

Emigration During Turbulent Times

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Motivation

- ▶ Migration to avoid risks from political turmoil occurs often.
 - ▶ During times of (political) crisis, pending but unrealized risks often provide a short window of opportunity: those who catch it may survive in the long-run, and those who miss the opportunity may not be able to remedy the loss.

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- ▶ What drives individuals (both families and firms) to move during those uncertain circumstances?
 - ▶ May be political: movers may face or perceive higher political cost, those who are misaligned with the incoming political ideology, etc.
 - ▶ But moving is also an *economic* decision: the costs of uprooting families or business may be large; the wealth accumulated and cost of staying may play an important role.

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- ▶ In this paper, we examine two episodes of mass migration in recent Chinese history to understand the economic factors that weight into this decision: what are the economic incentives to leave and to stay during political turbulence?

Two episodes of political turbulence in Greater China

	Out of Shanghai
Timing	1930s-40s
Background	Sino-Japanese War and Civil War
Uncertainty	Pending Communist take-over
Destination of migration	Hong Kong, among others



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	Out of Shanghai	Out of Hong Kong
Timing	1930s-40s	Since 1995, esp. after 2014
Background	Sino-Japanese War and Civil War	End of British Colonial Rule and start of “One Country Two Systems”
Uncertainty	Pending Communist take-over	Encroachment of Communist control
Destination of migration	Hong Kong, among others	Commonwealth nations and the US



SHANGHAI'S PAST, HONG KONG'S FUTURE

5.12.2020



BY JAMES CARTER & JEFFREY WASSERSTROM

Sometimes, when a city changes, residents are suddenly forced to ask themselves hard questions: Should we stay, or cut our losses and leave to start afresh somewhere else? Will this place still be enough like the community we love in a year or a decade to make it worth sticking it out? If we don't leave now and things get worse, will we still be able to get out? Even if we're okay now, what about our children? And all these personal questions boil down to bigger ones: What does it mean for a city to be free? What happens when a free city loses its freedom? And when does that occur?

Seventy-one years ago today, these questions were being asked by many residents of the most cosmopolitan city on the China coast: Shanghai. Some had considered leaving in 1937, when the Japanese took over all Chinese-run parts of Shanghai, and again in 1941, when the city's two enclaves of foreign privilege, the International Settlement and the French Concession, fell to Japan. But they had stayed, only to face a choice early in 1949, when the Red Army advanced toward the great metropolis of the Yangtze Delta. While many locals welcomed the Communist Party's arrival, others, Chinese and non-Chinese alike, feared that their way of life would be dramatically changed once Mao Zedong's forces took over, and changed for the worse. As the first battles outside the city began on May 12, 1949, those who had remained surely wondered if they'd made a mistake.

Seven decades later, the same questions are being asked again, but in Hong Kong. In the Pearl River Delta's most cosmopolitan city, the people asking the

What we do and what we find

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	Wealth elasticity of migration = 0.50	Wealth elasticity of migration = 0.88
How much migrants would potentially forego by leaving? <i>[price effects]</i>	Bomb hit firms' properties accidentally increased staying cost	Sector-specific labor market shocks increased staying cost
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In so doing, we provide (to the best of our knowledge) ...

- ▶ First estimate of migration elasticity to wealth in any context;
- ▶ One of the few estimates of negative migration elasticity to wage;
- ▶ Both elasticities *increase* as political uncertainty rises.

Historical background

Shanghai and out-migration in late 1930s

- ▶ Shanghai in 1930s: East Asia's financial center.
 - ▶ Shanghai alone accounted for 46% (67%) of total (manufacturing) FDI in China, 48% of China's financial capital. (Ma 2008)
- ▶ Political turbulence due to two back-to-back wars:
 - ▶ Sino-Japanese War (1937-1945) and Chinese Civil War (1945-1949).
 - ▶ Political uncertainty as CCP gained grounds and KMT's grip on power declining, and uncertainty as CCP's policy towards the enterprises if it ruled China. ▶ Views vary

