Housing Price Shocks and Divorce: Evidence from Australia

Preliminary – please do not quote without permission

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THE UNIVERSITY OF SYDNEY

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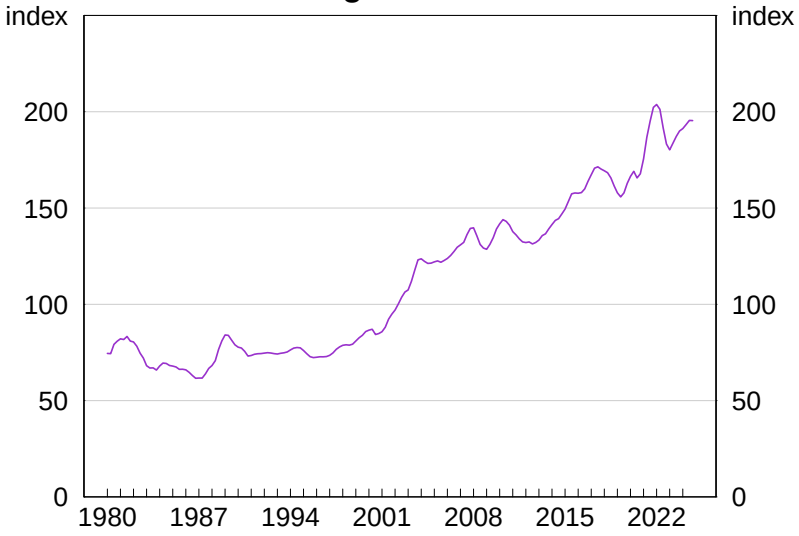
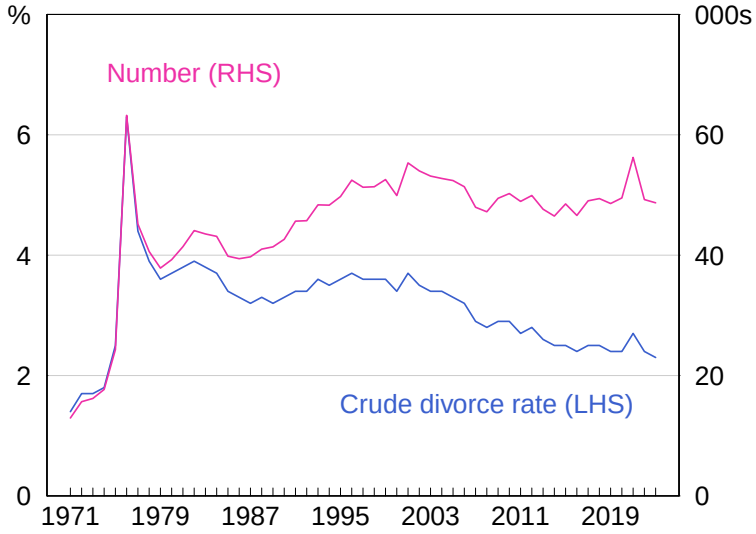
Real Housing Prices – Australia



Note: Nominal housing prices delated using 'CPI excl. housing' (2023/24 = 100)
Sources: ABS; Author's calculations; CoreLogic

Divorces in Australia



Note: Rate of divorces per 1000 residents aged 16+
Sources: ABS; AIFS

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Our contributions:

- Australian evidence: important given different institutional environment (i.e. divorce laws, property settlement) and high (real) housing prices (owner-occupied and rental)
- Consideration of different types of partnerships (i.e. legally married couples and common law couples), and different types of tenures

Economics of marriage

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Shocks or new information may lead to a reassessment of initial expectations with respect to a partner

Why housing price shocks might effect likelihood of separation

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Conversely, an increase in housing prices leaves them with more money to split, making them wealthier and potentially able to match with a better partner in the marriage market

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We argue a positive housing price shock will have ambiguous implications for owner-occupiers, but a negative housing price shock will increase likelihood of separation. Outcome might be different for renters and could be heterogeneity across housed types

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To best of our knowledge, no previous study has considered the role of housing price shocks on the risk of divorce (separation) in Australia

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Likely to be endogeneity issues between various macroeconomic variables as well

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By focusing on residuals from an AR process, previous authors have violated these properties

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Include four macroeconomic variables shown to be important for determining housing price growth:

1. Unemployment rate
2. Variable lending rate
3. Housing credit for owner-occupiers
4. Approvals for detached dwellings

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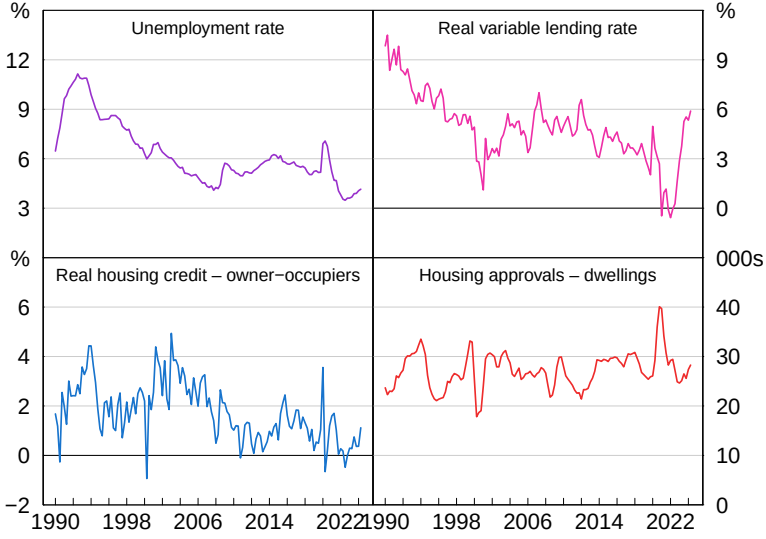
Deflate housing prices, variable lending rate and housing credit using CPI excluding Housing

