Politics and Asset Prices: China's Anti-corruption Campaign and Prices of Luxury Homes in Beijing

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Abstract

While anti-corruption efforts may improve social fairness and economic efficiency, they can have unintended, depressing impacts on asset prices. Using condo sales from 2012 to 2018 in Beijing, we find that luxury condos commanded about 5% higher prices than ordinary condos before the anti-corruption announcement in December 2012. However, this luxury premium became a 10% discount following the announcement and was more significant in the two districts where most government agencies are located. Analyzing the 11 rounds of anti-corruption traveling inspections after the announcement, we find that after each inspection, the luxury premium decreased more in the two districts, and more for condos nearer the inspection targets. Next, we identify subdivisions developed on land lots with unusually low land sale prices, which we assume have a higher likelihood of corruption. Post the announcement, we find that the luxury premium was significantly lower in these subdivisions.

Keywords: Anti-corruption, housing, luxury premium

JEL classification: G1, H1, P5, R3

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1. Introduction

On December 4, 2012, the Chinese Communist Party (CCP) launched its anti-corruption campaign by announcing the "eight-point regulation"[1], which provides clear guidance for party and government officials to deter corruption. As an unexpected and possibly the most extensive anti-corruption campaign in modern history, it has had massive yet heterogeneous effects on governments, firms, and individuals (See, e.g., Griffin, Liu and Shu (2022) and Fang, Lerner, Wu and Zhang (2023)).

While anti-corruption efforts aim to improve social fairness and economic efficiency, they might have unintended collateral effects on the economy, particularly in developing countries where corruption might have already spread widely (see, e.g., Li, Meng, Wang and Zhou (2008) and Markussen and Tarp (2014)). Wall Street Journal reported that Chinse officials, who owned a significant amount of assets,[2] rushed to sell luxury homes amid the corruption crackdown, which depressed home prices.[3] However, the literature is silent on the statistical and economic significance of such an effect due to a lack of data. In this paper, we fill the gap by empirically analyzing whether China's anti-corruption campaign, including the announcement and subsequent traveling inspections, depressed the prices of luxury condos in Beijing.

We classify a condo as luxurious if its total "construction area"[4] is equal to or larger than 144 square meters, for two reasons. First, according to Chinese tax laws, residential properties smaller than 144 meters are considered "ordinary residences," for which the transaction tax rate is 1.5%. Larger

[1] See https://zh.wikipedia.org/wiki/中央八项规定 for details.
[2] According to WSJ, about 20% of luxury condos in Beijing were directly or indirectly owned by government and party officials
[3] "Chinese Officials Rush to Sell Luxury Homes Amid Corruption Crackdown" By Esther Fung and Alyssa Abkowitz, the Wall Street Journal, August 17, 2014
[4] The construction area is a standard measure of a residential unit's size in China. It consists of internal area of the unit as well as a share of the public area in the subdivision allocated to the unit proportional to its internal area.

properties, unless they are the first purchase of a household, which has special tax and mortgage interest rate benefits, have a transaction tax rate of 3%. Second, government and party officials can enjoy price discounts when they directly buy condos developed by government agencies themselves, but only for condos smaller than roughly 144 meters. Due to these special tax rates and financing arrangements for condos larger than 144 meters, we assume that government and party officials would treat condos above the 144 square meter threshold differently. We also assume that these officials believe owning luxury condos or too many of them might increase their likelihood of being investigated for possible corruption, and influence their punishment if convicted. As a result, their demand for luxury condos would be influenced by this campaign.

Using 250,146 condo transactions in Beijing from January 1, 2012 to January 28, 2018, we find that prices of luxury condos responded to the anti-corruption campaign differently from those of ordinary condos. Using condo sales in 11 months before and 11 months post the anti-corruption announcement, we find that luxury condos commanded higher prices than ordinary condos before the announcement, holding constant condo attributes including size, location, and time (month) of sales, which we call the luxury premium. Post the announcement, however, the luxury premium was significantly negative. This is consistent with the notion that government and party officials shied away from luxury condos, by selling or less likely buying them.

However, this result alone does not suffice to establish causation, as it could have been caused by other political, economic, and financial shocks that happened when the anti-corruption campaign was announced. In other words, this result is essentially from an event study with one single event, which makes it impossible to rule out alternative interpretations of the result.

We conduct five more analyses to identify causation further. First, we investigate heterogeneity in luxury house prices' responses to the anti-corruption announcement across different districts in

Beijing. Assuming that government and party officials tend to reside in two specific districts, Dongcheng (east city) and Xicheng (west city), where most government agencies are located, we estimate a model that allows the luxury premium to differ between these two "government" districts and other districts, both before and after the announcement. We find very strong evidence that (1) before the anti-corruption announcement, the luxury premium is positive in both the government districts and other districts, and it is higher in the government districts; (2) post the announcement, the luxury premium becomes negative in both the government districts and other districts, and it is more negative in the government districts. Therefore, prices of luxury condos in the two government districts, which more likely reflect government and party officials' demand, responded more dramatically to the anti-corruption campaign.

Second, we try to see *when exactly* the luxury premium turned negative. To analyze the dynamics of the luxury premium across time in the 11 months before and 11 months after the anti-corruption announcement, we estimate a model that allows us to estimate the luxury premium in each of the 22 months. We find strong evidence that (1) the luxury premium is always positive in *every single month* before the announcement, (2) and always negative in *every single month* after the announcement. Apparently, the luxury premium turned negative exactly in December 2012, when the anti-corruption announcement was made.

Third, we focus on the post-announcement period only. There were 11 rounds of traveling inspections conducted by the Chinese Communist Party's Central Commission for Discipline Inspection (CCDI), targeting different ministries/departments/offices of the government. Under the premise that each round of these inspections would materially increase officials' likelihood to be investigated, we construct a two-month time window before and a two-month time window after each round of these inspections and analyze condo transactions in these windows.

We find that, before each inspection, the luxury premium was higher in the two government districts than in non-government districts. After an inspection, the luxury premium decreased in government districts but not non-government ones. These results indicate that luxury condos in the two government districts, which are more likely to reflect government and party officials' demand, responded more dramatically to traveling inspections.

Fourth, following the previous analysis, we limit our sample to sales in the two government districts in the 11 before- and 11 after-inspection windows. We calculate the distance of each condo sale to the nearest inspected government agencies and test if the post-inspection decrease in the luxury premium is related to the distance. We find strong and robust evidence that the luxury premium decreased more for condos nearer the inspection targets.

Finally, we analyze heterogeneity in the responses of luxury condo price to the anti-corruption announcement across subdivisions. The literature provides strong evidence of corruption in the sales of land leaseholds, which is how urban land is allocated in China, at least prior to the anti-corruption announcement. For example, Cai, Henderson and Zhang (2013) find that, despite sales being conducted publicly by either English or "two-stage" auctions, corruption persists through the choice of auction format, which would affect sale prices and competition among potential bidders, and side deals between favored bidders and local officials. Chen and Kung (2019) also find that firms linked to members of China's supreme political elites obtained a significant price discount in land leasehold sales, compared to those without such connections. These firms also purchased slightly more land. Both papers appear to point in the same direction: land leaseholds sold with larger discounts are more likely to involve corruption.

Anecdotal evidence indicates that developers offered condo units, likely luxury ones, to government officials in exchange for a higher chance of successful transactions and/or lower prices,

in subdivisions they built on the involved land lots. We collect land sale data in Beijing before the anti-corruption announcement and use a hedonic regression to identify land lots with negative regression residuals. We call the subdivisions on them "shady subdivisions" and assume that luxury condos there are more likely to be owned by corrupt officials.

Since there were very few condo sales in these shady subdivisions before the anti-corruption announcement, we focus on condo sales in these and other subdivisions post the announcement. We find strong evidence that luxury condos in shady subdivisions had significantly lower prices than luxury condos in other subdivisions. Under the assumption that luxury condos had similar prices across shady and non-shady subdivisions before the anti-corruption campaign began, the result shows that luxury condos in shady new subdivisions were more negatively affected by the anti-corruption announcement. This is consistent with the notion that the anti-corruption campaign affected government and party officials more significantly than others.

This paper makes a novel contribution to the literature about the connections between politics and asset prices by showing that politics can have a measurable impact on asset prices by affecting the behavior of influential investors. This paper also contributes to the literature on the connection between corruption and the economy, as well as a growing literature that analyzes China's corruption, by providing empirical evidence that China's anti-corruption campaign has unintended and detectable effects on house prices. To our knowledge, this is novel evidence of the collateral effect of anti-corruption efforts on asset prices.

The rest of the paper is organized as follows: Section 2 reviews the literature; Section 3 describes the institutional background of the anti-corruption campaign; Section 4 describes our data on condo sales and presents our baseline results; Section 5 investigates how the luxury premium varies across government and non-government districts and documents its dynamics across time; Section 6

provides evidence that the luxury premium decreases more for condos nearer the inspected agencies; Section 7 analyzes how prices of luxury condos vary across shady and non-shady subdivisions post the anti-corruption campaign announcement; and, Section 8 provides our concluding remarks.

2. Literature review

The literature provides abundant evidence for connections between politics and asset prices. Among these, Santa-Clara and Valkanov (2003) make a puzzling discovery: the excess return in the stock market is higher under Democratic, rather than Republican presidencies. These excess returns are not explained by business-cycle variables related to expected returns, nor differences in the riskiness of the stock market across presidencies. Mei and Guo (2004) use GARCH models to analyze and compare the impact of political uncertainty and financial crises on stock market volatility in 10 Middle East/North Africa (MENA) countries over the period 2005–2018. They find that political events have a more significant effect than financial crises on stock market volatility. He, Lin, Wu and Dufrene (2009) find that the uncertainty of the 2000 presidential election induces information asymmetry of politically sensitive firms under the Bush/Gore platforms. The unusual delay in election results creates a significant increase in the adverse selection component of the trading cost of politically sensitive stocks. Pástor and Veronesi (2012) and Pástor and Veronesi (2013) develop general equilibrium models predicting the economic impact of government policies, including policy shock effects on direction, magnitude, volatility, risk premium, and correlations of stock prices. Belo, Gala and Li (2013) show that political cycles predict variation in cash flows and stock returns. During Democratic presidencies, firms with high government exposure experience higher cash flows and stock returns, whereas the opposite pattern holds true during Republican presidencies. This predictability does not appear to be priced in by the market. Baker, Bloom and Davis (2016) develop an index of economic policy uncertainty based on newspaper coverage frequency, which spikes during major political/economic/social events. Using firm-level data, they find that policy uncertainty is associated with greater stock price volatility, and reduced

investment and employment in policy-sensitive sectors. They also find that innovations in policy uncertainty foreshadow declines in investment, output, and employment. Çolak, Durnev and Qian (2017) find that there are fewer IPOs (initial public offerings) originating from a state when it is scheduled to have an election, and this dampening effect of elections on IPO activity is stronger for firms with more concentrated businesses in their home states, firms that are more dependent on government contracts, and harder-to-value firms. Cao, Li and Liu (2019) find that political uncertainty affects the volume and outcome of cross-border acquisitions. A national election deters foreign firms' inbound acquisitions but encourages domestic firms to conduct outbound cross-border acquisitions. The novel insight of our paper is that political activities might produce direct and significant effects on asset prices because political figures themselves can be major investors, and their demand for or supply of assets can be directly influenced by political events.

This paper is also directly related to the literature on corruption and its connections with the economy. Lien (1990) studies a game in which two firms compete via bribery of a corrupt government official for a to-be-awarded project and finds that the economy may suffer allocation inefficiencies whenever there is some degree of discrimination. Mauro (1995) analyzes a cross-section of countries and finds that corruption lowers investment, thereby lowering economic growth. Acemoglu and Verdier (2000) show that government intervention creates room for corruption. To prevent corruption, governments may create rents for bureaucrats, induce a misallocation of resources, and expand bureaucracy. Fisman (2001) constructs an index of political connectedness for Indonesia and finds that a large percentage of a well-connected firm's value may be derived from political connections. Billger and Goel (2009) use cross-sectional data for nearly one hundred countries to examine the corruption determinants. They find that, among the most corrupt nations, larger governments and greater economic freedom do not appear to reduce corruption, but greater democracy seems to alleviate it. Paunov (2016) documents the impacts of corruption on smaller- and larger-sized firms' adoption of quality certificates and patents. She uses firm-level data for 48

developing and emerging countries to analyze corruption's impacts on firms operating in industries that use quality certificates and patents more intensively. She finds that corruption reduces the likelihood that firms obtain quality certificates. Corruption affects particularly smaller firms but has no impact on exporters or foreign- and publicly-owned firms. Zeume (2017) finds that, after the passage of the U.K. Bribery Act 2010, U.K. firms operating in high-corruption countries experienced a drop in firm value, whereas their non-U.K. competitors in these countries encountered an increase. U.K. firms responded to the Act by reducing their expansion into perceptively corrupt countries. Moreover, their sales and merger and acquisition (M&A) activity declined in such countries.

