

Chinese Housing Market and Bank's Credit Supply

Masaya Sakuragawa*, Satoshi Tobe**, Mengyuan Zhou***¹

Abstract

This paper studies the determinants of the Chinese housing price using the panel data covering the whole regions for 31 provincial-level regions for 2000-2015. The bank's credit is the primary determinant of the housing prices. A one-percentage point increase in the growth of bank lending raises the growth of housing price by 0.219% in the average of commercialized buildings. The sensitivities are higher for office and business buildings than residential buildings. The findings are robust by using the dynamic panel GMM that controls for the endogeneity and alternative data sets published by the private sector.

Keywords: Housing Price, Bank Credit, Chinese Economy

JEL classification: E5

¹ * Faculty of Economics, Keio University, 2-15-45, Mita, Minato-ku, Tokyo, 108-8345, Japan, masaya822@gmail.com.

** School of Policy Studies, Kwansai Gakuin University, 2-1, Gakuen, Sanda, Hyogo 669-1337, Japan.

*** Graduate School of Economics, Keio University, 2-15-45, Mita, Minato-ku, Tokyo, 108-8345, Japan.

1. Introduction

The dramatic appreciation in the Chinese housing prices has received great concern as one of important risk in the economy. Figure 1 shows the annual growth rate of housing prices in Beijing, Shanghai, and Shenzhen, showing the positive growth rates for almost of the interval along with the boom and bust cycle.² During the past decade, the housing price continued to appreciate, but did not fell. This observation is contrasted sharply with bubble episodes that occurred in Japan in the late 1980s and the US in the 2000s, both of which peaked out after almost five years.

Insert Figure 1 Here

Ever since the seminal contributions of Kindleberger (1978) and Minsky (1986), the bank's credit supply is widely believed to be a primary driver of the appreciation in the housing price. Some empirical evidence also supports this hypothesis in periods of asset bubbles that result in the financial crises (e.g., Gourinchas and Obstfeld 2012, and Jordà, Chularick, and Taylor 2015). As Figure 2 illustrates, the bank credit outstanding is expanding at a rate far higher than GDP for almost periods, and this trend is clearer more recently.³

Insert Figure 2 Here

The aim of this paper is to investigate how the bank's credit influences the housing price. At least to our small knowledge, there is no empirical analysis in China that relates the bank's credit supply to the housing price because it is difficult to access the comprehensive dataset for the bank's credit across regions.

² Data source: "Chinese Quality-Controlled Housing Price (newly built commercial housing)" from "Hang Lung Center for Real Estate, Tsinghua University"

³ Data source: "GDP (constant LCU)" from World Bank and "Credit to Private Non-financial Sector from Banks" from Bank for International Settlements.

As is well known, the Chinese financial markets are regulated. Our concern is if the government controls credit effectively to stabilize the housing prices. This hypothesis is interesting because there is little evidence that the government deals successfully with asset bubbles. To investigate the role of the bank credit as a determinant of the housing price is the starting point of this study.

We investigate the determinants of the Chinese housing price using the panel data of 31 provincial-level regions for 2000-2015. We use the housing price indices that are published by the National Bureau of Statistics and cover all the regions in China. The empirical analysis reveals that the bank lending is the primary determinant of the housing prices. A one-percentage point increase in the growth of bank lending raises the growth of the average of commercialized buildings by 0.219% in. We also conduct the estimation by splitting the commercialized buildings into several categories. The sensitivities are higher for commercialized office and business buildings than commercialized residential buildings. The findings are robust by performing the dynamic panel Generalized Method of Moments (GMM) method to control for the endogeneity.

On the other hand, there is concern if the official house price index underestimates real house price appreciations (Wu, Deng, and Liu 2014, and Bian and Gete 2015). We complement the analysis by using different price indices published by the private sector although the data availability is limited to several large cities. These findings indicate that bank's credit supply plays a key role in explaining dynamics of Chinese housing market.

An increasing literature studies the Chinese housing market. Shih, Lib, and Qin (2014), Wu, Deng, and Liu (2014), Bian and Gete (2015), Du and Zhang (2015), Chen and Wen (2016), and others investigate the determinants of housing prices and/or its macroeconomic interaction. To our small knowledge, none of them addresses the bank's

credit because the comprehensive dataset for the bank's credit is not available. This is the first paper that links the credit supply to the Chinese housing price using a panel data analysis.

The remainder of this paper is organized as follows: Section 2 describes housing market data, Section 3 presents empirical analysis with provincial-level regions data, section 4 provides additional analysis with city-level data, and Section 5 concludes.

2. Data

Our panel dataset consists of yearly data for the period of 2000-2015 from 31 provincial-level regions, including 22 provinces, 5 autonomous regions, and 4 direct-controlled municipalities.⁴ The direct-controlled municipalities, including Beijing, Tianjin, Shanghai and Chongqing, are the cities which have the same administrative rank as the provinces in China. Table 1 provides the data source for housing prices, the credit supply, the gross regional product, the inflation rate, and the population growth.

Insert Table 1 Here

As an index for housing prices, we use the average selling price of commercialized buildings (hereafter ASP) that is published by the National Bureau of Statistics of China (NBSC). We conduct estimation by splitting the commercial buildings into four categories, commercialized residential buildings (including villas, high-grade apartments), commercialized office buildings, houses for business, and other commercialized buildings.

⁴ In this empirical analysis, we did not include 2 Special Administrative Regions (Hong Kong and Macao) and Taiwan province.

There is some concern about the reliability of the official house price index. A natural question is if the official house price index underestimates real house price appreciations. Some house price indices published by the private sector, such as “Chinese Residential Land Price Index (CRLPI)” and “Chinese Quality-Controlled Housing Price (CQCHPI)”, suggest that the official house price index shows less volatile dynamics and more moderate appreciation than the reality (Wu, Deng, and Liu 2014, and Bian and Gete 2015). Figure 3 illustrates the time series of three price indices.⁵

Insert Figure 3 Here

The data availability of these private indices is limited. CRLPI covers 12 large cities, and CQCHPI does 8 large cities, such as Beijing, Shanghai, and Tianjin. Additionally, CRLPI covers the period after, and CQCHPI from 2006. In contrast, ASP covers all the provincial regions for the period from 2000 on, which enables us to perform more comprehensive analysis on Chinese housing markets. The relatively moderate behavior of ASP may reveal that the estimates reported in the next section is interpreted as conservative.

The year-end loan data is collected from the Statistical Yearbooks of each provincial-level regions or local statistics bureau websites. See Appendix for the individual sources of data. As this paper aims at examining the housing price within China, we think that the best indicator is the loans in Renminbi in Chinese financial institutions. If such indicator is unavailable, we do not discriminate Renminbi from foreign currencies or domestic financial institutions from foreign-funded ones.

⁵ “ASP_housing (4 municipalities)” is normalized at 100 in 2005, “National CRLPI” is in 2004, and “Avg. CQCHPI” is in 2006. “ASP_housing (4 municipalities)” represents the average selling price of the 4 direct-controlled municipalities, Beijing, Shanghai, Tianjin and Chongqing. “National CRLPI” retrieved from “Chinese Quality-Controlled Housing Price (newly built commercial housing)”. “Avg. CQCHPI” represents the average value of CQCHPI for the 8 cities (Beijing, Shanghai, Tianjin Shenzhen, Chengdu, Dalian, Wuhan and Xian).

