

Spillovers in Asset Prices: The Curious Case of Haunted Houses

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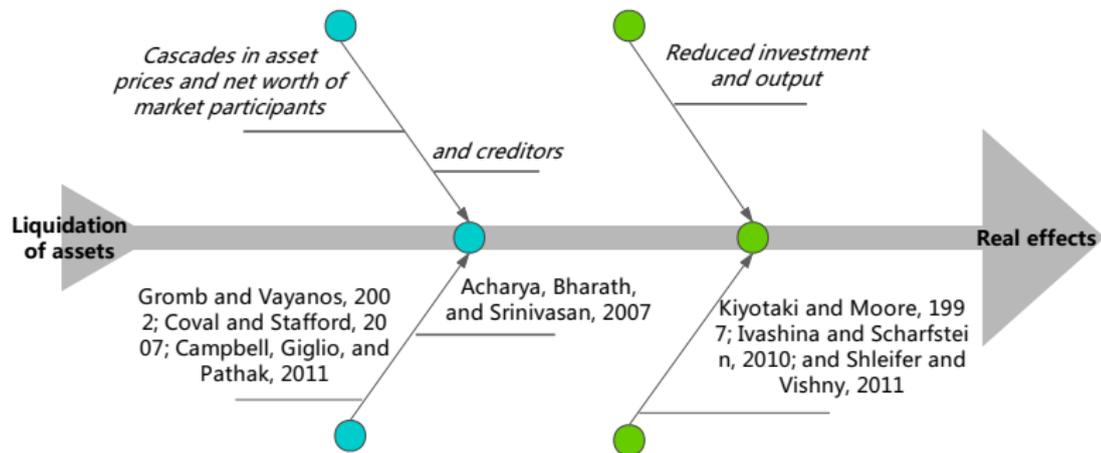
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Spillover

- Spillover is the notion that the **consequences of an activity can affect a third party.**
- Spillovers in asset prices have become an important topic of research since the Great Recession.



Fire sales

Prior literature on spillovers in asset prices has mainly been preoccupied with identifying the effect of *fire sales on asset prices* using transaction based dataset on

- Airplanes
 - ▶ Pulvino, 1998
- Corporate bankruptcies
 - ▶ Eckbo and Thorburn, 2008; Bernstein et al, 2017
- Mutual funds
 - ▶ Coval and Stafford, 2007

Collectively, these studies have established that fire sales lead to substantial reductions in asset prices, and result in negative spillover effects on prices of similar assets.

Identification problem

The identification of effects of fire sales on asset prices is not clean.

- Market conditions affect both supply and demand.
- Fire sales are endogenous.
- To quote Campbell, Giglio and Pathak (2011):

“Ideally, we would like an instrument that influences foreclosures but that does not influence house prices except through foreclosures: however, we have not been able to find such an instrument.”

Haunted houses

An ideal solution to the identification problem

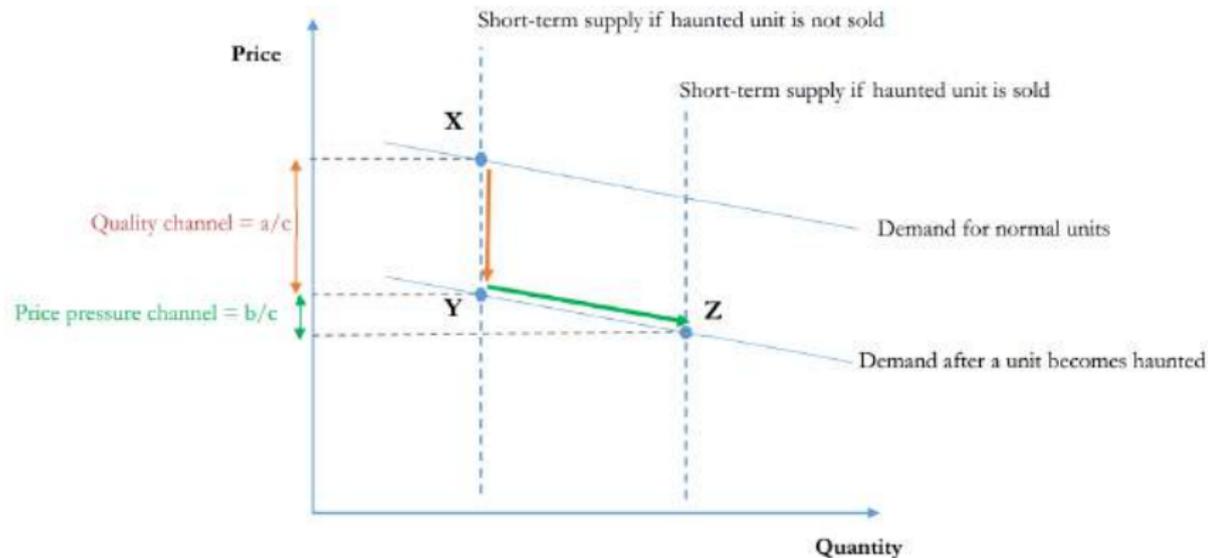
- An idiosyncratic negative shock
- A house is declared as “haunted” if there has been a murder, suicide or other unnatural death.
- Local market conditions are unlikely to differently affect haunted and non-haunted units, floors or blocks within an estate, because of the close proximity.
- It is reasonable to attribute the effect of haunted houses on nearby apartments to the spillover effect.