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- ▶ Enterprise migration to Hong Kong:
 - ▶ Hong Kong as a safe haven as a British colony with strong rule of law and Common Law tradition that protects business;
 - ▶ Except for the brief Japanese occupation period (1941-1945);
 - ▶ According to surveys in 1961, at least 70,000 people (and their business) migrated from Shanghai to Hong Kong. (Barnett, Census Commissioner, 1961 Vol. II, page 118)
 - ▶ 32% of new firms registered in Hong Kong during 1940s were migrants from Shanghai. (Source: *Registrar General's Department Annual Report, Hong Kong 1976-77*)

Shanghai and Hong Kong: the twin cities

Even though Shanghai was never a formal colony, its cosmopolitanism was possible because it existed outside the sovereignty of all nation-states. Shanghai avoided the worst deprivations of the Second World War (even, famously, racing its horses under occupation), yet it was during that regional and global conflict that the city finally lost its special status. [...] It was no coincidence, then, that Shanghai's mid-century decline was matched by Hong Kong's rise.

— James Carter and Jeffrey Wasserstrom

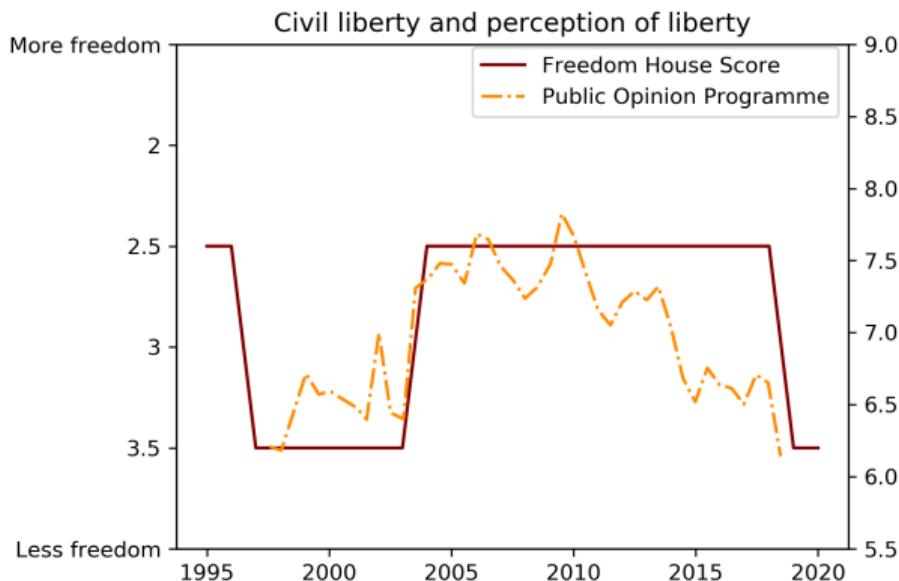
Hong Kong and out-migration since 1997

- ▶ HK grew into one of the world's most important financial centers since WWII, esp. after 1970s.
 - ▶ Prior to 1997: British Crown Colony.
 - ▶ Income per capita in 2022: USD 48,154 (vs. USD 47,232 in UK).

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 - ▶ Income per capita in 2022: USD 48,154 (vs. USD 47,232 in UK).
- ▶ Political uncertainty and turbulence:
 - ▶ Sovereignty "handed over" to China from UK; "One country, two systems" principle to be respected through 2047 but key constitutional issues left unresolved.
 - ▶ Since 2014: Umbrella Revolution and its aftermath, demanded political rights and protection of its distinctive institutions from Mainland China.
 - ▶ Lack of credible commitment from the CCP and its gradual decline in political freedom and civil liberties since 2019, e.g., National Security Law.
- ▶ Exodus of citizens and business alike:
 - ▶ At the eve of 1997, and again after 2014.

Liberty and freedom, and public perception in Hong Kong



Source: Freedom Houses Country and Territory Ratings and Statuses, 1973-2023; Public Opinion Programme, HKU, 1997-2019 — based on a question that asks a representative sample of Hong Kong population to evaluate the extent of freedom (e.g., of procession and demonstration) in Hong Kong, ranging from absolute lack of freedom to full freedom.

Episode 1: Out of Shanghai

Overview: episode 1

- ▶ Identify movers.
- ▶ Economic incentives and migration decisions:
 - ▶ How much wealth needed to cover migration costs? Real estate value appreciation;
 - ▶ How much potential migrants would forego by leaving? Bombing.

