers:

1. Bubble?
2. Land – the numerator includes land/property but the denominator (construction costs) does not.
 - If land is partly the answer, it seems that residential land prices rise more quickly in Australian than the United States. Why are we less good at creating new residential property
3. Dwellings are becoming bigger?

One approach is to focus on apartments/units which should minimise the impact of rising land price

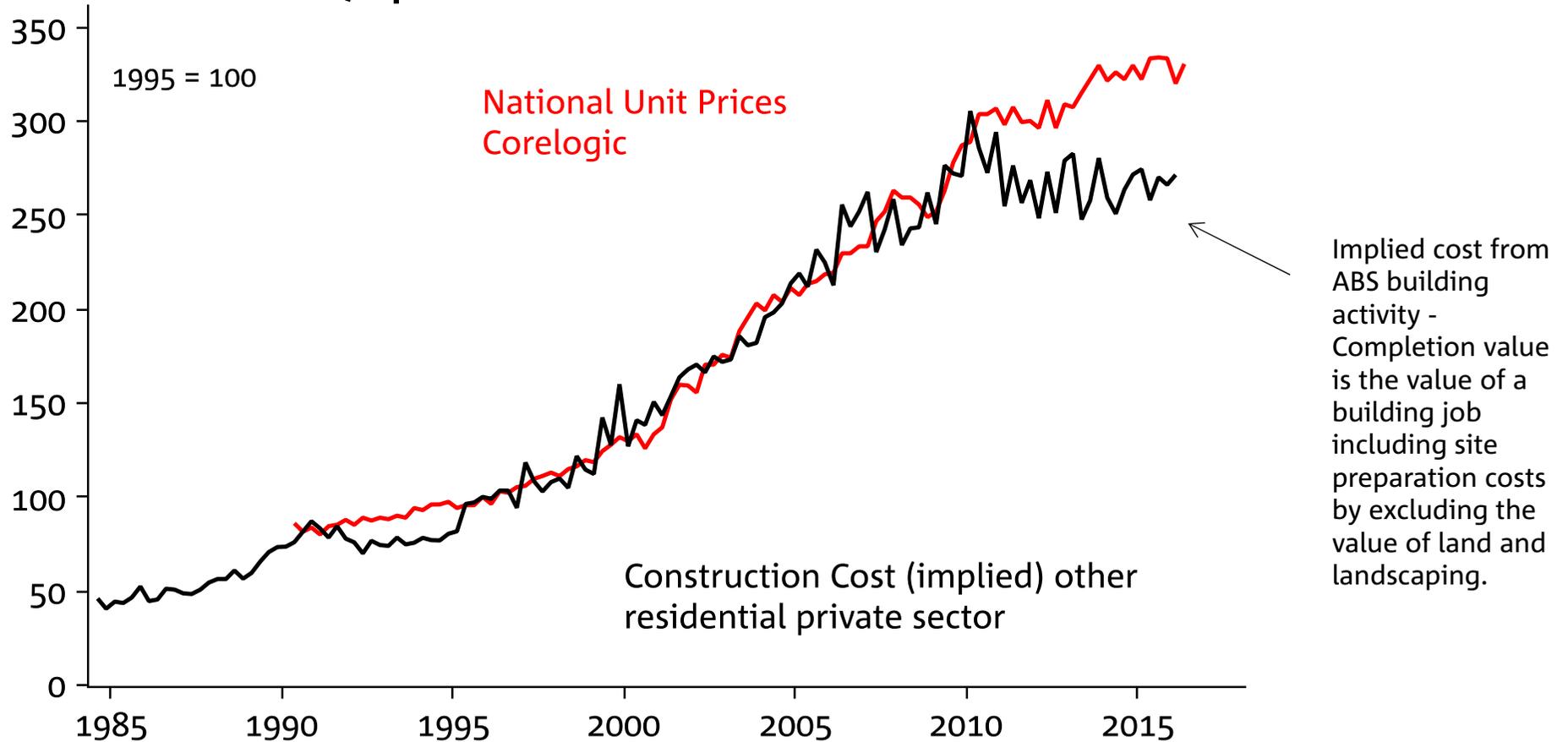
Australia's population has grown 18% over the past decade