A new spillover channel

- We analyze the spillover effect on prices of neighboring houses, and examine whether it is driven by
 - ▶ **the price pressure channel:** prices of nearby houses are depressed because of the fire sale of the haunted unit
 - ▶ **the change in perceived quality channel:** prices of nearby houses are depressed even if the haunted unit is not sold
 - ▶ or both
- Spillovers in asset prices, we argue, might occur not just due to the price pressure from a fire sale, but also because of a change in the perceived quality of the asset.

Disentangling spillovers in prices



Data

EPRC: all housing transactions in Hong Kong

- From 2000 to 2015
- 1,124,348 trades in 7,352 estates
- 211 liquid estates, each with 1,000 or more transactions over our sample period
- 3 estates with detached houses only

Haunted houses from property information websites

- Squarefoot; Spacious; property.hk; hk-compass.com

News search

- 837 haunted houses; 188 addresses

Coroner's court

- 38,244 deaths; 1,403 unnatural deaths in our sample estates

Haunted Houses and Air

squarefoot.com/hk/haunted

mysquarefoot.com.hk

Join

Sign in

Calculators & Guides

- Property Directory
- Mortgage Calculator
- Guide to Buying Property
- Guide to Renting Property
- Property Glossary
- Currency Converter

HK Living Library

- Home Blog
- Owners' Listing
- New Developments
- Service Apartments
- School Network
- Haunted House
- Living in Hong Kong
- Property News & Trends
- Find An Agent
- Trade Directory

eMagazine

- Squarefoot eMagazine
- SF Home
- Top 10 Interior Design

Year: All District: All SEARCH

Date	District	Address	Building	Case
2017-01-06	Aberdeen	South Horizons	Mei Chun Court	56-year-old woman jumped from living room window and died on the scene
2017-01-05	Sha Tin	Shan Kap Mei	Pak Tin Estate Block 9	66-year-old woman fell from apartment unit and was pronounced dead upon arrival at hospital
2017-01-05	Kwun Tong	Tsui Ping North Estate	Tsui Nam House	Man fell from heights and confirmed dead upon arrival at hospital
2017-01-04	Tin Shui Wai	Tin Tsz Estate	Tsz Sun House	34-year-old man fell from apartment unit and died on the scene
2017-01-03	Yuen Long		Ed Tai Tsang Wai	A woman hanged herself and was pronounced dead upon arrival at hospital
2017-01-03	Tai Po		Kingsland	74-year-old man hanged himself with dog leash inside glasshouse on rooftop
2017-01-02	Mong Kok		Kwong Wing Building	53-year-old woman hanged herself with rope and was pronounced dead upon arrival at hospital
2016-12-31	Tai Po		Ting Kok Tsouat	46-year-old man committed charcoal suicide in bedroom and confirmed dead
2016-12-30	Tuen Mun	Affluence Garden	Civic House	32-year-old woman was stabbed by husband with scissors during quarrel and was pronounced dead upon arrival at hospital
2016-12-30	Ma On Shan		Saddle Ridge Garden Block T1	80-year-old man hanged himself at home and body was found by helper
2016-12-29	Sha Tin	Sun Chai Estate	Sun Hok House	90-year-old man hanged himself at home and was confirmed dead
2016-12-29	Tai Kok Tsau	Hoi Fu Court	Hoi Ning House	46-year-old woman fell from heights and died
2016-12-29	Kwun		Chai Kwo	Burnt body of 56-year-old woman