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- ▶ Org structure that allows for flexibility affect responsiveness to economic shocks?
- ▶ Median to long-run firm outcomes?

Identifying movers

- ▶ We obtain the Shanghai firm roster from *The North-China Desk Hong List*, published annually by North-China Herald, a British newspaper agency in Shanghai (1850-1941).
 - ▶ A comprehensive list of business operating in the International Settlement and French Settlement, economic center of pre-War Shanghai for foreign and domestic businesses alike (N=2,871).
 - ▶ We use the 1937 July edition as our baseline sample as it's surveyed right before WWII.
 - ▶ We also digitized all the firm lists from 1900-1941 to track within-firm characteristics over time.

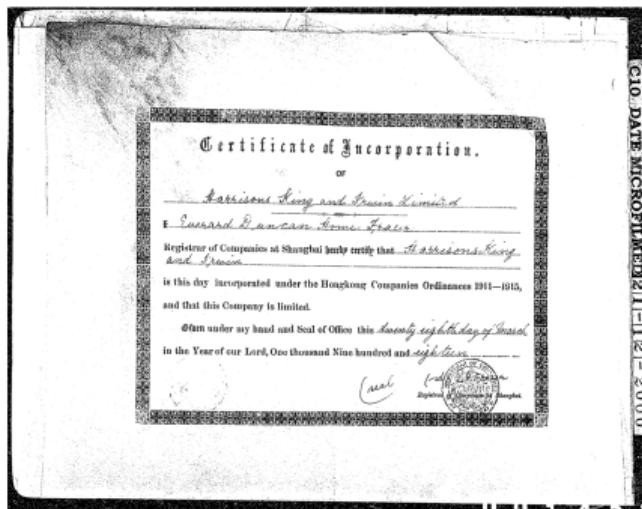
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 - ▶ We also digitized all the firm lists from 1900-1941 to track within-firm characteristics over time.
- ▶ We then match the list of firms with the official firm registry database in Hong Kong (Integrated Companies Registry Information System).
 - ▶ We identify a firm as a mover if its names in the two data sources match with one another ($N=365$). ▶ Dist'n of years
 - ▶ Only the main characters of the company names are used to identify potential matches — keywords like "Yang Hang" (Foreign Company), "Shang Hao" (Business), "Limited", etc. are not used for matching.
 - ▶ We validate our sample by comparing sector of business activity, looking for evidence of Shanghai presence in the charters and in the director list, and excluding firm registrations outside our time frame of interest.

A mover example: Harrisons, King & Irwin, Ld.

► Another example

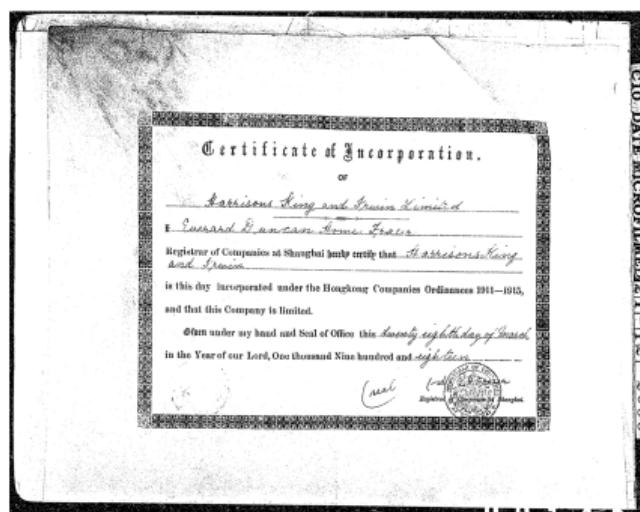
A joint venture of trading company specialized in tea among Harrisons and Crosfield Ltd (in London), Willian Seaton King (in Shanghai), and Andrew F. Irwin (in Shanghai).



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HARRISONS, KING & IRWIN, LTD.
(INCORPORATED IN HONGKONG)

P. O. Box 311
SHANGHAI June 6th, 1946

The Registrar of Companies,
HONG KONG

Dear Sir,

It is desired to register this Company (already incorporated under the Hong Kong Companies Ordinance) as a Hong Kong Company under Proclamation No. 27 of March 11th, 1946: the Head Office of the Company to be at its Hong Kong premises at 734 King's Road (I.L. 3507).