This paper also contributes to the literature on corruption in China and other developing countries. Li, Meng, Wang and Zhou (2008) provide early evidence indicating that corruption might be widely spread in China. Using a nationwide survey of private firms, they find that private entrepreneurs' affiliation with the Chinese Communist Party positively affects the performance of their firms. They also find that Party membership helps private entrepreneurs to obtain loans from banks or other state institutions, and affords them more confidence in the legal system. Furthermore, Party membership is more important to firm performance in regions with weaker market institutions and weaker legal protection. Markussen and Tarp (2014) find similar results in Vietnam, suggesting widely spreading corruption: households increase their investments in land improvements if they have relatives in positions of political or bureaucratic power. Using hand-collected data on changes in local government officials, An, Chen, Luo and Zhang (2016) find that, in China, political turnover leads firms to significantly reduce corporate investment, particularly when the new official is an outsider appointed by a higher-level government. Furthermore, the investment decline due to political turnover has a significantly negative impact on the profitability of private firms, but not state-owned firms. Xu, Chen, Xu and Chan (2016) examine the relation between political uncertainty and cash holdings for firms in China. They find that firms hold less cash during the first

year of a new city government official's appointment, which is consistent with the grabbing hand hypothesis of politicians. They also find that firms hold significantly less cash when the political risk is higher. Lin, Morck, Yeung and Zhao (2016) find that, on the day of the anti-corruption announcement, Chinese companies' share prices rose sharply. The reaction was uniformly positive for state-owned enterprises (SOEs), but heterogeneous across non-SOEs. Stock prices of non-SOEs that invested more in "connections" with government officials reacted negatively or less positively to the announcement. Lan and Li (2018) present evidence of corruption during China's leadership transitions when governmental positions are open for competition. They find that the import value of luxury watches, a popular medium for corrupt exchanges, peaked during regular leadership transitions. However, imports of non-luxury watches and other luxury items unpopular for corrupt exchanges did not exhibit the same cycle. Fang, Gu and Zhou (2019) find that the housing price paid by bureaucrat buyers was significantly lower than that paid by non-bureaucrat buyers. Furthermore, they find that the bureaucrat price discounts exhibited salient gradients with respect to their hierarchical ranks, the criticality of their government agencies to real estate developers, and geography. Using price discounts government officials receive when buying new housing units as a measure of corruption in China, Chu, Kuang and Zhao (2019) examine the effect of the anti-corruption campaign launched in 2012. They find that the discounts decreased sharply after the campaign, but had no effect on existing housing sales. Agarwal, Qian, Seru and Zhang (2020) find that government bureaucrats received 16% higher credit lines than non-bureaucrats with similar income and demographics before the anti-corruption campaign. Regions associated with greater credit provision to bureaucrats opened more branches and received more deposits from the local government. After staggered corruption crackdowns, the new credit cards created for bureaucrats in exposed regions no longer enjoyed a credit line premium. Our paper extends this literature by showing that the anti-corruption campaign has an unintended but measurable impact on luxury condos in Beijing, via affecting government and party officials' economic behavior. Griffin, Liu and Shu (2022) find that executives from firms with poor governance and inefficiencies are more

likely to be investigated; however, connections with investigated political leaders or the current leadership would increase and decrease the probability of being investigated, respectively. Fang, Lerner, Wu and Zhang (2023) show that China's anticorruption campaign effectively reduced corruption in allocating government subsidies to firms. They find that, after the removal of provincial heads on corruption charges and the unanticipated departures of local government officials, the allocation of subsidies became more sensitive to firm merit, and subsidies became more strongly associated with future innovation. Our paper complements this literature by showing an unintended consequence of the anti-corruption campaign on asset prices.

3. Institutional background

3.1 The anti-corruption campaign

Since 1978, corruption in China has been soaring with economic growth and has become a salient policy concern. From November 2007 to June 2012, over 660,000 officials were punished for corruption.[5] At the 18th Party Congress in 2012, both the outgoing CCP General Secretary, Hu Jintao, and the incoming Party Leader, Xi Jinping, repeatedly emphasized that corruption is a threat to the survival of the CCP. The anti-corruption campaign launched after the conclusion of the 18th National Congress of the Chinese Communist Party in 2012 has become the most considerable and organized anti-corruption effort in the history of the CCP.

On December 4, 2012, the Central Committee of the CCP unexpectedly announced the "eight-point regulation" (八项规定), which immediately shocked the stock market (see Lin, Morck, Yeung and Zhao (2016)) and also significantly affected the land market (see Chen and Kung (2019)). The regulations were unusually explicit: in addition to stating what government and party officials were expected to do (serving the public more efficiently etc.), it stated in detail what they were not

[5] https://web.archive.org/web/20121012051901/http://www.zj.xinhuanet.com/newscenter/rb/2012-10/09/c_113309073.htm

allowed to do. Examples of forbidden activities include using banners, red carpets, flowers in any welcome ceremonies, attending dinners and banquets, and publishing books. The eighth point specifically stated that government and party officials needed to be diligent and thrifty, and strictly follow regulations on housing and traveling.

The Central Commission for Discipline Inspection (CCDI) was directly charged with overseeing the campaign. CCDI has the mandate to enforce party disciplines, investigate malfeasance, and punish party members for committing offenses using disciplinary and legal measures. Since 2012, CCDI largely relied on "central traveling inspection teams" instead of its local commissions to conduct audits and investigations. The traveling inspection teams would send their findings to the CCDI to enact formal investigative procedures if necessary. Prior to the CCP's 19th National Congress in October 2017, CCDI organized 12 rounds of traveling inspections, 11 of which included government officials in their targets and one of which only targeted state-owned enterprises. During that period (December 2012 to October 2017), over 189,000 cases were investigated, and about 256,000 party members and officials were punished.[6]

3.2. Corruption and luxury homes

In addition to owning Swiss watches, French wine, fine arts and antiques (see Lan and Li (2018)), the media and CCDI's inspection reports often accuse corrupt government and party officials of owning a large number of luxury homes. Due to the enormous number of luxury houses owned by corrupt officials, it is likely that possible actions they take in response to the anti-corruption campaign, including selling those properties or refraining from acquiring more, may have detectable effects on the housing market, particularly a decline in the prices of luxury homes.

[6] "The work report of the 18th Central Commission for Discipline Inspection to the 19th National Congress of the Communist Party of China"
https://www.ccdi.gov.cn/xxgkn/hyzl/201710/t20171031_40522_m.html

Chinese media started to report fire sales of luxury houses by officials right after the 2012 announcement. On December 22, 2012, China Times, a financial media, reported that officials in Guangdong and Jiangsu province were selling their houses at low prices[7]. However, this story was initially disputed by other official media. For example, on December 28, 2012, Xinhua Daily, which is the core newspaper managed by the CCP dismissed the news as a mere rumor. Xinhua Daily stated that the housing market remained strong, and the officials' sales had negligible effects.[8]

Soon after, foreign media started to report officials' fire sales of houses. On August 17, 2014, the Wall Street Journal (WSJ) reported that Chinese officials were rushing to sell luxury homes amid corruption crackdowns. The newspaper interviewed real estate agents in Beijing, Shanghai, and Guangzhou who were involved in helping officials sell their luxury houses. Those agents stated that a 5-10% discount was common to quickly sell those properties, often within two weeks. One official even offered a 2 million RMB discount. According to the WSJ's estimate, about 20% of luxury houses were owned by officials, who constitute about 0.9% of the population in China. The WSJ believed that the anti-corruption campaign had compelled officials to sell their luxury houses before inspections, and discouraged them from buying new luxury homes. This WSJ article was (December 2014) also reported in a government-owned media Cankaoxiaoxi (News for reference), which is a well-known media whose target audience is government officials.

CCDI inspection reports further confirmed that corrupt officials tended to own many luxury houses, and they also described why this happened. Compared with cash, offering luxury houses to officials was a more popular and better-disguised bribery channel. For example, it was found that some real estate developers offered officials luxury houses on huge discounts or for free, in exchange for a

[7] The official website of the China Times has deleted this article. Here is another link: http://money.sohu.com/20121224/n361344626.shtml

[8] The Xinhua Daily has deleted this article. Here is another link: https://3g.163.com/news/article/8JQA4HP800014JB5.html

favor in helping them acquire land at a lower price and/or higher likelihood of success. According to the CCDI reports and the media, it was "normal" for a corrupted official to have 20 or 30 luxury homes. Some even had over 100 luxury homes. In fact, the former Minister of the Railway, Liu Zhijun, was accused of having 374 houses in 2013.

Corrupt officials who own many luxury houses could quickly become extremely wealthy with the rapid increase in house prices. For example, Lu Xiwen, the former Vice Party Secretary of Beijing, was inspected in November 2015. According to a documentary film by CCDI, she accumulated vast wealth by owning luxury homes in Beijing and Guangzhou. In 2006, a famous SOE real estate developer, the Financial Street Group, constructed a luxury complex in a highly desirable location in Beijing. In exchange for Lu's help, the developer "sold" three luxury condos in that complex to Lu and her family at a 50% discount. The market value of the three units was about 40 million RMB in 2006. In 2022, the market value increased to around 120 to 150 million RMB. The documentary also mentioned how officials sold luxury houses when faced with inspections. In 2014, after the third round of the CCDI traveling inspection began, many officials in Beijing expected that Lu would be investigated for corruption. Hou Jiuyi, who was complicit in Lu's corruption, tried to sell his luxury villa in Guangzhou immediately. Noticeably, all those properties related to corruption and bribery cases were luxury homes.

The literature also provides evidence supporting the idea that government officials likely own unproportionally more luxury houses. Chen and Kung (2019) show that local officials granted favors to princeling firms, mostly real estate developers, in exchange for higher chances of being promoted to positions of national leadership, which would be enabled by Politburo behind the princeling firms. It seems reasonable to assume that those developers were willing and able to offer luxury houses to officials as another form of rewarding them. Moreover, Fang, Gu and Zhou (2019) provide evidence that government officials tended to buy larger houses than other buyers.

4. Data and baseline results

4.1. Data of condo sales

This paper focuses on the housing market in Beijing. As the capital of China, Beijing is not only where many officials of the central and Beijing municipal governments live but also, anecdotally, among the favorite housing markets where corrupt officials from other parts of China invest. They have been attracted to Beijing by its high price appreciation rates and amenities, including low crime rates, good infrastructure, high-quality education, and good medical services. It is not unusual for corrupt officials to be accused of owning multiple luxury condos in Beijing, not just for themselves but also for their children. Therefore, it is plausible that a larger percentage of luxury condos are owned by officials in Beijing than in other cities, making Beijing an ideal market to analyze the impact of the anti-corruption campaign on luxury house prices via government and party officials' behavior. Furthermore, Beijing is among the largest markets and has one of the largest samples of condo transactions, which provides more statistical power to our tests.

We collect data on transactions of existing condos in Beijing from the biggest real estate agent in China, Lianjia from January 2012 to January 2018. The initial sample comprises 312,646 transactions of condos in 4,034 residential subdivisions. Note that Lianjia was established in 2010, and the data it provides go back to January 2012 but not earlier years, which is certainly disappointing. However, we have at least 11 months of data before the anti-corruption announcement, which has enough power to generate statistically significant results. Furthermore, the housing market in China has been constantly regulated by the central government and micro-managed by municipal governments, and thus often experienced structural changes. Having an 11-month window before the announcement has the advantage that the housing market was less likely to experience structural changes in that period, so our empirical models are less likely to be misspecified.

We keep in our final sample those satisfying all the following conditions: (1) its building is not older than 30 years, (2) it is not located in the four far-away districts: Yanqing, Huairou, Miyun, and Pinggu, (3) it has one to five bedrooms, (4) it has one to three dining rooms, (5) it has one to three kitchens, (6) its area is between 36 to 500 square meters, (7) its price per square meter is above the lowest 1% and below the highest 1% of price per square meter, and (8) it is located in a subdivision with at least five condo sales. Our final sample comprises 250,146 condo sales.

Figure 1 plots the locations of subdivisions in our final sample. Table 1 reports summary statistics of main housing attributes. The total price ranges from about half a million to 45 million RMB; price per square meter ranges from 13,000 RMB to 115,000 RMB; unit size ranges from 36 to 461 square meters; the number of bedrooms ranges from 1 to 5; the number of bathrooms ranges from 1 to 5; the number of dining rooms ranges from 1 to 3; the number of kitchens ranges from 1 to 3; the total number of floors ranges from 1 to 42; the age of the building at the time of condo sale ranges from 0 (brand new) to 30 years; the distance of the center of the subdivision to the city center (the Tiananmen Square) ranges from 1.22 to about 50 kilometers. The table also reports the mean and standard deviation of each of these variables. Figure 2 plots the histogram of log price per square meter, and Figure 3 plots the histogram of condo size in log square meters, with the vertical bar corresponding to the log of 144 meters.

4.2. *Luxury premium before and after the anti-corruption announcement*

We first use a model similar to those in Agarwal, Qian, Seru and Zhang (2020) and Fang, Gu and Zhou (2019) to investigate how the pricing of luxury condos varies before and after the announcement of the anti-corruption campaign, in the two 11-month time windows.

$$P_{i,t} = \beta_1 Luxury_i + \beta_2 Luxury_i \times Post_i + \sum_{c=1}^{c} \rho_c X_{i,c} + \varepsilon_{i,t} \quad (1)$$

In equation (1), $P_{i,t}$ is the log of house price per square meter (in RMB), $Luxury_i$ is a dummy variable for houses larger than 144 square meters, $Post_i$ is a dummy that equals 1 if the house is sold after December 4, 2012, and $X_{i,c}$ are other control variables, including square meters of the condo, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby,[9] a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one third of the floors in the building. It is worth noting that the model in (2) does not include the post-announcement dummy $Post_i$ itself. This is because it would be perfectly correlated with the monthly dummies.

It is straightforward to interpret coefficients in equation (1). The coefficient of $Luxury_i$, which is β_1, captures the difference between the intercept term of the pricing of luxury condos and the intercept term of the pricing of non-luxury condos, which we call the luxury premium. A positive (negative) value of β_1 would suggest that luxury condos have higher (lower) prices than non-luxury condos with identical attributes. The coefficient of the interaction term between $Luxury_i$ and $Post_i$, which is β_2, captures the difference between the luxury premium post the announcement and that before the announcement. A positive (negative) value of β_2 would indicate that the luxury premium increases (decreases) post the announcement. Our hypothesis here is $\beta_2 = 0$.

