

Chen, Z., Hu, M. R., Jin, G. Z., & Zhou, Q. (2024).
Haste or Waste? The Role of Presale in Residential
Housing., NBER.

Presenter: GAO Han

SYSU ISBF

April 23, 2024

Outline of Today's Discussion

1 Motivation and Research Questions

- Motivation
- Contribution of This Research
- Preview of the Conclusion

2 Institutional Background

3 Presale Model

4 Empirical Evidence

5 Conclusion and Implications

Motivation

- While presale is prevalent around the world, it is remarkably high in China: over 90% of residential units were sold through presale during the 2010s.
- In the meantime, the growth of residential housing is astonishing in China – the average living space per urban resident surged from 7.1 m^2 in 1990 to 41.8 m^2 in 2020, accompanied by a more than tenfold increase in average housing prices.
- China has also witnessed a surge in unfinished projects, impacting millions of families and posing risks to system-wide financial and social stability.
- *What role does presale play in the rapid growth of housing development and the painful surge of unfinished projects?*

Contribution of This Research

- It provides the **first theory and evidence** on the role of presale policies in the residential housing market.
- Constructing a **novel dataset** of unfinished projects.
- The paper develops a theoretical model that examines the trade-offs associated with presale policies in the residential housing market, particularly focusing on the aspects of presale criteria and postsale supervision.
- It provides insights into how presale policies can be used as a financial leverage tool to accelerate urban development while also highlighting the risks associated with developer moral hazard and the potential for unfinished projects.

Preview of the Conclusion

Main Finding 1

Tightening the regulation on postsale supervision by 2 standard deviations may lead to a 58% reduction in the occurrence of unfinished projects, without changing the pace of new housing development.
(Pareto frontier)

Main Finding 2

The impact of presale policies on unfinished projects and developer behavior is shown to vary based on factors such as construction costs and presale revenue.

Main Finding 3

It is possible to find a policy configuration that would make at least one aspect of the policy outcome better without making any other aspect worse.

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1 Motivation and Research Questions

2 Institutional Background

- Presale in the Residential Housing Market
- Presale as a financial leverage and a risk-sharing tool

3 Presale Model

4 Empirical Evidence

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Presale in the Residential Housing Market

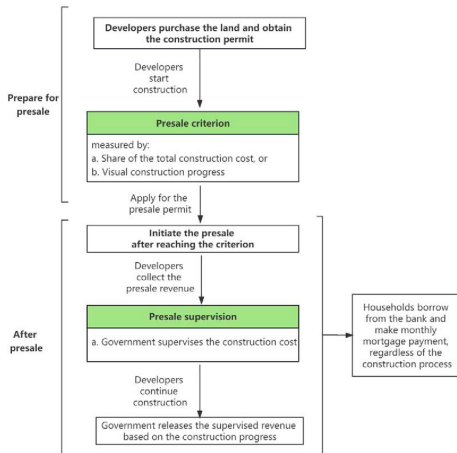
- In 1994, the Ministry of Construction issued “The Urban Commercial Housing Pre-sale Management Measures”, officially permitting presale in mainland China’s housing market. Since then, presale has become a dominant practice, with over 90% of the houses being sold through presale during the 2010s.
- In practice, housing presale encompasses a bundle of policies, which comprises presale criterion, postsale supervision, and legal protections available to presale buyers.
- In mainland China, the central government mandates that all buildings must be at least 25% completed for presale. Local governments have the discretion to set higher standards.

Presale as a financial leverage and a risk-sharing tool

- The most prominent feature of presale is that it serves as a financial leverage, shortening the borrowing cycle for developers and enabling them to work on multiple projects concurrently.
- It also functions as a risk-sharing tool that transfers risks from the developer to buyers.
- Upon collecting presale revenue, housing developers can then reallocate their funds to initiate another project. Consequently, a lower presale criterion can enhance financial leverage and expedite this process.
- Along with insufficient protection for homebuyers in the event of unfinished projects, households bear almost all the risks.

