

# A Historical Housing Price Index from South China: 1570–1949

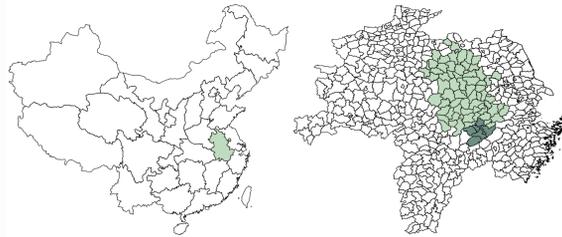
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## Introduction

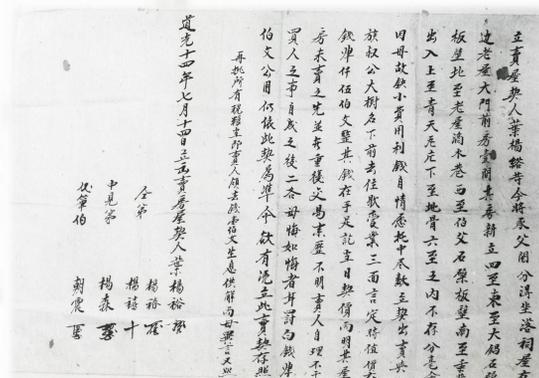
- Economic studies on premodern housing markets are still limited by the scarcity of data and the scope of which is limited to a few urban areas scattered across the globe.
- In this paper, I collect a unique housing transaction dataset with over 1000 observations from the historic Huizhou prefecture, a relatively rural area in south China that had strong economic influence in late imperial China.
- This study develops a housing price index that covers the late Ming Dynasty, the Qing Dynasty, and the Republic of China era (1570–1949).
- My results reveal price determinants that are unique to the historical and cultural background of the Huizhou housing market.

## Data

- The property transaction records were collected in southern Anhui province (the historic Huizhou prefecture):



- These transaction records look like:



- These houses look like:



- I obtain the following variables from these documents:

| Variable  | Mean  | Std.Dev. | Min    | Max   |
|---|-------|----------|--------|-------|
| Sample: All Transactions; N=1031                    |       |          |        |       |
| log(Price)  | 4.228 | 3.176    | -1.347 | 16.81 |
| Silver  | 0.351 | 0.478    | 0      | 1     |
| Female Seller                                       | 0.113 | 0.317    | 0      | 1     |
| Same Lineage  | 0.438 | 0.496    | 0      | 1     |
| Same Family   | 0.067 | 0.250    | 0      | 1     |
| Seller in Urgent Situation                          | 0.029 | 0.168    | 0      | 1     |
| Next to Ancestral Halls                             | 0.045 | 0.207    | 0      | 1     |
| Subsample: Residential and Commercial Houses; N=679 |       |          |        |       |
| log(Price)  | 4.650 | 3.191    | -1.204 | 16.81 |
| Silver  | 0.333 | 0.472    | 0      | 1     |
| Number of Rooms                                     | 3.362 | 4.778    | 0      | 72    |
| Female Seller                                       | 0.113 | 0.317    | 0      | 1     |
| Same Lineage  | 0.436 | 0.496    | 0      | 1     |
| Same Family   | 0.077 | 0.266    | 0      | 1     |
| Seller in Urgent Situation                          | 0.034 | 0.181    | 0      | 1     |
| Next to Ancestral Halls                             | 0.056 | 0.230    | 0      | 1     |
| Abandoned   | 0.021 | 0.142    | 0      | 1     |
| New   | 0.038 | 0.192    | 0      | 1     |

## Method

- For price indices:  

$$\ln(\text{Price}_{it}) = \beta X_{it} + \gamma_1 T_i + \gamma_2 \text{county}_i + \epsilon_{it}$$
  - $T_i$  is a vector of time dummy variables;  $\gamma_1$  are the base values of price indices.
- For housing price determinants:  

$$\ln(\text{Price}_{it}) = \beta X_{it} + \gamma_1 T_i + \gamma_2 \text{county}_i + \gamma_3 T_i * \text{county}_i + \epsilon_{it}$$
  - $X_{it}$  is a vector of housing characteristics, such as the number of rooms, location, etc.,  $\beta$  reflects the impact of each characteristic on the housing price.