Table 2 reports summary statistics of the main attributes of condo sales used in estimating the model. It omits statistics of the number of bedrooms, number of dining rooms, number of kitchens, and number of bathrooms, as these variables are highly correlated with the square meters and do not

[9] This information is provided in the dataset, which is not constructed by us.

provide extra information. Note that our sample consists of 26,411 sales in the 11-month window before December 4, 2012 and 29,187 sales in the 11-month window after.

We estimate the model in (1) using three specifications. The first one is a benchmark, and it does not include $Luxury_i$ nor its interaction term with $Post_i$. The second one includes $Luxury_i$ but not its interaction term with $Post_i$. The third one includes both $Luxury_i$ and its interaction term with $Post_i$.

We report the results in Table 3. The first specification has coefficient estimates that are generally consistent with conventional wisdom. First, condo prices are an increasing function of condo size. Second, prices are higher for condos with more bedrooms and more dining rooms. Third, condos in buildings with fewer floors (lower density) have higher prices. Fourth, newer condos have higher prices. However, the numbers of kitchens and bathrooms are not significant, possibly because they are highly correlated with the numbers of bedrooms and dining rooms. Note that we are not reporting the coefficients of all dummy variables.

The second specification reports very similar coefficients for all control variables, and the coefficient of $Luxury_i$ is insignificant, which appears to suggest that over the 11 months before and after the announcement, luxury houses are not priced differently from non-luxury houses with identical attributes. However, the result regarding the luxury premium changes dramatically once we further include the interaction term between the luxury dummy and the post-announcement dummy. Now, the coefficient of $Luxury_i$ is 0.05, which is significant at the 1% level, and the coefficient of the interaction term is -0.1, which is also significant at the 1% level. This essentially indicates that (1) there is a positive 5% luxury premium before the anti-corruption campaign announcement, and (2) after the announcement, the luxury premium dramatically decreased to the extent that luxury condos were sold at a 10% discount (negative premium). It appears that the

decrease is so significant that it eliminates the pre-announcement premium, and makes the average premium during the 22-month period insignificant.

5. Luxury premium heterogeneity and dynamics

5.1. Government vs non-government districts

Evidently, it is premature to argue that the anti-corruption campaign caused the decrease in the luxury premium as documented above. To further shed light on possible causation, we investigate across-district heterogeneity on the dynamics of the luxury premium. One particularly interesting and useful heterogeneity is that government and party officials tend to reside in two districts: Dongcheng and Xicheng, which we refer to as "government districts".[10] Since the anti-corruption campaign mostly targets and affects officials, we hypothesize that these two districts would experience a more dramatic decline in the luxury premium post the announcement.

Table 4 reports the same summary statistics of main attributes reported in Table 3 for condo sales in the two government districts and those in other districts, which we refer to as non-government districts. Note that there are 7,228 sales in government districts, and 48,370 sales in other districts.

We use the model below to test whether changes in the luxury premium after the announcement differ between government districts and other districts.

$$P_{i,t} = \beta_1 Luxury_i + \beta_2 Luxury_i \times Post_i + \beta_3 Luxury_i \times Government_i + \beta_4 Post_i \times Government_i + \beta_5 Luxury_i \times Post_i \times Government_i + \sum_{c=1}^{c} \rho_c X_{i,c} + \varepsilon_{i,t} \quad (2)$$

[10] Out of all 67 departments of the central government, 21 are in Dongcheng, 36 are in Xicheng, 4 are in Chaoyang, and 6 are in Haidian. The Beijing municipal government was in Dongcheng before 2019.

Three things in (2) are worth noting. First, $Government_i$ is a dummy that equals 1 for condos in the two government districts. Second, the model does not include $Government_i$ itself. This is because we have subdivision dummies in the model, so including $Government_i$ would create perfect multicollinearity. Third, the model does not include $Post_i$ itself either, because it already includes monthly dummies. Note that the model in (2) is essentially an extended version of the model in (1) that includes three more explanatory variables: an interaction term between $Luxury_i$ and $Government_i$, an interaction term between $Post_i$ and $Government_i$, and a three-way interaction term between $Luxury_i$, $Post_i$, and $Government_i$.

Table 5 report results of the three regressions. The first estimates the model in (1) for the two government districts. The second also estimates the model in (1) for all other districts. The third uses the whole sample to estimate the model in equation (2). Note that, since the coefficients of condo attributes are generally similar to those in Table 3, we no longer report all of them in this table.

The first two regressions have results similar to those in Table 3. Before the announcement, the luxury premium is 6% for "government" districts, and 5% for other districts. Both are significant at the 1% level. Post the announcement, the luxury premium decreases by 16% for government districts and by 9% for non-government districts, and both changes are the 1% level. Therefore, it appears that the luxury premium decreases more dramatically in "government" districts than in other districts.

The third regression formally tests whether the luxury premium decreases more in "government" districts than in others, by estimating the model in (2) using condos from all districts. Note that according to the specification, the base group is non-luxury condos in non-government districts before the announcement.

In the third regression, coefficients of all interaction terms are significant at the 1% level. Specifically, the coefficient of $Luxury_i$ is 0.04. This shows that luxury condos have a 4% premium in non-government districts. The coefficient of the interaction between $Luxury_i$ and $Post_i$ is -0.10. This indicates that the luxury premium decreases by about 10% in non-government districts post the anti-corruption announcement. The coefficient of the interaction term between $Luxury_i$ and $Government_i$ is 0.11, which indicates that the luxury premium is about 11% higher in "government" districts than in other districts prior to the announcement. The coefficient of the interaction term between $Post_i$ and $Government_i$ is 0.02. This shows that non-luxury condos appreciate 2% more, or depreciate 2% less, in "government" districts than in others after the announcement.

The most important result in Table 5 is the coefficient of the three-way interaction term: the one between $Luxury_i$, $Post_i$, and $Government_i$. It allows us to test our key hypothesis regarding heterogeneity across districts: does the luxury premium decrease more in "government" districts than in other districts post the announcement? The answer seems to be yes, as the coefficient is -0.07 and significant at the 1% level. This evidence is consistent with the notion that the anti-corruption campaign announcement likely *caused* decreases in the luxury premium in the post-announcement period.

5.2. Dynamics of the luxury premium across time

To further identify whether the anti-corruption campaign announcement *caused* the decrease in the luxury premium, we need to answer a critical question: exactly *when* did the luxury premium turn negative? If it turned negative before the anti-corruption announcement was made or possibly leaked, or long after the announcement, it would be difficult to argue that the decrease in the luxury premium was caused by the announcement.

To answer this question, we estimate a model that is similar to the one in (1). But instead of including $Luxury_i$ and its interaction with $Post_i$, we include interaction terms between $Luxury_i$ and the monthly dummies. The coefficients of these interaction terms are straightforward to interpret: they measure the luxury premium of each month. We estimate this model using the 55,598 condo sales in the 22 months from January 2012 to October 2013, as well as subsamples of the 7,228 sales in the two government districts and the 48,370 sales in other districts in the same period.

Table 6 reports the results from the three regressions. Using the whole sample of 55,598 condo sales, the first regression provides very strong evidence that the luxury premium is positive *every single month* before December 2012. It is significant at the 1% level in 7 months, at the 5% level in September 2012, at the 10% level in October 2012, and insignificant in August and November of 2012. The regression also shows that the luxury premium turns negative exactly in December 2012, and remains negative in *every single month* in the post-announcement period. The negative luxury premium is statistically significant from December 2012 to September 2013, and insignificant in October 2013. The fact that the luxury premium turned negative exactly in December 2012, when the anti-corruption announcement was made, further corroborates the causation from the announcement to the decrease in the luxury premium.

To visualize the dynamics of the luxury premium suggested by this regression, we provide a boxplot of the time series of the monthly luxury premium from January 2012 to October 2013 in Figure 4. The center of each box is the point estimate of the coefficient of each interaction term, and the height of each box is two times the standard error of the estimate. The length of each whisker is one standard error of the estimate. The figure clearly shows that the luxury premium turned negative exactly in December 2012, decreased further in the two following months, and remained negative in the entire 11-month post-announcement period. It is worth noting that the

luxury premium seemed to decrease slightly from July to August in 2012, but it remained positive and stabilized from August to November. Therefore, the decrease in the luxury premium in December 2012 did not seem to follow a trend starting before the announcement.

The other two regressions, which use sales from the government districts and other districts respectively, provide similar results. First, the luxury premium turns negative exactly in December 2012 for both types of districts. Second, the luxury premium is *always positive* before December 2012, except for the government districts in August 2012. Third, the luxury premium is *always negative* after December 2012 for both types of districts. Heterogeneity also exists across these two types of districts. First, the positive luxury premium is generally insignificant in the government districts before December 2012, but often significant in other districts. Second, the negative luxury premium after December 2012 tends to have a greater magnitude in the government districts than in other districts. In other words, luxury condos in government districts have larger discounts than those in other districts post the anti-corruption announcement.

5.3. Before and after traveling inspections post the announcement

Post the announcement of the anti-corruption campaign, the Chinese Communist Party's Central Commission for Discipline Inspection (CCDI) conducted 12 rounds of "travel inspection" targeting different ministries/departments/offices of the government. We exclude one round that targeted state-owned enterprises only, as our research focus is government and party officials. Table 7 reports the dates and targets of the 11 inspections during our sample period. Under the assumption that each round of inspection would materially increase the probability of corrupt officials to be investigated and prosecuted, we hypothesize that the luxury premium would decrease after the commencement of each inspection round.

We still estimate the model in (1) but make two changes. The first change is in the sample. Instead of using condo sales in the 11 months before and after the announcement, we limit our sample to sales that happened in a two-month window before and after the commencement date of each inspection, which is when the earliest news was reported regarding the targets of the inspection. Since there are 11 rounds of inspections, we have 22 windows: 11 "before" windows and 11 "after" windows. However, note that some inspections are not more than 4 months apart from each other, so we exclude from our sample a small number of sales that belong to more than one window (e.g., the "after" window of one inspection and the "before" window of the next inspection). The second change is that, instead of having a $Post_i$ dummy, we use an $Inspection_i$ dummy, which equals 1 for sales in any of the 11 "after" windows, and 0 for sales in any of the 11 "before" windows. Table 8 reports summary statistics of 76,471 condo sales in the 11 "before" windows, and 81,911 condo sales in the 11 "after" windows.

Table 9 reports five regressions. The first follows the model in (1) but replaces $Post_i$ with $Inspection_i$. This is a benchmark and uses all sales from all districts. Two things are worth noting. First, the base group in this regression consists of all non-luxury condos sold before each inspection. Second, it includes the interaction term between $Luxury_i$ and $Inspection_i$ but not $Inspection_i$ itself, as the regression already includes monthly dummies. The result shows a negative luxury premium before inspections (note that all inspections took place post the announcement), as the coefficient of $Luxury_i$ is -0.01 and significant at the 1% level. Moreover, there is no evidence of change in the luxury premium before and after each inspection, as the coefficient of the interaction term between $Luxury_i$ and $Inspection_i$ is insignificant.

The second regression limits its sample to sales in the two "government" districts. Two results are worth noting. First, there is a positive luxury premium now. The coefficient of $Luxury_i$ is 0.03 and significant at the 1% level. Second, the luxury premium dramatically decreases after the inspection,

as the coefficient of the interaction term between $Luxury_i$ and $Inspection_i$ is -0.02 and significant at the 1% level. This is consistent with the notion that, traveling inspections affect luxury premium more in the "government" districts. The third regression limits its sample to sales in all "non-government" districts and shows no evidence for changes in the luxury premium before and after each inspection.

The fourth regression formally tests whether the change in the luxury premium after each inspection differs between government and non-government districts by estimating the model below.

$$P_{i,t} = \beta_1 Luxury_i + \beta_2 Luxury_i \times Inspection_i + \beta_3 Luxury_i \times Government_i + \beta_4 Inspection_i \times Government_i + \beta_5 Luxury_i \times Inspection_i \times Government_i + \sum_{c=1}^{c} \rho_c X_{i,c} + \varepsilon_{i,t} \quad (3)$$

Three things in (3) are worth noting. First, the base group of this regression consists of sales of non-luxury condos in "before" windows and non-government districts. Second, the regression does not include the $Government_i$ dummy itself, because it would correlate with the subdivision dummies. Third, the regression does not include the $Inspection_i$ dummy itself, as it is correlated with monthly dummies.

The coefficients of the interaction term between $Luxury_i$ and $Inspection_i$ is insignificant; therefore, there is no evidence of change in the luxury premium in non-government districts after each round of inspection. The other three interaction terms are statistically significant at the 1% level. The coefficient of the interaction between $Luxury_i$, $Government_i$ is 0.12, which indicates that the luxury premium in the two government districts before inspections is higher than that in non-government districts. The coefficient of the interaction term between $Inspection_i$ and $Government_i$t is 0.09. This seems to suggest that non-luxury condos in government districts appreciate more, or depreciate less, than non-luxury condos in non-government districts, after

inspections. Finally, and most importantly, the coefficient of the three-way interaction term between $Luxury_i$, $Government_i$, and $Inspection_i$ is -0.02. This strongly indicates that, after an inspection, the luxury premium in government districts decreases more, or increases less, than that in non-government districts.

6. Luxury premium and condo's distance to inspected targets

To further identify the causation from traveling inspections to changes in luxury premiums, note that the 11 inspections targeted different government agencies in different locations in Beijing. Figure 5 plots the locations of the inspection targets. Most of them are in Dongcheng and Xicheng, and some of them are in Chaoyang and Haidian. If (1) government officials more likely owned luxury condos near where they worked, and (2) an inspection more significantly affected officials of the targeted agencies than those of other agencies, we expect that the luxury premium decreases more in areas near the targeted agencies after each inspection.