The consent of the Directors of the Company has already been obtained although the undersigned are the only two directors at present in the Far East. The Directors are:-

Norman Frederick Meyers, c/o Harrisons & Crosfield, Ltd., London.
Sydney William Harris, c/o the same, at present represented by the undersigned Valdemar Reginald Zimmerman as alternate director.
Carlton Reid, of Harrisons & Crosfield, Ltd., London.
Charles Cecil King the undersigned, of this address.

A fifth Director, Mr. A.P. Irwin of Irwin-Harrisons-Whitney, Philadelphia, died recently and we have not been informed of any new appointment to his seat on the Board.

It would be much appreciated if you would be good enough to institute the registration of this Company as requested and hand the Registration Certificates to Messrs. Lowe Bingham & Matthews of Hong Kong who are temporarily acting as our local representatives and through whom this application will be presented to you.

Yours faithfully,
HARRISONS, KING & IRWIN, LTD.


S. W. Harris
Director


J. R. Zimmerman
Alternate Director to S. W. Harris

Who are the movers?

► Data collection details

	Emigration	
	Bivariate	Multivariate
	(1)	(2)
Panel A: Ownership		
Chinese-owned	-0.0218*	0.0266 (0.0120) (0.0209)
British-owned	0.0433*** (0.0141)	0.0619*** (0.0238)
Panel B: Presence in China		
Year of incorporation in Shanghai	-0.0006 (0.0005)	-0.0003 (0.0003)
Business presence in other parts of China	0.0440*** (0.0054)	0.0457*** (0.0107)
Panel C: Foreign presence		
Total number of foreign managers	0.0108*** (0.0039)	0.0011 (0.0144)
Δ foreign managers from 1934 to 1937	-0.0024 (0.0072)	-0.0072 (0.0099)
Ratio of foreign managers to Chinese managers	0.0167** (0.0074)	0.0037 (0.0227)
Panel D: Industry		
Finance sector	0.1391*** (0.0280)	0.1164*** (0.0380)
Groceries, restaurants and clothing	-0.0990*** (0.0117)	-0.0663*** (0.0223)
Manufacturing	-0.0276* (0.0161)	-0.0272 (0.0240)
Panel E: Land value and assets		
Land value at 1937 (in logarithm)	0.0481*** (0.0114)	0.0203* (0.0116)
Mean of DV	0.127	0.127

Firms ... were more likely to move:

- with stronger ties to the destination;
- with bigger geographical business scope;
- in sectors with lighter physical assets.

How much wealth needed to cover migration costs?

Measuring firms' land value appreciation in Shanghai

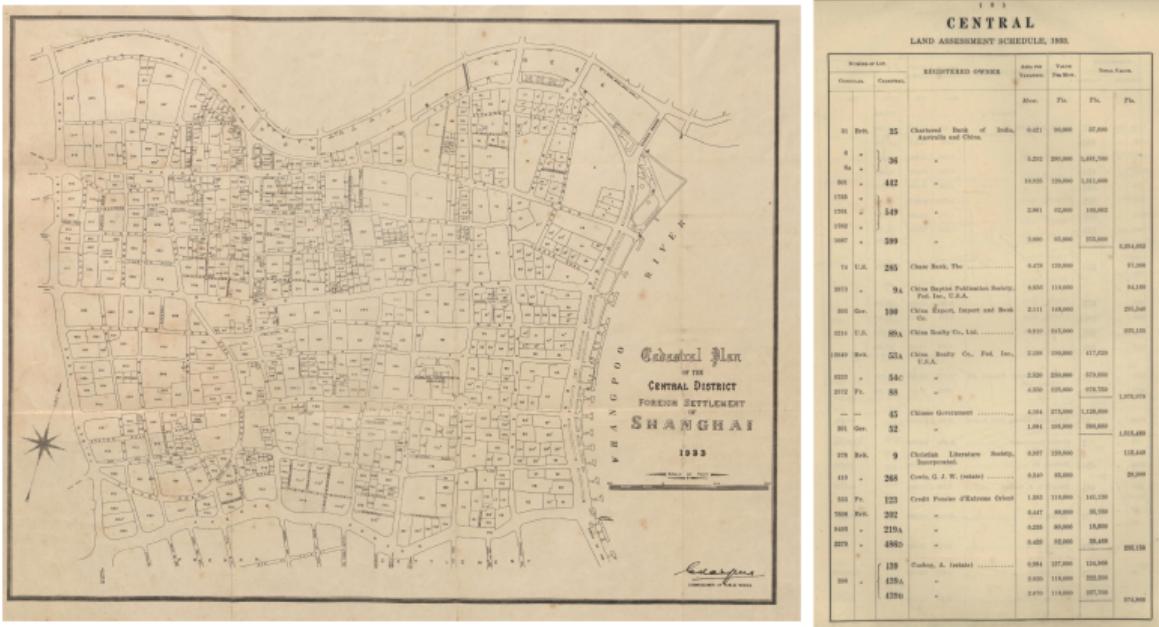
- ▶ Based on firms' address, we match to land value retrieved from *the Land Assessment Schedules* — cadastral-level land valuations conducted every few years by the Shanghai Municipal Council and the French Council for tax purposes.
- ▶ For all the firms continuing their business in 1937, we compute the change of land value from the incorporation year to the 1937. If a land survey is not conducted at the year of incorporation, we do linear inter-/extrapolation with the data we have.