## Price Determinants

- Conventional determinants such as the size and layout of the property played a role in Huizhou:

|                    | (1)<br>log(House Price) | (2)<br>log(Land Price) |
|--------------------|-------------------------|------------------------|
| House Size & Style |                         |                        |
| 3 Room Style       | 0.960<br>(1.45)         | 0.115<br>(1.17)        |
| 3Room × Rooms      | 0.054*<br>(2.06)        | 0.071*<br>(2.19)       |
| 4 Room Style       | 0.951<br>(1.43)         | -0.005<br>(-0.01)      |
| 4Room × Rooms      | 0.081***<br>(5.41)      | 0.116*<br>(2.36)       |
| Other × Rooms      | 0.323<br>(1.39)         | 0.073<br>(0.23)        |

- Several price determinants are unique to the historical and cultural context:

| Seller/Buyer Characteristics |                    |                    |                   |                   |
|------------------------------|--------------------|--------------------|-------------------|-------------------|
| Female Seller                | -0.185<br>(-0.92)  | -0.097<br>(-0.34)  | -0.563<br>(-0.92) | 0.033<br>(0.04)   |
| Same Lineage                 | 0.045<br>(0.34)    | -0.135<br>(-0.79)  | 0.355<br>(1.05)   | -0.169<br>(-0.29) |
| Same Family                  | 0.056<br>(0.24)    | 0.431<br>(1.18)    | 0.431<br>(0.49)   | -2.370<br>(-1.15) |
| Seller in Urgent Situation   | 1.327***<br>(4.08) | 0.451***<br>(3.80) | 0.270<br>(0.20)   | 3.113<br>(1.32)   |
| Transaction Characteristics  |                    |                    |                   |                   |
| Next to Ancestral Hall       | 0.732**<br>(2.86)  | 0.682*<br>(1.80)   | 0.570<br>(0.55)   | 0.862<br>(0.61)   |
| Next to Temple               | -0.658<br>(-1.32)  | -1.342*<br>(-1.88) |                   |                   |
| Old                          | 0.290<br>(0.74)    | 0.141<br>(0.25)    |                   |                   |
| New                          | 0.248<br>(0.83)    | 0.037<br>(0.09)    |                   |                   |
| Decade or Year FE            |                    |                    |                   |                   |
|                              | Decade             | Year               | Decade            | Year              |

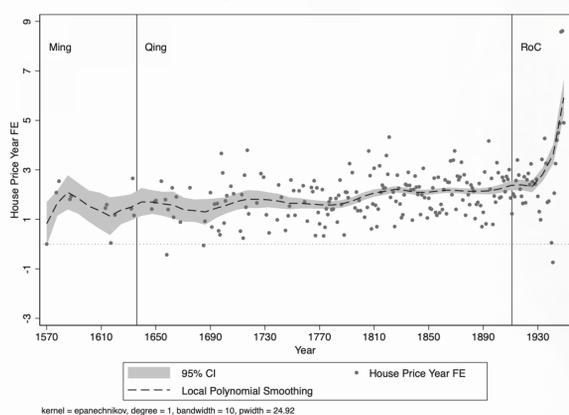
- Property owners in Huizhou preferred an east- or south-facing house:

| House Orientation    |                   |                  |     |     |
|----------------------|-------------------|------------------|-----|-----|
| East                 | 0.752*<br>(2.13)  | 0.951*<br>(1.69) |     |     |
| West                 | -0.328<br>(-0.80) | 0.487<br>(0.80)  |     |     |
| South                | 0.831*<br>(2.40)  | 0.969*<br>(1.96) |     |     |
| Transaction Methods  |                   |                  |     |     |
| Currency             | ✓                 | ✓                | ✓   | ✓   |
| County FE            | ✓                 | ✓                | ✓   | ✓   |
| Decade FE            |                   |                  | ✓   |     |
| Year FE              |                   | ✓                |     |     |
| Currency × Decade FE | ✓                 | ✓                | ✓   | ✓   |
| County × Decade FE   | ✓                 |                  | ✓   |     |
| County × Year FE     |                   | ✓                |     | ✓   |
| N                    | 678               | 678              | 172 | 172 |

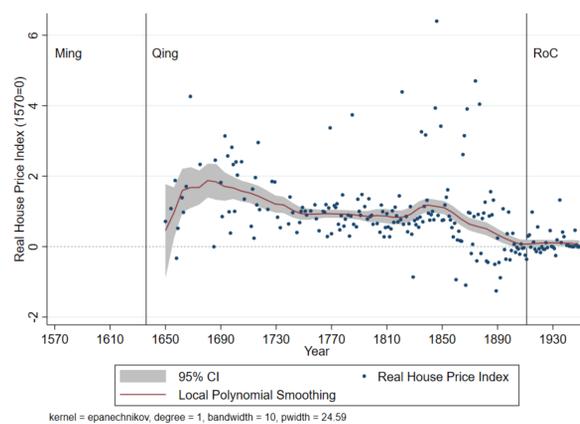
t statistics in parentheses  
\* p < 0.1, \*\* p < 0.01, \*\*\* p < 0.001

## The Huizhou Index

- Nominal house price index:



- Real house price index:



- To construct the real index, the nominal prices are deflated using a consumer price index from Peng (2006), which is constructed based on price information of rice, cotton, and silk collected from the nearby Yangtze Delta region.

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