We test this hypothesis using the 19,149 sales from Dongcheng and Xicheng in the 11 "before" and 11 "after" windows. This is to mitigate a concern that results in Table 9 might be due to unobserved factors that (1) affect the luxury premium but not via government officials' selling of luxury condos and (2) change more dramatically in the two government districts than in the other districts after each inspection. By limiting the sample to sales from these two government districts, our current analyses are immune from this problem. Also, most inspection targets are in these two districts; therefore, we have a large enough sample for our analyses.

For each sale, we calculate the distance from the condo's subdivision's center point to the nearest inspected agency's center point in that round. We define a dummy variable "Near" that equals 1 if the distance is short (3, 4, or 5 kilometers) and 0 otherwise. We then estimate the following model.

$$P_{i,t} = \beta_1 Luxury_i + \beta_2 Near_i + \beta_3 Luxury_i \times Inspection_i + \beta_4 Luxury_i \times Near_i \quad (4)$$
$$+ \beta_5 Inspection_i \times Near_i + \beta_6 Luxury_i \times Near_i \times Inspection_i$$
$$+ \sum_{c=1}^{c} \rho_c X_{i,c} + \varepsilon_{i,t}$$

The coefficient of the three-way interaction term between Luxury, Near, and Inspection allows us to test the hypothesis. A negative coefficient would be consistent with the notion that the luxury premium decreased more for condos nearer the inspection targets after inspections.

Table 10 reports results from three regressions, in which Near is defined using 3, 4, and 5 kilometers, respectively. Possibly because these regressions have more explanatory variables than the second regressions in Table 9, which uses the same sample, many variables in Table 10 are insignificant. Nonetheless, the coefficients of the three-way interaction term are statistically significant (at the 5% level) and all negative: -0.04 for 3 kilometers and -0.05 for 4 and 5 kilometers. This indicates that, after each inspection, luxury condos near inspected agencies sell for an additional 4% to 5% discount compared with those farther away.

The implicit control group in the regressions in Table 10 comprises condo sales outside of the 3, 4, or 5-kilometer radius of inspected agencies but inside Dongcheng and Xicheng. These condos might have very different distances from the inspection targets. To have a more homogeneous control group, we further limit condo sales to those within 6, 8, and 10 kilometers of inspected agencies in each round. Specifically, in each round of inspection, the treatment group comprises condo sales within 3, 4, and 5 kilometers of the nearest inspected agency, and the control group comprises those farther away but within 6, 8, and 10 kilometers of the nearest inspected agency.

We estimate the model in (4) using this smaller sample and report results in Table 11. The three regressions use 3, 4, and 5 kilometers to define Near and use sales within 6, 8, and 10 kilometers

of the nearest inspected agencies as the control group. The sample size is 16,491, 17,915, and 18,711, respectively. Once again, the coefficient of the three-way interaction term is statistically significant (at the 5% level) and negative: -0.04, -0.05, and -0.05. This corroborates the notion that the luxury premium of condos near inspected agencies decreases more (or increases less) than that of condos farther away.

7. Luxury premium in shady subdivisions

7.1. Corruption in land sales

To further identify possible causation from the anti-corruption campaign to prices of luxury condos, we note that corruption in land sales may lead to heterogeneity in the luxury premium across subdivisions. Anecdotal evidence indicates that to increase their chances of successfully acquiring land or paying less for land, real estate developers may promise to offer condos, likely luxury ones, to government officials for free or significant discounts, in the land lots they hope to acquire. Such activities would lead to two consequences on land lots involved: a higher portion of luxury condos owned by corrupt government officials, and abnormal land transaction prices (i.e., below fair market values). If we can identify subdivisions developed on land lots with unusually low acquisition prices, which we call "shady subdivisions" and supposedly have a larger portion of luxury condos owned by corrupt government officials, we may be able to see a more dramatic decline in luxury premium in such subdivisions post the announcement of the anti-corruption campaign.

It is reasonable to assume that corruption in land sales more likely happened before the anti-corruption campaign started; therefore, we use land transactions that took place before the announcement day to identify shady subdivisions. Furthermore, our data contains very few condo sales in shady subdivisions before the anti-corruption announcement, which makes it impossible to test whether the luxury premium declined more in them than in other subdivisions post the

announcement. Under the assumption that, prior to the anti-corruption announcement, the luxury premium was similar across subdivisions with similar attributes regardless of whether being shady or not, a more dramatic decline in the luxury premium in shady subdivisions post the announcement means that the luxury premium would be lower in shady subdivisions than in others. This is the hypothesis we try to test hereafter.

We collect data on residential land transactions from landchina.com, which is managed by the Ministry of Natural Resources. We limit our sample to land transactions that took place before the anti-corruption announcement. The dataset of landchina.com comprises 829 such transactions with the earliest one happening in February 2001. We have no data on land sales that took place before February 2001. We assume that, post the anti-corruption announcement, all the sold condos that were *not* built on any of the 829 land lots were built on land lots transacted before 2001. Figure 6 plots the location of these land lots. Figure 7 plots the time series of the number of land sales.

We categorize subdivisions developed on land lots transacted before the announcement day, including the 829 land lots from 2001 to 2012 and older ones that are not in our land sale data, into three mutually exclusive groups. The first is old subdivisions, which are those developed on land lots transacted before February 2001 and thus not in our sample of 829 land sales. The second is shady new subdivisions, which were developed on those of the 829 land lots with a higher probability of corruption in land sales. The third is non-shady new subdivisions, which were developed on those of the 829 land lots with a lower probability of corruption.

To do this, we first limit our sample of condo sales to 223,735 sales that took place after December 4, 2012 (the announcement day). Out of them, we identify sales of condos that (1) are in subdivisions the center points of which are within 100 meters from the center points of at least one

of the 829 land lots, and (2) were built after the land lot was transacted. This leads to 2,173 "new" condo sales. We label the other 221,562 condo sales as "old."

For each of the 2,173 sales of "new" condos, we identify a unique land lot that this condo belongs to using the following procedure. If the center point of the condo's subdivision is within 100 meters of only one of the 829 land lots, we assume that this condo belongs to this land lot. There are 1,119 such condo sales. However, there are 1,054 sales of condos in subdivisions that are within 100 meters of multiple land lots, which we exclude from our sample.

We then go back to clean the land transaction data. We exclude 342 of the 829 land sales with (1) price square meter being too low (under 100 RMB) or too high (over 100,000 RMB), (2) lot size being too small (smaller than 0.1 hectares), (3) the lease term being too short (shorter than 1 year) [11] and land types being rare (fewer than 8 transactions)[12], (4) and transaction method types being rare (fewer than 8 transactions)[13]. This leads to 487 land transactions, which are matched to 464 condo sales out of the 1,054 "new" condo sales. Figure 8 plots the histogram of the land price per square meter (in log).

Table 12 reports summary statistics of the main variables of these land sales. The average and the standard deviation of the total price are about 382 million and 772 million RMB, respectively. The average and the standard deviation of the price per square meter are about 5,000 RMB and 9,000 RMB, respectively. The land lease term ranges between 50 and 70 years. The distance to the city center ranges from about 1 to 122 kilometers.

[11] Land acquisition in China is essentially an acquisition of the leasehold; therefore, there is a term for each land transaction.
[12] There are 7 different land types. Three of them have too few transactions. "Low rental cost land" has 0 transactions. "Public renting residential" has 2 transactions. "Affordable housing" has 5 transactions.
[13] There are four transaction methods. We exclude "Government assigning", which has 7 sales, and "Auction", which has 7 sales too.

We estimate a hedonic model that regresses the log price per square meter of each of the 487 land transactions against a series of land attributes, including lot size, distance to city center (Tiananmen Square), the lease term, quality of land, semi-annual dummies, district dummies, land type dummies, and transaction method dummies. Coefficient estimates are sensible. For example, land lots have higher price per square meter if they are closer to Tiananmen Square, have longer terms, and have higher quality. Out of the 487 land lots, one is dropped as being a singleton, 239 have negative regression residuals and are thus considered shady, and 247 have positive residuals and are considered not shady. Figure 9 plots the histogram of the residuals.

Out of the 464 sales of new condos, 172 were in subdivisions on one of the 239 shady land lots, and 292 were built in subdivisions on one of the non-shady 247 land lots. Now we have three mutually exclusive condo sales: (1) 172 shady new condo sales, (2) 247 non-shady new condo sales, and 221,562 old condo sales. It is important to note that, for subdivisions developed on land transacted before February 2021, we are unable to distinguish shady subdivisions from non-shady ones. Therefore, we treat the 221,562 old condo sales as a mixture of condos in both shady and non-shady subdivisions. Table 13 reports summary statistics of the main variables of these three groups of condo sales.

7.2. Shady vs non-shady subdivisions

We estimate the model below to test whether the luxury premium differs between shady subdivisions and other subdivisions post the anti-corruption announcement.

$$P_{i,t} = \beta_1 Luxury_i + \beta_2 Shady_i + \beta_3 Luxury_i \times Shady_i + \sum_{c=1}^{c} \rho_c X_{i,c} + \varepsilon_{i,t} \quad (5)$$

In the above model, $Shady_i$ is a dummy that equals 1 for the 172 shady new condo sales.

Table 14 reports results from 10 regressions. The five regressions in Panel A are the same as the five regressions in Panel B, except that regressions in Panel A include subdivision dummies but not district dummies, and regressions in Panel B include district dummies but not subdivision dummies. It is also worth noting that, regressions in Panel A cannot include the $Shady_i$ dummy itself due to multicollinearity given the presence of subdivision dummies. In Panel A, the first three regressions follow the model in (1), using the 127 sales of shady new condos, 292 sales of non-shady new condos, and 221,562 sales of old condos respectively. The fourth regression follows the model in (4), using a sample that combines the 127 and 292 sales of new condos. The fifth regression follows the model in (4), using all new and old condos.

In Panel A, the first three regressions show that, post the anti-corruption announcement, luxury condos depreciated more, or appreciated less, than non-luxury condos in shady subdivisions and old subdivisions, but there is no evidence in non-shady new subdivisions. In the fourth regression, which combines sales of condos in shady and non-shady new subdivisions, there is no significant result. The fifth regression, however, provides very strong results. First, luxury condos depreciated more or appreciated less than non-luxury ones. Second, the coefficient of the interaction term between $Luxury_i$ and $Shady_i$ is -0.11 and significant at the 1% level. This indicates that luxury condos in shady subdivisions depreciated significantly more, or appreciated significantly less, than luxury condos in other subdivisions.

Panel B provides similar results. The first regression shows that, in shady subdivisions, luxury condos appreciated less, or depreciated more, than non-luxury ones. The second and third regressions do not have significant results. The fourth regression shows that non-luxury condos in shady new subdivisions depreciated more, or appreciated less, than non-luxury condos in non-shady new subdivisions. The fifth regression provides a statistically significant coefficient of the interaction term between $Luxury_i$ and $Shady_i$, which is -0.21. This shows that luxury condos in

shady new subdivisions depreciated more, or appreciated less, than luxury condos in other subdivisions and non-luxury condos in shady new subdivisions. Overall, fifth regressions in both Panel A and B provide the same message: prices of luxury condos in shady new subdivisions were more negatively affected after the anti-corruption announcement. This is consistent with the notion that the anti-corruption campaign caused decreases in prices of luxury condos by affecting government and party officials' demand for luxury condos.

8. Conclusions

There exists a resourceful literature on the connections between politics and the financial market. This paper makes a novel contribution to it by showing that, despite its righteous goals, anti-corruption efforts can have unintended and measurable effects on asset prices by affecting government officials demand for assets. Using data on condo sales in Beijing from 2012 to 2018, we find that luxury condos (larger than 144 square meters), which were more likely owned by government and party officials, commanded about 5% higher prices before the 2012 anti-corruption announcement. This luxury premium, however, decreased and became negative 10% after the announcement. Furthermore, the decrease in the luxury premium was more pronounced in the two districts where more officials resided and started in exactly December 2012, when the announcement was made.

We also analyze changes in the luxury premium in the time windows before and after each of the 11 rounds of traveling inspections after the anti-corruption announcement. We find evidence that the luxury premium decreased after each inspection and decreased more in the two government districts. Furthermore, the luxury premium decreased more for condos nearer the inspected agencies in these two districts.

To further shed light on causation from the anti-corruption campaign to luxury house prices, we investigate heterogeneity in luxury condo prices across subdivisions post the anti-corruption announcement. Inspired by the literature as well as anecdotal evidence, we assume that land sales with unusually low prices had a higher probability of involving corruption, and a larger portion of luxury condos in those land lots was owned by corrupt government officials. We use hedonic regressions to identify shady land sales and subdivisions. We find that, post the announcement, luxury condos in shady subdivisions have significantly lower prices than luxury condos in other subdivisions.

Overall, our results highlight a simple yet important channel through which politics affect asset prices: when political events affect people with sufficient wealth, they can have a significant impact on asset values. This paper extends the literature on the effects of corruption on the economy, as well as the literature on China's corruption and the effects of the anti-corruption campaign. The results corroborate the notion that, in Beijing, corrupt government and party officials own enough luxury condos that their decrease in demand alone was sufficient to alter luxury condo prices in the market. The results indicate that anti-corruption efforts can have a collateral effect: an unintended but measurable impact on asset prices where corruption is wide-spreading and people involved own significant amounts of assets.

References

Acemoglu, Daron, and Thierry Verdier, 2000, The choice between market failures and corruption, *American Economic Review* 90, 194-211.