Presale in the Residential Housing Market

Figure 1: Presale system in mainland China



Outline of Today's Discussion

- 1 Motivation and Research Questions
- 2 Institutional Background
- 3 Presale Model
 - Model Setting
 - Model Analysis
 - Comparative Statics and Prediction
- 4 Empirical Evidence
- 5 Conclusion and Implications

Model Setting

- Consider a model in which the developers maximize their payoff for a given presale criterion and supervision extent.
- Consider the scenario where there is one representative developer with two potential projects to develop in this model.
- Project 1's total expected construction costs are represented by c . On average, c accounts for 40 to 50% of the housing price in China (National Bureau of Statistics, 2014).
- The duration required to complete Project 1 is normalized to 1.

Model Setting

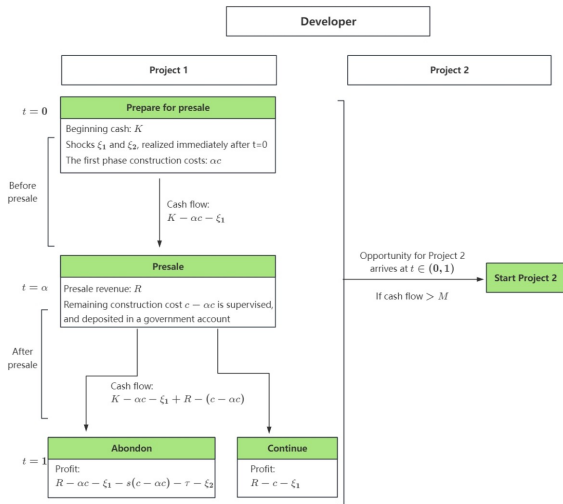
- The presale criterion posits that presale can begin at time $t = \alpha$, measured as a percentage of the construction process that needs to be completed before presale commencement. This construction milestone requires the developer to pay construction costs $c_1 = \alpha c$ upfront.
- Once the construction milestone is achieved, presale starts and the developer can obtain presale revenue up to R .
- If Project 1 remains unfinished at the end of its planned duration, the developer can only receive a fraction of the supervised amount back from the government (i.e., $(1 - s) \cdot (c - \alpha c)$) at time 1 .
- The parameter s measures the intensity of postsale supervision.

Model Setting

- The first shock, ξ_1 , affects the actual construction costs needed for Project 1 before fulfilling the presale criterion. This shock might represent land conditions that determine whether the land is construction-ready or the developer needs to stabilize the land before development begins.
- The second shock, ξ_2 , signifies a developer-specific cost tied to abandoning Project 1. It can be interpreted as a variation to the typical ethical, legal, or reputation costs of deserting an ongoing project (τ).
- For ease of exposition, we assume $\xi_1 \sim \text{Uniform}(-\sigma_1, +\sigma_1)$, and $\xi_2 \sim \text{Uniform}(-\sigma_2, +\sigma_2)$.

Presale timeline

Figure 2: Presale Timeline



Potential outcomes and probability

- outcome1: *Abandon project 1 and ignore project 2*

$$\Pr_1 = \left(\frac{1}{2} - \frac{R + K - c - M}{2\sigma_1} \right) \left(\frac{1}{2} - \frac{\tau - (1-s)(c - \alpha c)}{2\sigma_2} \right)$$

- outcome2: *Abandon project 1 and start project 2*

$$\Pr_2 = \left(\frac{R + K - c - M}{2\sigma_1} + \frac{1}{2} \right) \left(\frac{1}{2} - \frac{\tau - (1-s)(c - \alpha c)}{2\sigma_2} \right)$$

Potential outcomes and probability

- outcome3: *Continue project 1 and ignore project 2*

$$\Pr_3 = \left(\frac{R + K - \alpha c - M}{2\sigma_1} + \frac{1}{2} \right) \left(\frac{1}{2} - \frac{\tau - (1-s)(c - \alpha c)}{2\sigma_2} \right)$$

- outcome4: *Continue project 1 and start project 2*

$$Pr_4 = 1 - Pr_1 - Pr_2 - Pr_3$$

Potential outcomes and probability

The probability that the developer starts project 2

$$Pr_{\text{new}} = \underbrace{\left(\frac{K - \alpha c - M}{2\sigma_1} + \frac{1}{2} \right) \cdot \alpha}_{\text{Project 2 arrives before the presale}} + \underbrace{(Pr_2 + Pr_4)(1 - \alpha)}_{\text{Project 2 arrives after the presale}}$$

