Research article

The impact of house prices on FDI inflows: Based on 35 large and medium sized cities in China

Ning Li[1], Hong-Yul Jeong[2,*], Kang Wang[3], Yuanxiao Xiang[4]

[1] *Graduate School of International Trade and Economics, Korea Maritime and Ocean University, Busan, Republic of Korea. Email.com : lhj1413191@gmail.com*

[2] *Department of Economic and International Trade, Korea Maritime and Ocean University, Busan, Republic of Korea. Email: jhy@Kmou.ac.kr*

[3] *School of Economics, University of Guangdong Ocean, China*

[4] *School of Business, Monash University, Australia*

* Corresponding author: Hong-Yul Jeong, jhy@Kmou.ac.kr

ABSTRACT

In the context of economic globalization, with the deepening of China's economic openness, a large amount of foreign capital inflows have not only brought about technological and management innovations, but also filled the funding gap for China's economic development. Especially, as a pillar industry of the national economy, the rapid development of China's real estate market has attracted a large amount of foreign investment. This study is based on data from 35 large and medium-sized cities in China, and deeply analyzes the impact and mechanism of housing prices on FDI inflows, providing theoretical support for the government to formulate relevant foreign investment policies. Research has shown a significant positive correlation between Chinese housing prices and FDI inflows. This study not only enriches the empirical evidence of emerging market research, but also provides more specific and representative analysis by focusing on urban clusters. In addition, this study further explores the role of foreign direct investment in the real estate industry through empirical testing, providing a new perspective for research in related fields.

Keywords: House Prices; FDI; China

1. Introduction

With the development of economic globalization, a large amount of foreign capital has flooded into the Chinese market, which not only brings more advanced technology management, but also the huge amount of foreign direct investment (FDI) makes up for the gap of insufficient capital in the process of China's economic development[1]. According to data from China's Ministry of Commerce, 53,766 new FDI enterprises were established in China in 2023, up 39.7% year-on-year, and the actual amount of FDI utilized was RMB 113.31 billion. Among them, actual investment in China from Spain, Germany and the Netherlands increased by 263%, 34.7% and 9.5% respectively. Foreign direct investment in China is developing at a faster pace, and China is gradually becoming one of the most attractive countries for foreign

direct investment.

China's real estate sector has undergone a remarkable transformation over the past few decades, intricately intertwined with the country's economic development, local finance, infrastructure enhancements, and rapid urbanization[2]. Since the initiation of economic reforms in 1978, China's real estate industry has emerged as a key driver of economic growth, attracting substantial foreign direct investment (FDI) in the process. The sector's evolution has been marked by several significant milestones. Initially, housing was primarily viewed as a social welfare rather than a commodity, with limited private ownership[3]. However, with the country's shift towards a more market-oriented economy, the real estate market began to open up, allowing for increased private participation and foreign investment. This transition was further accelerated by the introduction of land use rights reforms, which allowed for the leasing and sale of land use rights, effectively privatizing land ownership and stimulating real estate development [4].

As China's economy continued to grow, local governments increasingly relied on land sales and related revenues as a significant source of finance [5]. This so-called "land finance" model has played a pivotal role in fueling urbanization and infrastructure development, as governments use land sales proceeds to finance public works projects, including roads, bridges, and public transportation systems[4] . In turn, this infrastructure development has attracted more people to cities, driving up demand for housing and further stimulating the real estate market.

The vigorous development of the real estate industry has played a pivotal role in improving the living conditions of residents, stimulating consumption, boosting domestic demand and promoting the growth of the national economy [6]. With the advancement of China's housing system reform, the real estate industry has developed into an important pillar industry for national economic development [7]. China's real estate market has developed rapidly, with real estate development investment growing at a fast pace and the real estate market becoming increasingly prosperous, with the average selling price of commercial properties rising from RMB 1,854 per square meter in 1998 to RMB 10,322.67 per square meter in 2021, an increase of 556.78%. The current excessive housing prices have clearly exceeded the affordability of ordinary home buyers [8]. The rapid rise in housing prices will not only seriously affect the lives of residents, destroying social stability and harmony, but also more likely to cause an imbalance in the development of the real estate industry itself, resulting in housing price bubbles, which is not conducive to the stable development of the national economy [9]. Therefore, scholars have begun to pay attention to China's real estate market and explore the influencing factors of housing prices.

China's huge market potential and increasingly perfect investment environment greatly promote the development of foreign trade, attracting a large influx of foreign capital, and the tendency of capital requires it to flow into high-profit industries or sectors [10]. As the average profit of China's real estate industry is 10%, it is undoubtedly the best choice for foreign investment. The high profit margin constantly attracts foreign capital to enter the real estate industry by taking shares in real estate companies and setting up real estate subsidiaries [3]. As can be seen from Figure 1, the rise in China's housing prices and the inflow of FDI have the characteristics of convergence, and the convergence has become more obvious in recent years: the higher the housing prices, the larger the scale of foreign investment inflow.