Source: National Australia Bank, Macrobond

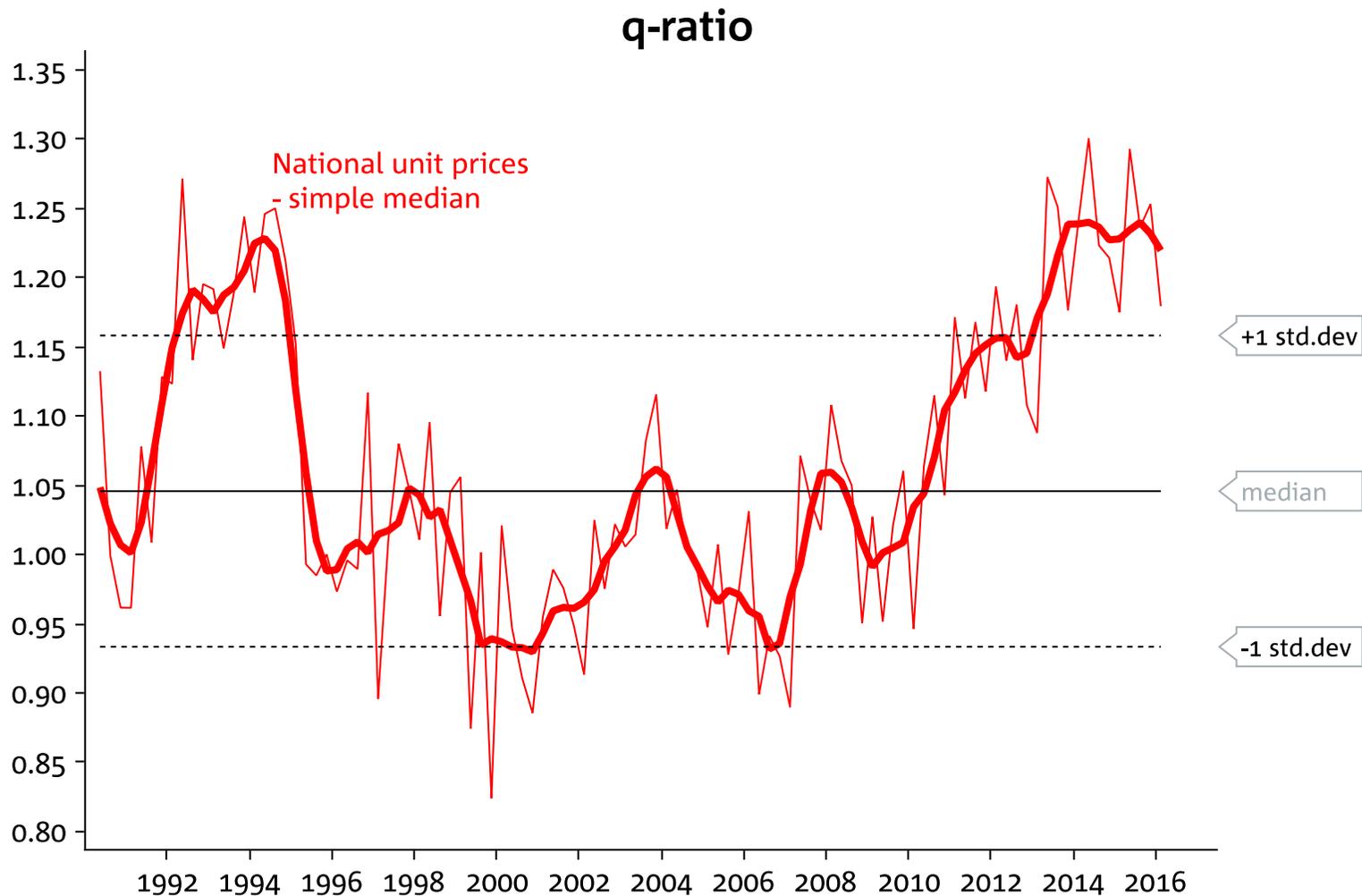
Components of q-ratio for Units

Australia Unit/Apartment Prices versus Construction Costs



Source: National Australia Bank, Macrobond

q-ratio for apartments/units

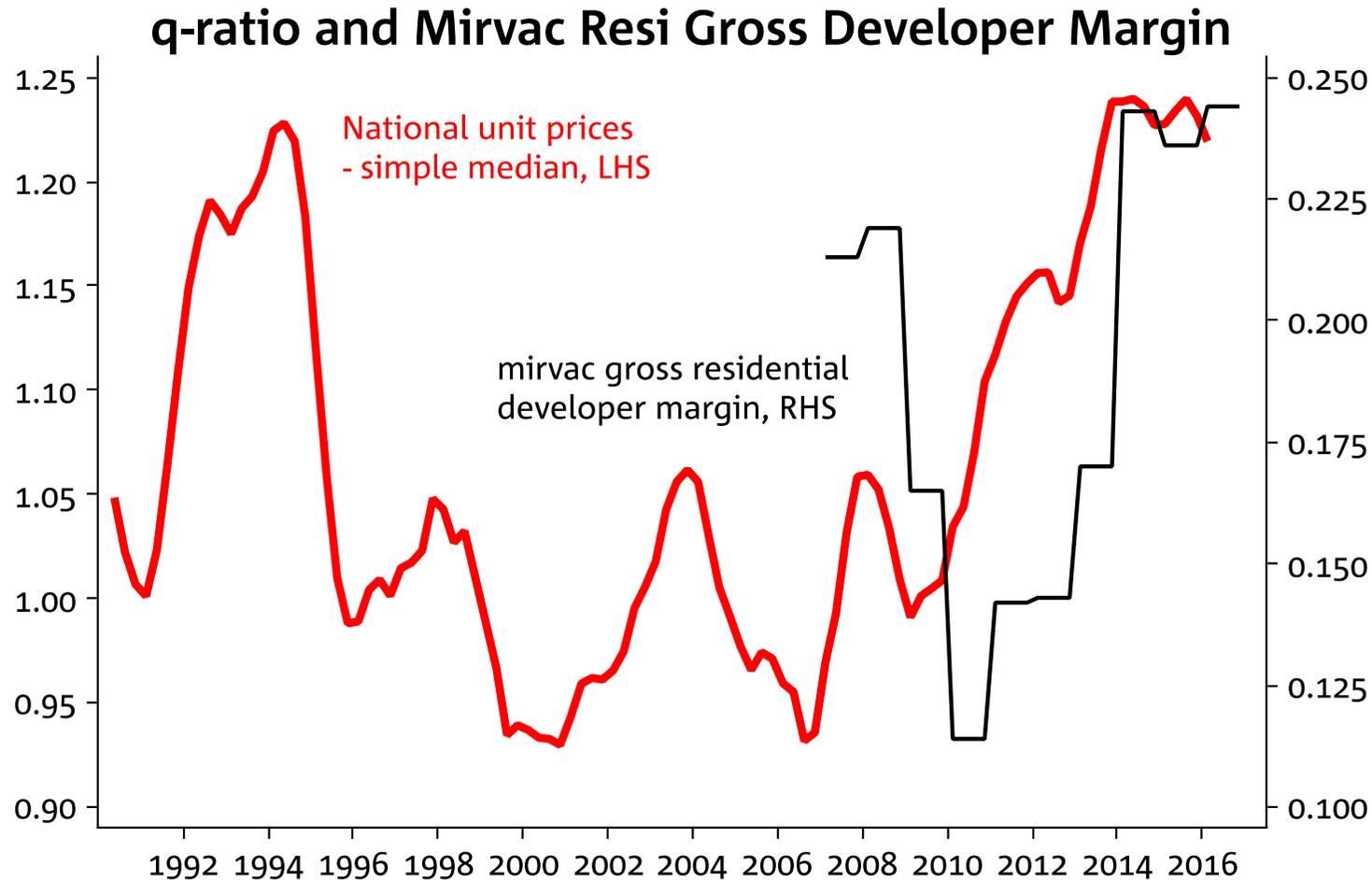


Source: National Australia Bank, Macrobond

If q high what should we see?

- Good profits for property developers.
- New supply of dwellings

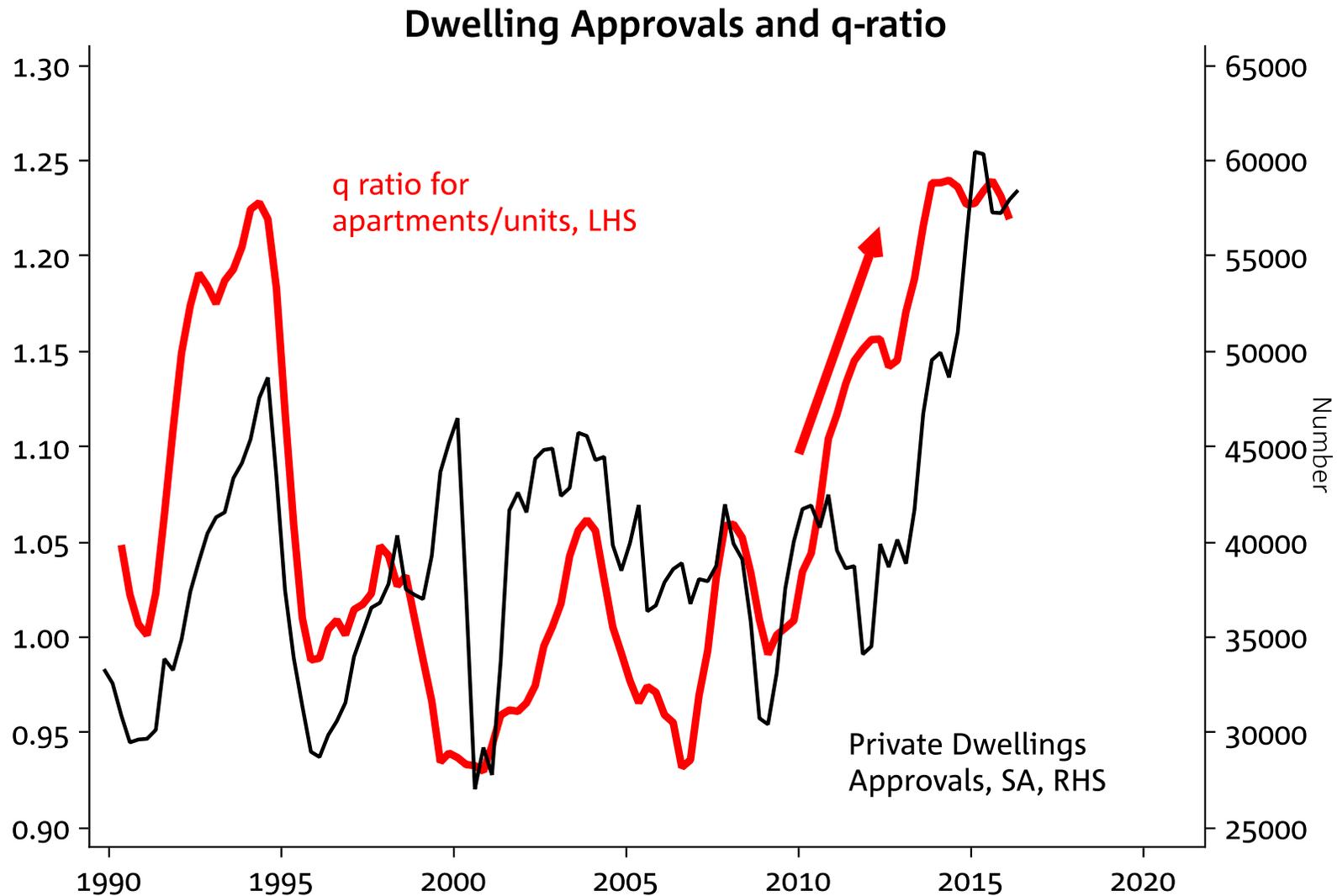
Question 1: Did it predict a supply response? Developer margins surged.



