Australian Dwelling Prices and Tobin's $q$

Presentation to UNSW Business School Real Estate Symposium

Peter Jolly, Global Head of Research
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Tobin's q

Market Value for an asset

\[ q = \frac{\text{Market Value}}{\text{Replacement Cost}} \]

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

United States
- Dwelling Prices vs Construction Cost

S&P/Case-Shiller,
Real Estate Price Index,
National

Price Index -
Residential Dwelling
Investment Index
SA.

United States
q-ratio

S&P/Case-Shiller Real Estate Price Index
/ Construction price index

Source: National Australia Bank, Macrobond
Shiller’s simple q for Australia
– Compare dwelling prices to dwelling construction costs from national accounts

Australia
- Dwelling Prices vs Construction Cost

BIS Residential Property Price Index

Gross Fixed Capital Formation
Dwelling Deflator
(Current Prices/Constant Prices).

Source: National Australia Bank,Macrobond
Shiller’s simple q for the United States and Australia

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.

Source: National Australia Bank, Macrobond
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

1995 = 100

National Unit Prices
Corelogic

Implied cost from ABS building activity - Completion value is the value of a building job including site preparation costs by excluding the value of land and landscaping.

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.

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!
There has been a significant lift in supply of dwellings - especially of apartments.
230,000 dwellings have been commenced.
Residential supply and demand nearing balance. Foreign demand an extra factor.

Australia - New Dwelling Approvals vs Population Growth

Number per quarter.

Population growth per quarter

Dwelling Approvals

Source: National Australia Bank, Macrobond
Supply-demand gap by State – NSW and Victoria OK. Over-supply in WA and QLD.
Rental growth slowing most places – a clear sign that supply has caught demand.

Residential rents by city

Source: ABS CPI data and National Australia Bank
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

### 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

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**Australia House Price Valuation Measures**

- **BIS Price to CPI**
- **Price to Rent Ratio**
- **Price-to-Income Ratio**

1995 = 100
Trend is the 10 year centred moving average

Source: National Australia Bank Calculations, BIS, OECD, Macrobond
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:
- q-ratio: 13%
- Price to rent: 12%
- Price to Income: 12%
- Price to CPI: 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 aver.
What about prices from here?

Australian Capital City Dwelling Prices

Median dwelling price in $000's for eight capital cities. 3 month moving average.

logged

All indicators bearish since late 2015

All indicators were bullish in 2000

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

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SOURCE: CoreLogic; NAB Economics
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