The degree of opening up of China's real estate industry has been increasing, with a large influx of foreign investment, which has promoted the rapid development of China's real estate industry, but the entry of many foreign direct investments has taken the real estate industry as the focus of speculation, which has accelerated the rise of China's real estate prices to a certain extent [11]. Since 1978, foreign direct investment has played an important role in the process of China's economic development, many scholars have studied

foreign direct investment more, but for the real estate industry, the research on foreign direct investment is relatively small [12]. At present, China will shift from policy-based to system-based investment, continue to promote the liberalization and facilitation of foreign investment, optimize the business environment for foreign-invested enterprises, and better serve the promotion of high-quality economic development. Therefore, it is of practical significance to study the impact of China's real estate market on foreign direct investment.

The marginal contributions of this study are in: first, based on the Chinese context, this study explores the impact of house prices on FDI inflows in the world's largest developing country, where, as discussed, the rapid rise in house prices attracts foreign investors looking for high returns, leading to an influx of FDI into the real estate sector. This, in turn, leads to further increases in house prices in a positive feedback loop. However, the long-term sustainability of this trend is questionable, as excessive speculation and price bubbles can destabilize the market and ultimately hinder economic growth. This study further analyzes the impact of China's real estate market on FDI and enriches the empirical evidence of emerging market research; second, most of the sample areas of current studies on house prices are selected on a country-wide basis or based on a single province, and no study has been conducted on a particular group of cities. Meanwhile, the quality of the local investment environment, including the infrastructure, the legal system, and the government policies, plays a crucial role in attracting FDI plays a key role. Foreign investors are likely to choose locations with lower risk and better return prospects. The trend of China's real estate price index is consistent in certain regions. In 1998, China's National Bureau of Statistics selected 35 large and medium-sized cities for real estate price index compilation, which has the most accurate data and the longest span of time, so the selection of 35 large and medium-sized cities as the object of the study has a certain degree of representativeness and typicality [13]. Thirdly, there are many controversies about the role of FDI in the real estate industry, and many conclusions are based on qualitative analysis. In view of this, this study empirically examines the impact of China's housing prices on the inflow of FDI based on the data of 35 large and medium-sized cities in China from 2010 to 2021, and tries to further examine its intrinsic mechanism of action, so as to provide a theoretical basis for the government's foreign investment policy in regulating the real estate industry.
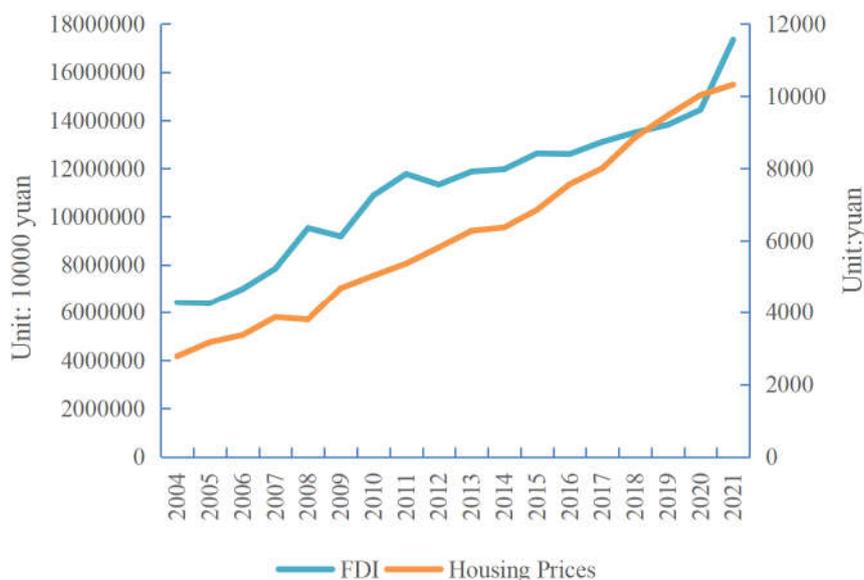

Figure 1. Trends in China's FDI and housing prices from 2004 to 2021.

2. Literature review

One of the most important manifestations of the internationalization of modern capital flows is foreign direct investment (FDI), the inflow and outflow of which has a far-reaching impact on the development of a country's economy. As the number of FDI flows in the international arena continues to increase and the scope of flows continues to grow, its importance is becoming more and more prominent [14]. Since then, research on FDI has been a hot spot in economics.