Agarwal, Sumit, Wenlan Qian, Amit Seru, and Jian Zhang, 2020, Disguised corruption: Evidence from consumer credit in china, *Journal of Financial Economics* 137, 430-450.

An, Heng, Yanyan Chen, Danglun Luo, and Ting Zhang, 2016, Political uncertainty and corporate investment: Evidence from china, *Journal of Corporate Finance* 36, 174-189.

Baker, Scott R, Nicholas Bloom, and Steven J Davis, 2016, Measuring economic policy uncertainty, *Quarterly Journal of Economics* 131, 1593-1636.

Belo, Frederico, Vito D Gala, and Jun Li, 2013, Government spending, political cycles, and the cross section of stock returns, *Journal of Financial Economics* 107, 305-324.

Billger, Sherrilyn M, and Rajeev K Goel, 2009, Do existing corruption levels matter in controlling corruption?: Cross-country quantile regression estimates, *Journal of Development Economics* 90, 299-305.

Cai, Hongbin, J Vernon Henderson, and Qinghua Zhang, 2013, China's land market auctions: Evidence of corruption?, *Rand Journal of Economics* 44, 488-521.

Cao, Chunfang, Xiaoyang Li, and Guilin Liu, 2019, Political uncertainty and cross-border acquisitions, *Review of Finance* 23, 439-470.

Chen, Ting, and James Kai-sing Kung, 2019, Busting the "princelings": The campaign against corruption in china's primary land market., *Quarterly Journal of Economics* 134, 185-226.

Chu, Yongqiang, weida Kuang, and Daxuan Zhao, 2019, The effect of the anti-corruption campaign in china: Evidence from housing transactions, *Available at SSRN: https://ssrn.com/abstract=3437329 or http://dx.doi.org/10.2139/ssrn.3437329*.

Çolak, Gönül, Art Durnev, and Yiming Qian, 2017, Political uncertainty and ipo activity: Evidence from us gubernatorial elections, *Journal of Financial and Quantitative Analysis* 52, 2523-2564.

Fang, Hanming, Quanlin Gu, and Li-An Zhou, 2019, The gradients of power: Evidence from the chinese housing market, *Journal of Public Economics* 176, 32-52.

Fang, Lily, Josh Lerner, Chaopeng Wu, and Qi Zhang, 2023, Anticorruption, government subsidies, and innovation: Evidence from china, *Management Science* 69, 4363-4388.

Fisman, Raymond, 2001, Estimating the value of political connections, *American Economic Review* 91, 1095-1102.

Griffin, John M., Clark Liu, and Tao Shu, 2022, Is the chinese anticorruption campaign authentic? Evidence from corporate investigations, *Management Science* 68, 7248-7273

He, Yan, Hai Lin, Chunchi Wu, and Uric B Dufrene, 2009, The 2000 presidential election and the information cost of sensitive versus non-sensitive s&p 500 stocks, *Journal of Financial Markets* 12, 54-86.

Lan, Xiaohuan, and Wei Li, 2018, Swiss watch cycles: Evidence of corruption during leadership transition in china, *Journal of Comparative Economics* 46, 1234-52.

Li, Hongbin, Lingsheng Meng, Qian Wang, and Li-An Zhou, 2008, Political connections, financing and firm performance: Evidence from chinese private firms, *Journal of Development Economics* 87, 283-299.

Lien, Da-Hsiang Donald, 1990, Corruption and allocation efficiency, *Journal of Development Economics* 33, 153-164.

Lin, Chen, Randall K. Morck, Bernard Yin Yeung, and Xiaofeng Zhao, 2016, Anti-corruption reforms and shareholder valuations: Event study evidence from china, *Available at SSRN: https://ssrn.com/abstract=2729087 or http://dx.doi.org/10.2139/ssrn.2729087*.

Markussen, Thomas, and Finn Tarp, 2014, Political connections and land-related investment in rural vietnam, *Journal of Development Economics* 110, 291-302.

Mauro, Paolo, 1995, Corruption and growth, *Quarterly Journal of Economics* 110, 681-712.

Mei, Jianping, and Limin Guo, 2004, Political uncertainty, financial crisis and market volatility, *European Financial Management* 10, 639-657.

Pástor, Ľuboš, and Pietro Veronesi, 2012, Uncertainty about government policy and stock prices, *Journal of Finance* 67, 1219-1264.

Pástor, Ľuboš, and Pietro Veronesi, 2013, Political uncertainty and risk premia, *Journal of Financial Economics* 110, 520-545.

Paunov, Caroline, 2016, Corruption's asymmetric impacts on firm innovation, *Journal of Development Economics* 118, 216-231.

Santa‐Clara, Pedro, and Rossen Valkanov, 2003, The presidential puzzle: Political cycles and the stock market., *Journal of Finance* 58, 1841-1872.

Xu, Nianhang, Qinyuan Chen, Yan Xu, and Kam C Chan, 2016, Political uncertainty and cash holdings: Evidence from china, *Journal of Corporate Finance* 40, 276-295.

Zeume, Stefan, 2017, Bribes and firm value, *Review of Financial Studies* 30, 1457-1489.

Table 1. Summary statistics

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the 250,146 condo transactions used in our analyses. The sample period was from January 1st 2012 to January 28th 2018. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), square meters of the apartment, the number of bedrooms, the number of bathrooms, the number of dining rooms, the number of kitchens, the number of floors of the building, the floor level of the apartment (1 means the lowest one third of the floors, 2 means the middle one third of the floors, 3 means the highest one third of the floors), the age of the building at transaction (years), and the distance of the building to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Total price	3.61	2.21	0.54	3.05	44.75
Price per s.m.	42.43	19.25	12.83	38.37	115.40
Square meters	87.24	35.68	36.00	80.10	460.87
Bedrooms	2.07	0.75	1.00	2.00	5.00
Bathrooms	1.21	0.45	1.00	1.00	5.00
Dining rooms	1.26	0.45	1.00	1.00	3.00
Kitchens	1.00	0.05	1.00	1.00	3.00
Building floor	13.43	7.82	1.00	12.00	42.00
Apart. floor	1.82	0.77	1.00	2.00	3.000
Building age	14.43	7.12	0.00	13.00	30.00
Distance	14.84	8.05	1.22	13.55	49.59

Table 2. Summary of subsample used in table 3

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the condo transactions used in our analyses. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), square meters of the apartment, the number of floors of the building, the floor level of the apartment (1 means the lowest one third of the floors, 2 means the middle one third of the floors, and 3 means the highest one third of the floors), the age of the building at the time of the transaction (years), and the distance of the building to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Panel A. Condo sales from January 1st, 2012 to December 4th, 2012					
Observations: 26,411					
Total price	2.12	1.10	0.54	1.85	16.90
Price per s.m.	25.88	8.65	12.83	24.71	98.96
Square meters	83.56	32.52	36.00	76.15	418.26
Building floor	13.17	7.60	1.00	11.00	33.00
Apart. floor	1.81	0.77	1.00	2.00	3.00
Building age	12.84	7.15	0.00	11.00	30.00
Distance	13.69	7.28	1.22	12.65	44.66
Panel B. Condo sales from December 4th, 2012 to October 4th 2013					
Observations: 29,187					
Total price	2.77	1.36	0.59	2.45	23.00
Price per s.m.	33.34	12.12	12.83	31.63	94.94
Square meters	86.37	34.91	36.00	78.85	445.00
Building floor	12.94	7.70	1.00	11.00	42.00
Apart. floor	1.81	0.77	1.00	2.00	3.00
Building age	13.12	7.09	0.00	12.00	30.00
Distance	15.02	8.06	1.22	13.79	44.66

Table 3. Luxury premium prior and post the announcement

The table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (larger than 144 square meters), an interaction term between the luxury dummy and a dummy for transactions that took place after the anti-corruption campaign announcement on December 4th, 2012 (Post), as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one third of the floors in the building. The table uses a symmetric window for the before and after shock periods which means it uses a subsample from January 1, 2012, to October 4, 2013. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	I	II	III
Luxury		-0.01	0.05***
		(-1.54)	(6.83)
Luxury * Post			-0.10***
			(-15.88)
Square meters	-0.003***	-0.003***	-0.003***
	(-16.22)	(-16.16)	(-16.64)
Square meters squared	0.0000***	0.0000***	0.0000***
	(5.80)	(6.14)	(6.62)
Bedrooms	0.03***	0.03***	0.03***
	(11.81)	(11.86)	(12.09)
Dining rooms	0.01***	0.01***	0.01***
	(6.37)	(6.16)	(6.25)
Kitchens	0.002	0.003	0.001
	(0.18)	(0.25)	(0.10)
Bathrooms	0.003	0.004	0.004
	(0.97)	(1.09)	(1.07)
Floors	-0.003***	-0.003***	-0.003***
	(-6.46)	(-6.50)	(-6.49)
Age	-0.003***	-0.003***	-0.003***
	(-5.97)	(-5.92)	(-5.96)
Month dummy	Yes	Yes	Yes
Subdivision dummy	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes
Sample size	55,598	55,598	55,598
Adjusted R2	0.93	0.93	0.93

Table 4. Summary of subsample used in table 5

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the condo transactions used in our analyses in Table 5. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), square meters of the apartment, the number of floors of the building, the floor level of the apartment (1 means the lowest one third of the floors, 2 means the middle one third of the floors, 3 means the highest one third of the floors), the age of the building at the time of the transaction (years), and the distance of the building to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Panel A. Condo sales in "government" districts					
Observations: 7,228					
Total price	3.07	1.49	0.80	2.75	16.90
Price per s.m.	42.12	12.03	13.44	40.24	98.96
Square meters	73.60	29.97	36.00	65.00	355.48
Building floor	12.74	6.78	2.00	12.00	29.00
Apart. floor	1.81	0.77	1.00	2.00	3.00
Building age	15.74	7.59	0.00	15.00	30.00
Distance	5.24	1.37	1.22	5.41	13.61
Panel B. Condo sales in "non-government" districts					
Observations: 48,370					
Total price	2.37	1.22	0.54	2.08	23.00
Price per s.m.	27.96	9.89	12.83	26.31	94.94
Square meters	86.74	34.03	36.00	80.07	445.00
Building floor	13.09	7.77	1.00	11.00	42.00
Apart. floor	1.81	0.77	1.00	2.00	3.00
Building age	12.57	6.95	0.00	11.00	30.00
Distance	15.75	7.35	4.30	14.15	44.66

Table 5. Luxury premium prior and post the announcement across districts

The table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (larger than 144 square meters), an interaction term between the luxury dummy and a dummy for transactions took place after the anti-corruption campaign announcement on December 4th, 2012 (Post), as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one third of the floors in the building. "Government" is a dummy variable that equals 1 for condos located in the two districts where government officials more likely reside: Dongcheng and Xicheng. All condo sales used in the three regressions happened between January 1st, 2012 and October 4th 2013. The first regression uses condos in two "government" districts only. The second regression uses condos in other districts. The third uses the full sample, and includes three additional interaction terms. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	I Government districts	II Other districts	III All districts
Luxury	0.06***	0.05***	0.04***
	(2.75)	(6.30)	(5.28)
Luxury * Post	-0.16***	-0.09***	-0.10***
	(-7.83)	(-14.18)	(-14.18)
Luxury * Government			0.11***
			(5.54)
Post * Government			0.02***
			(4.51)
Luxury * Post * Government			-0.07***
			(-3.43)
Condo attributes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes
Subdivision dummy	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes
Sample size	7,228	48,370	55,598
Adjusted R2	0.86	0.93	0.94

Table 6. Dynamics of the luxury premium

The table reports the results of regressing log condo price (RMB per square meter) against interaction terms between Luxury and monthly dummies, as well as the same control variables in Tables 3 and 5. All condo sales used in the three regressions happened between January 1, 2012 and October 4, 2013. The first regression uses the full sample. The second regression uses condos in two "government" districts only. The third uses condos in other districts. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

Luxury * Month	I: All districts	II: Government districts	III: Other districts
January 2012	0.15***	0.09	0.15***
	(6.37)	(1.32)	(6.23)
February 2012	0.07***	-0.01	0.07***
	(3.12)	(-0.16)	(3.19)
March 2012	0.07***	0.04	0.07***
	(4.23)	(1.05)	(4.10)
April 2012	0.10***	0.06*	0.10***
	(6.73)	(1.84)	(6.07)
May 2012	0.07***	0.07	0.07***
	(4.94)	(1.08)	(4.64)
June 2012	0.08***	0.01	0.09***
	(6.44)	(0.40)	(6.34)
July 2012	0.05***	0.08	0.05***
	(3.42)	(1.58)	(3.10)
August 2012	0.01	-0.04	0.02
	(0.99)	(-0.64)	(1.31)
September 2012	0.03**	0.10**	0.02
	(2.41)	(2.44)	(1.62)
October 2012	0.02*	0.03	0.02*
	(1.94)	(1.20)	(1.72)
November 2012	0.02	0.05	0.02
	(1.30)	(0.73)	(1.05)
December 2012	-0.03**	-0.08**	-0.02*
	(-2.48)	(-2.35)	(-1.94)
January 2013	-0.05***	-0.09***	-0.05***
	(-5.61)	(-2.65)	(-4.68)
February 2013	-0.07***	-0.12***	-0.06***
	(-4.46)	(-3.78)	(-3.84)
March 2013	-0.05***	-0.15***	-0.04***
	(-5.21)	(-4.73)	(-3.99)
April 2013	-0.04***	-0.10	-0.04***
	(-2.95)	(-1.43)	(-2.62)
May 2013	-0.06***	-0.06**	-0.05***
	(-4.45)	(-2.16)	(-3.92)
June 2013	-0.04***	-0.06	-0.03**
	(-2.97)	(-1.27)	(-2.46)
July 2013	-0.05***	-0.004	-0.05***
	(-3.43)	(-0.13)	(-3.68)
August 2013	-0.07***	-0.12***	-0.066***
	(-5.59)	(-4.04)	(-4.83)
September 2013	-0.06***	-0.12***	-0.05***
	(-3.94)	(-4.65)	(-3.30)
October 2013	-0.08	-0.61***	-0.03
	(-1.49)	(-13.13)	(-0.80)
Control variables	Yes	Yes	Yes
Sample size	55,598	7,228	48,370
Adjusted R2	0.93	0.86	0.93

Table 7. Travelling inspection dates and targets

This table reports the commencement dates and targets of the 11 rounds of Chinse Communist Party's Central Commission for Discipline Inspection (CCDI) travelling inspections from 2013 to 2017 which we focus on. The date of commencement of each inspection was the date when the earliest news was reported to reveal the inspection's targets.