The probability that project 1 becomes unfinished

$$Pr_{uf} = \frac{1}{2} - \frac{\tau - (1 - s)(c - \alpha c)}{2\sigma_2}$$

Important Prediction

Prediction 1

Strengthening postsale supervision s and presale criterion α can reduce the probability of unfinished project 1. Formally, $\frac{\partial Pr_{uf}}{\partial s} < 0$, $\frac{\partial Pr_{uf}}{\partial \alpha} < 0$. Intuitively, a higher value of supervision s increases the loss of the developer if Project 1 remains unfinished, while a higher presale criterion α implies less gain from abandoning project 1.

Prediction 2

Strengthening presale criterion α reduces the developers' multitasking behavior, while the postsale supervision s has no impact on multitasking. Formally, $\frac{\partial Pr_{new}}{\partial \alpha} < 0$, $\frac{\partial Pr_{new}}{\partial s} = 0$. Intuitively, setting a higher presale criterion α prevents the developer from securing presale revenue R early on.

Important Prediction

Prediction 3

Total expected construction costs c amplifies the effect of presale criterion α and postsale supervision s on reducing unfinished projects. The presale revenue R has no such heterogeneous effect. Formally, $\frac{\partial Pr_{uf}}{\partial s \partial c} < 0$, $\frac{\partial Pr_{uf}}{\partial \alpha \partial c} < 0$, and, $\frac{\partial Pr_{uf}}{\partial s \partial R} = 0$, $\frac{\partial Pr_{uf}}{\partial \alpha \partial R} = 0$.

Prediction 4

An increase in presale revenue R amplifies the negative impact of presale criterion α on multitasking. An increase in the total expected construction costs c works in an opposite direction. Formally, $\frac{\partial Pr_{new}}{\partial R} \partial \alpha \leq 0$, and, $\frac{\partial Pr_{new}}{\partial c \partial \alpha} \geq 0$.

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1 Motivation and Research Questions

2 Institutional Background

3 Presale Model

4 Empirical Evidence

- Data and Measures
- Summary Statistics
- Identification Specification
- Results
- Back-of-the-envelope Analysis

5 Conclusion and Implications

Presale policy documents

- Collect all local laws and administrative regulations pertaining to presale criteria and postsale supervision from the China Law Database (www.pkulaw.net) maintained by the Legal Information Center of Peking University.
- Manually searched for policy documents using keywords [pre-sale](#), [permit](#), [revenue](#), [supervision](#), and [housing](#) (or synonyms such as [real estate](#) and [property](#)). The extensive search identified 792 policy documents from 270 cities, in effect between 2010 and 2017.
- These 270 cities, including four direct-administered municipalities (Zhi Xia Shi) and almost all prefecture-level cities in China,²² account for 96.3% of the population and 99.1% of the GDP in China.

Policy documents example: presale criteria

厦门市商品房预售管理规定(2022)

第二章 预售项目管理

第五条 预售商品房应当符合下列条件:

- (一) 已交付全部土地使用权出让金,取得土地使用权证书;
- (二) 持有建设工程规划许可证和施工许可证;
- (三) 房屋建设工程承包合同已生效,房屋交付使用日期已经确定;

(四) 投入开发建设的资金已达到该项目工程建设总投资的**25%**以上。其中,申请预售商品房项目工程形象进度应达到的标准为:**7层以下(含7层)**的,已完成主体建筑封顶工程;**8层以上(含8层)**的,已完成主体结构工程的二分之一以上,且不得少于**7层**;

- (五) 已取得预售主管部门核发的商品房预售许可证明。

预售主管部门可以根据市场情况,对前款第四项规定的预售商品房项目工程形象进度进行调整,报市人民政府批准后实施。

Presale criterion:

- a. Share of the total construction cost **(25%)**
- b. Visual construction progress **(50% main structure finished)**

Define presale criteria

- Finishing the foundation is equivalent to 30% of completion.
- Finishing the main structure is equivalent to 65% of completion.
- Finishing the exterior walls is equivalent to 80% of the completion.
- If the policy document requires completion of a specified percentage of the building's main structure, then the presale criterion becomes $a\% \cdot (65 - 30)\% + 30\%$.