Source: National Australia Bank, Macrobond, Mirvac Financial Accounts

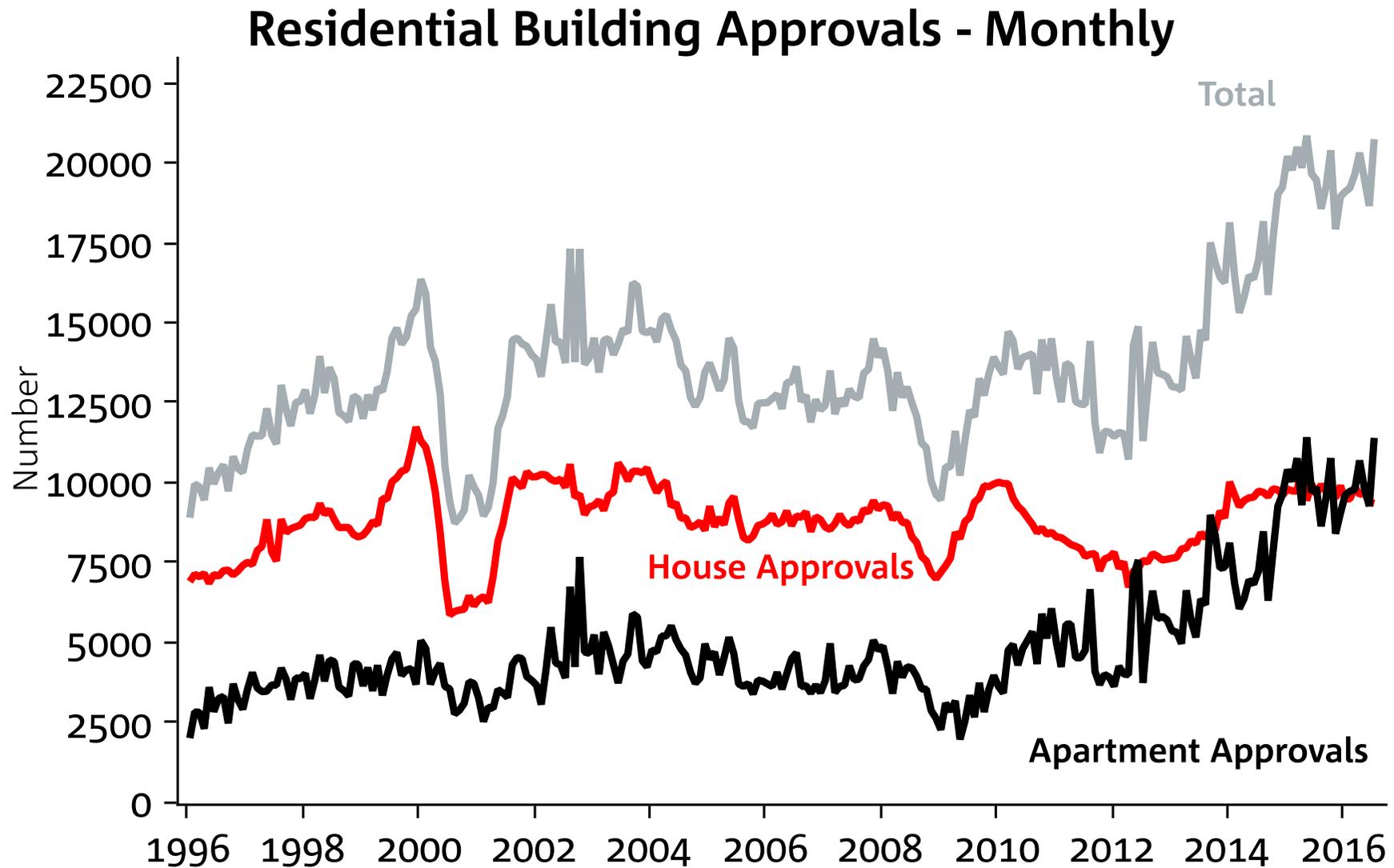
Gross developer margin is development revenue – cost of development & construction. Also it's just for the residential business so I've re-titled & removed the note previously attached (probably not worth including).

Question 1: Did it predict a supply response - Yes. Dwelling approvals have surged!