Regional GDP (hereinafter referred to as Gross Regional Product), Consumer Price Index and Year-end Resident Population are retrieved from the database of the NBSC under ‘Nation Accounts’, ‘Price Index’ and ‘Population’ Indicators, respectively.

3. Empirical Analysis for Housing Price with Provincial-level Regions Data

3.1 Baseline analysis

This paper investigates the effects of supply of bank’s credit on Chinese housing prices. As a baseline analysis, we perform panel regressions with unit-level (province- or city-level) fixed effect, using the dataset described in the previous section. This time-invariant fixed effect can capture unobserved individual (demand) factor, which reduces concern of the omitted-variable bias.

The dependent variable is the annual growth rate of housing prices. This estimation uses four housing price indices: growth of average selling price of commercialized buildings ($\Delta ASP_{housing}$), and the three subgroups, residential buildings (ΔASP_{resid}), office buildings (ΔASP_{office}), and business buildings ($\Delta ASP_{business}$). As the explanatory variable, the estimations include growth of bank lending ($\Delta Loan$) as the variable for supply of bank credit. The estimations also include real GRP per capita growth ($\Delta Real_GRPpc$), inflation rate ($Inflation$), and population growth ($\Delta Population$) to control the effects of region-specific fundamentals. All these variables are winsorized at the 2.5 percentile to avoid possible problem caused by the outliers⁶. Summary statistics on these variables are summarized in Table 2. Finally, to reduce endogeneity concern, all the right-hand-side variables are lagged by one year in this baseline analysis.

Insert Table 2 Here

⁶ Results hold if we use non-winsorized data.

Table 3 summarizes the results of panel regressions, which uses growth of average selling price of commercialized buildings (*ΔASP_housing*) as a dependent variable. Column 1 shows the results of a preliminary analysis that includes only the fundamentals. As can be seen, real GRP per capita growth has a positively significant coefficient, which is consistent with the literature (e.g., Case and Shiller, 2003). The other fundamentals have expected coefficients, but are insignificant. Thus, these results suggest that standard fundamentals largely perform well in explaining dynamics of housing price in China.

Insert Table 3 Here

We present main results. Column 2 shows that the coefficient of bank lending is positively significant, indicating that an increase in supply of bank's credit contributes to a subsequent appreciation in housing assets. This finding remains unchanged even when the estimations include different sets of control variables (column 3-8). For example, a one-percentage point increase in growth of bank lending raises growth of housing price by 0.219% (Column 2).

Table 4-6 shows the results for three subgroups of housing price indices. The findings are qualitatively similar those on commercialized buildings. Interesting is the case for commercialized office buildings. The housing price is very sensitive to bank lending and real GRP per capita growth rate. For example, a one-percentage point increase in growth of bank lending raises growth of housing price by 0.371% (Column 2). Coefficients of bank credit become larger in columns (3) to (8). In addition, the population growth is statistically significant. Therefore, the overall results indicate that bank lending plays a key role in explaining housing price dynamics in China, as well as real GRP per capita growth.

Insert Table 4 Here

Insert Table 5 Here

Insert Table 6 Here

3.2 Robustness checks

We complement our panel regressions by performing the dynamic panel Generalized Method of Moments (GMM) method (e.g., Arellano and Bond 1991). The panel GMM method can be used not only to control for the dynamic relation between housing price and bank credit but also to eliminate potential endogeneity. The most concern is the reverse causation from the housing price to credit, whereby appreciations in housing price mitigate the collateral constraints and expand credit (e.g., Kiyotaki and Moore 1997). In the panel GMM analysis, we treat all the repressors and the one-period lagged dependent variable as endogenous variables.

Insert Table 7 Here

Table 7 summarizes the results obtained by Arellano-Bond method. Columns (1), (3), (5), and (7) show the one-step estimation results. Similarly, columns (2), (4), (6), and (8) show the two-step estimation results. The results are qualitatively similar to the baseline analysis. They show that change in bank credit and real GRP per capita growth remain positively significant, especially when we use average selling price of commercialized buildings, residential buildings, and office buildings. These results indicate the robustness of the baseline results.⁷

4. Empirical Analysis for Alternative Housing Price Index with City-level Data

This section examines the interaction between housing price and bank credit using Chinese city-level panel data. As discussed above, there is some concern that official housing price index may underestimate the appreciation of the price. We use the price

⁷ P-values of Hansen test of two-step estimation shows the value of unity. This is a typical symptom that specification includes many instruments. This can be avoided by restricting the number of instruments. Actually, we confirmed that this problem disappears by changing the settings of instruments while remaining the key results. However, we do not choose this strategy to minimize the arbitrary decision.

index published by the private sector, called, “Chinese Residential Land Price Index (CRLPI)”, which supposedly captures well the real appreciations,

However, the private index only covers twelve cities listed in Table 8 and the period from 2004 to 2016. As a result, the analysis using city-level panel data become less comprehensive compared to the previous analysis.

Insert Table 8 Here

Panel regressions include growth of Residential Land Price Index ($\Delta CRLPI$) as dependent variable, growth of bank credit ($\Delta Loan_{city}$), growth of real GRP per capita ($\Delta Real_GRPpc$), and population growth ($\Delta Population_{city}$) as independent variables. The regressions also include city-level fixed effect. In the following analysis, inflation is omitted because CRLPI is CPI-controlled index by construction. Further details and data source are summarized in Table 9. Finally, all the right-hand-side variables are lagged by one year, and all the data is winsorized at the 2.5 percentile to limit the undesirable effect of the outliers. Table 10 shows summary statistics.

Insert Table 9 Here

Insert Table 10 Here

Table 11 shows the estimated results. The key results are consistent with the previous analysis. Coefficients of bank credit are positively significant (columns 2-4). More importantly, these coefficients become larger compared to the previous ones. For example, a one-percentage point increase in growth of bank credit leads to subsequent increase in growth of CRLPI by 1.271% (column 2). This reflects the higher rate of housing price appreciation in large city area.

Insert Table 11 Here

Coefficients of growth of real GRP per capita become negatively significant. This result is inconsistent with the one presented in the last section and the theoretical prediction. Housing price appreciation under show-down of real economy from the late-2000s described in Figure 1 can explain these results. Coefficients of population growth are positive as expected, but they are not statistically significant. Therefore, these results suggest that bank credit supply underpins housing price appreciation in large city area after the mid-2000s.

Insert Table 12 Here

We also perform the panel GMM analysis as a robustness check, following the same settings to the exercise in the previous section. Table 12 summarizes the results. As shown in the results of one-step estimation, the coefficient of bank credit remains positively significant (column 1), which corroborates the key findings in Table 11. Coefficients of real GRP per capita growth and population growth show positive, but are insignificant. If we implement two-step estimation, coefficient of bank credit became insignificant (column 2). Thus, these panel GMM analysis indicates that results using city-level panel data are marginally robust.

5. Conclusion

This paper studies the determinants of the Chinese housing price using the panel data of 31 provincial-level regions for 2000-2015. The real GRP per capita growth and the bank's credit supply are primary determinants of the housing prices.

The final concern is on the interpretation on the findings. Greenspan (2002) that remarked at Federal Reserve Bank of Kansas City symposium, "it was very difficult to

definitively identify a bubble until after the fact--that is, when its bursting confirmed its existence.” Controlling asset bubbles is a challenging policy area.