squarefoot.com.hk

Considerations when Renting a Home in Hong Kong

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Spacious

The screenshot shows the Spacious website interface. At the top, there's a navigation bar with "Hong Kong - New Development", "Neighbourhood Guides", "Valuation", "Resources", and "Blog". The main header features the Spacious logo and navigation options: "Buy", "Rent", "Overseas Properties", "Serviced Apartments", "List Now", and "Sign In". Below the header is a search bar with filters for "Select Neighbourhoods", "Price", "Area", "Any Beds", and "More...". A "SAVE SEARCH" button is visible. The main content area displays a map of Tai Koo Shing, Hong Kong, with various filters like "TRENDS", "POPULATION", "HOUSEHOLDS", "SCHOOLS", "POLITICS", "HAUNTED", "AFFORDABILITY", and "HIDE OVERLAY". A pop-up window is overlaid on the map, displaying the following text:

3 Tai Koo Shing Road, Tai Koo Shing, Hong Kong
Former news anchor committed suicide by jumping off building.
- A 63-year-old man with emotional problem jumped off the building.
- A man in his 60s jumped off the building due to sickness.
- Male jumped off the building due to health problem.
- Female with depression first strangled her 10 years old son and hanged herself after she found out her husband's affair.

凶宅 / 兇宅

地區

大廈/街樓



廣告



信託一等八Return
健康全面保

Cigna
誠誠信信

案發日期	地址/內容	層數	凶宅 / 兇宅	詳細內容
返回頁碼請「自己未來自己來」-網上申請建家300現金券 為您度身訂造置業方案 此福利是支出, 卡數從此消失, 更有額外現金作費用, 立即申請! www.dbs.com.hk/conts 貸款顯示				
2018/01/12	荃灣荃灣中心 廣州樓		25歲姓陳女子於傍晚6時許由高處墮下,救護員到場證實陳...	詳情
2018/01/11	觀塘順天村 天權樓		77歲姓陳老翁於凌晨1時32分被妻子發現在單位內便尿自殺...	詳情
2018/01/11	深水埗富臨村 富悅樓		30歲姓黃男子於下午4時許被發現在洗手間墮灰自殺,救護...	詳情
2018/01/11	屯門良景村 第05座 良景樓	7	48歲姓黃女子於凌晨2時10分因火警身亡...	詳情
2018/01/10	上環林士街多層停車場	8	59歲姓雙男子於凌晨0時四過圍欄墮下,送院搶救終於不治...	詳情
2018/01/10	黃大仙慈正村 正和樓		1名女子於晚上8時許由高處墮下,送院救治死亡...	詳情
2018/01/09	元朗好景洋樓		21歲姓盧青年於傍晚近6時半在寓所吊頸自殺,救護人員接...	詳情
2018/01/08	觀塘寶蓮村 達康樓		1名男子於下午3時許由高處墮下,救護員接報到場證實他當...	詳情
2018/01/07	荃灣荃豐花園 第05座 晏都閣		約40歲女子於早上9時許被男友發現在單位內墮灰自殺,救...	詳情

Sample of haunted houses

	N	%
A. Cause of deaths		
Murder	21	2.3%
Suicide	656	73.1%
- Hanging	74	8.2%
- Jump to death	427	47.6%
- Other suicides	155	17.3%
Other	221	24.7%
B. Territory		
Hong Kong Island	194	21.6%
Kowloon	218	24.3%
New Territories	486	54.1%
N	898	100%

C. Year

2000	26	2.9%
2001	39	4.3%
2002	31	3.5%
2003	53	5.9%
2004	45	5.0%
2005	30	3.3%
2006	37	4.1%
2007	41	4.6%
2008	59	6.6%
2009	59	6.6%
2010	62	6.9%
2011	45	5.0%
2012	87	9.7%
2013	108	12.0%
2014	99	11.0%
2015	77	8.6%