2.1. Study on foreign direct investment

From the existing literature, many scholars' studies on FDI mainly focus on the location choice of FDI, i.e., the analysis of the influencing factors of foreign direct investment inflow. These scholars mainly focus on important influencing factors such as labor cost, infrastructure, and market openness. Hammami [15] suggests that lower labor costs and untapped Market size are important advantages for low-income countries in attracting FDI inflows, which help to create an attractive and sound environment for FDI, thus ensuring the main factors for sustainable economic growth [2]. Concurrently, different types of infrastructure affect FDI inflows, with transportation infrastructure in FDI target countries significantly mitigating the negative impact of epidemics on FDI inflows [16]. For Middle Eastern countries, reliance on professional management reduces FDI inflows to the UAE, while linking pay to productivity reduces FDI inflows to Bahrain and the UAE, and trade openness and infrastructure development have a positive impact on FDI inflows [17]. Furthermore, Liao, Yang [18] 's research shows that FDI has a significant positive impact on employment, and the Belt and Road Initiative has had a positive impact on this impact, with FDI in industrial structure upgrading having an overall positive impact on employment.

2.2. Study on the relationship between house prices and FDI

Since China's real estate market reform in 1998, foreign investment flows into the real estate market have risen year by year, which has indeed driven residential consumption and effectively boosted social demand for a certain period of time [13]. However, as the real estate industry accounts for a rising proportion of the national economy, and the correlation with other industries continues to increase, the continuous rise in housing prices has also led to the exposure of a variety of social contradictions [9]. Even though the Chinese government has introduced a series of control policies, housing prices are not decreasing but increasing, and the prosperity of real estate as a non-tradable sector will inevitably attract the inflow of foreign direct investment. "High house prices" and "rapidly rising house prices" have been the prominent features of China's house prices in recent years. Some scholars have found that the increase of FDI inflow will promote the rise of house prices, and have put forward relevant opinions on this phenomenon [14].

The real estate industry is like a reservoir, into which both domestic and foreign capital will continuously flow, and the concentration of a large amount of capital will further push up the price of housing, thus promoting the prosperity of the real estate industry [19]. On the one hand, the high rate of return of the real estate industry will increase the investment demand of foreign investors, and foreign investors will even directly participate in the real estate development industry, investment or speculation, in order to obtain high returns [14]; on the other hand, real estate is one of the most important means of preserving and increasing the value of wealth [20], and many enterprises will hold real estate, and for foreign-invested enterprises holding real estate, the rise in housing prices means that the amount of fixed assets of foreign-invested enterprises will increase, and the enterprises will be relieved of the problem of rising housing prices [21]. The increase in the amount of fixed assets of enterprises eases their financing constraints and improves their lending and financing ability [22]. The development of real estate industry is closely related to the upstream and downstream related industries such as building materials, furniture, decoration, marketing, etc.

Therefore, the prosperous development of the real estate industry will promote the development of other industries, further promote the improvement of local infrastructure, improve the level of economic development, and create a better environment, which constitutes a benign cycle and attracts more inflows of foreign direct investment.

We propose hypothesis 1: An increase in housing prices will promote the inflow of FDI.

3. Data and model setting

3.1. Data source and sample selection

This study empirically examines the impact of China's house prices on foreign direct investment inflows based on data from 35 large and medium-sized cities in China from 2010 to 2021. The data for the study are mainly obtained from the National Bureau of Statistics of China, China Urban Statistical Yearbook, China Statistical Yearbook and China National Economic and Social Development Statistical Bulletin. This study combines the theme of the study with data processing. In addition to using the indicator data directly provided by the yearbook, some missing data are filled in by linear interpolation and individual variables are logarithmically processed in order to eliminate the influence of possible heteroskedasticity on the empirical analysis. The final effective sample size obtained was 387.

3.2. Research design

Based on the previous analysis, the following econometric model is constructed:

$$Fdi_{it} = \alpha + \beta_1 Hps_{it} + \beta_2 X_{it} + u_i + \lambda_t + \varepsilon_{it} \tag{1}$$

In equation (1), Fdi is foreign direct investment; Hps is housing prices, and X is a control variable including population density, level of economic development, degree of financial development, degree of government intervention and overall industrial upgrading. α is a constant term, ε is an error term, i and t are different cities and years, u_i is city fixed effects, and λ_t is time fixed effects.

Foreign direct investment (Fdi) is the explanatory variable of this paper, which is derived from the National Bureau of Statistics of China and the National Economic and Social Development Statistics Bulletin of each city. It is measured by taking the logarithm of the actual amount of foreign investment utilized in the year.

Housing price (Hps) is the explanatory variable of this paper, which is obtained from the statistical yearbook of each city, and is measured by taking the logarithm of the average price of commercial housing in the current year.

Existing literature identifies certain potential factors that can lead to changes in the level of FDI. In order to avoid the effect of omitted variables, this paper controls for six variables, namely population density (popd), economic development level (edol), financial development level (fdol), government intervention level (goil) and overall industrial upgrading (ouid), by drawing on relevant literature. The main variables are defined in **Table 1**.