Policy documents example: postsale supervision

长春市商品房预售资金监督管理办法

第七条 开发企业在申请《商品房预售许可证》前，应当在预售方案中明确预售资金监管的以下

事项：

(一) 项目工程建设费用；

Calculate the remaining construction cost, then determine the supervised amount

(二) 项目用款计划；

(三) 选定的监管银行，并提交商品房预售资金三方监管协议；

(四) 监管账户名称、账号；

Submit the three-party supervision agreement for the supervised presale revenue

(五) 涉及的其他情况。

第八条 市房地产主管部门在公示《商品房预售许可证》时，应当将监管账户一并公布。

第十二条 开发企业应当按照该商品房项目的工程建设进度，分期申请使用商品房预售资金：

(一) 达到以下工程建设进度的，可使用存入商品房预售资金总额的百分之三十：

1、三层以下（含三层）的，完成基础和结构工程；

2、四层以上（含四层）有地下室工程的，完成基础和首层结构工程；无地下室工程的，完成基础和四层结构工程。

(二) 达到主体结构二分之一的，可使用存入商品房预售资金总额的百分之五十；

(三) 达到主体结构封顶的，可使用存入商品房预售资金总额的百分之七十；

(四) 达到工程质量竣工验收的，可使用存入商品房预售资金总额的百分之九十；

(五) 预售商品房完成初始登记后，可使用剩余的商品房预售资金和商品房预售资金的全部利息

Release the supervised amount, based on the real-time construction progress

第十三条 开发企业申请使用商品房预售资金时，应当向管理机构提交下列证明材料：

(一) 商品房预售资金使用申请；

(二) 经核验的《房地产开发项目手册》；

(三) 监理单位出具的工程建设进度施工完成证明。

完成商品房工程质量竣工验收及初始登记的，应当提交其证明材料。

Define postsale supervision

- Construct a dummy that equals 1 if the supervised amount exceeds 110% of the remaining construction costs $S(cost)$.
- Create another dummy that equals 1 if the release of the supervised amount is based on real-time construction progress $S(progress)$.
- Create the percentage of the supervised amount $S(mainstructure)$ that the developer could retrieve from the escrow account upon completion of the building's main structure.
- Create a dummy that equals 1 if the supervised construction costs are deposited in a third-party independent bank account $S(third)$.

$$s = 0.25 \cdot S_{\text{cost}} + 0.2 \cdot S_{\text{progress}} + 0.35 \cdot \left(1 - \frac{S_{\text{mainstructure}} - 0.5}{0.5} \right) + 0.2 \cdot S_{\text{third}}$$

Unfinished Residential Projects

- Collect data on unfinished residential projects from the Local Leaders' Message Board (LLMB) maintained by the main state media People's Daily (www.liuyan.people.com.cn).
- It is mandatory for local leaders to respond promptly to citizen messages, resulting in a high response rate around 90%. Both citizen messages and leadership replies are publicly accessible.
- Successfully identify 2,330 unfinished projects across 270 cities that began construction between 2010 and 2017.

Policy documents example



首页 **部委/地方** 人民建议 话题 数据 报道 人民日报读者来信 政企直通车 案例库 理论

请输入关键词 回车一下 搜索

留言对象: 河北省省长王正谱

Message receiver: Zhengpu Wang (Hebei province governor)

Tr

☆ 0

烂尾楼

投诉/求助

城建

已办理

Topic: Urban construction/Unfinished project; Message type: Complaint

W*** 留言ID:14410468 2022-04-29 08:20

长安区高营镇赫石府项目，五证齐全烂尾楼，2016年购买，约定2018年3月交房，延期，网签合同规定2020年10月1号交房，延期。开发商挪用资金导致资金链断裂，已事实上烂尾，但该项目却不能列入解疑名单，得不到解决。因五证齐全已贷款，现在交房无望，却依然要还贷，雪上加霜的是还要交房租，已走投无路。恳请领导解决交房问题，如果交房一时半会解决不了，请政府出面协调银行暂停还贷，等交房问题解决之后再继续还贷，减轻一下广大业主的负担。