As is well known, the bank’s credit allocation is distorted in China. The SOEs (state owned enterprises) have easy access to bank credit, but the private firms and individuals do not. Combined with the fact the housing price persisted to appreciate but never fell (Figure 1), our findings suggest a possibility that the credit control contributes to stabilizing the housing bubbles.

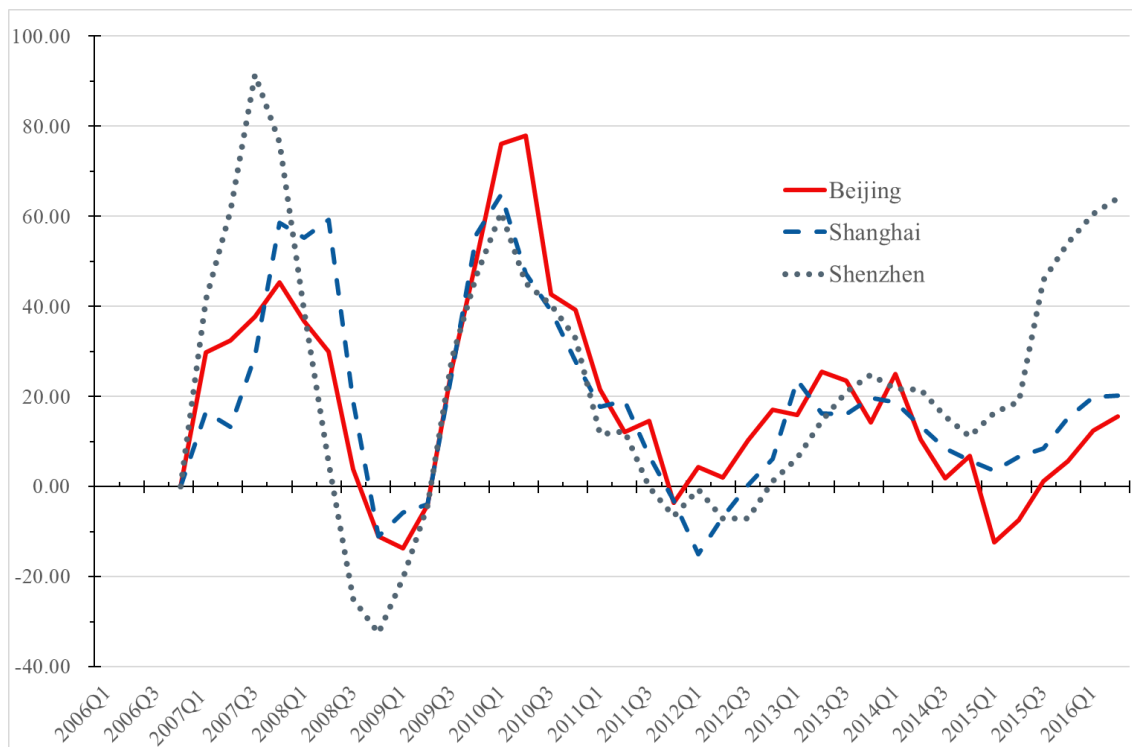
Of course, we should be modest to finalizing conclusion. For example, we did not consider the effect of the shadow banking that has grown in the last decade in China and supposedly has had an impact on the housing market. The shadow banking is by definition the credit intermediation outside the traditional banking system and hence uncontrollable by the government. The further research is necessary to convince the conclusion.

Reference

- Arellano Manuel., and Stephen Bond, Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *The Review of Economic Studies*, Volume 58, Issue 2, 1 April 1991, Pages 277–297,
- Bian, Timothy Yang., and Pedro Gete, What drives housing dynamics in China? A sign restrictions VAR approach, *Journal of Macroeconomics*, Volume 46, December 2015, Pages 96-112.
- Case, Karl, and Shiller, Robert, In There a Bubble in the Housing Market?, *Brookings Papers on Economic Activity*, 2003, pp.299-342.

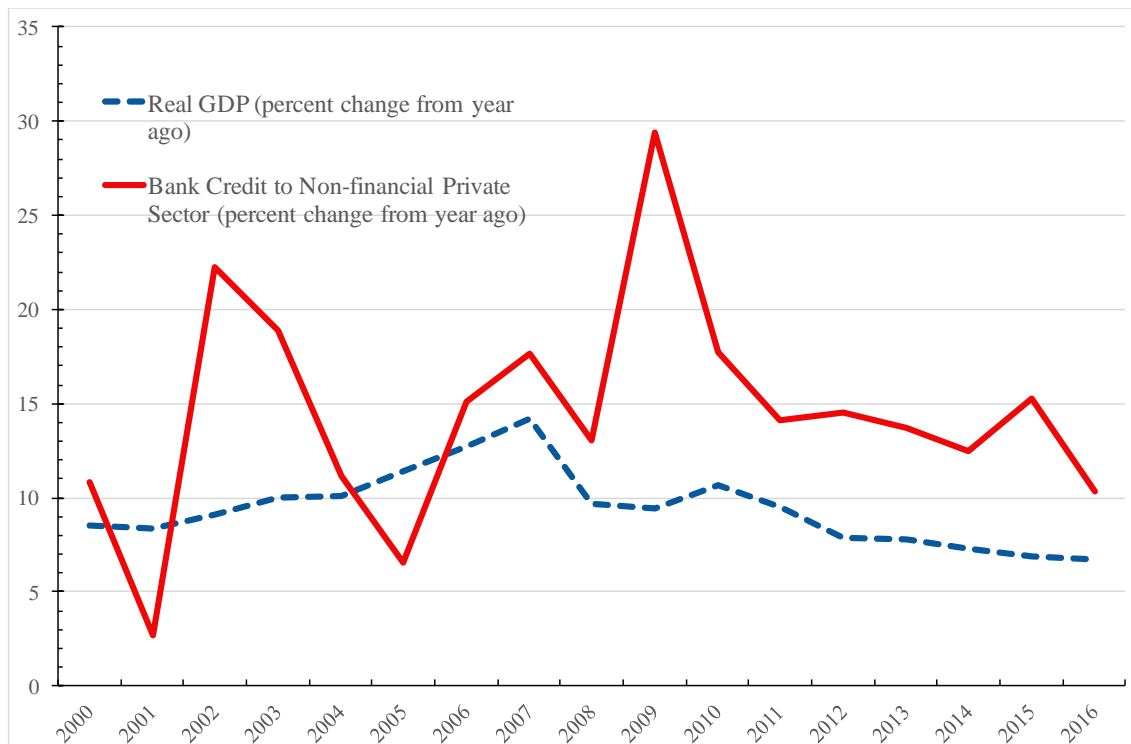
- Du, Zaichao., Lin Zhang, Home-purchase restriction, property tax and housing price in China: A counterfactual analysis, *Journal of Econometrics*, Volume 188, Issue 2, October 2015, Pages 558-568.
- Gourinchas, P., Obstfeld, M., 2012. Stories of the twentieth century for the twenty-first. *American Economic Journal of Macroeconomics*. 4(1), 226–265
- Greenspan, Alan, Economic Volatility, Federal Reserve Bank of Kansas City symposium, Jackson Hole, 2002.
- Òscar Jordà, Moritz Schularick, Alan M. Taylor, Leveraged bubbles, *Journal of Monetary Economics*, Volume 76, Supplement, December 2015, Pages S1-S20
- Kaiji, Chen, and Yi Wen, The Great Housing Boom of China, *American Economic Journal of Macroeconomics* 2016.
- Kindleberger, C, P., 1978, *Manias, Panics, and Crashes, A history of Financial Crises*, 3ed edition, 1996, London, Macmillan.
- Kiyotaki Nobuhiro., and John Moore, Credit Cycles, *Journal of Political Economy* Volume 105, Number 2, April 1997
- Minsky, Hyman P., *Stabilizing an unstable economy*, Yale University Press, 1986.
- Shih, Yu-Nien., Hao-Chuan Lib, Bo Qin, Housing price bubbles and inter-provincial spillover: Evidence from China, *Habitat International* Volume 43, July 2014, Pages 142-151.
- Wu, Jing., Yongheng Deng, Hongyu Liu, House Price Index Construction in the Nascent Housing Market: The Case of China, *The Journal of Real Estate Finance and Economics*, April 2014, Volume 48, Issue 3, pp 522–545.