Table 1. Variable definition.

Variable		Sign	Variable description
Explained variable	Foreign direct investment	Fdi	Foreign direct investment for the year in logarithmic
Explanatory variable	Housing prices	Hps	Average price of housing in the year taken in logarithms
Control variables	Population density	Popd	Person/km²
	Level of economic development	Edol	GDP in logarithms
	Level of financial development	Fdol	Balance of deposits and loans of financial institutions/GDP
	Level of government intervention	goil	Local fiscal expenditure/GDP
	Industrial Upgrading	ouid	Value added of primary industry as a share of GDP*1+Value added of secondary industry as a share of GDP*2+Value added of tertiary industry as a share of GDP

3.3. Variable descriptive statistics

In order to have a preliminary understanding of the research sample, this paper first conducted a descriptive analysis of the relevant variables, and the results are shown in **Table 2**. The average level of foreign direct investment in China's 35 large and medium-sized cities was 12.213, but there are large fluctuations in this value, and the standard deviation is close to the mean, indicating that there are large differences in foreign direct investment among cities. The large difference between the minimum and maximum values shows that there are significant differences in the ability of different cities to attract FDI in the study sample. The mean value of housing prices is 9.422, with a small standard deviation, indicating that housing prices are relatively centralized among cities, but still have a large range of fluctuations. Population density shows the number of people per unit area, with a mean value of 6.340566 and a small standard deviation, implying that the distribution of population density is relatively close in most cities, but there are still some differences; the standard deviation of the level of economic development is small, showing that the level of economic development is relatively close among cities; the degree of financial development is measured by the deposit and loan balances of financial institutions at the end of the year, with a mean value of 4.448116, with a relatively large standard deviation, indicating a large difference in the degree of financial development between cities. For the degree of government intervention, the level of urbanization and industrial upgrading, the standard deviation is very small, indicating that the degree of government intervention, the level of urbanization and industrial upgrading are similar among cities.

Table 2. Variable descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
Fdi	387	12.21397	1.620016	4.905275	14.94127
Hps	387	9.421992	.5833419	8.376321	10.99186
Popd	387	6.340566	0.717264	1.517323	7.808888
Edol	387	11.33007	0.391235	10.22543	13.05569
Fdol	387	4.448116	1.342277	2.355984	12.56896
goil	387	0.14792	0.038456	0.081708	0.267
ouid	387	2.506693	0.212446	0.000246	2.835702
CFdi	387	12.80096	1.699963	7.350516	15.80852

4. Analysis of empirical results

4.1. Benchmark regression

This section demonstrates the impact of housing prices on foreign direct investment, and the regression results are shown in Table 3, based on the sample data with the gradual inclusion of control variables. Column (1) of Table 3 shows that the coefficient of the explanatory variable Hps is 1.225, which is statistically significantly positive at the 1% level, when fixed effects and control variables are not included, suggesting that an increase in housing prices can increase the inflow of foreign direct investment. Column (2) of Table 3 shows that with the inclusion of fixed effects, the coefficient of Hps of the explanatory variable is positive and statistically significant at the 1% level. Columns (3) and (4) of **Table 3** show that the Hps coefficient of the explanatory variable is still positive and statistically significant at the 1% level with the inclusion of fixed effects, including some and all control variables, respectively. Overall, the direction of the effect of the explanatory variables and the level of significance do not change significantly between columns, indicating that the model estimation is highly robust, further validating the research hypothesis of this paper, which suggests that rising housing prices can promote the inflow of foreign direct investment.

<div align="center">**Table 3.** Benchmark regression.</div>

VARIABLES	(1) Fdi	(2)	(3)	(4)
Hps	1.225***	0.921***	0.920***	0.871***
	(0.103)	(0.243)	(0.238)	(0.250)
Popd			-0.278**	-0.270**
			(0.113)	(0.110)
Edol			0.581	0.783*
			(0.437)	(0.402)
Fdol			0.015	-0.021
			(0.197)	(0.201)
goil				3.876
				(3.784)
ouid				0.051
				(0.084)
Area fixed effects	No	Yes	Yes	Yes
Time fixed effect	No	Yes	Yes	Yes
Constant	11.955***	12.019***	7.137	4.268
	(0.087)	(0.059)	(5.791)	(5.185)
Observations	387	387	387	387
R-squared	0.195	0.862	0.865	0.866

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.2. Robustness check

4.2.1. Replacement of explained variable

In order to further examine the credibility of the regression results, this paper adopts the method of replacing the explained variables to carry out the robustness test. We replace the explained variables, the original explanatory variable "Fdi" with the amount of contracted foreign investment in the current year "Cfia", the regression steps remain the same, the regression results are statistically significant at the 1% level and the coefficient is positive, indicating that the regression of housing prices on foreign direct investment is significant. The coefficient is positive, indicating that the regression of housing price on foreign direct investment is significant. **Table 4**, column (1) shows that the regression results are basically consistent with the previous section, indicating that the estimation results are robust.