该留言中含有个人信息或其他不便公开展示的内容，仅办理机构可见。

Main information: the name (Heshi Fu) and the location (Shijiazhuang City, Chang'an District) of the unfinished project; house purchase time (2016)

官方回复



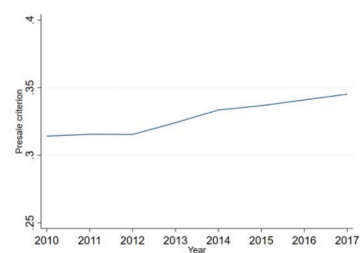
石家庄市人民政府

2022-05-18 16:13

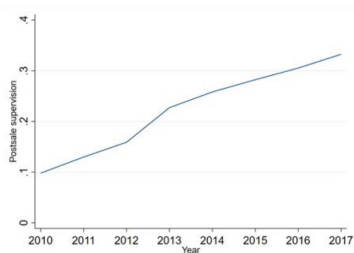
网友您好！经长安区政府调查核实，目前，司法机关已对项目实际控制人采取司法措施。同时，为加快项目复工，属地正在帮助项目单位与有意向合作的开发企业就项目后续进场建设施工、销售、资金管理、债权债务对项目的影响等问题进行洽谈，督促协调中融汇通公司与合作单位尽快达成一致意见签订合作协议、制定施工计划，力争早日进场施工。聘请了房地产领域解疑专业律师，对此项目进行研究分析、全面梳理，推进项目取得实质性进展。请您耐心等待，下一步，属地将定期召开业主见面会，及时通报项目进展情况。感谢您对我们工作的关注和支持，祝您身体健康！生活愉快！

Official response from the Shijiazhuang Municipal People's Government

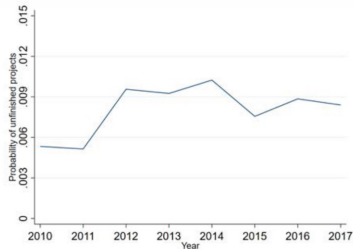
Presale policies and unfinished projects



(a) Presale criterion



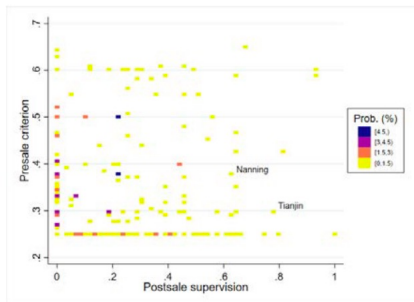
(b) Postsale supervision



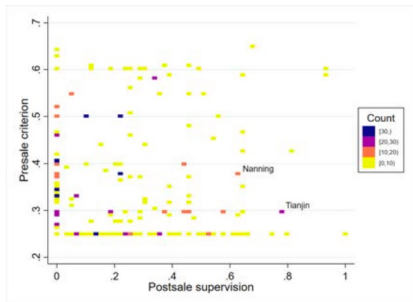
(c) Probability of unfinished projects

Presale policies and unfinished projects

Figure 4: Presale policies and unfinished projects



(a) Probability of unfinished projects



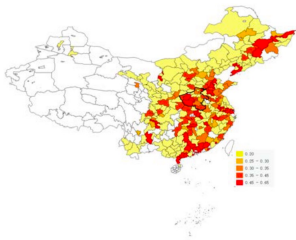
(b) # of unfinished projects

Notes: The heatmaps visualize the initial relationship among the average of presale criterion, postsale supervision, and the total count/probability of unfinished projects from 2010 to 2017.

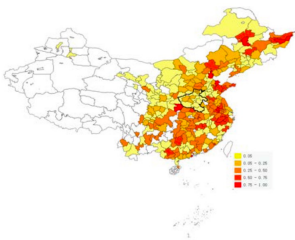
Other datasets

- Land transaction: Apart from transaction type, this dataset also contains information regarding the land sale, such as auction date, reserve price, deal price, area, developer of the land, as well as the agreed project start date and completion date in the land contract.
- CSMAR.