Figure 1. Annual Appreciation Rate of Housing Prices



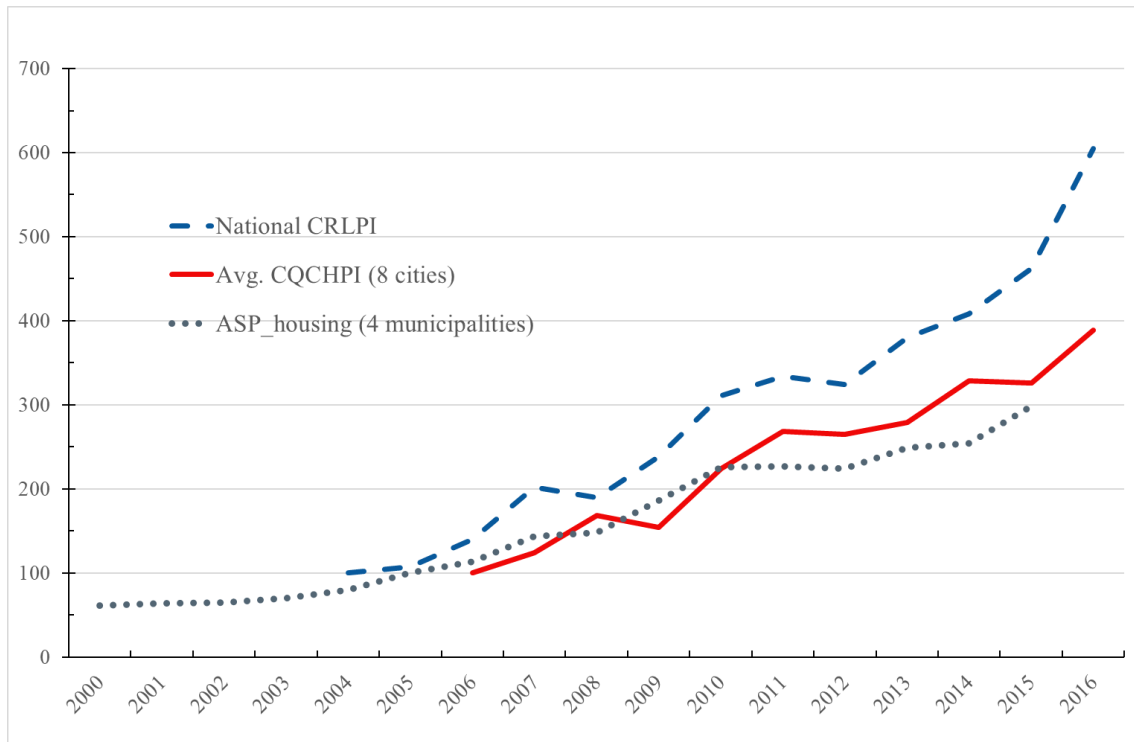
(source: Chinese Quality-Controlled Housing Price)

Figure 2. China's Credit Expansion



(source: World Bank and BIS)

Figure 3. Three Different Price Indices



(source: National Bureau of Statistics of China and Hang Lung Center for Real Estate, Tsinghua University)

Table 1. Variables and Data Sources

Notation	Description	Year	Source
ASP_housing	Average Selling Price of Commercialized Buildings(yuan/sq.m)	1999-2015	National Bureau of Statistics of China
ASP_resid	Average Selling Price of Commercialized Residential Buildings(yuan/sq.m)	1999-2015	National Bureau of Statistics of China
ASP_office	Average Selling Price of Commercialized Office Buildings(yuan/sq.m)	1999-2015	National Bureau of Statistics of China
ASP_business	Average Selling Price of Houses for Business Use(yuan/sq.m)	1999-2015	National Bureau of Statistics of China
Loan	The year-end loan in Financial Institutions	1999-2015	Statistical Yearbooks of each provincial-level regions or local statistics bureau websites
Real_GRPpc	Real Gross Regional Product per capita	1999-2015	National Bureau of Statistics of China
CPI	Consumer Price Index (preceding year=100)	1999-2015	National Bureau of Statistics of China
pop_resid	Resident Population (year-end) (10000 persons)	2000-2015	National Bureau of Statistics of China

Table 2. Summary Statistics

	Mean	Std. Dev	Min	Max	Observation
Δ ASP_housing	0.092	0.079	-0.065	0.277	465
Δ ASP_resid	0.095	0.081	-0.063	0.284	465
Δ ASP_office	0.084	0.234	-0.381	0.663	453
Δ ASP_business	0.082	0.150	-0.235	0.446	462
Δ Loan	0.149	0.067	0.008	0.328	496
Δ Real_GRPpc	0.102	0.043	0.005	0.190	465
Inflation	0.021	0.021	-0.019	0.063	527
Δ Population	0.008	0.010	-0.015	0.041	465

Table 3. Results of Panel Regressions for Average Selling Price of Commercialized Buildings

	Dependent Variable: $\Delta ASP_{\text{housing}}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta Loan(t-1)$		0.219*** (0.055)	0.211*** (0.050)	0.208*** (0.055)	0.225*** (0.054)	0.218*** (0.052)	0.239*** (0.056)	0.212*** (0.053)
$\Delta Real_GRPpc(t-1)$	0.437*** (0.118)	0.407*** (0.111)	0.426*** (0.107)			0.410*** (0.108)		0.423*** (0.110)
Inflation(t-1)	0.029 (0.149)	0.139 (0.148)		0.304* (0.153)		0.137 (0.148)	0.304* (0.163)	
$\Delta Population(t-1)$	0.026 (0.618)	-0.169 (0.625)			-0.392 (0.529)		-0.405 (0.603)	-0.154 (0.620)
constant	0.047*** (0.014)	0.015 (0.014)	0.016 (0.013)	0.054*** (0.009)	0.063*** (0.008)	0.013 (0.013)	0.053 (0.009)	0.018 (0.014)
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Region	31	31	31	31	31	31	31	31
Observation	434	434	434	465	434	434	434	434
Within R ²	0.046	0.075	0.074	0.036	0.032	0.075	0.038	0.074

Note. Standard errors clustering at provincial-level regions are reported in parenthesis. ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 4. Results of Panel Regressions for Average Selling Price of Commercialized Residential Buildings