4.2.2. Explained variable and explanatory variable lagged one period

To ensure that the conclusions are robust, column (2) of Table 4 presents the regression results of this paper with an extended observation window for the explained variables. Column (2) of Table 4 presents the regression results for the lagged explanatory variable (L.Fdi). From the regression results, it can be seen that by lagging the explained variables, the coefficients of their explanatory variables are still significantly positive and statistically significant at the 1% level. It indicates that house prices have an impact on FDI after

one year and the conclusions of this paper have not been substantially changed and the regression results are still robust.

Column (3) of Table 4 shows the regression results after extending the observation window for the explanatory variables. Column (3) of Table 4 shows the regression results for the lagged explanatory variables (L.Hps). From the regression results, it can be seen that by lagging the explanatory variables, the coefficients of their explanatory variables are still significantly positive and statistically significant at the 1% level, the conclusions of this paper have not been substantially changed and the regression results are still robust.

Table 4. Robustness check.

VARIABLES	(1) Cfia	(2) L.Fdi	(3) Fdi
Hps	0.677***	0.584**	
	(0.199)	(0.272)	
L.Hps			0.877***
			(0.238)
Popd	0.012	-0.126	-0.249**
	(0.083)	(0.169)	(0.116)
Edol	-0.234	0.809*	0.652*
	(0.201)	(0.421)	(0.389)
Fdol	-0.135**	-0.043	-0.029
	(0.056)	(0.189)	(0.188)
goil	2.769*	1.836	3.801
	(1.610)	(3.548)	(3.736)
ouid	-0.018	0.101	0.025
	(0.078)	(0.076)	(0.073)
Area fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Constant	7.722***	3.355	5.753
	(2.540)	(5.329)	(4.988)
Observations	387	351	351
R-squared	0.943	0.869	0.876

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.3. Endogeneity testing

Despite the fact that we control for city-level characteristic variables and fixed effects in the estimation in **Table 3**, there may still be endogeneity between house prices and FDI. An effective way to address endogeneity is the instrumental variable approach, where we conduct endogeneity tests by looking for macro-level instrumental variables. Green space per capita, as an exogenous variable, reflects the quality of the local environment and the level of urban planning, and these factors can have an important impact on real estate prices. For example, more green space can improve the quality of life of residents, thus driving up house prices. However, at the same time, the green space per capita itself is not directly affected by house

prices and FDI, which satisfies the basic condition of being an instrumental variable. Based on the above analysis, this paper uses green space per capita (Pgs) as an instrumental variable for Hps, with specific data from the China Urban Statistical Yearbook. Column (1) of **Table 5** reports the first-stage results of the two-stage least squares (2SLS) estimation, which shows that Pgs has a significant negative effect on Hps. Column (2) reports the second-stage results, in which Hps is significantly positively correlated at the statistical level of 5%, which indicates that Hps significantly improves the inflow of Fdi while controlling for the endogeneity, and suggests that the present study effectively removes the effect of endogeneity, thus obtaining a more accurate estimation result. thus obtaining more accurate estimation results.

Table 5. Endogeneity testing.

VARIABLES	(1) Hps	(2) Fdi
Pgs	-0.001**	
	(0.001)	
Hps		5.557**
		(2.778)
Popd	0.026	-0.458**
	(0.018)	(0.188)
Edol	0.162*	0.043
	(0.086)	(0.586)
Fdol	-0.023	0.074
	(0.019)	(0.252)
goil	1.142**	-2.652
	(0.536)	(5.839)
ouid	-0.050	0.199
	(0.035)	(0.157)
Area fixed effects	Yes	Yes
Time fixed effect	Yes	Yes
Constant	-0.998**	11.338*
	(0.001)	(6.652)
Observations	387	387
R-squared	0.952	0.728