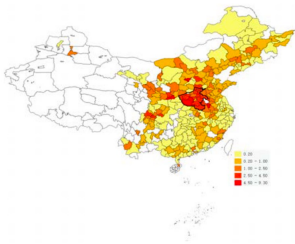
Stylized facts



(a) Presale criterion



(b) Postsale supervision



(c) Probability of unfinished projects

Summary Statistics

Table 1: Summary statistics

Variable	Mean	Std.Dev.	Minimum	Q1	Median	Q3	Maximum
Panel (a). Presale policies (2,144 obs. by city-year, 270 cities)							
Presale criterion (α)	.33	.12	.25	.25	.25	.38	.80
Postsale supervision (s)	.22	.29	0	0	0	.45	1
Panel (b). Unfinished residential development projects (2,144 obs. by city-year, 270 cities)							
Probability of unfinished projects (%)	.80	1.72	0	0	0	.88	23.88
Panel (c). Multitasking developers (364,248 obs. by developer-city-year, 270 cities)							
# of projects	1.75	1.42	0	1	1	2	9
Panel (d). Land auction records (144,948 obs. by land parcel up for auction, 270 cities)							
Auction success	.68	.47	0	0	1	1	1
Auction deal price (RMB/ m^2)	4802.7	6950.16	43.93	286.23	1701	6021	25996

Notes: (1) The data in Panel (c) is constructed at the developer-by-year level. (2) Prices in current RMB.

Identification Specification

$$Y_{(i,)j,t} = \beta_1 \alpha_{j,t} + \beta_2 s_{j,t} + \gamma X_{(i,)j,t} + \theta_j + v_t + \epsilon_{(i,j)j,t}$$

$$Y_{i,j,t \neq m} = \beta_1 \alpha_{j,t \neq m} + \beta_2 s_{j,t \neq m} + \gamma' X_{j,t \neq m} + \theta_j + v_{t \neq m} + \epsilon_{j,t \neq m}$$

Unfinished $_{j,t} = \beta_1^u \alpha_{j,t} + \beta_2^u s_{j,t} + \gamma^u X_{j,t} + \theta_j^u + v_t^u + \epsilon_{j,t}^u$

Table 2: Presale and unfinished projects

Dep. Variable	Probability of a project being unfinished (%)				
	(1)	(2)	(3)	(4)	(5)
Presale Criterion	-0.139 (0.0851)		-0.136 (0.0846)	-0.145* (0.0819)	-0.168* (0.0965)
Postsale Supervision		-0.161*** (0.0505)	-0.160*** (0.0505)	-0.160*** (0.0506)	-0.233*** (0.0697)
Sample mean	0.8%	0.8%	0.8%	0.8%	0.8%
Observations	2,144	2,44	2,144	2,144	1,878
Adjusted R^2	0.438	0.439	0.440	0.445	0.444
Extra controls	No	No	No	Yes	Yes
Donut analysis	No	No	No	No	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Multitasking developers

$$\# \text{ of Projects }_{ij,j} = \beta_1^p \alpha_{j,t} + \beta_2^p s_{j,t} + \gamma^p X_{j,t}^C + \eta^p X_{i,j,t}^P + \theta_j^p + v_t^p + \mu_{i,j,t}^p$$

Table 3: Presale and multitasking developers

Dep. Variable	# of projects (Poisson)				
	(1)	(2)	(3)	(4)	(5)
Presale Criterion (α)	-0.0139** (0.00670)		-0.0141** (0.00679)	-0.0136** (0.00683)	-0.0173* (0.00900)
Postsale Supervision (s)		-0.00659 (0.00421)	-0.00670 (0.00418)	-0.00645 (0.00414)	-0.00548 (0.00610)
Sample mean	1.75	1.75	1.75	1.75	1.75
Observations	364,248	364,248	364,248	364,248	302,404
Pseudo R^2	0.024	0.024	0.024	0.024	0.025
Extra controls	No	No	No	Yes	Yes
Donut analysis	No	No	No	No	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Robust Check

Collected all laws and local government regulations containing the word 'unfinished' (Lan Wei) from the China Law Database.