	Dependent Variable: $\Delta ASP_{\text{resid}}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta Loan(t-1)$		0.170*** (0.056)	0.163*** (0.052)	0.186*** (0.055)	0.180*** (0.056)	0.167*** (0.052)	0.193*** (0.058)	0.165*** (0.055)
$\Delta Real_GRPpc(t-1)$	0.497*** (0.114)	0.474*** (0.110)	0.488*** (0.104)			0.478*** (0.107)		0.484*** (0.107)
Inflation(t-1)	0.005 (0.133)	0.090 (0.137)		0.324** (0.145)		0.087 (0.136)	0.283* (0.149)	
$\Delta Population(t-1)$	-0.123 (0.771)	-0.275 (0.796)			-0.538 (0.739)		-0.549 (0.746)	-0.265 (0.792)
constant	0.045*** (0.014)	0.020 (0.013)	0.020 (0.012)	0.059*** (0.009)	0.074*** (0.008)	0.018 (0.012)	0.065*** (0.009)	0.022 (0.013)
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Region	31	31	31	31	31	31	31	31
Observation	434	434	434	465	434	434	434	434
Within R ²	0.055	0.072	0.071	0.029	0.020	0.072	0.025	0.072

Note. Standard errors clustering at provincial-level regions are reported in parenthesis. ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 5. Results of Panel Regressions for Average Selling Price of Commercialized Office Buildings

	Dependent Variable: ΔASP_office							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta Loan(t-1)$		0.371** (0.160)	0.409** (0.165)	0.422*** (0.153)	0.401** (0.170)	0.409** (0.167)	0.419** (0.174)	0.374** (0.159)
$\Delta Real_GRPpc(t-1)$	0.936*** (0.279)	0.884*** (0.264)	0.815*** (0.235)			0.814*** (0.258)		0.878*** (0.239)
Inflation(t-1)	-0.243 (0.657)	-0.049 (0.669)		0.494 (0.577)		0.006 (0.660)	0.331 (0.613)	
$\Delta Population(t-1)$	4.336*** (0.907)	4.014*** (0.845)			3.489*** (0.930)		3.466*** (0.946)	4.007*** (0.836)
constant	-0.037 (0.029)	-0.091** (0.041)	-0.059 (0.040)	0.009 (0.025)	0.001 (0.027)	-0.059 (0.041)	-0.009 (0.033)	-0.092** (0.041)
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Region	31	31	31	31	31	31	31	31
Observation	423	423	423	453	423	423	423	423
Within R ²	0.033	0.042	0.031	0.015	0.021	0.031	0.022	0.042

Note. Standard errors clustering at provincial-level regions are reported in parenthesis. ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 6. Results of Panel Regressions for Average Selling Price of Commercialized Business Buildings

	Dependent Variable: $\Delta ASP_business$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta Loan(t-1)$		0.330*** (0.098)	0.288*** (0.094)	0.257*** (0.091)	0.308*** (0.097)	0.331*** (0.097)	0.360*** (0.100)	0.287*** (0.095)
$\Delta Real_GRPpc(t-1)$	0.644*** (0.181)	0.598*** (0.176)	0.694*** (0.165)			0.597*** (0.175)		0.697*** (0.166)
Inflation(t-1)	0.687** (0.304)	0.853*** (0.298)		0.938*** (0.274)		0.854*** (0.296)	1.097*** (0.274)	
$\Delta Population(t-1)$	0.399 (0.554)	0.105 (0.538)			-0.197 (0.663)		-0.241 (0.679)	0.194 (0.524)
constant	-0.005 (0.016)	-0.053** (0.020)	-0.034 (0.022)	0.021 (0.015)	0.038** (0.014)	-0.052 (0.021)	0.002 (0.016)	-0.036 (0.021)
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Region	31	31	31	31	31	31	31	31
Observation	432	432	432	462	432	432	432	432
Within R ²	0.042	0.061	0.048	0.029	0.016	0.061	0.038	0.048

Note. Standard errors clustering at provincial-level regions are reported in parenthesis. ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 7. Results of Dynamic Panel GMM Methods (Arellano-Bond Method)

	$\Delta ASP_housing$		ΔASP_resid		ΔASP_office		$\Delta ASP_business$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta Loan$	0.234*** (0.064)	0.233*** (0.078)	0.228*** (0.064)	0.224** (0.096)	0.337* (0.178)	0.199 (0.408)	0.134 (0.103)	0.126 (0.133)
$\Delta Real_GRPpc$	0.661*** (0.097)	0.604*** (0.122)	0.674*** (0.098)	0.637*** (0.136)	0.965*** (0.278)	1.383*** (0.503)	0.816*** (0.159)	0.799*** (0.263)
Inflation	0.227 (0.191)	0.319 (0.257)	0.204 (0.198)	0.220 (0.276)	1.286** (0.525)	-0.238 (1.326)	-0.043 (0.298)	-0.015 (0.337)
$\Delta Population$	0.057 (0.783)	0.048 (1.710)	-0.261 (0.845)	0.488 (2.385)	-1.384 (1.261)	-6.170 (9.156)	1.186 (0.943)	0.373 (2.475)
dependent var (t-1)	-0.043 (0.063)	-0.035 (0.082)	-0.016 (0.062)	-0.042 (0.089)	-0.341 (0.042)	-0.346*** (0.069)	-0.345 (0.039)	-0.335*** (0.042)
# Region	31	31	31	31	31	31	31	31
Observation	403	403	403	403	391	391	398	398
Estimator	1-step	2-step	1-step	2-step	1-step	2-step	1-step	2-step
AR(1)	-4.67	-3.61	-4.76	-3.57	-4.64	-3.43	-4.62	-3.79
[p-value]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]
AR(2)	0.10	0.13	-0.08	-0.14	-1.74	-1.29	-2.08	-1.57
[p-value]	[0.918]	[0.894]	[0.940]	[0.892]	[0.081]	[0.198]	[0.038]	[0.116]
Hansen test	373.04	29.28	374.93	29.52	319.87	25.15	343.77	28.00
[p-value]	[0.064]	[1.000]	[0.056]	[1.000]	[0.585]	[1.000]	[0.330]	[1.000]

Note. Robust standard errors are reported in parenthesis. ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 8. Sampled Cities

Beijing	Tianjin	Shanghai	Chongqing
Chengdu	Hangzhou	Nanjing	Wuhan
Guangzhou	Xian	Dalian	Changsha

Table 9. Variables and Data Sources (City-level Panel data)

Notation	Description	Year	Source
CRLPI	Chinese Residential Land Price Index	2004-2016	Hang Lung Center for Real Estate, Tsinghua University
Loan_City	The year-end loan in Financial Institutions	2004-2016	Statistical Yearbooks of each city
Real_GRPpc_City	Real Gross Regional Product per capita	2004-2016	National Bureau of Statistics of China
CPI_City	Consumer Price Index (preceding year=100)	2004-2016	Statistical Yearbooks of each city
Population_City	Total Population (year-end) (10000 persons)	2004-2016	National Bureau of Statistics of China

Table 10. Summary Statistics (City-level Panel data)

	Mean	Std. Dev	Min	Max	Observation
Δ CRLPI	0.146	0.272	-0.378	0.635	136
Δ Loan_City	0.149	0.063	0.055	0.367	140
Δ Real_GRPpc_City	0.103	0.045	0.023	0.209	138
Δ Population_City	0.009	0.005	-0.001	0.021	144

Table 11. Results of City-level Panel Regressions for Residential Land Price Index

	Dependent Variable: Δ CRLPI			
	(1)	(2)	(3)	(4)
Δ Loan_City(t-1)		1.353*** (0.309)	1.328*** (0.308)	0.905** (0.306)
Δ Real_GRPpc_City(t-1)	-0.986 (0.621)	-1.753*** (0.478)	-1.730*** (0.509)	
Δ Population_City(t-1)	3.772 (4.639)	4.969 (4.440)		4.327 (5.079)
constant	0.217*** (0.064)	0.078 (0.078)	0.125 (0.078)	-0.029 (0.049)
Fixed effect	Yes	Yes	Yes	Yes
# City	12	12	12	12
Observation	127	127	127	127
Within R ²	0.025	0.105	0.099	0.045

Note. Standard errors clustering at city-level are reported in parenthesis. ***, **, and * denote significance at the 1, 5 and 10 percent levels respectively.