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- ▶ Real estate accounted for a major part of many firm's assets. Based on the records of 67 balance sheets that we observe, 37.65% of firm assets were held in real estate.
 - ▶ E.g., 40% for Sassoon Trustee & Executor Corp, and 70% for Metropolitan Land & Company.

Matching land value with cadastral map



- An example of a map and a corresponding table in the 1933 Land Assessment Schedules for Central District, International Settlement.
- Each block in the map is called a cadastre. An average cadastre occupies an area of 3.91 thousand square meters (half a soccer field), and usually hosts a couple firms.

How much wealth needed to cover migration costs?

Empirical strategy

- ▶ $\text{Emigration}_i = \beta \times \Delta \log(\text{land value})_i + \gamma_{\text{entry decade}} + \eta_{\text{street}} + \varepsilon_i$
 - ▶ Emigration after 1937; cumulative land value appreciation until 1937.
 - ▶ We include entry year FE and street FE: thus identifying variations in land value appreciation due to years of entering Shanghai real estate market and the street of entering (due to differential trajectories of asset appreciation across the city and across time).

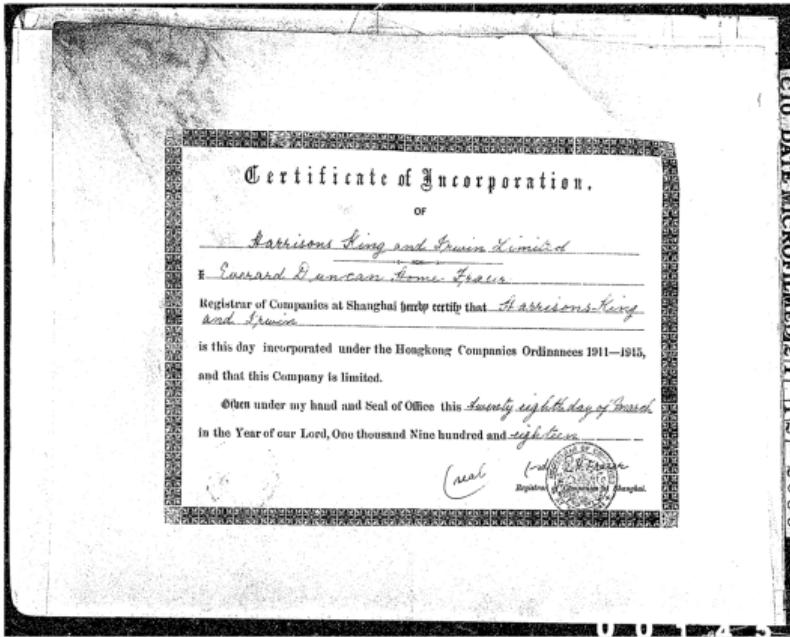
Appreciation of asset value \Rightarrow increased moving

	Emigration		
	(1)	(2)	(3)
$\Delta \text{Log}(\text{land value})$	0.070*** (0.018)	0.065*** (0.017)	0.064*** (0.017)
# of obs.	1346	1346	1346
Mean of Dep. Var.	0.127	0.127	0.127
Mean of Indep. Var.	0.647	0.647	0.647
Entry year FE	No	Yes	Yes
Street FE	Yes	Yes	Yes
Control for land value in 1937	No	No	Yes

Notes: Standard errors are clustered at cadastral level as the variation of price comes at cadastral level. Extrapolations sometimes creates negative land values; we winsorize the largest 15% of absolute differences to address the issue.