Dates	Targets
2013-05-31	Ministry of Water Resources
2013-10-29	Ministry of Commerce, Ministry of Natural Resources
2014-03-27	Beijing Municipality, Ministry of Science and Technology
2014-07-25	General Administration of Sport of China
2014-11-18	Ministry of Culture, Ministry of Ecology and Environment
2015-06-23	General Office of the State Council Affairs Management of the Central Authorities, Taiwan Affairs Office of the State Council, Ministry of Transport, State Administration of Foreign Experts Affairs, State Council Leading Group Office of Poverty Alleviation and Development, Civil Aviation Administration of China
2015-10-23	Communist Youth League of China (CYLC), National Bureau of Statistics, People's Bank of China (China's central bank), Ministry of Education, State Administration of Foreign Exchange, State Forestry and Grassland Administration, China Securities Regulatory Commission (CSRC), China Banking and Insurance Regulatory Commission (CBIRC), China Banking and Insurance Regulatory Commission (CBIRC), China Insurance Regulatory Commission (CIRC), China Meteorological Administration, State Council Three Gorges Project Construction Committee Office
2016-02-28	Publicity Department of the Communist Party of China, Ministry of Industry and Information Technology, State Administration of Science, Technology, and Industry for National Defense, State Tobacco Monopoly Administration, Ministry of Agriculture and Rural Affairs, State Bureau of Letters and Calls, Ministry of Human Resources and Social Security, State Administration of Foreign Experts Affairs, State Administration of Grain, State-owned Assets Supervision and Administration Commission, National Health Commission, State Administration for Market Regulation, Ministry of Justice, National Cultural Heritage Administration, Ministry of Civil Affairs, State Administration for Religious Affairs, National Public Service Bureau, National Development and Reform Commission (NDRC), National Energy Administration, State Post Bureau, China Food and Drug Administration
2016-07-02	Central Committee of the Chinese Communist Youth League, National Audit Office, National Committee of the Chinese People's Political Consultative Conference (CPPCC), Hong Kong and Macau Affairs Office of the State Council, National Intellectual Property Administration, State Taxation Administration, Working Committee of Central Government Departments under the Communist Party of China, Office of the Central Government-institution Reform Commission, Research Office of the State Council, International Liaison Department of the Communist Party of China, General Office of the National People's Congress, United Front Work Department of the Communist Party of China, Ministry of Foreign Affairs, Ministry of Public Security, Ministry of Housing and Urban-Rural Development, China Earthquake Administration, State Council Overseas Chinese Affairs Office, State Administration of Work Safety, Ministry of Finance
2016-11-06	Supreme People's Court, China Foreign Languages Bureau, Development Research Center of the State Council, Central Compilation and Translation Bureau, Supreme People's Procuratorate, Beijing Municipality
2017-02-22	Central Cyberspace Affairs Commission Office, Leading Group Office of Poverty Alleviation and Development of the State Council

Table 8. Summary of subsample used in Table 9

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the condo transactions used in our analyses in Table 9. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), square meters of the apartment, the number of floors of the building, the floor level of the apartment (1 means the lowest one third of the floors, 2 means the middle one third of the floors, 3 means the highest one third of the floors), the age of the building at the time of the transaction (years), and the distance of the building to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Panel A. Condo sales in before inspections					
Observations: 76,471					
Total price	3.91	2.30	0.59	3.25	43.04
Price per s.m.	45.67	19.41	12.84	40.65	115.40
Square meters	87.95	36.38	36.00	80.65	436.98
Building floor	13.42	7.84	1.00	12.00	42.00
Apart. floor	1.82	0.77	1.00	2.00	3.00
Building age	14.68	7.04	0.00	14.00	30.00
Distance	15.10	8.14	1.22	13.52	49.59
Panel B. Condo sales after inspections					
Observations: 81,911					
Total price	3.82	2.24	0.60	3.32	35.20
Price per s.m.	44.61	19.01	12.86	41.58	115.35
Square meters	87.89	36.37	36.00	80.86	445.00
Building floor	13.50	7.85	1.00	11.00	42.00
Apart. floor	1.82	0.77	1.00	2.00	3.00
Building age	14.73	7.09	0.00	14.00	30.00
Distance	14.86	8.12	1.22	13.79	49.59

Table 9. Luxury premium prior to and post each round of inspection

The table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (larger than 144 square meters), an interaction term between Luxury and a dummy Inspection, which equals 1 for transactions taking place within a two-month window after the commencement of each round of inspection, an interaction term between Luxury and a dummy Government, which equals 1 for condos located in the two districts where government officials more likely reside: Dongcheng and Xicheng, an interaction term between Inspection and Government, and a three-way interaction term between Luxury, Government, and Inspection, as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one-third of the floors in the building. All condo sales used in the four regressions are in either the two-month window before or after the commencement of a round of inspection, but we exclude sales that happened during the overlapping portion of any windows. The first specification uses condo sales in all districts. The second uses those from the two "government" districts. The third uses all non-government districts. The last one uses sales in all districts and includes three additional interaction terms. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	I All districts	II Government districts	III Other districts	IV All districts
Luxury	-0.01**	0.03**	-0.02***	-0.02***
	(-2.33)	(1.98)	(-2.72)	(-3.32)
Luxury * Inspection	-0.002	-0.02**	0.00	0.00
	(-0.62)	(-2.14)	(0.44)	(0.25)
Luxury * Government				0.01***
				(6.12)
Inspection * Government				0.09***
				(5.56)
Luxury * Government * Inspection				-0.02**
				(-2.17)
Condo attributes	Yes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes	Yes
Subdivision dummy	Yes	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes	Yes
Sample size	158,382	19,149	139,233	158,382
Adjusted R2	0.93	0.88	0.92	0.93

Table 10. Luxury premium and distance to inspection targets

Using sales from Dongcheng and Xicheng, the table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (larger than 144 square meters), a dummy Near that equals 1 if the condo's subdivision is near (within 3, 4, or 5 kilometer to) an inspection target, an interaction term between Luxury and a dummy Inspection, which equals 1 for transactions taking place within a two-month window after the commencement of each round of inspection, an interaction term between Luxury and Near, an interaction term between Inspection and Near, and a three way interaction term between Luxury, Near, and Inspection, as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one-third of the floors in the building. All condo sales used in the four regressions are in either the two-month window before or after the commencement of a round of inspection, but we exclude sales that happened during the overlapping portion of any windows. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	I	II	III
	Distance < 3km	Distance < 4km	Distance < 5km
Luxury	0.01	0.0004	-0.001
	(0.78)	(0.03)	(-0.04)
Near	-0.001	0.002	0.01**
	(-0.37)	(0.53)	(2.42)
Luxury * Inspection	0.002	0.01	0.02
	(0.10)	(0.87)	(0.93)
Luxury * Near	0.03	0.04**	0.03*
	(1.37)	(1.99)	(1.66)
Inspection * Near	0.003	0.005	0.005
	(0.92)	(1.39)	(1.20)
Luxury * Near * Inspection	-0.04**	-0.05**	-0.05**
	(-2.05)	(-2.34)	(-2.07)
Condo attributes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes
Subdivision dummy	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes
Control variables	Yes	Yes	Yes
Sample size	19,149	19,149	19,149
Adjusted R2	0.88	0.88	0.88

Table 11. Luxury premium and distance to inspection targets: inside circles

Using sales from Dongcheng and Xicheng that are within 6, 8, or 10 kilometers from inspection targets, the table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (larger than 144 square meters), a dummy Near that equals 1 if the condo's subdivision is near (within 3, 4, or 5 kilometer to) an inspection target, an interaction term between Luxury and a dummy Inspection, which equals 1 for transactions taking place within a two-month window after the commencement of each round of inspection, an interaction term between Luxury and Near, an interaction term between Inspection and Near, and a three way interaction term between Luxury, Near, and Inspection, as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, subdivision dummies, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one-third of the floors in the building. All condo sales used in the four regressions are in either the two-month window before or after the commencement of a round of inspection, but we exclude sales that happened during the overlapping portion of any windows. Standard errors are clustered at the subdivision level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	I Near (< 3 km) All (< 6 km)	II Near (< 4 km) All (< 8 km)	III Near (< 5 km) All (< 10 km)
Luxury	0.02	-0.001	0.004
	(1.00)	(-0.08)	(0.18)
Near	-0.003	0.002	0.01*
	(-0.73)	(0.57)	(1.68)
Luxury * Inspection	0.002	0.02	0.02
	(0.09)	(0.86)	(0.90)
Luxury * Near	0.02	0.04*	0.03
	(1.00)	(1.73)	(1.19)
Inspection * Near	0.004	0.01*	0.01
	(1.17)	(1.72)	(1.56)
Luxury * Near * Inspection	-0.04*	-0.05**	-0.05**
	(-1.82)	(-2.22)	(-2.03)
Condo attributes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes
Subdivision dummy	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes
Sample size	16,491	17,915	18,711
Adjusted R2	0.88	0.88	0.88

Table 12. Summary of clean land sales before the announcement

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the clean land sales before December 4th, 2012. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), the land lease term (years), and the distance of the center points of land lots to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Observations: 487					
Total price	382	772	0.1	44	5,970
Price per s.m.	5.48	9.11	0.1	1.63	67.66
Lease term	70	1	50	70	70
Distance	29.87	22.71	1.08	24.75	121.59

Table 13. Summary of clean condo sales post the announcement

This table reports the mean, standard deviation, minimum, median, and maximum of key variables of the condo transactions used in our analyses in Table 14. The variables are the total price (in 1,000,000 RMB), price per square meter (1,000 RMB), square meters of the apartment, the number of floors of the building, the floor level of the apartment (1 means the lowest one third of the floors, 2 means the middle one third of the floors, 3 means the highest one third of the floors), the age of the building at the time of the transaction (years), and the distance of the building to the city center (kilometers).

	Mean	Standard deviation	Minimum	Median	Maximum
Panel A. Condo sales in "shady" new subdivisions					
Observations: 172					
Total price	4.75	1.66	2.18	4.44	9.49
Price per s.m.	54.53	14.55	33.10	50.77	99.27
Square meters	87.70	23.35	42.73	82.30	184.69
Building floor	6.89	1.78	5.00	6.00	11.00
Apart. floor	1.78	0.78	1.00	2.00	3.00
Building age	5.41	1.45	2.00	6.00	8.00
Distance	11.65	4.61	4.97	14.94	14.94
Panel B. Condo sales in not shady new subdivisions					
Observations: 292					
Total price	3.51	1.73	1.00	3.10	19.80
Price per s.m.	39.86	15.31	18.22	37.68	102.25
Square meters	89.13	27.73	42.15	88.68	257.66
Building floor	12.23	6.48	4.00	9.00	24.00
Apart. floor	1.81	0.74	1.00	2.00	3.00
Building age	7.31	2.57	1.00	7.00	14.00
Distance	22.38	7.72	6.60	20.91	36.21
Panel C. Condo sales in old subdivisions					
Observations: 221,562					
Total price	3.78	2.24	0.59	3.20	44.75
Price per s.m.	44.34	19.22	12.83	40.34	115.40
Square meters	87.63	36.06	36.00	80.42	460.87
Building floor	13.44	7.82	1.00	12.00	42.00
Apart. floor	1.82	0.77	1.00	2.00	3.00
Building age	14.63	7.10	0.00	13.00	30.00
Distance	14.98	8.13	1.22	13.65	49.59

Table 14. Luxury premium post the announcement across subdivisions

The table reports results of regressing log condo price (RMB per square meter) against a dummy Luxury that equals 1 for luxury condos (condos larger than 144 square meters), a dummy Shady that equals 1 for "shady" new subdivisions, an interaction term between Luxury and Shady, as well as a series of control variables: square meters, square meters squared, the number of bedrooms, the number of dining rooms, the number of kitchens, the number of bathrooms, the number of floors of the building, the age of the building (years), monthly dummies for transaction time, a dummy for having subway stations nearby, a dummy for having elevators in the building, dummies for being at the lowest, middle, and highest one third of the floors in the building. Regressions in Panel A also include subdivision dummies but not district dummies, and regressions in Panel B also include district dummies but not subdivision dummies. A subdivision is considered "new" if it was developed on one of the 486 land lots transacted from February 2001 to December 2018. A subdivision is considered "old" if it was developed on land transacted before February 2001. The first regression uses condo sales from shady new subdivisions only. The second regression uses condo sales from other (non-shady) new subdivisions. The third regression uses condo sales from old subdivisions. The fourth uses all condo sales from new subdivisions (both shady and non-shady). The fifth regression uses condo sales from both new and old subdivisions. In Panel A, standard errors are clustered at the subdivision level. In Panel B, standard errors are clustered at the district level. Robust t-statistics are in parenthesis. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% levels respectively.