Table 12. Results of Dynamic Panel GMM Methods (Arellano-Bond Method) for Residential Land Price Index with City-level Panel Data

	Dependent Variable: ΔCRLPI	
	(1)	(2)
$\Delta\text{Loan_City}$	0.881** (0.381)	0.793 (1.590)
$\Delta\text{Real_GDPpc_City}$	0.104 (0.591)	0.690 (3.605)
$\Delta\text{Population_City}$	4.076 (4.840)	6.925 (23.962)
$\Delta\text{CRLPI}(t-1)$	-0.237*** (0.060)	-0.259 (0.507)
Estimator	1-step	2-step
# City	12	12
Observation	106	106
AR(1)	-2.92	-1.05
[p-value]	[0.003]	[0.296]
AR(2)	-2.24	-0.92
[p-value]	[0.025]	[0.360]
Hansen test	95.73	11.46
[p-value]	[0.489]	[1.000]

Note. Robust standard errors are reported in parenthesis.
 ***, ** and * denote significance at the 1, 5 and 10 percent levels respectively.

Appendix A

Notation	Region	Description	Available Years	Source	Retrieved Date
ASP_housing	Provincial-level	Average Selling Price of Commercialized Buildings (yuan/sq.m)	1999-2015	National Bureau of Statistics of China	2017/10/14
ASP_resid	Provincial-level	Average Selling Price of Commercialized Residential Buildings (yuan/sq.m)	1999-2015	National Bureau of Statistics of China	2017/10/14
ASP_office	Provincial-level	Average Selling Price of Commercialized Office Buildings (yuan/sq.m)	1999-2015	National Bureau of Statistics of China	2017/10/14
ASP_business	Provincial-level	Average Selling Price of Houses for Business Use (yuan/sq.m)	1999-2015	National Bureau of Statistics of China	2017/10/14
Loan	Beijing	Deposit and Loan Balance of Financial Institutions (Including Foreign Banks) (1978-2015)	1999-2015	Beijing Statistical Yearbook 2016	2017/10/16
	Tianjin	RMB Deposit and Loan Balance of Chinese Financial Institutions,1981-2015	1999-2015	Tianjin Statistical Yearbook 2016	2017/10/18
	Hebei	Deposits and Loans Balances of Financial Institutions at Year-end	1999-2015	Hebei Statistical Yearbook 2016	2017/11/18
	Shanxi	Balance of Deposits and Loans in Renminbi of Financial Institutions	1999-2015	Shanxi Statistical Yearbook 2016	2017/10/23
	Inner Mongolia	Saving Deposits and Loans of Financial Institutions at Year-end	1999	Inner Mongolia Bureau of Statistics	2017/11/27
		Saving Deposits and Loans of Financial Institutions at Year-end	2000-2015	Inner Mongolia Bureau of Statistics	2017/10/16
	Liaoning	Deposits and Loans of Financial Institutions	1999	Liaoning Statistical Yearbook 2002	2017/10/16
		Deposits and Loans of Financial Institutions	2000-2002	Liaoning Statistical Yearbook 2003	2017/10/16
		Deposits and Loans of Financial Institutions	2003-2004	Liaoning Statistical Yearbook 2005	2017/10/16
		Deposits and Loans of Financial Institutions	2005-2007	Liaoning Statistical Yearbook 2009	2017/11/2
		Deposits and Loans of Financial Institutions	2008-2015	Liaoning Statistical Yearbook 2016	2017/10/16
	Jilin	Balance of Deposits and Loans of National Banking System	1999-2015	Jilin Statistical Yearbook 2016	2017/10/16

Notation	Region	Description	Available Years	Source	Retrieved Date	
	Heilongjiang	Finance, Banking and Insurance	1999-2015	Heilongjiang Statistical Yearbook 2016	2017/11/20	
	Shanghai	Saving Deposit and Loan Balance of Bank	1999	Shanghai Statistical Yearbook 2001	2017/11/28	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2000-2002	Shanghai Statistical Yearbook 2004	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2003	Shanghai Statistical Yearbook 2005	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2004	Shanghai Statistical Yearbook 2006	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2005	Shanghai Statistical Yearbook 2007	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2006	Shanghai Statistical Yearbook 2008	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions in Main Years	2007	Shanghai Statistical Yearbook 2009	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions at Year-End (2008~2009)	2008	Shanghai Statistical Yearbook 2010	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions at Year-End (2009~2011)	2009-2010	Shanghai Statistical Yearbook 2012	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions at Year-End (2011~2013)	2011-2012	Shanghai Statistical Yearbook 2014	2017/11/1	
		Saving Deposit and Loan Balance of Financial Institutions at Year-End (2013~2015)	2013-2015	Shanghai Statistical Yearbook 2016	2017/11/1	
		Jiangsu	The Balance of Deposits of Financial Institutions over the Years	1999-2015	Jiangsu Statistical Yearbook 2016	2017/10/16
		Zhejiang	Deposits and Loans of Financial Institutions (year-end,1978-2015)	1999-2015	Zhejiang Statistical Yearbook 2016	2017/10/18
	Anhui	Deposits and Loans of Financial Institutions	1999	Anhui Statistical Yearbook 2000	2017/10/18	
Total Deposits and Loan (RMB)in Financial Organ in Main Years		2000-2001	Anhui Statistical Yearbook 2010	2017/10/18		

Notation	Region	Description	Available Years	Source	Retrieved Date
		Year of Major Financial Institutions (including foreign) RMB Deposits and Loan Balance	2002-2015	Anhui Statistical Yearbook 2016	2017/10/18
	Fujian	RMB Deposits and Loans of Financial Institutions (1990-2015)	1999-2015	Fujian Statistical Yearbook 2016	2017/11/9
	Jiangxi	National Economic and Social Development Statistical Communique	1999-2002	Jiangxi Bureau of Statistics	2017/11/27
		Balance Sheet of Credit Funds of Financial Institutions	2003	Jiangxi Statistical Yearbook 2004	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions	2004	Jiangxi Statistical Yearbook 2005	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions	2005	Jiangxi Statistical Yearbook 2006	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end	2006-2010	Jiangxi Statistical Yearbook 2011	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end	2011	Jiangxi Statistical Yearbook 2012	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end (2012)	2012	Jiangxi Statistical Yearbook 2013	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end (2013)	2013	Jiangxi Statistical Yearbook 2014	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end (2014)	2014	Jiangxi Statistical Yearbook 2015	2017/11/1
		Balance Sheet of Credit Funds of Financial Institutions at Year-end (2015)	2015	Jiangxi Statistical Yearbook 2016	2017/11/1
		Shandong	RMB Loans of Financial Institutions in Major Years	1999-2015	Shandong Statistical Yearbook 2016
	Henan	Main Indicators of Banking and Insurance	1999-2015	Henan Statistical Yearbook 2016	2017/11/9
	Hubei	Credit Funds of Financial Institutions	1999	Hubei Statistical Yearbook 2001	2017/11/28
		Credit Funds of Financial Institutions	2000	Hubei Statistical Yearbook 2002	2017/11/28