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.4. Placebo test

In order to test the validity of the above findings, this paper completes a placebo test using a randomly generated experimental group to verify the impact of house prices on foreign direct investment. Firstly, the explanatory variable "Hps" is randomized, and then it is put into the model for regression to produce an estimated coefficient $\widehat{\beta}$, and then this process is repeated 500 times, and finally 500 $\widehat{\beta}$ are produced. Figure 1 shows the distribution of β , which is close to the standard normal distribution with a mean close to 0, indicating that the estimated equation passes the placebo test, suggesting that the impact of house prices on FDI is robust and excluding other random factors from interfering with the results.
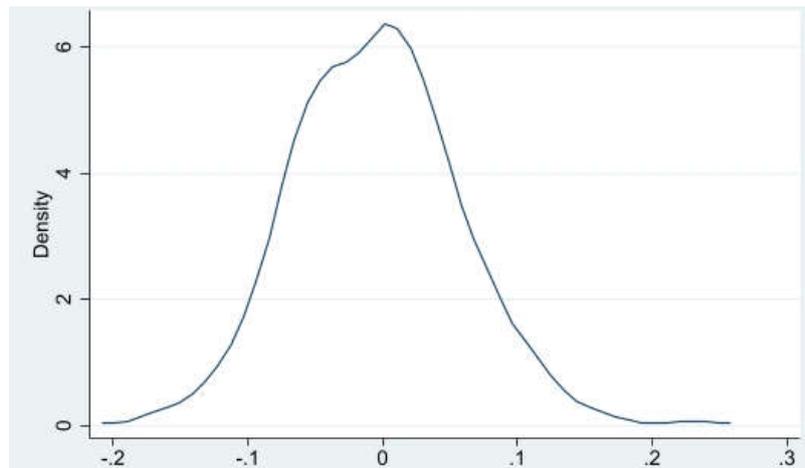
Figure 2. Placebo test.

5. Heterogeneity analysis

China's economic development process is affected by geographic location, resources, policies and other factors, the problem of regional development imbalance is becoming more and more prominent, in this context, the effect of house prices on FDI will also vary from place to place. Therefore, it is of great significance to further study the impact of house prices on FDI in different regions. In this section, 35 large and medium-sized cities are categorized into regressions according to their geographical locations in the East, Middle and West.

The regression results in **Table 5** show that the role of house prices for FDI varies across regions. In the eastern region, rising house prices have a positive effect on FDI inflows and are statistically significant at the 1% level. In the middle and western regions, the effect of rising house prices on FDI inflows is not significant.

The eastern region, due to its earlier opening to the outside world, higher level, infrastructure is more complete, the industrial structure is also more reasonable, the market capacity is larger, although the price of housing will be through the increase in the cost of living to promote the rise in labor wages, thus increasing the cost of foreign-invested enterprises, so that the cost of enterprises to increase, weakening the competitiveness of the capital to reduce the efficiency of the use of capital. However, it cannot be ignored that the eastern region of the market environment is more favorable, the rise in housing prices means that the real estate industry has a greater potential, the real estate industry as a capital reservoir, high-speed liquidity to enhance the efficiency of the use of capital and the rate of return, the capital has the characteristics of profit-seeking, so more foreign capital is willing to inflow of real estate-related industries in order to obtain more income. Even if foreign capital does not flow directly into the real estate industry, but into the real industry in the eastern region, the real estate owned by the real estate industry, real estate will be accompanied by the rise in housing prices and value-added, in order to alleviate the financing constraints of the enterprise, to enhance the ability of its loans, financing, increase the number of funds used, improve the liquidity of funds, and drive the development of the real economy.

For the middle region, although its economy is developing faster, its real estate market has not yet reached the same level of development compared to the eastern region. Rising housing prices may lead to an increase in the cost of land for enterprises, which in turn affects production and labor costs. For foreign firms seeking cost-effectiveness, such rising costs may inhibit their willingness to invest in the central region. Meanwhile, the industrial structure of the central region may not yet have reached the level of that of the

eastern region, especially in terms of high-tech industries and modern service industries. Foreign investment in the Middle is likely to be more concentrated in traditional manufacturing and resource-based industries, which are relatively less dependent on the real estate market. The western region is usually a relatively backward region of China's economy, where the real estate market and infrastructure may not yet be well developed. Therefore, the impact of rising house prices on FDI inflows may not be significant. Foreign investment in the Western region may focus more on the natural resources or other specific advantages of the region than on the real estate market. This means that changes in house prices may not be a major factor influencing foreign investment decisions in the western region.

Table 6. Heterogeneity analysis from the region.

VARIABLES	(1) East Fdi	(2) Mid	(3) West
Hps	1.005***	0.433	0.723
	(0.299)	(0.520)	(0.827)
Popd	0.666	0.197**	-0.318*
	(0.470)	(0.081)	(0.169)
Edol	0.607*	1.359	1.277
	(0.328)	(0.886)	(0.962)
Fdol	-0.413***	1.308***	0.929***
	(0.040)	(0.237)	(0.244)
goil	14.224***	-11.817*	-15.536*
	(2.768)	(6.397)	(8.185)
ouid	-0.187**	4.249**	0.344
	(0.081)	(1.864)	(0.225)
Area fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Constant	0.868	-18.107*	-4.012
	(5.194)	(10.747)	(12.070)
Observations	184	91	112
R-squared	0.874	0.855	0.897