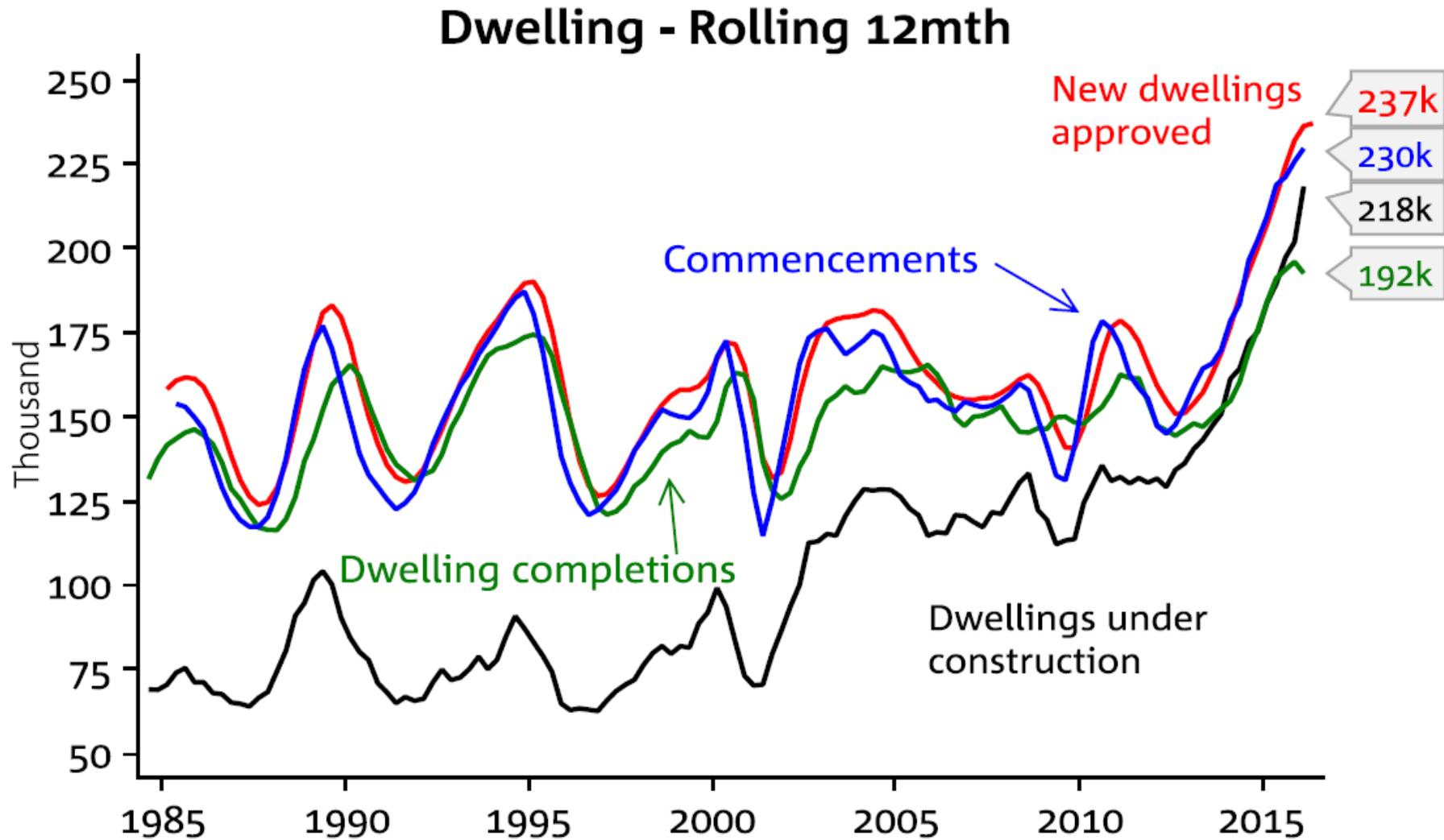
Source: National Australia Bank, Macrobond

There has been a significant lift in supply of dwellings - especially of apartments.



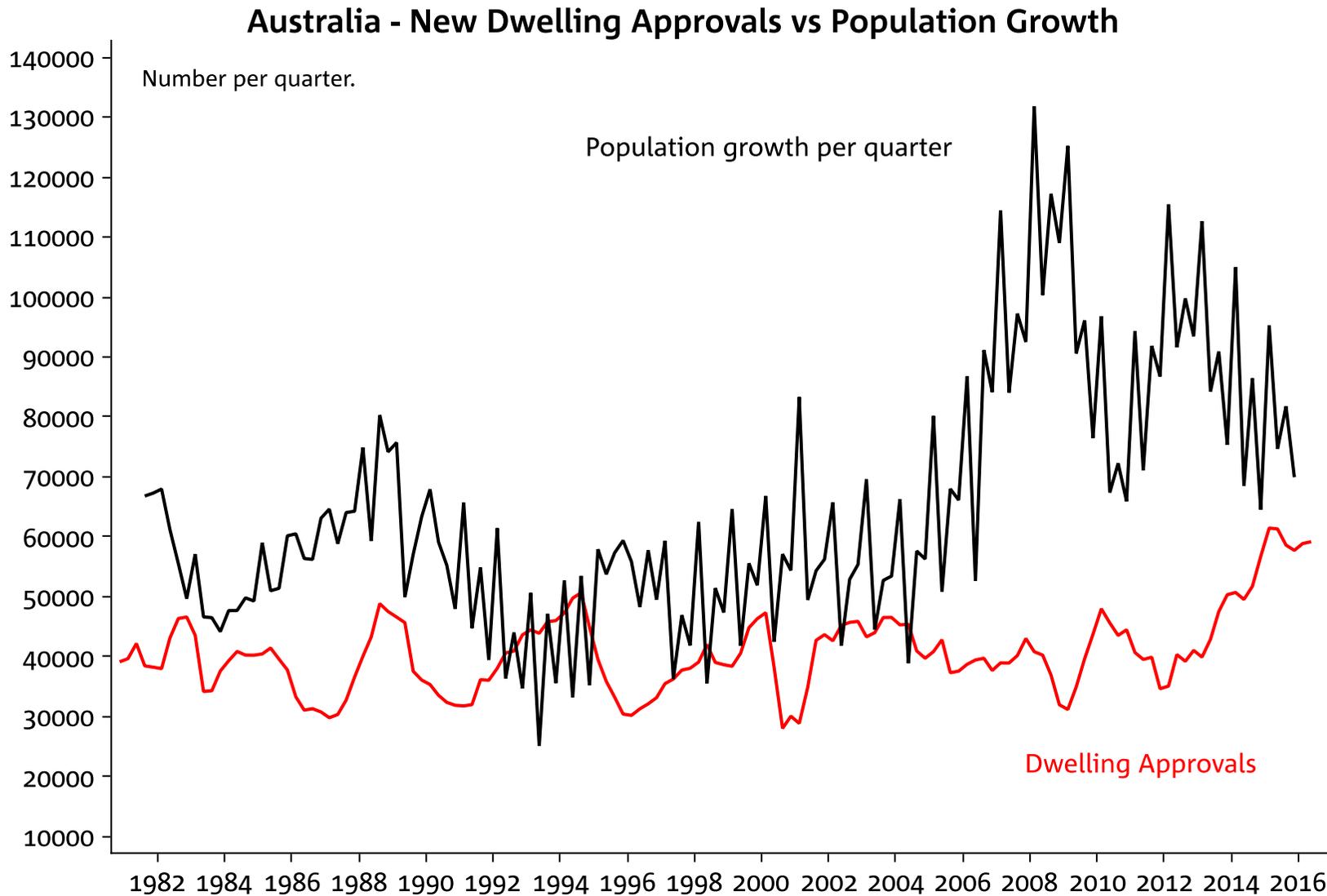
Source: National Australia Bank, Macrobond

230,000 dwellings have been commenced.