Notation	Region	Description	Available Years	Source	Retrieved Date
		Credit Funds of Financial Institutions	2001	Hubei Statistical Yearbook 2003	2017/11/28
		Credit Funds of Financial Institutions	2002	Hubei Statistical Yearbook 2004	2017/11/28
		Credit Funds of Financial Institutions	2003-2004	Hubei Statistical Yearbook 2005	2017/11/28
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2005-2008	Hubei Statistical Yearbook 2010	2017/11/1
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2009-2010	Hubei Statistical Yearbook 2011	2017/11/28
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2011	Hubei Statistical Yearbook 2013	2017/11/1
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2012	Hubei Statistical Yearbook 2014	2017/11/1
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2013-2014	Hubei Statistical Yearbook 2015	2017/11/1
		Balance of RMB Loans of Financial Organizations (Including Foreign Funded Enterprises) by The End	2015	Hubei Statistical Yearbook 2016	2017/11/1
	Hunan	Government Finance, Banking and Insurance	1999-2015	Hunan Statistical Yearbook 2016	2017/11/20
	Guangdong	Deposit and Loan Balance of Financial Institutions in Renminbi	1999	Guangdong Statistical Yearbook 2004	2017/11/25
		Deposits and Loans in All Financial Institutions	2000-2015	Guangdong Statistical Yearbook 2016	2017/10/23
	Guangxi	Deposit and Loans Balance of Total Financial Institutions in Main Years	1999-2000	Guangxi Statistical Yearbook 2001	2017/11/19
		Deposit and Loans Balance of Total Financial Institutions in Main Years	2001	Guangxi Statistical Yearbook 2002	2017/11/19
		Deposit and Loans Balance of Total Financial Institutions in Main Years	2002	Guangxi Statistical Yearbook 2004	2017/11/19
		Deposit & Loans Balance of Total Financial Institutions in Main Years (Year-end)	2003	Guangxi Statistical Yearbook 2005	2017/11/18

Notation	Region	Description	Available Years	Source	Retrieved Date
		Deposit & Loans Balance of Total Financial Institutions in Main Years (Year-end)	2004	Guangxi Statistical Yearbook 2006	2017/11/18
		Deposits & Loans of Financial Institutions (Year-end, 2005-2015)	2005-2015	Guangxi Statistical Yearbook 2016	2017/10/23
	Hainan	Deposit and Loan Balance of Financial Institutions in Various Years	1999-2015	Hainan Statistical Yearbook 2017	2017/10/23
	Chongqing	Year-end Deposit and Loan Balance of Financial Institutions (Including Foreign-funded Institutions) (1980-2015)	1999-2015	Chongqing Statistical Yearbook 2016	2017/10/23
	Sichuan	Credit Funds Balance Sheet of Financial Institutions (use of funds)	1999	Sichuan Statistical Yearbook 2002	2017/11/20
		Credit Funds Balance Sheet of Financial Institutions (use of funds)	2000-2004	Sichuan Statistical Yearbook 2006	2017/11/1
		Credit Funds Balance Sheet of Financial Institutions (use of funds)	2005-2010	Sichuan Statistical Yearbook 2011	2017/11/1
		Balance Sheet of Local and Foreign Credit Funds of Financial Institutions (Including Foreign) (Funds Uses)	2011	Sichuan Statistical Yearbook 2012	2017/11/1
		Balance Sheet of Local and Foreign Credit Funds of Financial Institutions (Including Foreign) (Funds Uses)	2012	Sichuan Statistical Yearbook 2013	2017/11/1
		Balance Sheet of Local and Foreign Credit Funds of Financial Institutions (Including Foreign) (Funds Uses)	2013	Sichuan Statistical Yearbook 2014	2017/11/1
		Balance Sheet of Local and Foreign Credit Funds of Financial Institutions (Including Foreign) (Funds Uses)	2014	Sichuan Statistical Yearbook 2015	2017/11/1
		Balance Sheet of Local and Foreign Credit Funds of Financial Institutions (Including Foreign) (Funds Uses)	2015	Sichuan Statistical Yearbook 2016	2017/11/1
	Guizhou	Saving Deposits and Loans Balance of Financial Institutions	1999-2007	Guizhou Bureau of Statistics	2017/10/23
		Total Deposits and Total Loans of Financial Institutions	2008-2010	Guizhou Statistical Yearbook 2014	2017/10/23
		Saving Deposits and Loans Balance of Financial Institutions	2011-2015	Guizhou Statistical Yearbook 2016	2017/10/23
	Yunnan	RMB Loans Balance of Financial Institutions	1999	Yunnan Statistical Yearbook 2001	2017/11/28

Notation	Region	Description	Available Years	Source	Retrieved Date
		RMB Loans Balance of Financial Institutions	2000-2015	Yunnan Bureau of Statistics	2017/11/25
	Tibet	RMB Credit Balance of Payments Financial Institutions	1999-2015	Tibet Statistical Yearbook 2016	2017/11/28
	Shaanxi	Funding Sources and Utilization of Financial Institutions	1999	Shaanxi Statistical Yearbook 2000	2017/11/28
		Funding Sources and Utilization of Financial Institutions	2000	Shaanxi Statistical Yearbook 2001	2017/11/28
		Funding Sources and Utilization of Financial Institutions	2001	Shaanxi Statistical Yearbook 2002	2017/11/28
		Deposits & Loans of Financial Institutions	2002	Shaanxi Statistical Yearbook 2003	2017/11/28
		Deposits & Loans of Financial Institutions	2003	Shaanxi Statistical Yearbook 2004	2017/11/28
		Deposits & Loans of Financial Institutions	2004	Shaanxi Statistical Yearbook 2005	2017/11/28
		Total Volume of Savings and Loans at Year-end	2005-2008	Shaanxi Statistical Yearbook 2010	2017/11/19
		Total Volume of Savings and Loans at Year-end	2009-2010	Shaanxi Statistical Yearbook 2011	2017/11/19
		Summary of Sources & Uses of Funds of Financial Institutions in RMB (Including Foreign Currency at Year-end)	2011	Shaanxi Statistical Yearbook 2014	2017/11/9
		Summary of Sources & Uses of Funds of Financial Institutions in RMB (Including Foreign Currency at Year-end)	2012-2014	Shaanxi Statistical Yearbook 2015	2017/11/19
		Summary of Sources & Uses of Funds of Financial Institutions in RMB at Year-end (2015)	2015	Shaanxi Statistical Yearbook 2016	2017/11/19
		Gansu	Credit Funds Balance Sheet of Financial Institutions	1999	Gansu Statistical Yearbook 2001
	Credit Funds Balance Sheet of Financial Institutions		2000-2002	Gansu Statistical Yearbook 2003	2017/11/19