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

6. Further analysis

The prosperity of the real estate industry is not only limited to real estate itself, but will also stimulate the development of the real estate industry and related industries, driving market demand and increasing investment in fixed assets [1]. This will drive the development of related industries such as construction, renovation, and home furnishing, and increase the scale and volume of investment in fixed assets, thus further boosting the overall development of the local economy. Meanwhile, rising house prices will directly

incentivize real estate developers to increase their investment in real estate projects. As house prices rise, developers expect project returns to increase, thereby increasing investment in land acquisition, building construction, etc. Rising house prices act as a market signal that will increase investor confidence and attract more capital into the market. This confidence is not only reflected in investment in the real estate market, but also spreads to other areas, contributing to the growth of overall fixed asset investment. Based on this, we choose fixed asset investment (Fixai) as the mediating variable for further analysis. Table 6 demonstrates the regression results, column (2) of Table 6 shows that the increase in house prices increases the increase in fixed asset investment. The results in column (3) of Table 6 show that Hps and Fixai are positively significant at the 1% statistical level, indicating that Hps increases FDI through Fixai.

Table 7. Further analysis.

VARIABLES	(1) Fdi	(2) Fixai	(3) Fdi
Fixai			0.407***
			(0.151)
Hps	0.871***	0.197**	0.790***
	(0.250)	(0.096)	(0.246)
Popd	-0.270**	-0.062***	-0.245**
	(0.110)	(0.023)	(0.110)
Edol	0.783*	0.204	0.699*
	(0.402)	(0.168)	(0.389)
Fdol	-0.021	-0.002	-0.021
	(0.201)	(0.028)	(0.208)
goil	3.876	-0.150	3.937
	(3.784)	(0.894)	(3.783)
ouid	0.051	0.024	0.041
	(0.084)	(0.044)	(0.093)
Area fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Constant	4.268	15.572***	-2.077
	(5.185)	(2.027)	(5.480)
Observations	387	387	387
R-squared	0.866	0.907	0.869

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

7. Conclusion and policy implication

7.1. Conclusion

Using data from 35 large and medium-sized cities in China for the period 2010-2021, this study provides an in-depth analysis of the impact of housing prices on FDI inflows and its mechanism of action. Our results show that rising housing prices can promote FDI inflows; Moreover, the role of housing prices

on FDI varies across regions. Among them, rising house prices in the eastern region have a positive effect on FDI inflows; while in the central and western regions, the effect of rising house prices on FDI inflows is not significant. Further analysis shows that rising house prices increase FDI inflows by increasing urban fixed asset investment. This study controls for other potential confounders through a placebo test to more accurately assess the true effect of rising house prices on FDI inflows. In addition, we conduct a series of robustness tests on the empirical results, and the estimates are all robust.

7.2. Policy implication

Based on the above findings, this study makes the following observations and recommendations:

First, policymakers need to consider regionally differentiated strategies. Given the regional differences in the impact of rising house prices on FDI inflows, policymakers should formulate regionally differentiated policies. In developed eastern regions, the regulation of the real estate market should be further optimized to ensure that house prices rise within a reasonable range in order to attract more FDI. For central and western regions, although the impact of rising house prices on FDI inflows is not significant, policymakers still need to pay attention to the healthy development of the real estate market to avoid the negative impact of excessively rapid house price rises, and at the same time seek other ways to promote FDI inflows, such as optimizing business environments and strengthening infrastructure construction.

Secondly, local governments need to optimize the investment environment and strengthen the regulation of the real estate market. Rising housing prices can increase urban fixed-asset investment, thus attracting foreign direct investment. Therefore, the government should continue to increase investment in infrastructure construction and upgrade the level of hardware facilities in the city to create a better environment for foreign investment. At the same time, the government should also pay attention to the construction of the soft environment, such as improving the efficiency of government services, optimizing the examination and approval process, and protecting the legitimate rights and interests of foreign investors, in order to enhance the investment attractiveness of the city. Although rising house prices can promote FDI inflows, excessively high house prices may also bring a series of social problems, such as increasing the cost of living of residents and lowering consumption capacity. Therefore, the government should strengthen the regulation of the real estate market to prevent the negative impacts of excessively high housing prices. Control measures may include implementing land supply management, adjusting real estate tax policies and strengthening real estate market supervision.

Thirdly, there is a need to strengthen regional cooperation among local governments and to enhance policy advocacy and communication. Regional cooperation among the eastern, central and western regions should be strengthened to promote the optimal allocation of resources and the synergistic development of industries. Through regional cooperation, we can jointly enhance the investment attractiveness of each region and realize win-win development. The government should strengthen external publicity to demonstrate to the outside world the healthy development of China's real estate market and a favorable investment environment. At the same time, it should strengthen communication and exchanges with international investors, answer their doubts and concerns in a timely manner, and increase their confidence in the Chinese market.