Table A1: Other policies related to unfinished buildings

Dep. Variable	Dummy of other related policies				
	(1)	(2)	(3)	(4)	(5)
Presale Criterion	0.00996 (0.0185)		0.00991 (0.0185)	0.00986 (0.0183)	0.0152 (0.0259)
Postsale Supervision		0.00268 (0.0115)	0.00258 (0.0116)	0.00152 (0.0112)	0.0155 (0.0162)
Observations	2144	2144	2144	2144	1878
Adjusted R^2	0.607	0.607	0.607	0.608	0.600
Extra controls	No	No	No	Yes	Yes
Donut analysis	No	No	No	No	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Extensive and intensive margins

	(1)	(2)	(3)	(4)	(5)
Panel (a). Extensive margin: Dummy of unfinished project occurrence					
resale Criterion	-0.0488** (0.0241)		-0.0485** (0.0242)	-0.0484** (0.0235)	-0.0485* (0.0254)
Postsale Supervision		-0.0125 (0.0204)	-0.0121 (0.0204)	-0.0121 (0.0204)	-0.0310 (0.0228)
Observations	2,144	2,144	2,144	2,144	1,878
Adjusted R^2	0.354	0.353	0.354	0.355	0.364
Panel (b). Intensive margin: Probability of a project being unfinished (%)					
Presale Criterion	0.00940 (0.246)		-0.0242 (0.239)	0.0256 (0.216)	-0.186 (0.346)
Postsale Supervision		-0.334*** (0.101)	-0.335*** (0.102)	-0.315*** (0.112)	-0.557*** (0.185)
Observations	797	797	797	797	670
Adjusted R^2	0.429	0.436	0.435	0.446	0.439
Extra controls	No	No	No	Yes	Yes
Donut analysis	No	No	No	No	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Land auction outcomes

$$\text{LandOutcome}_{i,j,t} = \beta_1^L \alpha_{j,t} + \beta_2^L s_{j,t} + \gamma^L X_{j,t}^C + \eta^L X_{i,j,t}^P + \theta_j^L + v_t^L + \mu_{i,j,t}$$

Table 4: Presale and land auction

	(1)	(2)	(3)	(4)	(5)
Panel A: Auction success=1					
Presale Criterion (α)	-0.0277*** (0.00758)		-0.0277*** (0.00759)	-0.0287*** (0.00766)	-0.0202** (0.0101)
Postsale Supervision (s)		-0.00120 (0.0105)	-0.000994 (0.0105)	-0.000416 (0.0103)	-0.000621 (0.00754)
Sample mean	0.68	0.68	0.68	0.68	0.68
Observations	144,948	144,948	144,948	144,948	122,366
Adjusted R^2	0.093	0.093	0.093	0.093	0.091
Panel B: Log land auction deal price					
Presale Criterion (α)	0.0414 (0.104)		0.0414 (0.104)	0.0145 (0.0180)	0.00445 (0.0217)
Postsale Supervision (s)		-0.000605 (0.0446)	-0.000684 (0.0445)	0.0235 (0.0159)	0.0199 (0.0153)
Sample mean	4802.70	4802.70	4802.70	4802.70	4649.05
Observations	95,240	95,240	95,240	95,240	80,365
Adjusted R^2	0.266	0.266	0.266	0.967	0.969
Extra controls	No	No	No	Yes	Yes
Donut analysis	No	No	No	No	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Heterogeneity analysis: Construction costs and presale revenue