	Shady new subdivisions	Other new subdivisions	Old subdivisions	All new subdivisions	All subdivisions
Panel A. Include subdivision dummies					
Luxury	-0.08**	-0.07	-0.02***	0.01	-0.02***
	(-6.27)	(-0.69)	(-2.62)	(0.11)	(-2.63)
Luxury * Shady				-0.15	-0.11***
				(-1.31)	(-6.63)
Condo attributes	Yes	Yes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes	Yes	Yes
Sample size	172	292	221,562	464	222,026
Adjusted R2	0.92	0.92	0.93	0.93	0.93
Panel B. Include district dummies					
Luxury	-0.08**	-0.07	0.01	-0.02	0.01
	(-6.27)	(-0.69)	(0.38)	(-0.12)	(0.38)
Shady				-0.13***	0.02
				(-4.70)	(0.42)
Luxury * Shady				-0.18	-0.21**
				(-1.62)	(-2.75)
Condo attributes	Yes	Yes	Yes	Yes	Yes
Month dummy	Yes	Yes	Yes	Yes	Yes
Subway dummy	Yes	Yes	Yes	Yes	Yes
Elevator dummy	Yes	Yes	Yes	Yes	Yes
Floor dummy	Yes	Yes	Yes	Yes	Yes
Sample size	172	292	221,562	464	222,026
Adjusted R2	0.92	0.92	0.75	0.92	0.75