7.3. Limitations

We suggest that future research could consider more potential influencing factors, such as government policies and financial market development, in order to gain a comprehensive understanding of the mechanism by which house prices affect FDI inflows. Meanwhile, the scope of the study can be further expanded to consider data from other countries or regions to obtain broader conclusions.

Conflict of interest

The authors declare no conflict of interest.

References

1. Anderson, J., D. Sutherland, and J. Hurst, Measuring Chinese MNE activity: The challenge of corporate inversions and capital in transit related FDI. Research in International Business and Finance, 2024. 70: p. 102355.
2. Ashraf, A., F. Carril-Caccia, and N. Doytch, Reverse technological spillovers from outward FDI on home countries' total factor productivity: Does the mode of investment matter? Borsa Istanbul Review, 2024. 24(3): p. 607-617.
3. Chen, J., et al., Impact of Governments' Commitment to Housing Affordability Policy on People's Happiness: Evidence from China. Housing Policy Debate, 2021. 32: p. 1-20.
4. Mengkai, C., et al., Land Finance, Real Estate Market, and Local Government Debt Risk: Evidence from China. Land, 2023. 12: p. 1597.
5. Mengkai, C. and T. Chen, Land finance, infrastructure investment and housing prices in China. PLOS ONE, 2023. 18: p. e0292259.
6. Feng, L., C.-Y. Lin, and C. Wang, Do Capital Flows Matter to Stock and House Prices? Evidence from China. Emerging Markets Finance and Trade, 2016. 53.
7. Zhang, Y., et al., The impact of housing expenditure pressure on migrant's physical health: evidence from China. Applied Economics, 2023: p. 1-6.
8. Song, Z. and Y. Wu, Effects of residential push–pull factors on tenants' intentions to relocate from megacities: Evidence from a Beijing, China survey. Habitat International, 2022. 129: p. 102663.
9. Wu, W. and K. Zhao, Dynamic interaction between foreign direct investment and the new urbanization in China. Journal of Housing and the Built Environment, 2019. 34(4): p. 1107-1124.
10. Feng, L., C.-Y. Lin, and C. Wang, Do Capital Flows Matter to Stock and House Prices? Evidence from China. Emerging Markets Finance and Trade, 2017. 53(10): p. 2215-2232.
11. Choy, L.H.T., W.K.O. Ho, and S.W.K. Mak, On FDI-led growth and the price of residential properties in Guangdong. Journal of Housing and the Built Environment, 2015. 30(1): p. 39-51.
12. Wang, L., H. Hu, and X. Wang. Public Attention and Housing Prices: City Panel Data Based on Search Big Data. in 2021 International Conference on Applications and Techniques in Cyber Intelligence. 2021. Cham: Springer International Publishing.
13. Wang, L., et al., Synergistic evolution of resilience and efficiency in the real estate industry: evidence from 35 large and medium-sized cities in China. Applied Economics Letters, 2023. 30(19): p. 2702-2710.
14. Trinh, H., et al., Housing Price, Financial Development, Energy Intensity, FDI inflows: Global Evidence. 2021.
15. Hammami, S., Foreign direct investment inflows, intellectual property rights and economic freedom: Empirical evidence from middle- and low-income countries. African Journal of Science, Technology, Innovation and Development, 2019. 11(7): p. 861-871.
16. Zhao, K., M. Mo, and J. Shen, Pandemics and FDI inflows: The role of infrastructures. International Review of Economics & Finance, 2024. 93: p. 552-566.
17. Mina, W., Do GCC market-oriented labor policies encourage inward FDI flows? Research in International Business and Finance, 2020. 51: p. 101092.
18. Liao, H., et al., Outward FDI, industrial structure upgrading and domestic employment: empirical evidence from the Chinese economy and the belt and road initiative. Journal of Asian Economics, 2021. 74: p. 101303.
19. Wang, L., et al. Spatiotemporal Evolution and Cause Analysis of Urban Housing Investment Resilience: An Empirical Study of 35 Large and Medium-Sized Cities in China. Land, 2022. 11, DOI: 10.3390/land11101725.
20. Yang, H., et al., Exploring the interplay of resource utilization, human capital, and FDI in enhancing national well-being: Evidence from OECD countries. Resources Policy, 2024. 90: p. 104684.
21. Tan, R., et al., FDI, financial market development and nonlinearities of energy and environmental efficiency in China: Evidence from both parametric and nonparametric models. Energy Economics, 2023. 119: p. 106580.
22. Sugiharti, L., et al., The FDI Spillover Effect on the Efficiency and Productivity of Manufacturing Firms: Its Implication on Open Innovation. Journal of Open Innovation: Technology, Market, and Complexity, 2022. 8(2): p.