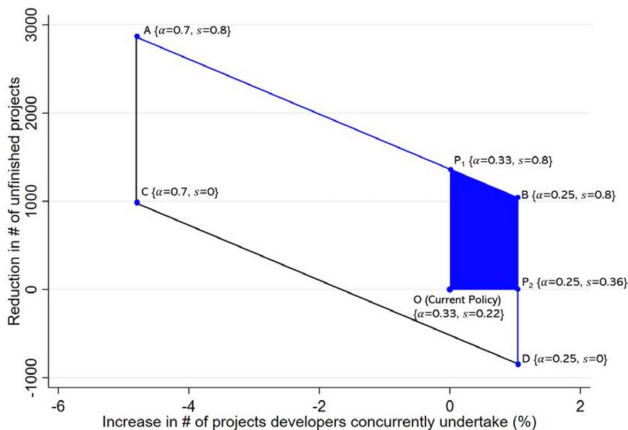
Dep. Variable	Probability of unfinished project			# of projects (Poisson)		
	(1)	(2)	(3)	(4)	(5)	(6)
Presale Criterion	-0.165*	-0.144*	-0.158*	-0.0163**	-0.0142**	-0.0160**
	(0.0902)	(0.0824)	(0.0891)	(0.00664)	(0.00616)	(0.00643)
Post-presale Supervision	-0.192***	-0.163***	-0.201***	-0.00774*	-0.00680*	-0.00792*
	(0.0557)	(0.0509)	(0.0555)	(0.00431)	(0.00408)	(0.00429)
Presale Criterion $\times$ Construction Cost	-0.0565		-0.0555	-0.00736		-0.00500
	(0.109)		(0.112)	(0.00716)		(0.00782)
Post-presale Supervision $\times$ Construction Cost	-0.113**		-0.130**	-0.00718*		-0.00709*
	(0.0533)		(0.0540)	(0.00378)		(0.00376)
Presale Criterion $\times$ Revenue		-0.0145	-0.00349		-0.00598***	-0.00484*
		(0.0542)	(0.0572)		(0.00214)	(0.00278)
Post-presale Supervision $\times$ Revenue		0.0555	0.103		-0.00350	-0.00142
		(0.0686)	(0.0761)		(0.00660)	(0.00636)
Observations	2,144	2,144	2,144	364,248	364,248	364,248
Adjusted R^2	0.446	0.445	0.446			
Pseudo R^2				0.024	0.024	0.024
Extra controls	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Back-of-the-envelope Analysis

- The previous estimates reflect the average treatment effect on the treated, and thus include the ripple effects that presale policies may generate through their interaction with other national or city-specific policies even if these policies do not change during our sample period.
- In this exercise, using the national average of presale criterion (0.33) and postsale supervision (0.22) as the status quo.
- Then varying the values of presale criterion and postsale supervision based on our regression results,²⁹ to evaluate the potential effects of different policy settings on the severity of unfinished projects as well as developer multitasking.

Back-of-the-envelope Analysis

Figure 5: Back-of-the-envelope analysis



Notes: (1) The y-axis represents the *reduction* in the number of unfinished projects compared with the status quo. (2) The x-axis represents the *percent increase* in the number of projects developers concurrently undertake (%). (4) The region shaded in blue is the Pareto Improvement region.

Outline of Today's Discussion

- 1 Motivation and Research Questions
- 2 Institutional Background
- 3 Presale Model
- 4 Empirical Evidence
- 5 Conclusion and Implications
 - Summary again
 - Comments of this paper

Summary again

- Begin with a theoretical framework with two key presale policies: presale criterion in terms of construction progress required prior presale and postsale supervision of presale revenue to cover construction costs.
- Not only are empirical results consistent with the theoretical predictions, they but also suggest that China's current presale policy is in the interior of the Pareto frontier.
- The back-of-envelope results suggest that increasing postsale supervision by 2 standard deviations (from 0.22 to 0.8) can relate to a 58% reduction in unfinished projects, while keeping the pace of new housing development unchanged.

Comments

- Infer unfinished projects from citizen complaints on a website run by the central government, it could underestimate the problem of unfinished projects because of under-reporting.
- It also does not tell us whether the unfinished projects have been eventually finished with a delay or remain unfinished as of today.
- Lack of exact geocoding prevents this research from linking a particular unfinished project to a specific parcel of land sale.
- Financial tools and related liability regulations – including home mortgage, developer loans, bonds, and foreclosure policies – play an important role in China's residential housing market and may interact with the presale policies in multiple ways.

Thank You!
Comments and questions
are welcome.