- ▶ Elasticity of migration w.r.t land wealth = 0.50.
 - ▶ A 10% additional increase in asset appreciation lead to a 0.61pp (5%) increase in emigration prob.
 - ▶ The difference of emigration probability between firms at the top decile and firms at the bottom decile is 12.65pp (99.4%).
- ▶ Results are robust measured in levels in current US dollars. ▶ Results
- ▶ Foreign firms may be slightly more elastic than local counterparts. ▶ Results

Back to the example: Harrisons, King & Irwin, Ld.



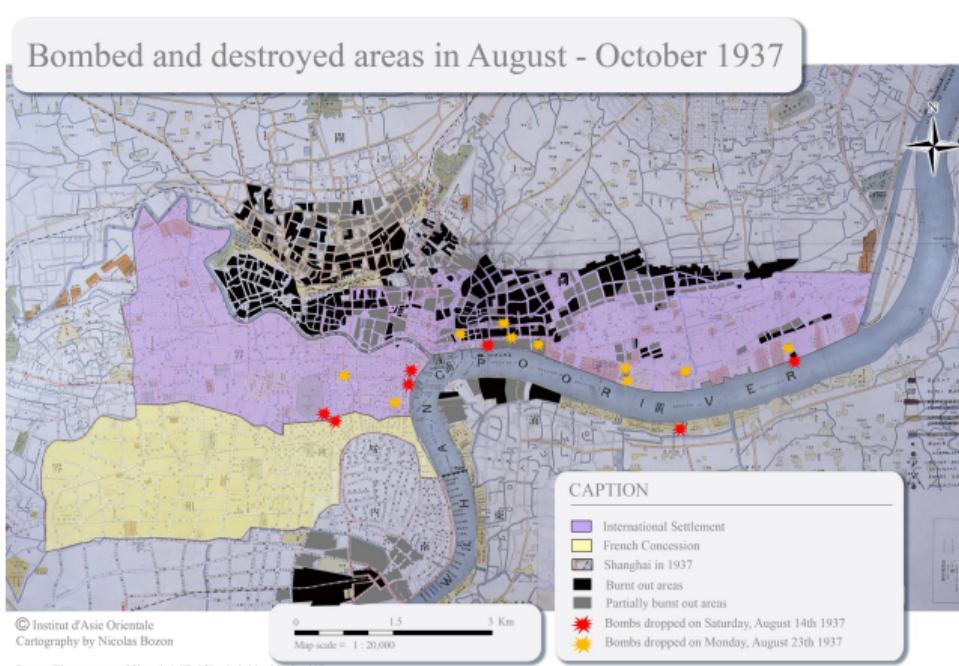
Shanghai headquarter address: 119 Szechuen Rd. — less than 100 meters from one of sites hit by wartime bombing.

How much would migrants potentially forego by leaving?

Shocks to cost of staying and migration decision

- ▶ The British and French settlements in Shanghai were safe harbors during the Sino-Japanese war. However, in August 1937, with the official break-out of WWII in the area, there were a few bombings that struck Shanghai, leaving civilian casualties en masse.
- ▶ Those bombs are believed to be dropped by accident, and the settlements were not meant to be targeted by either side of the war. Regardless, these bombs were reported to have killed 1,200 people and left hundreds of wounded. (Henriot, 2015)
- ▶ We retrieve the exact location of the bombs from the daily newspapers *North China Herald* and the work from the *Virtual Shanghai Project*.