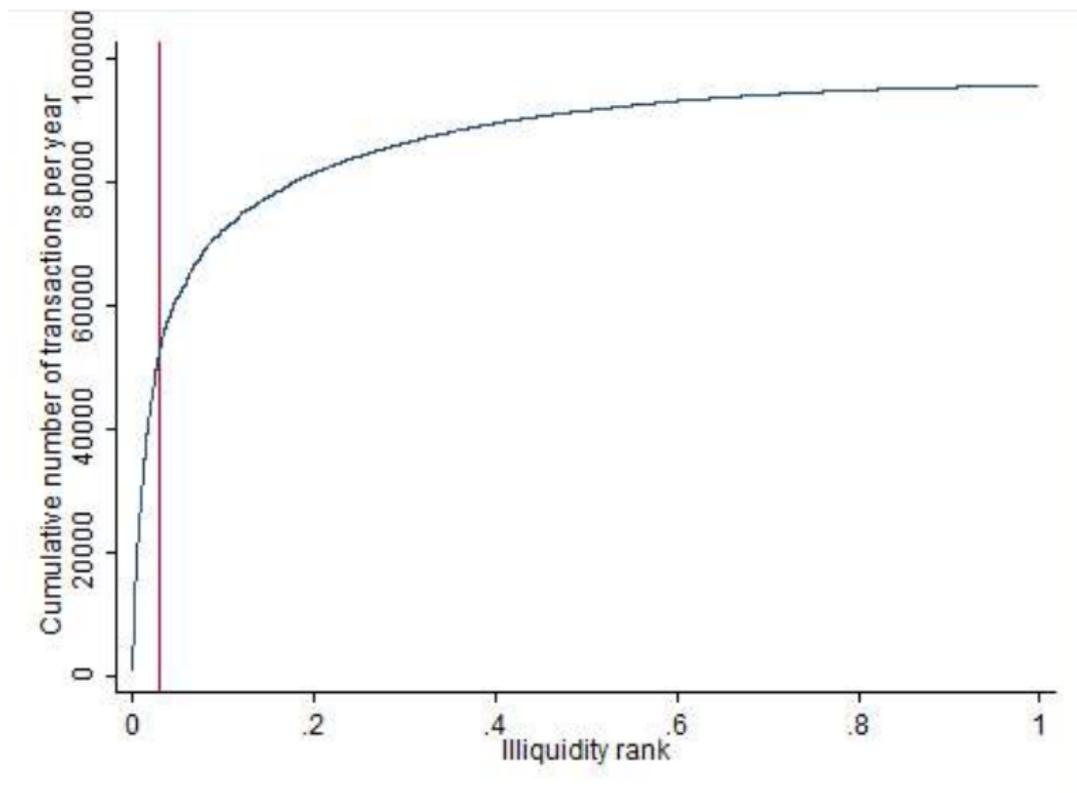
Housing transactions

	All	Liquid estate		Difference (1)-(2)
		Yes (1)	No (2)	
A. Transaction characteristics				
Price (million HKD)	4.22	3.89	4.65	-0.77***
Price per square feet (HKD)	6,207.5	6,014.6	6,499.3	-484.7***
Size (square feet)	606.4	600.5	615.3	-14.8***
Block age (years)	15.2	10.4	21.5	-11.2***
B. Territory (%)				
Hong Kong Island	23.0	11.8	37.9	
Kowloon	28.6	23.2	35.8	
New Territories	48.4	65.0	26.3	
D. Quarter				
First	288,199	166,257	121,942	
Second	290,003	164,098	125,905	
Third	277,780	159,808	117,972	
Fourth	268,366	152,616	115,750	
N	1,124,348	642,779	481,569	