Figure 1. Location of subdivisions

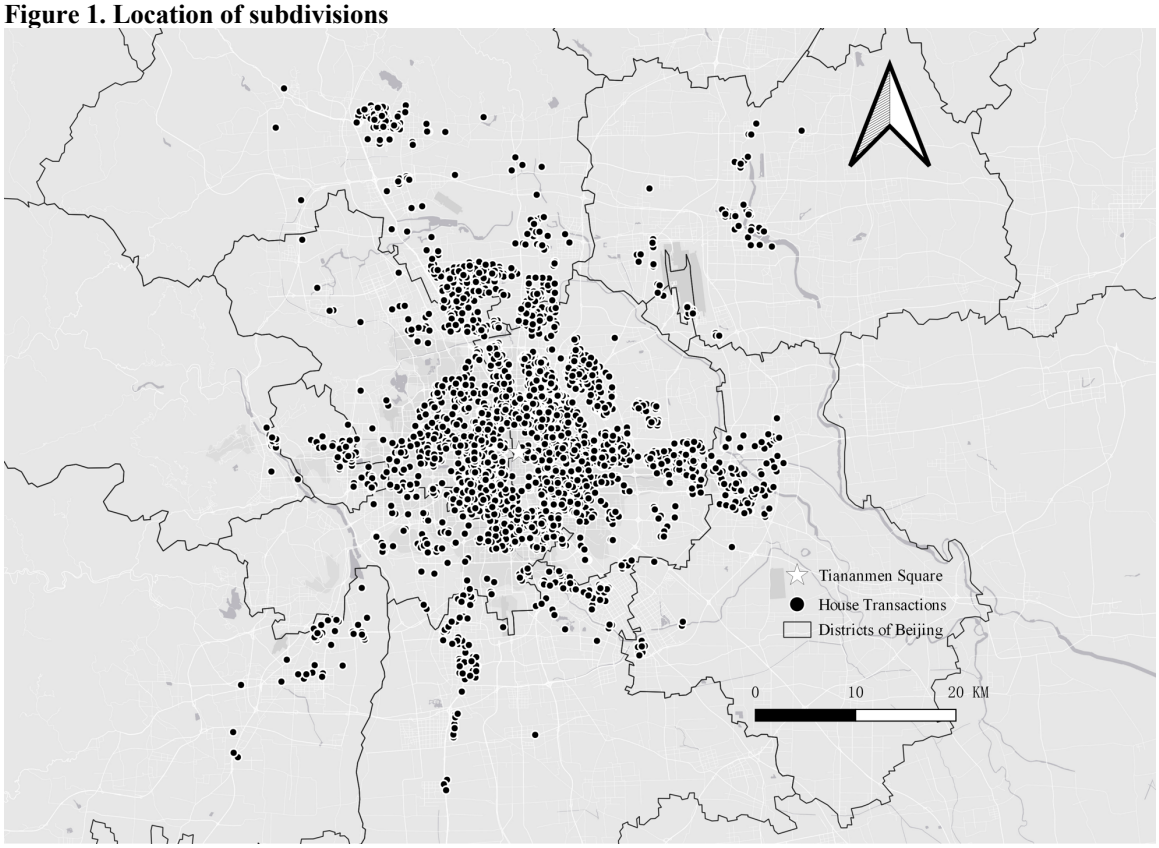

Figure 2. Histogram of log price per square meter

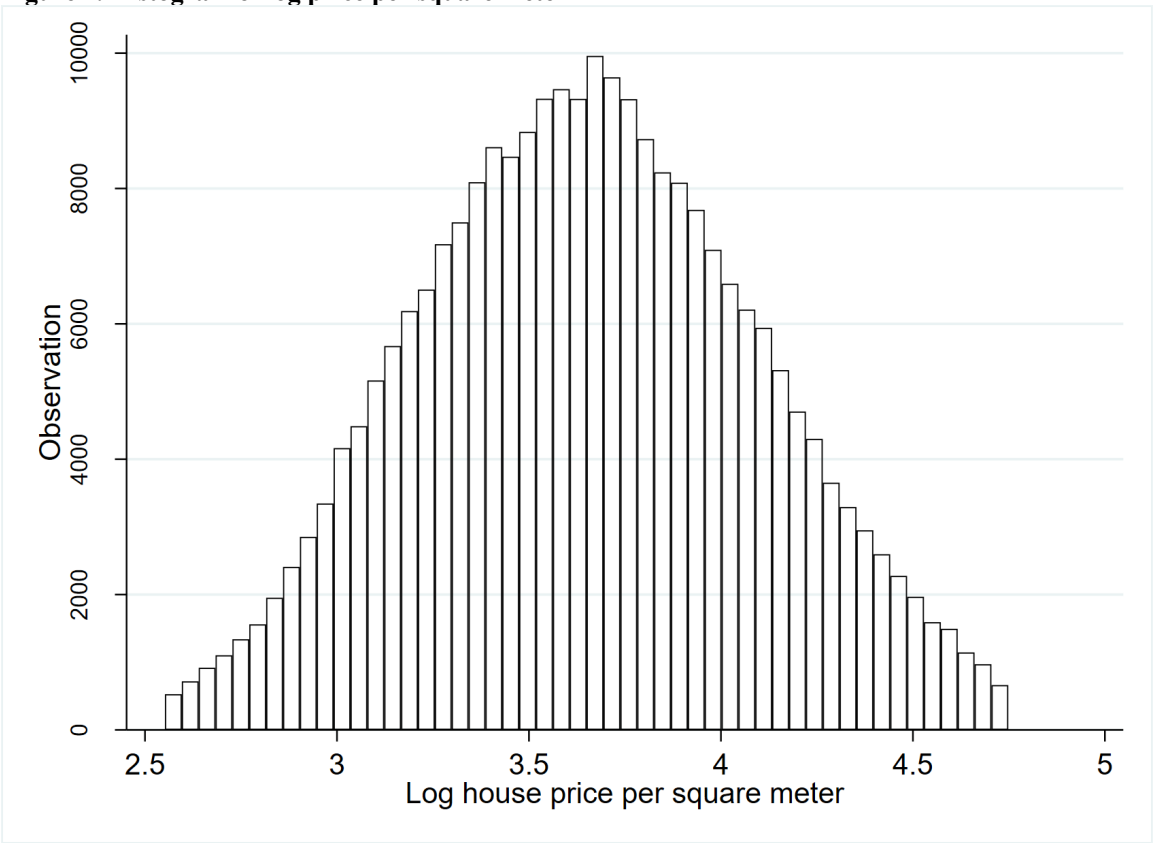

Figure 3. Histogram of condo size in log square meters

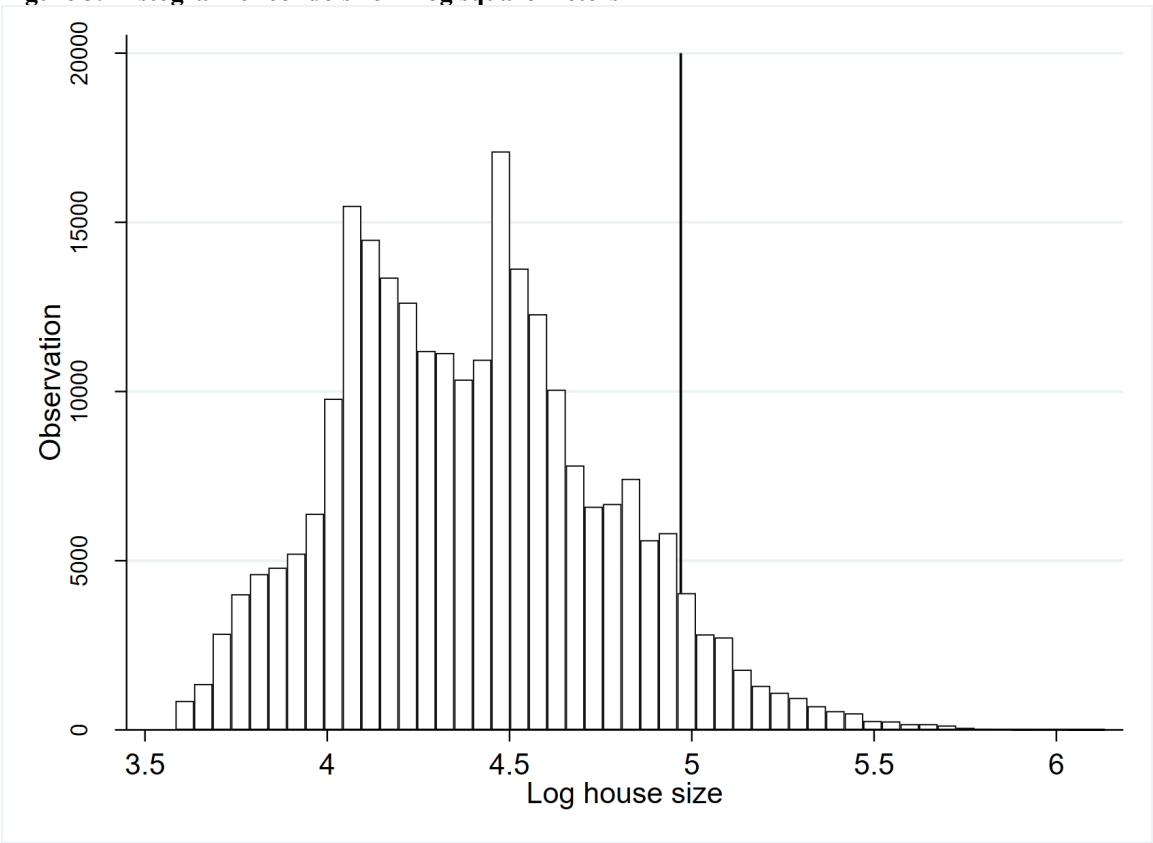

Figure 4. Luxury premium from January 2012 to October 2013

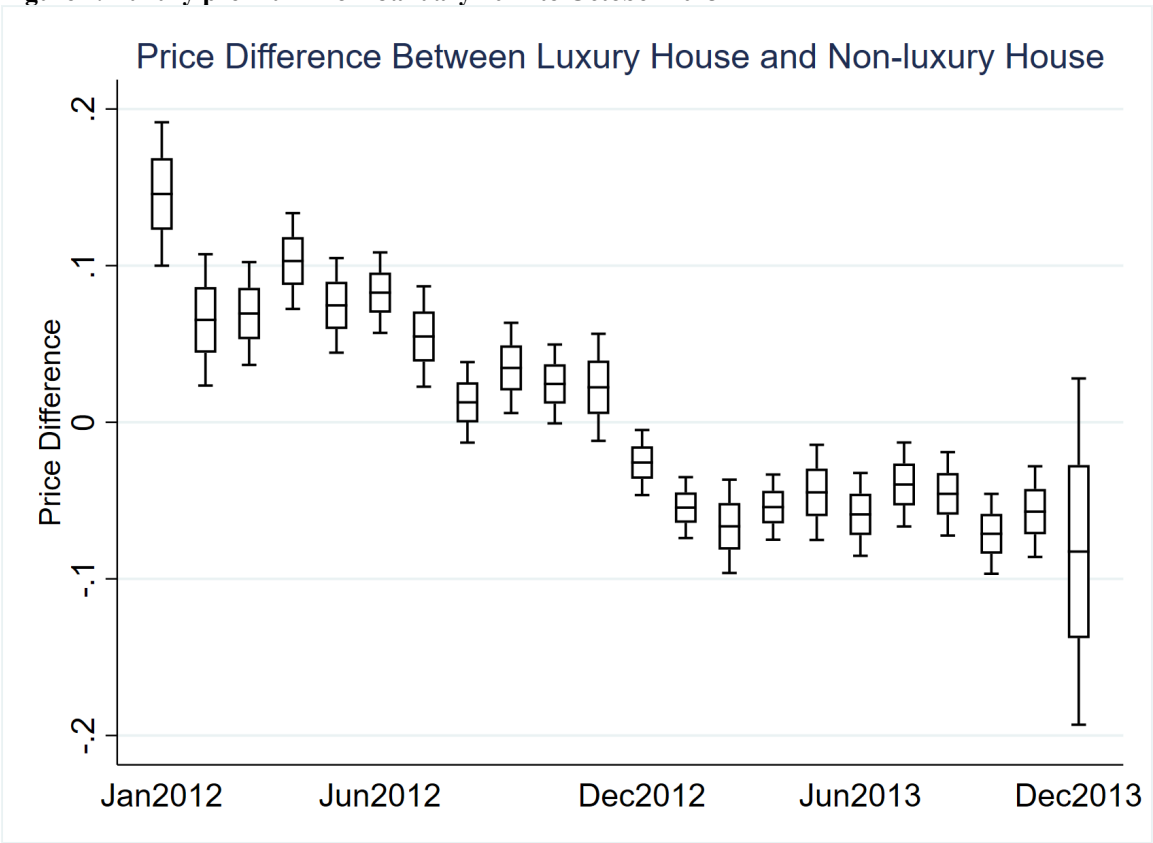

Figure 5. Location of inspection targets

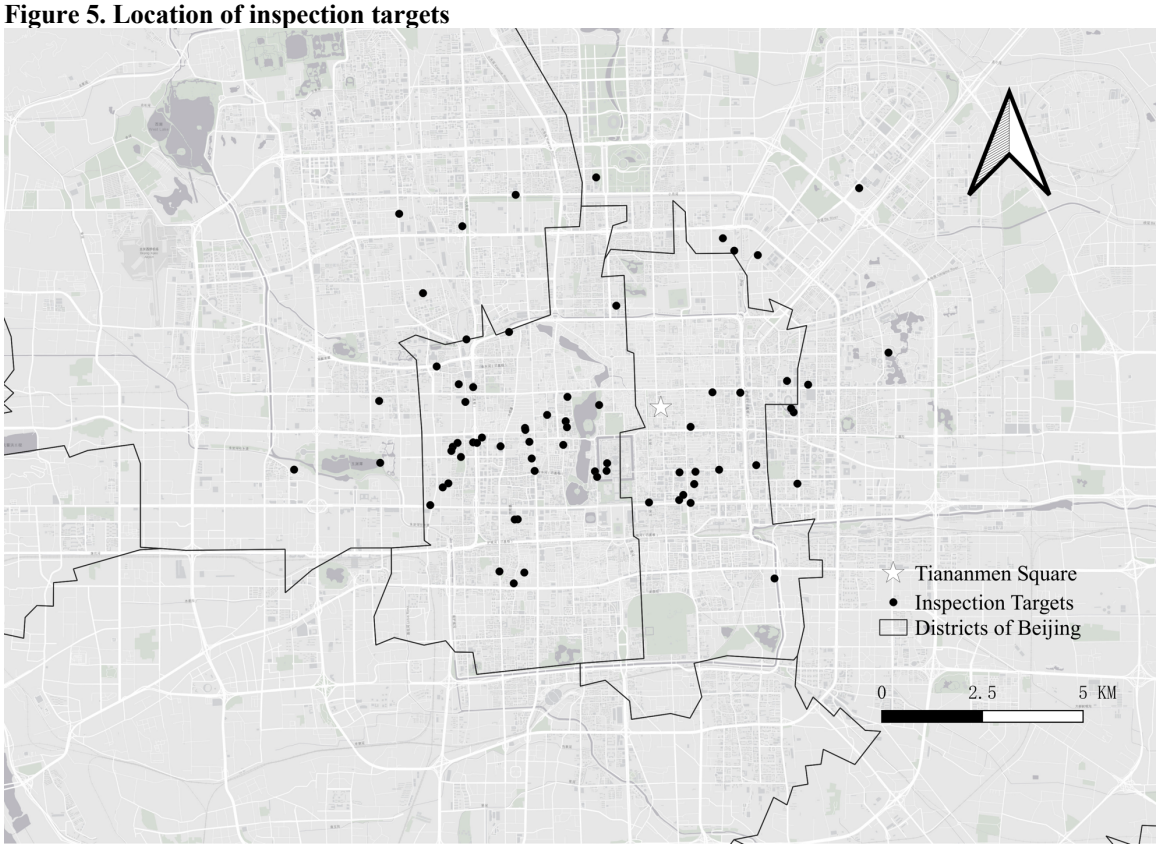

Figure 6. Location of land lots

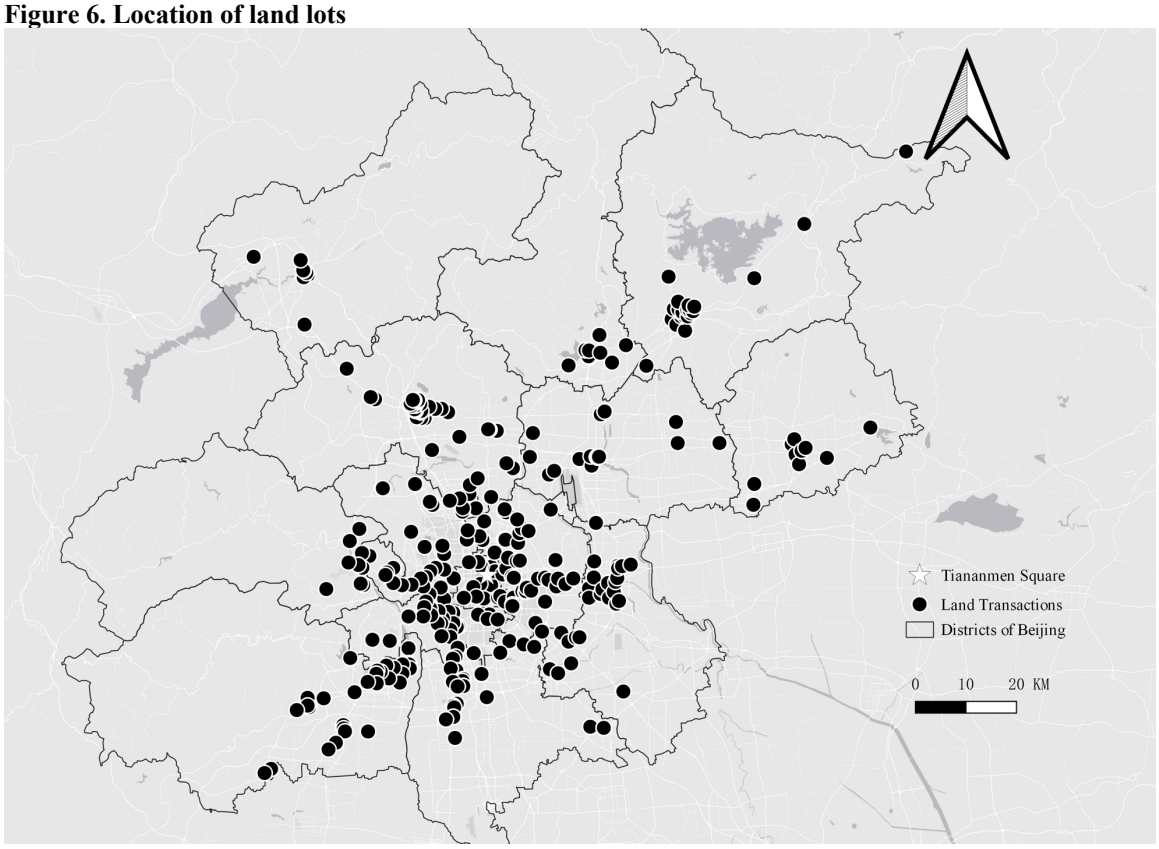

Figure 7. Time series of land sales

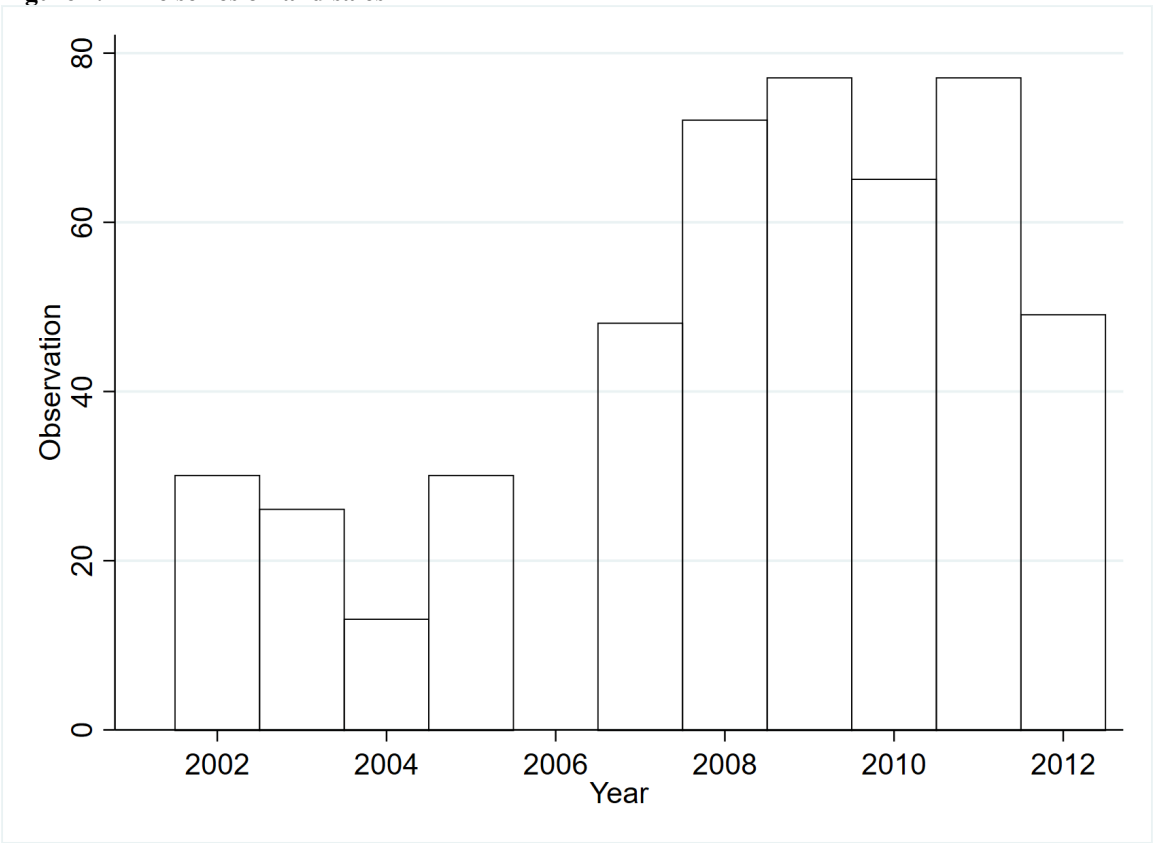

Figure 8. Histogram of land price per square meter (in log)

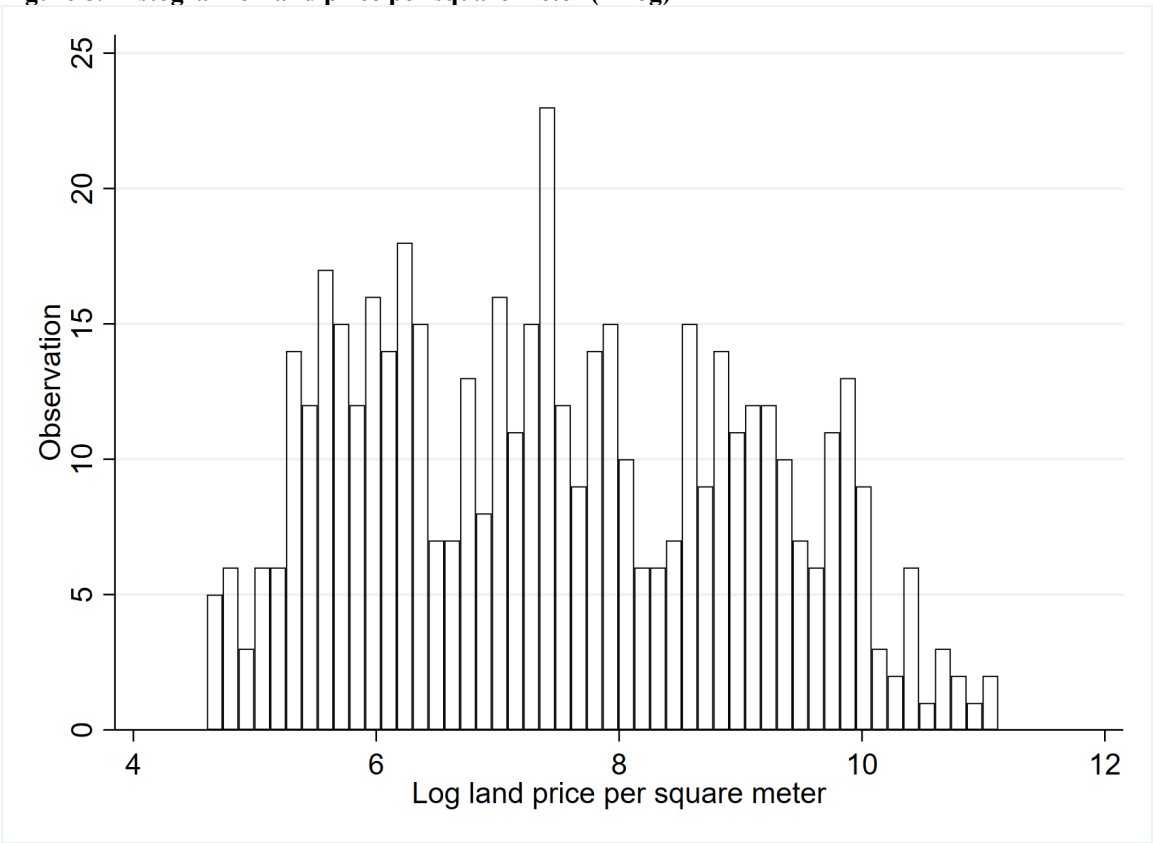

Figure 9. Histogram of hedonic regression residuals