

MA Thesis Workshop: Presentation 1

Lowering Down Tax Policy of Small Units: Unintended Effects on Divorce Rates

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Research Question

- This research investigates the impact of housing price changes (X) on the divorce rate (Y), using a policy change to conduct a Regression Discontinuity (RD) design.
- Important for understanding determinants of marriage stability.

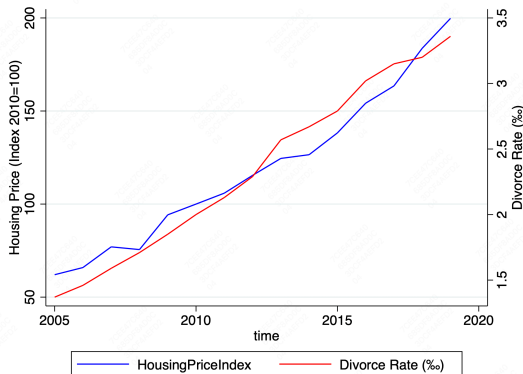


Figure: Increasing Housing Price and Divorce Rates in China, 2005-2019

Reasons for Divorce

- Macroeconomic conditions change partners' match quality valuation and affect divorce [Hellerstein and Morrill, 2011]. Financial stress increase social undermining and marriage unstableness via depressive symptoms [Vinokur et al., 1996].
- Individuals no longer choose to marry to diversify their labor income risk in an incomplete market [Hess, 2004].
- Incomplete information on the requirement, personality, and productivity of partner can lead to divorce [Becker et al., 1977].

Research Gap

- Housing price as a part of macroeconomic condition had not been investigated. It increases owned property value, mitigates labor income risk and financial stress (reduce divorce?), but also lead to asymmetry information (increase divorce?).

Equation of Interest and Endogeneity with OLS Estimation

$$Divorce_i = \alpha + \beta HousingPrice_i + \epsilon_i$$

- Reverse Causality: Changes in family dynamics may affect housing demand, thereby influencing housing prices.
- Omitted Variable Bias:
 - Macroeconomic environment influences divorce rate and housing price.
 - Individual characteristics and joint investment decisions influences marital outcomes and wealth.

Identification: Regression Discontinuity Design (RDD)

- We employ a policy-driven discontinuity design based on China's size based real estate policy.
- The policy introduces a clear, externally imposed threshold.

Regulations on Housing Issued in 2010: Tax Rate Discontinuity

- Lowered the percentage of the down payment for purchasing units with floor areas less than or equal to $90m^2$ to 20%, while the down payment for others remained at 30%.
- Lowered property deed taxes for purchasing housing units with floor areas less than or equal to $90m^2$ from 3 to 1%.

Intuition

- Tax reduction decreased the cost of selling a small house, thus increased the current price of house via discounted cash flow. Thereofre, small house owners experience a wealth increase via housing price increase.
- RD cannot estimate the effect of housing price on divorce, but provide the influence from treatment of policy.
- Argument: Policy affects divorce rate through housing price.

Estimation: Policy's Effect on Divorce Rate

Equation of Interest (Revised): Sharp RD

$$Y_{it} = \alpha + \beta \cdot D[\text{HouseSize}_{it} < 90] + f(\text{HouseSize}_{it} - 90) + 1[\text{HouseSize}_{it} < 90] \cdot g(\text{HouseSize}_{it} - 90) + X_{it}\theta + \epsilon_{it}$$

where

- Y_{it} is the outcome variable for household i in year t , such as the divorce rate or family stability indicator.
- HouseSize_{it} is the running variable: the size of the house purchased by household i .
- $D[\text{HouseSize}_{it} < 90]$ is an indicator dummy variable that equals 1 if the house size is below $90m^2$, and 0 otherwise.
- $f(\text{HouseSize}_{it} - 90)$ and $g(\text{HouseSize}_{it} - 90)$ are flexible functions of the house size relative to the cutoff (not necessarily the same)

Plans

- Regress OLS equation to evaluate the effect of the policy on the house price.
- Mechanism:
 - ① Implement sharp-RD using the $90m^2$ threshold to examine the relationship between housing price and divorce.
 - ② Build the theoretical model about the mechanism of policies affect divorce rate through housing price (ideal result: the policy affects the divorce rate by $-x\%$, and main mechanism is through housing price).
- Conduct robustness checks including sensitivity analyses with different bandwidths. Implement alternative functional forms of f and g if the empirical result turns out they are nonlinear or not the same.

References



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