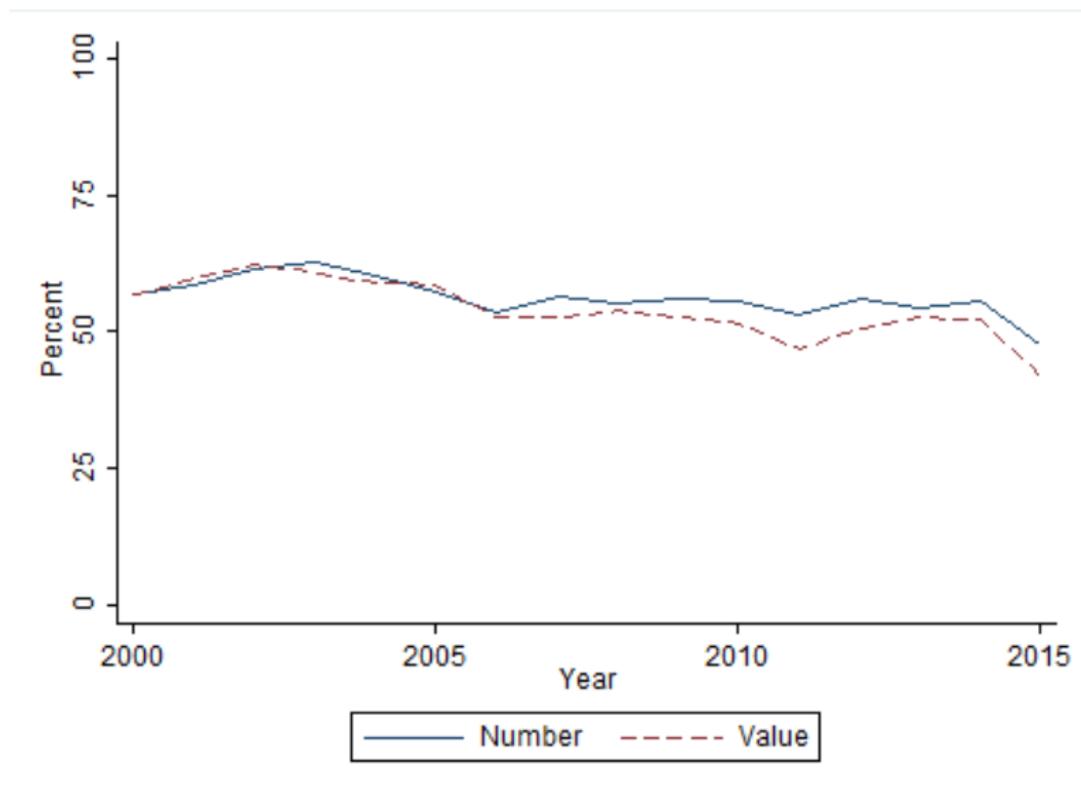
C. Year

2000	52,015	29,954	22,061
2001	60,216	35,754	24,462
2002	58,496	37,118	21,378
2003	60,557	39,370	21,187
2004	84,092	51,536	32,556
2005	80,998	47,203	33,795
2006	66,214	35,844	30,370
2007	107,122	60,660	46,462
2008	70,668	39,317	31,351
2009	100,855	56,909	43,946
2010	110,133	61,419	48,714
2011	67,341	36,080	31,261
2012	68,629	38,781	29,848
2013	39,803	21,911	17,892
2014	53,581	30,005	23,576
2015	43,628	20,918	22,710

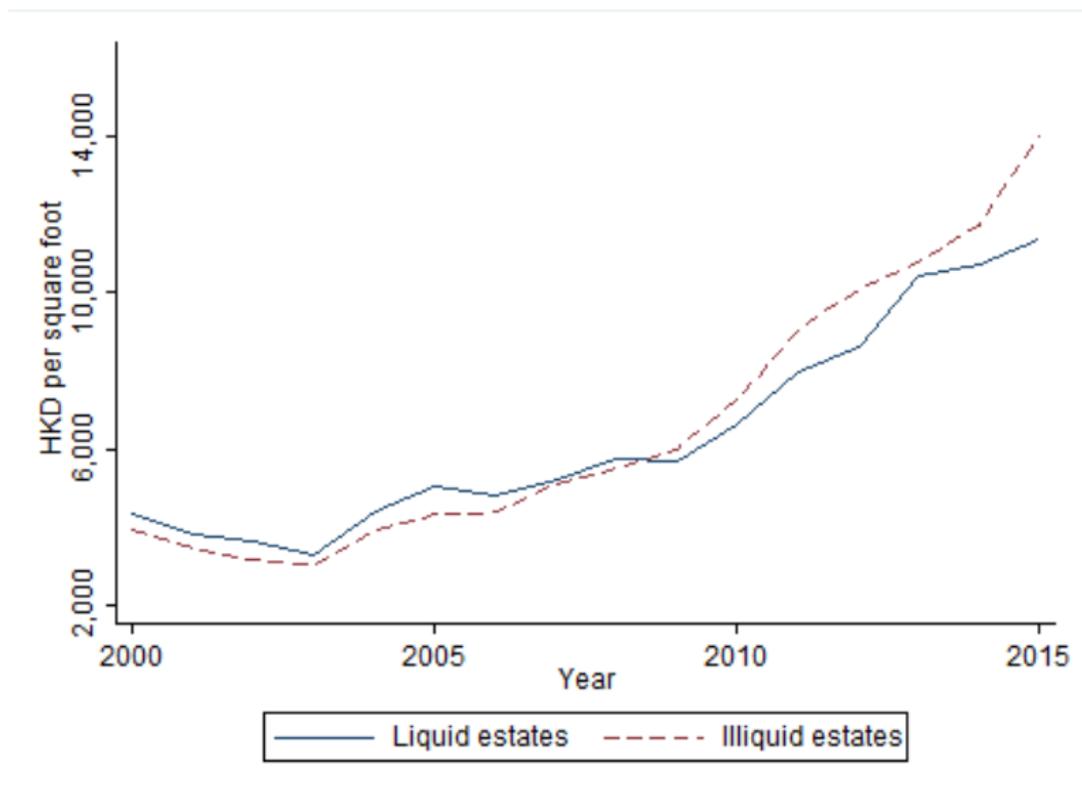
Cumulative transactions per year by illiquidity rank