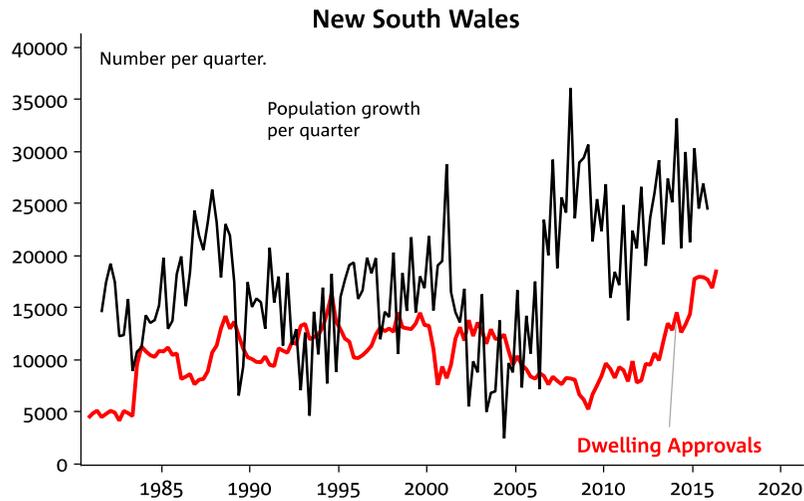
Source: National Australia Bank, ABS

Residential supply and demand nearing balance. Foreign demand an extra factor.

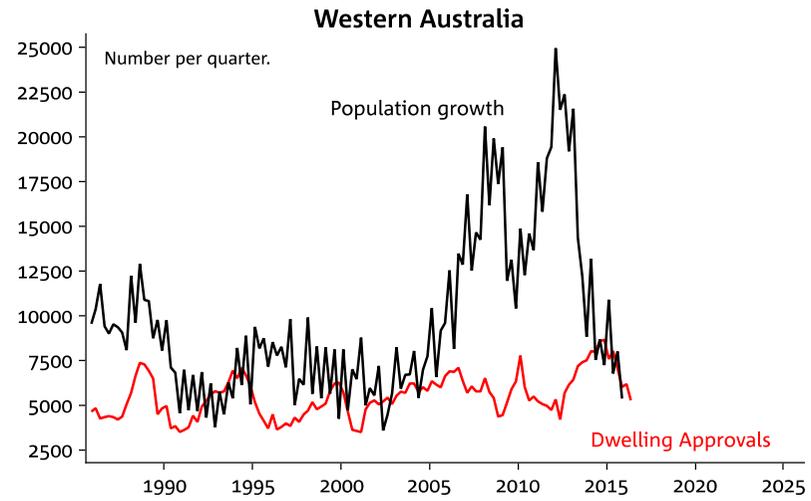


Source: National Australia Bank, Macrobond

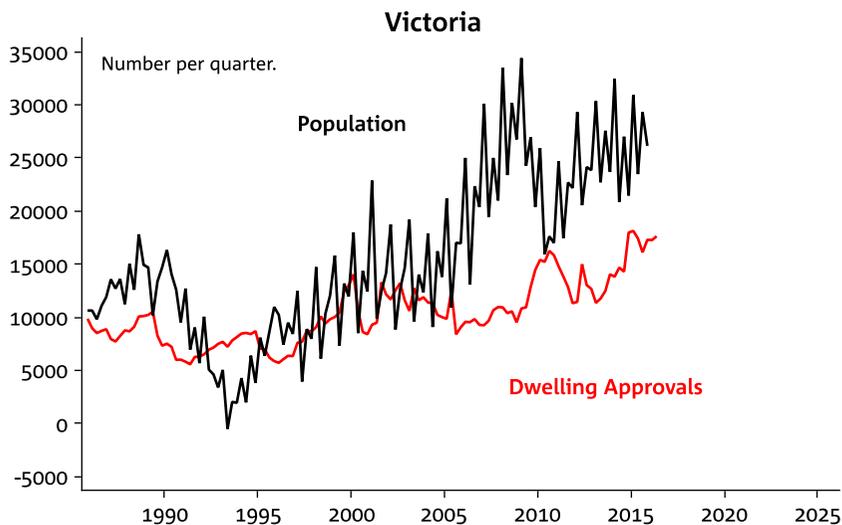
Supply-demand gap by State – NSW and Victoria OK. Over-supply in WA and QLD.



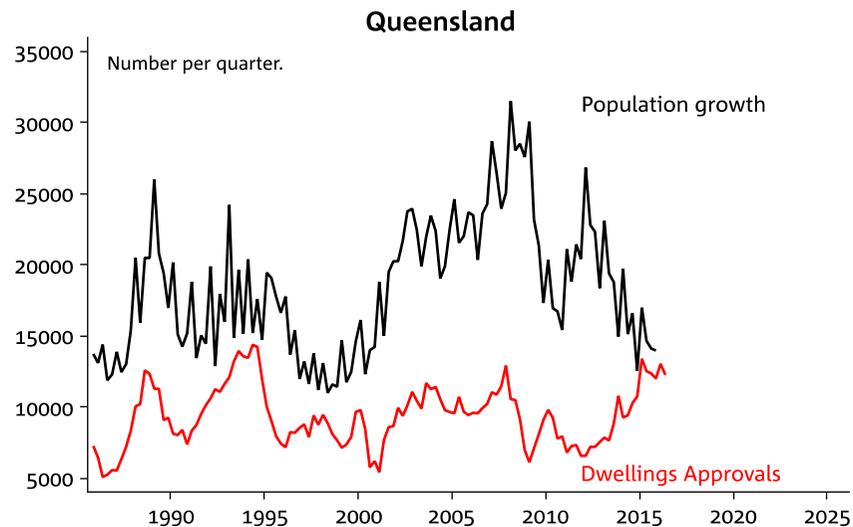
Source: National Australia Bank, Macrobond