Notation	Region	Description	Available Years	Source	Retrieved Date	
		Credit Funds Balance Sheet of Financial Institutions	2003	Gansu Statistical Yearbook 2005	2017/11/28	
		Credit Funds Balance Sheet of Financial Institutions	2004	Gansu Statistical Yearbook 2006	2017/11/25	
		Credit Funds Balance Sheet of Financial Institutions	2005-2008	Gansu Statistical Yearbook 2010	2017/10/23	
		Credit Funds Balance Sheet of Financial Institutions	2009	Gansu Statistical Yearbook 2011	2017/10/23	
		Balance Sheet of RMB Credit Funds of Financial Institutions	2010-2013	Gansu Statistical Yearbook 2015	2017/10/23	
		Balance Sheet of RMB Credit Funds of Financial Institutions	2014-2015	Gansu Statistical Yearbook 2016	2017/10/23	
	Qinghai	RMB Loans Balance of Financial Institutions in Main Years	1999-2004	Qinghai Statistical Yearbook 2010	2017/11/25	
		RMB Credit Balance of Payments Financial Institutions at Year-end (2005-2009)	2005-2009	Qinghai Statistical Yearbook 2010	2017/11/25	
		RMB Credit Balance of Financial Institutions at Year-end (2010-2014)	2010-2014	Qinghai Statistical Yearbook 2015	2017/11/25	
		RMB Credit Balance of Financial Institutions at Year-end (2015)	2015	Qinghai Statistical Yearbook 2016	2017/11/25	
	Ningxia	RMB Total Deposits and Loans Balances of Financial Institutions in Main Years	1999-2015	Ningxia Statistical Yearbook 2016	2017/10/23	
	Xinjiang	Balance of Deposits and Loans of Financial Institutions (1978-2015)	1999-2015	Xinjiang Statistical Yearbook 2016	2017/10/23	
	GRP	Provincial-level	Gross Regional Product (100 million yuan)	1999-2015	National Bureau of Statistics of China	2017/10/14
	CPI	Provincial-level	Consumer Price Index (preceding year=100)	1999-2015	National Bureau of Statistics of China	2017/10/14
pop_resid	Provincial-level	Resident Population (year-end) (10000 persons)	2000-2015	National Bureau of Statistics of China	2017/12/14	

Appendix B

Notation	Cities	Description	Available Years	Source	Retrieved Date
CRLPI	City-level	Chinese Residential Land Price Index	2004-2016	Hang Lung Center for Real Estate, Tsinghua University	2018/04/04
Loan_City	Chengdu	Credit Funds of Financial Institutions	2004	Chengdu Statistical Yearbook 2005	2018/04/27
		Credit Funds of Financial Institutions	2005	Chengdu Statistical Yearbook 2006	2018/04/27
		Credit Funds of Financial Institutions	2006	Chengdu Statistical Yearbook 2007	2018/04/27
		Main Indicators on Banking and Insurance in Districts, Cities at County Level and Counties (2007)	2007	Chengdu Statistical Yearbook 2008	2018/04/27
		Main Indicators on Banking and Insurance in Districts, Cities at County Level and Counties (2008)	2008	Chengdu Statistical Yearbook 2009	2018/04/27
		Main Indicators on Banking in Districts (2009)	2009	Chengdu Statistical Yearbook 2010	2018/04/27
		Main Indicators on Banking in Districts (2010)	2010	Chengdu Statistical Yearbook 2011	2018/04/27
		Main Indicators on Banking in Districts (2011)	2011	Chengdu Statistical Yearbook 2012	2018/04/27
		Main Indicators on Banking in Districts (2012)	2012	Chengdu Statistical Yearbook 2013	2018/04/27
		Main Indicators on Banking in Districts (2013)	2013	Chengdu Statistical Yearbook 2014	2018/04/27
		Main Indicators on Banking in Districts (2014)	2014	Chengdu Statistical Yearbook 2015	2018/04/27
		Main Indicators on Banking in Districts (2015)	2015	Chengdu Statistical Yearbook 2016	2018/04/27
		Main Indicators on Banking in Districts (2016)	2016	Chengdu Statistical Yearbook 2017	2018/04/27
	Hangzhou	Balance of Deposits and Loans of Financial Institutions	2004-2016	Hangzhou Statistical Yearbook 2017	2018/04/28

Notation	Cities	Description	Available Years	Source	Retrieved Date
	Nanjing	RMB Deposits and Loans of Financial Institutions since 2000	2004-2016	Nanjing Statistical Yearbook 2017	2018/04/27
	Wuhan	Credit Funds Balance Sheet of Banks - Sources and Banks - Uses of Financial Institutions	2004-2006	Wuhan Statistical Yearbook 2009	2018/04/27
		Credit Funds Balance Sheet of Banks - Sources and Banks - Uses of Financial Institutions	2007-2009	Wuhan Statistical Yearbook 2013	2018/04/27
		Credit Funds Balance Sheet of Banks - Sources and Banks - Uses of Financial Institutions	2010-2014	Wuhan Statistical Yearbook 2015	2018/04/27
		Credit Funds Balance Sheet of Banks - Sources and Banks - Uses of Financial Institutions	2015	Wuhan Statistical Yearbook 2016	2018/04/27
		Credit Funds Balance Sheet of Banks - Sources and Banks - Uses of Financial Institutions	2016	Wuhan Statistical Yearbook 2017	2018/04/27
	Guangzhou	Deposits and Loans in All Financial Institutions (Foreign Currencies) in Main Years	2004-2016	Guangzhou Statistical Yearbook 2017	2018/04/27
	Xian	Loans in Financial Institutions (Including Foreign-funded) in Representative Years	2004-2016	Xian Statistical Yearbook 2017	2018/04/28
	Dalian	Saving Deposit and Loan of Financial Institutions	2004-2016	Dalian Statistical Yearbook 2017	2018/04/27
	Changsha	Financial Statistical Indicators in Main Years	2004-2016	Changsha Statistical Yearbook 2017	2018/04/27
CPI_City	Chengdu	Consumer Price Indices and Retail Price Indices over the Years (Preceding Year=100)	2004-2016	Chengdu Statistical Yearbook 2017	2018/05/02
	Hangzhou	Consumer Price indices in Urban District (1978-2016)	2004-2016	Hangzhou Statistical Yearbook 2017	2018/04/29
	Nanjing	Consumer Price Indices in Main Years	2004	Nanjing Statistical Yearbook 2006	2018/04/29
		Consumer Price Indices in Main Years	2005-2006	Nanjing Statistical Yearbook 2010	2018/04/29
		Consumer Price Indices in Main Years	2007-2016	Nanjing Statistical Yearbook 2017	2018/04/29
	Wuhan	Consumer Price Index Over the Years	2004-2016	Wuhan Statistical Yearbook 2017	2018/04/29

Notation	Cities	Description	Available Years	Source	Retrieved Date
	Guangzhou	Urban Residents Consumer Price Indices in Main Years	2004-2016	Guangzhou Statistical Yearbook 2017	2018/04/29
	Xian	Price Indices in Representative Years (the price of preceding year= 100)	2004-2016	Xian Statistical Yearbook 2017	2018/05/02
	Dalian	Consumer Price indices (1978-2015)	2004-2015	Dalian Statistical Yearbook 2017	2018/04/29
	Changsha	Historical Consumer Price indices	2004-2016	Changsha Statistical Yearbook 2017	2018/04/29
GDP_City	City-level	Gross Regional Product (100 million yuan)	2004-2016	National Bureau of Statistics of China	2018/04/29
Population_City	City-level	Total Population (year-end) (10000 persons)	2004-2016	National Bureau of Statistics of China	2018/04/29