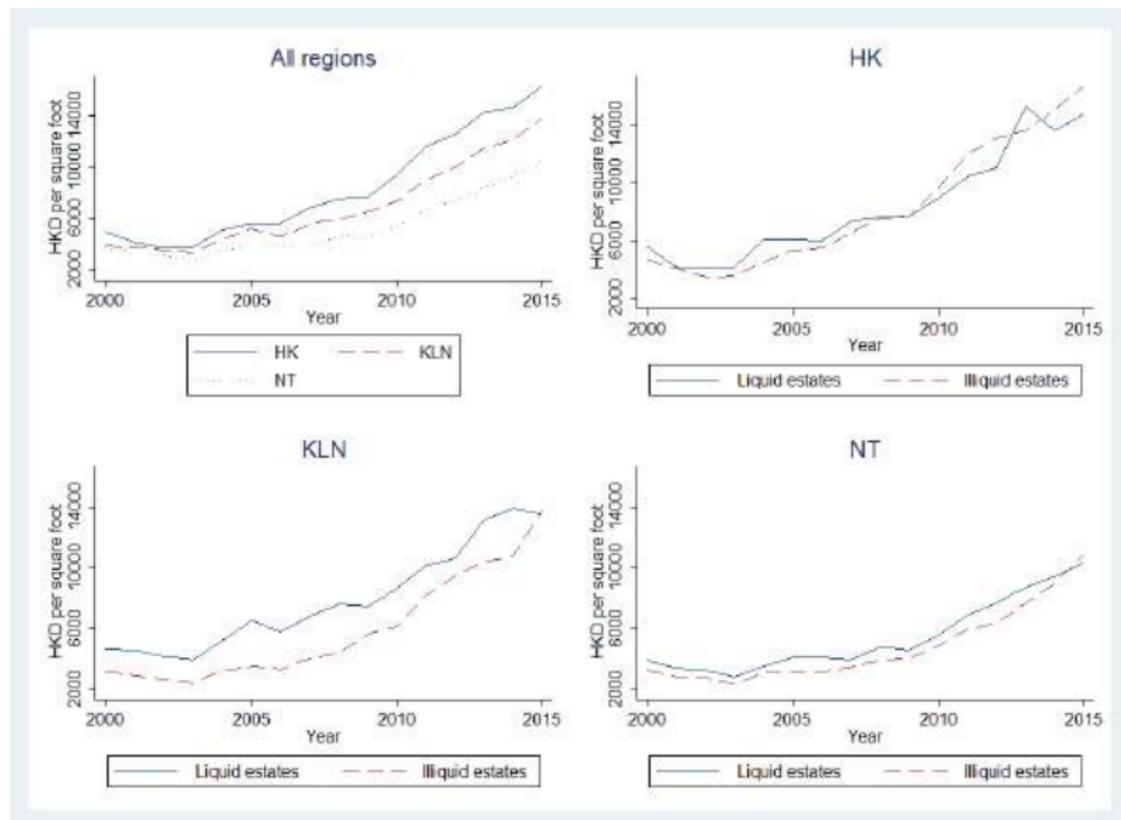
Market share of liquid estates



House price development



House price developments in regions



The 18 districts of Hong Kong



Dawning Views in Fanling, North District, New Territories

In our sample, each estate has an average of 12 blocks, each block has an average of 26 floors, and each floor has an average of 5 units. Thus, the average estate consists of 1,560 apartments in a small area. Dawning Views is the most representative estate.