Macroeconomic Control Variables



Note: Nominal values deflated by CPI excluding housing
Sources: ABS; Authors calculations; RBA

Identifying shocks using a SVAR model

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Estimate a reduced-form VAR(p) model for each SA4 region $i = 1, \ldots, 87$:

$$Y_{it} = A_0 + \sum_{j=1}^{p} A_{ij} Y_{it-j} + \eta_{it}, \qquad \eta_{it} \sim \mathcal{N}(0, \Sigma_{\eta_i}) \tag{1}$$

where Y_{it} is a vector of macroeconomic variables plus i-th SA4 real housing price growth series. Set p for each region i based on BIC. Across the 87 SA4 regions the mean value for p was 2

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Link reduced-form VAR innovations η_{it} to latent structural shocks ε_{it}:

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To identify structural shocks need to impose restrictions on H

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Order housing price growth last – prioritises fundamentals (e.g. unemployment, interest rates) as causally prior to housing market dynamics

From reduced-form innovations to structural shocks

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Equation (2) implies $\varepsilon_{it} = H^{-1}\eta_{it}$ and j-th row can re-written in terms of η_{jt} as:

$$\eta_{jt} = \frac{1}{h_{jj}} \left(\varepsilon_{jt} - \sum_{i=1}^{j-1} h_{ji}\eta_{it} \right) \tag{3}$$

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$$\eta_{jt} = \frac{1}{h_{jj}} \left(\varepsilon_{jt} - \sum_{i=1}^{j-1} h_{ji}\eta_{it} \right) \tag{3}$$

Equation (3) shows can estimate j-th structural shock by regressing j-th reduced-form innovation η_{jt} on $j-1$ reduced-form innovations from VAR model in Equation (1):

$$\eta_{jt} = \sum_{i=1}^{j-1} b_{ji}\eta_{it} + u_{jt} \tag{4}$$

Residual from regression, u_{jt}, will be an estimate of structural shock ε_{jt} (up to a scale multiple h_{jj})

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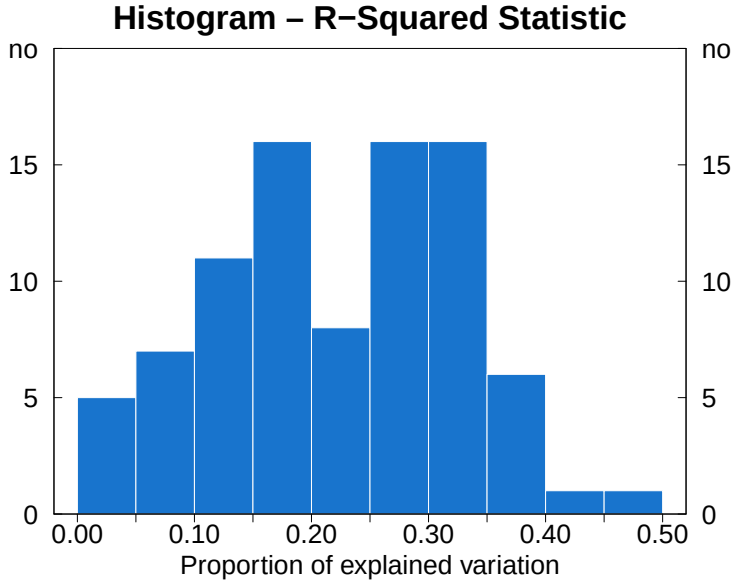
Supported by R-squared statistics from regression of Equation (4) for each SA4 region. Mean R-squared statistic is 0.22 – other variables contain meaningful information



Note: R−squared statistic in shock estimation across 87 SA4 regions

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Sample consists of approx. 55,000 couple-year observations; over 5,000 unique couples of which approximately 13 per cent report separating from partner

Predicting probability of divorce

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Estimate Probit model with divorce as dependent variable:

$$\Pr\left(D_{it} = 1 \mid X_{it-1}, Z_i, HPS_{it-1}\right) = \Phi\left(\alpha X_{it-1} + \beta Z_i + \gamma HPS_{it-1}\right)$$

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Where:

- D_{it} is a binary variable; 1 if divorced in year t and 0 otherwise
- Φ is standard Gaussian CDF
- X_{it-1} contains time-variant controls measured in year $t-1$, capturing changes experienced by couples after marriage including employment status, income, and financial condition
- Z_i contains time-variant controls capturing matching quality (i.e. education background and age differences)
- HPS_{it-1} represent our real housing price growth shock series which in some cases enter as a separate negative or positive shocks

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'Economies of scale' effect outweighs 'value' or 'wealth' effect, but estimated effect small

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- May reflect loss of economies of scale in housing for renters – no wealth effect

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Also investigate high mortgage vs low mortgage; old vs young; and urban vs rural

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Policy implication: housing markets could be keeping individuals locked into marriages they'd prefer to leave