Source: National Australia Bank, Macrobond



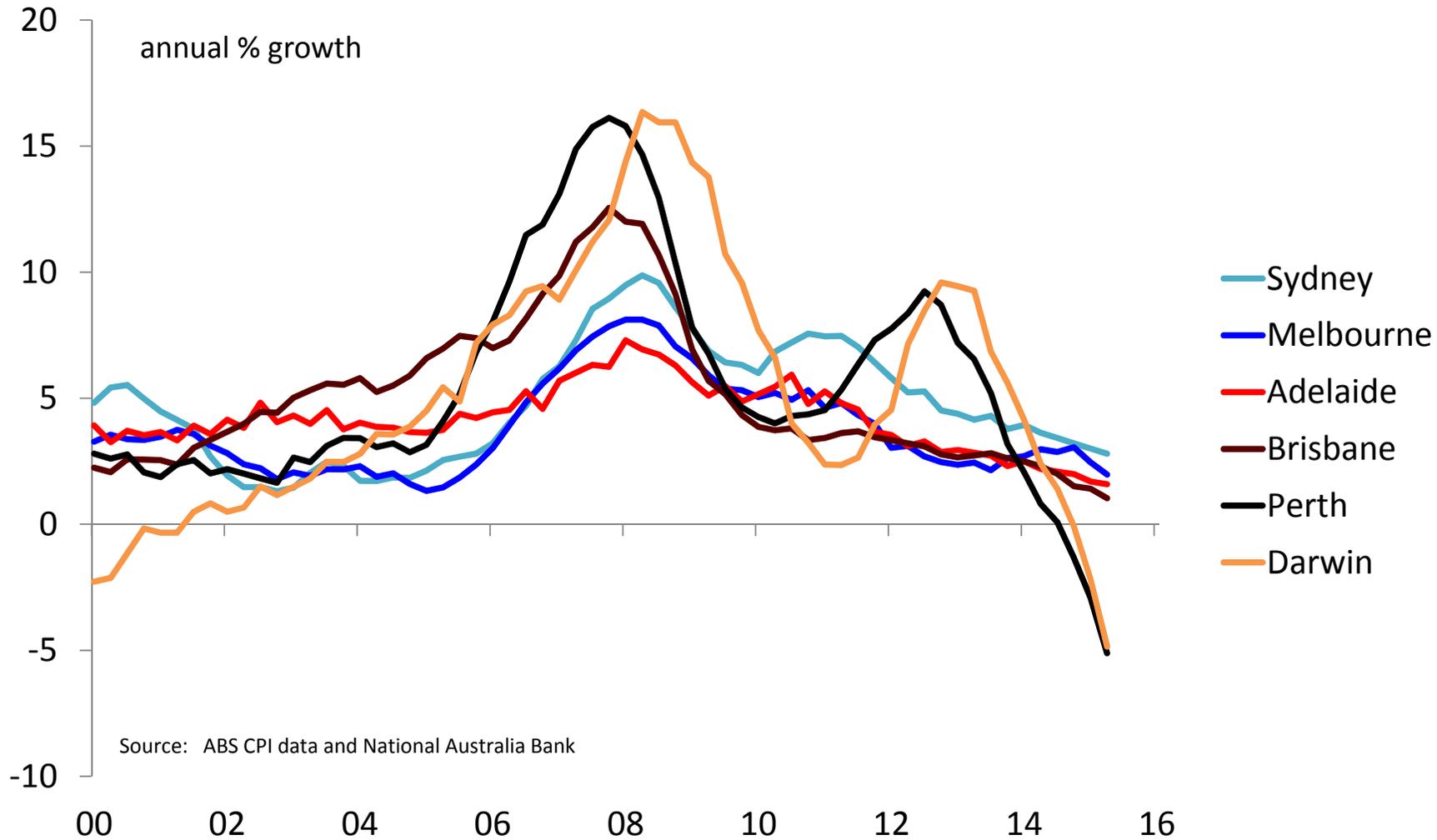
Source: National Australia Bank, Macrobond



Source: National Australia Bank, Macrobond

Rental growth slowing most places – a clear sign that supply has caught demand.

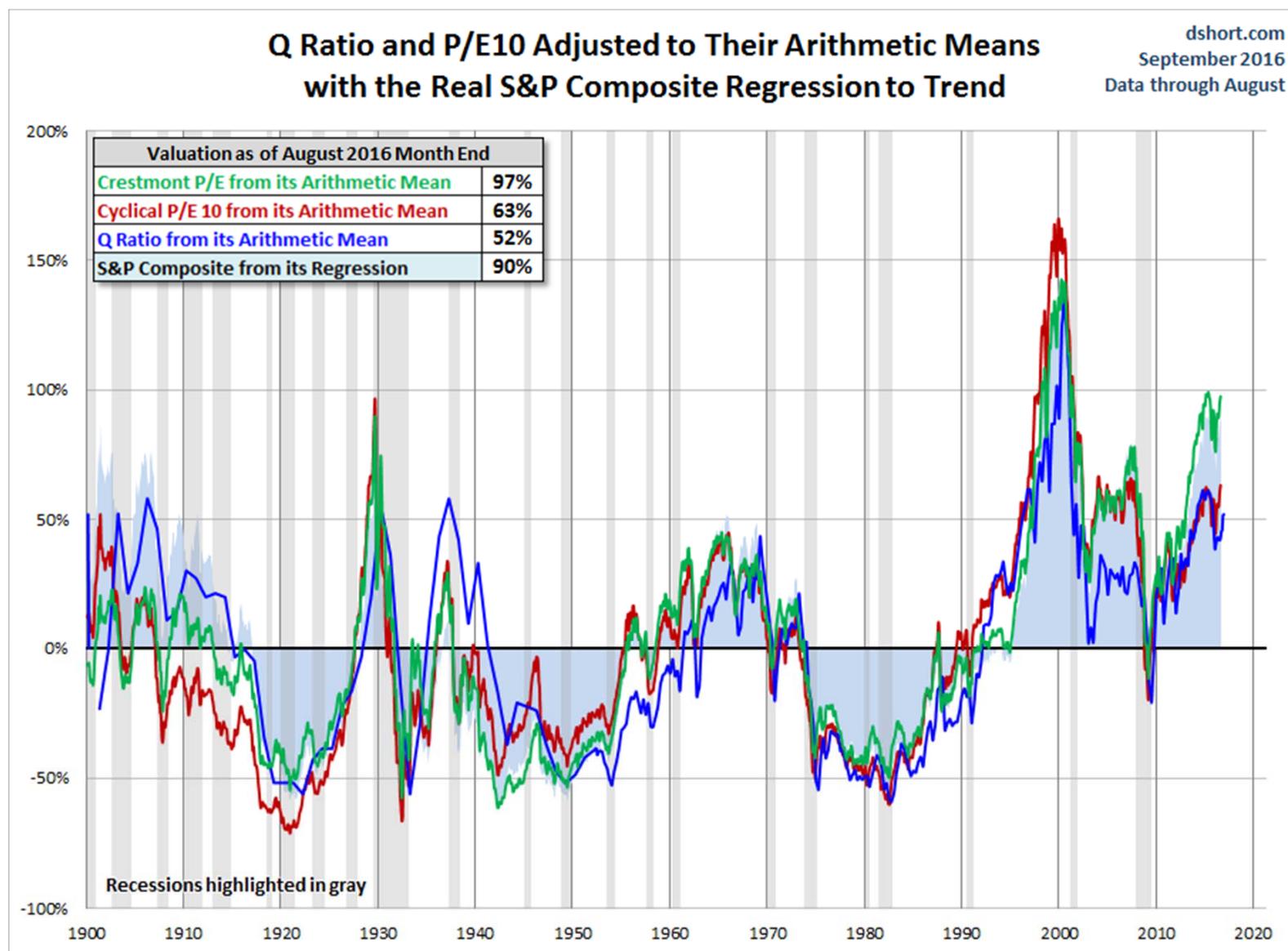
Residential rents by city



Question 2: Is q a useful indicator of over/under pricing of housing?

$$q = \frac{\text{Dwelling price}}{\text{Replacement cost}} \approx \frac{\text{Dwelling price}}{\text{Household Income}} \approx \frac{\text{Dwelling price}}{\text{Rents}} \approx \frac{\text{Dwelling price}}{\text{CPI Inflation}}$$