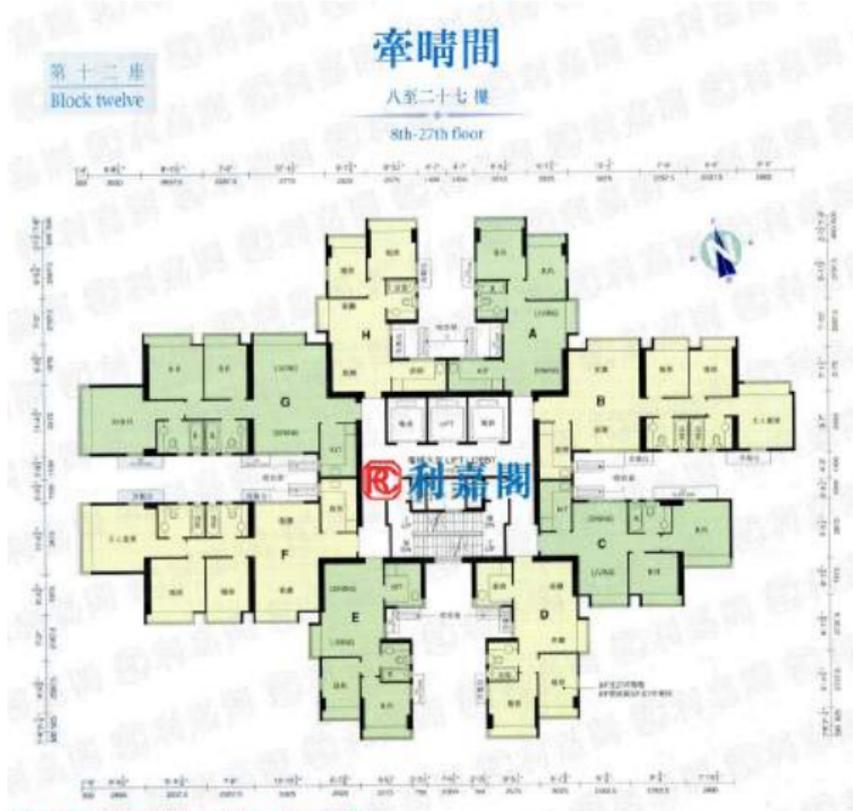
Estate layout of Dawning Views



S 二樓平台花園平面圖
second floor plan

此圖則只供作二手住宅物業參考用途，並不作為任何一手住宅物業銷售之用。
This plan is used for reference of second-hand residential properties only, not for the sale of any first-hand residential properties.

Floor plan of Floor 8-17 in Block 12 in Dawning Views



此圖對只供內二千住物業參考用途，並不作為任何一手住宅物業銷售之用。
This plan is used for reference of second-hand residential properties only,
not for the sale of any first-hand residential properties.

Haunted unit



Haunted floor



Haunted block



Difference-in-differences estimates

Window	Unit			Floor			Block		
	Price per square feet		%	Price per square feet		%	Price per square feet		%
	Haunted	District	Difference	Haunted	District	Difference	Haunted	District	Difference
A. One year before to one year after									
Before	4,162	4,013	4%	4,168	4,648	-10%	4,452	4,644	-4%
After	4,725	5,490	-14%	4,036	4,738	-15%	4,600	4,839	-5%
Difference	14%	37%	-23%	-3%	2%	-5%	3%	4%	-1%
B. Two years before to two years after									
Before	4,257	3,955	8%	4,078	4,540	-10%	4,388	4,582	-4%
After	4,605	5,407	-15%	4,069	4,787	-15%	4,590	4,819	-5%
Difference	8%	37%	-29%	0%	5%	-5%	5%	5%	0%
C. Three years before to three years after									
Before	4,808	4,167	15%	4,106	4,546	-10%	4,338	4,517	-4%
After	4,213	4,930	-15%	3,989	4,711	-15%	4,587	4,828	-5%
Difference	-12%	18%	-30%	-3%	4%	-7%	6%	7%	-1%

Spillover effects of haunted houses on price

$$y_{it} = \alpha_i + \beta_t + \gamma'X_{it} + \theta H_{it-k} + \epsilon_{it}$$

	Unit (1)	Floor (2)	Block (3)	Estate (4)
Haunted house	-0.1970*** (0.049)	-0.0466*** (0.0015)	-0.0271*** (0.0019)	-0.0120*** (0.0014)
Size	0.0016*** (0.0001)	0.0014*** (0.0001)	0.0014*** (0.0001)	0.0014*** (0.0001)
Age	-0.0116*** (0.0004)	-0.0171*** (0.0003)	-0.0186*** (0.0003)	-0.0213*** (0.0006)
Unit fixed-effects	Yes	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes	Yes
Adj. R-squared	0.988	0.976	0.976	0.975
N	151,237	323,586	324,025	199,516

Decay in spillover effects

$$y_{it} = \alpha_i + \beta_t + \gamma' X_{it} + \theta H_{it-k} + \lambda \times \text{Time} \times H_{it-k} + \epsilon_{it}$$

	Unit (1)	Floor (2)	Block (3)	Estate (4)
Haunted house	-0.1626*** (0.0539)	-0.0728*** (0.0015)	-0.05569*** (0.0016)	-0.0296*** (0.0010)
Haunted house * Time	-0.0045 (0.0054)	0.0032*** (0.0011)	0.0023*** (0.0002)	0.0028*** (0.0001)
Size	0.0016*** (0.0001)	0.0014*** (0.0001)	0.0014*** (0.0001)	0.0014*** (0.0001)
Age	-0.0116*** (0.0004)	-0.0171*** (0.0004)	-0.0166*** (0.0003)	-0.0190*** (0.0003)
Unit fixed-effects	Yes	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes	Yes
Adj. R-squared	0.988	0.976	0.976	0.975
N	151,237	323,586	324,025	199,516

Cause of death

	All	Cause of death				
	(1)	Murder (2)	Jump to death (3)	Hanging (4)	Other suicides (5)	Unclassified (6)
Unit	-0.2000*** (0.0309)	-0.3625*** (0.1194)	-0.1646*** (0.0477)	-0.2777*** (0.0852)	-0.2191*** (0.0404)	-0.1992*** (0.0318)
Floor	-0.0466*** (0.0069)	-0.1776*** (0.0388)	-0.0435*** (0.0089)	-0.1136*** (0.0374)	-0.0806*** (0.0133)	-0.0442*** (0.0069)
Block	-0.0405*** (0.0011)	-0.0480*** (0.0061)	-0.0363*** (-0.0014)	-0.1093*** (0.0031)	-0.0771*** (0.0020)	-0.0401*** (0.0011)
Estate	-0.0317*** (0.0010)	-0.0725*** (0.0023)	-0.0080*** (0.0010)	-0.0511*** (0.0014)	-0.0055*** (0.0012)	-0.0307*** (0.0010)
N of deaths	898	21	427	74	155	221

Price pressure and spillover effects

$$y_{it} = \alpha_i + \beta_t + \gamma' X_{it} + \theta H_{it-k} + \lambda \times \text{Haunted house sold} \times H_{it-k} + \epsilon_{it}$$

	Floor (1)	Block (2)	Estate (3)
Haunted house	-0.0527*** (0.0016)	-0.0226*** (0.0020)	-0.0121*** (0.0014)
Haunted house * Affected unit sold	0.0070 (0.0530)	-0.0350*** (0.0049)	-0.0093*** (0.0001)
Size	0.0014*** (0.0001)	0.0014*** (0.0001)	0.0014*** (0.001)
Age	-0.0171*** (0.0003)	-0.0186*** (0.0003)	-0.0213*** (0.0006)
Unit fixed-effects	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes
Adj. R-squared	0.976	0.976	0.976
N	323,586	324,025	199,516

Effects on liquidity

Measured by excess fraction of transactions relative to 1/16

Window	Unit			Floor			Block		
	Excess fraction of sales		%	Excess fraction of sales		%	Excess fraction of sales		%
	Haunted	District		Haunted	District		Haunted	District	
A. One year before to one year after									
Before	-1.9%	0.3%	-2.1%	-1.7%	-0.1%	-1.6%	0.5%	0.1%	0.4%
After	6.2%	0.4%	5.8%	-0.8%	0.2%	-0.9%	0.5%	-0.1%	0.5%
Difference	8.0%	0.1%	8.0%	0.9%	0.2%	0.7%	0.0%	-0.1%	-0.1%
B. Two years before to two years after									
Before	-5.4%	0.3%	-5.7%	-3.2%	-0.1%	-3.1%	0.4%	0.1%	0.3%
After	5.3%	-0.3%	5.6%	-2.0%	0.1%	-2.1%	-0.1%	-0.7%	0.6%
Difference	10.7%	-0.6	11.3%	1.2%	0.2%	1.0%	-0.5%	-0.8%	-0.3%
C. Three years before to three years after									
Before	-7.2%	0.5%	-7.6%	-4.6%	-0.4%	-4.2%	0.4%	0.2%	0.2%
After	2.9%	-0.2%	3.0%	-4.1%	-0.6%	-3.5%	-1.3%	-2.1%	0.8%
Difference	10.0%	-0.6%	10.6%	-0.5%	-0.2%	0.7%	-1.6%	-2.2%	0.6%

External validity

Factiva news search

Country	Number of articles	Average of price drop
Total	101	25.13%
United States	63	28.21%
United Kingdom	20	25.38%
Australia	18	14.07%

- The Supreme Court of New York: *Stambovsky v. Ackley*
- www.diedinhouse.com

Three takeaways

- An idiosyncratic shock to the perceived quality of an asset can cause large negative spillovers on asset prices.
- We decomposed the price drop as the amount that is from the supply shock and the amount that is from the demand shock.
- A cute identification