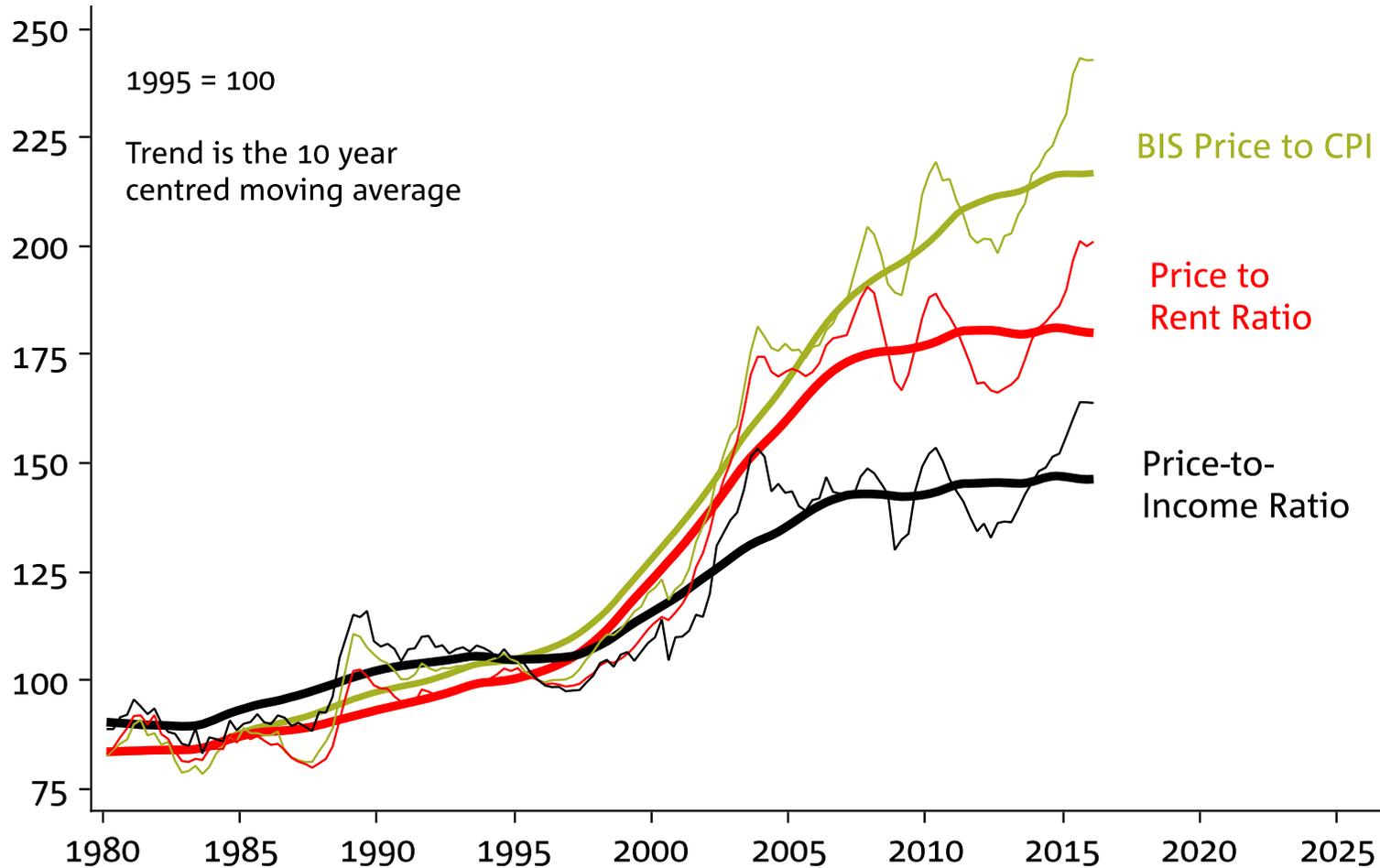
United States stockmarket - the *q*-ratio and other valuation metrics



<http://www.advisorperspectives.com/dshort/updates/Market-Valuation-Overview>

Other measures of Australian house price valuation

Australia House Price Valuation Measures



Source: National Australia Bank Calculations, BIS, OECD, Macrobond

Reasons why house prices have surged.

- Lower interest rates and improved affordability
- Population growth
- Foreign demand
- Slow supply side response of construction sector

Bubble?

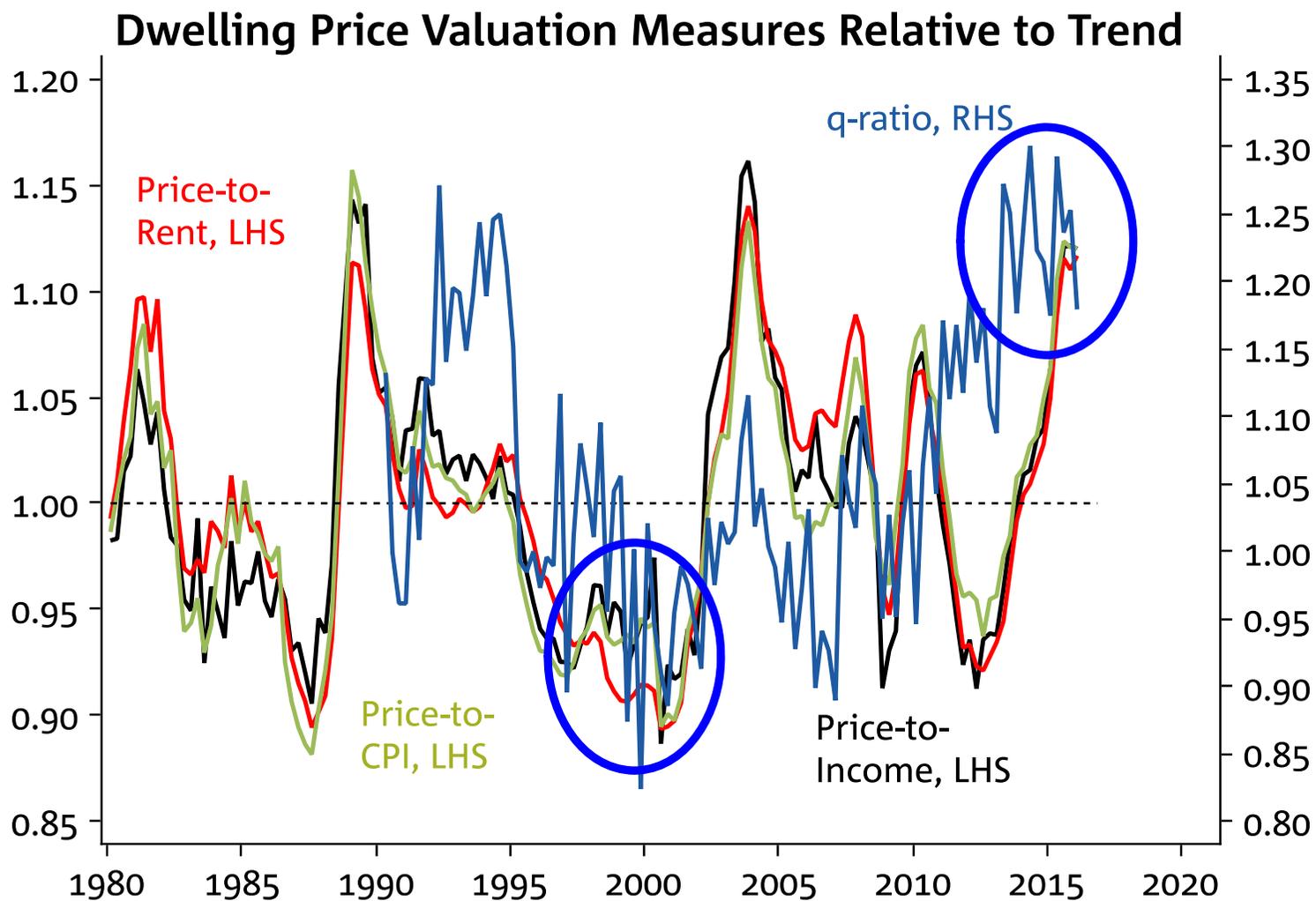
Possible - but for now being supported by low interest rates and low unemployment rate.

Short-term

Look at deviation from long-run trend

Dwellings/apartments around 10-15% overvalued on all valuation tools.

- for the first time since 2000, all valuation metrics are saying the same thing.



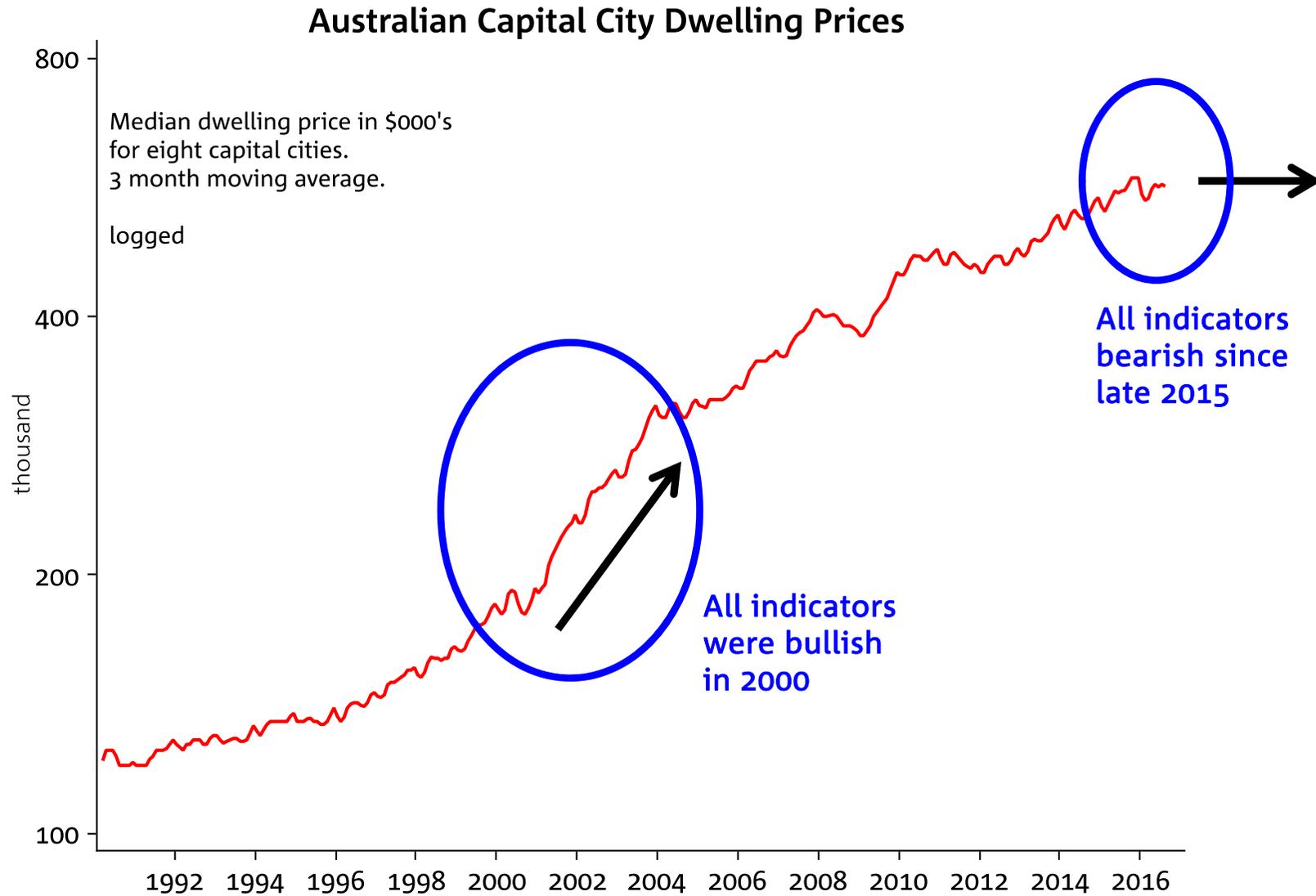
Over valuation on short-run metrics:

<i>q-ratio</i>	13%
<i>Price to rent</i>	12%
<i>Price to Income</i>	12%
<i>Price to CPI</i>	12%

Source: National Australia Bank Calculations, BIS, OECD, Macrobond.

q is for apartments/units as calculated and other measures are deviation from 10 year centred moving average

What about prices from here?



Source: National Australia Bank, Macrobond, Corelogic.

NAB's view: Housing to cool appreciably and some units to fall in price

- Low mortgage rates, foreign demand and a slow supply-side response all have supported higher dwelling prices in some Australian cities in recent years
- Some of those supports have weakened:
 - prices/valuations are higher
 - The under-supply of dwellings – particularly units/apartments - has closed and some some postcodes are already in over-supply. Peak supply still 12-24 months away.
- At the same time, mortgage lending standards have tightened.

NAB's view on housing

- Our expectation is that the housing market will cool appreciably
- National house price growth of 0.5% is expected in 2017.
- Unit prices are expected to decline by nearly 2% over 2017 – more where over-supply is acute.
- We continue to hold the view that residential property prices are unlikely to experience a severe 'correction' without a trigger from a shock.

NAB House/Unit Price Forecasts – y/y%.

Hedonic House Prices							
	2011	2012	2013	2014	2015	2016f	2017f
Capital City Average	-4.0	-0.5	9.9	8.4	7.8	5.1	0.5
Sydney	-2.6	1.3	15.2	13.4	11.5	8.6	0.2
Melbourne	-4.4	-2.9	8.5	8.4	11.7	6.1	0.4
Brisbane	-7.0	-0.5	5.3	5.2	4.3	4.0	1.9
Adelaide	-3.8	-0.8	3.0	4.5	-0.3	3.5	1.7
Perth	-3.4	0.6	10.2	2.1	-3.8	-5.5	-3.5
Hobart	-8.8	-0.5	2.9	3.3	-1.6	8.5	1.7

Hedonic Unit Prices							
	2011	2012	2013	2014	2015	2016f	2017f
Capital City Average	-2.6	0.5	9.0	5.1	7.9	3.6	-1.9
Sydney	-1.3	2.3	11.6	8.3	11.3	7.2	-1.5
Melbourne	-3.2	-2.5	8.7	1.1	6.9	0.6	-3.5
Brisbane	-2.0	-3.5	3.5	1.2	1.8	1.7	-1.8
Adelaide	-8.0	-0.5	0.6	2.5	1.4	0.2	0.5
Perth	-5.4	3.3	6.3	1.9	-3.5	-7.2	-5.0
Hobart	-5.6	4.2	-5.1	5.9	8.6	9.0	0.6

SOURCE: CoreLogic; NAB Economics

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