Bombing map



Increased cost of staying \Rightarrow stimulated moving

- ▶ Emigration_i = $\beta \times \text{Bombed}_i + \gamma_t + \eta_{\text{sector}} + \phi_{\text{nationality}} + \varepsilon_i$
 - ▶ Sample: All firms located within 500 meter radius of the bombed locations. Results robust to alternative choices of cutoffs. [► Results](#)
 - ▶ Firms hit vs. missed by bombs are balanced on observables. [► Detail](#)

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	Emigration			
	(1)	(2)	(3)	(4)
Panel A: Indicator: Firm < 200 m radius				
Bombed	0.0349** (0.0161)	0.0350** (0.0165)	0.0466** (0.0207)	0.0442** (0.0210)
Panel B: Continuous distance				
Distance to the nearest bomb	-0.000164** (6.82e-05)	-0.000162** (7.03e-05)	-0.000148** (6.83e-05)	-0.000174* (9.21e-05)
# of obs.	1,778	1,745	1,745	1,745
Mean of DV	0.133	0.133	0.133	0.133
Nationality FE	Yes	Yes	Yes	Yes
Entry decade FE	Yes	Yes	Yes	Yes
Sector FE	No	Yes	Yes	Yes
Control for 1937 land value	No	No	Yes	Yes
Street FE	No	No	No	Yes

Organizational structure and migration choices

Measurement of organizational flexibility

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- ▶ We collect data from the Hong List, as well as the Firm Registry in Hong Kong and Shanghai Municipal Archive. According to *Hong Kong Companies Ordinance* (1932) and *Shanghai Company Law* (1929), each firm is required to submit a copy of their charters before incorporation.

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- ▶ We manually extract some key features from the charters:
 - ▶ **Director address requirement:** "Each member whose registered place of address is not the colony of Hong Kong shall ... notify in writing some place in the colony of Hong Kong which shall be deemed his registered place" (CR 2744, Baboud Mary, Ltd.)
 - ▶ **Directors can't be replaced all at once:** "At every general meeting one-third of the directors ... shall retire from office." (CR 2020, Shanghai Worsted Mill)
 - ▶ **Directors can be in other countries:** "A meeting of directors may be held in Hong Kong or elsewhere." (CR 1599, Shewan Tomes & Co. Ltd.)
 - ▶ **Company can set up branches in other countries:** "The business of the company shall be carried on ... at places the Directors may from time to time determine." (CR 2017, Pacific Investors Ltd.)

Organizational structure and migration choices

Migrant firms look like HK locals

- ▶ We compare migrants with stayers (firms in Shanghai that did not migrate) and locals in Hong Kong (a random sample of firms registered in 1940s that did not come from Shanghai).
- ▶ Migrant firms looks substantially like Hong Kong locals, but very different from their peers in Shanghai.

Charter clause	Stayers	Migrants	HK locals
No director address requirement	1.000	0.884	0.901
No mandatory director rotation	0.980	0.630	0.573
Directors can be in other countries	0.495	0.646	0.672
Directors can set up foreign branches	0.309	0.662	0.577
Number of firms with charter records	108 (4.3%)	289 (78%)	162

- ▶ Selection or treatment? We found 4 movers firms with original charters in Shanghai and new charters in Hong Kong. No evidence suggesting that firms modify their charters as they move. ▶ Details
 - ▶ Nor were there systematic differences of legal systems that might affect the way these charters were written.

Firms with flexible org structures exhibit higher migration elasticities

► Other org characteristics

	Emigration							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Response to bombing					Panel B: Response to land value appreciation		
Bombed × Org flexibility z-score	0.206** (0.101)	0.211** (0.102)	0.201* (0.107)	0.205* (0.109)				
Bombed	0.207*** (0.0737)	0.207*** (0.0738)	0.108 (0.0913)	0.0947 (0.0870)				
Δ log (land value) × Org flexibility z-score					0.085 (0.174)	0.187 (0.167)	0.231 (0.143)	0.235* (0.131)
Δ log (land value)					0.165 (0.146)	0.224* (0.125)	0.339*** (0.120)	0.306** (0.126)
Org flexibility z-score	-0.344*** (0.0628)	-0.351*** (0.0658)	-0.334*** (0.0756)	-0.344*** (0.0783)	-0.237** (0.109)	-0.192 (0.118)	-0.200** (0.097)	-0.201** (0.086)
Nationality FE	Yes	Yes	Yes	Yes	No	No	No	No
Entry decade FE	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Sector FE	No	Yes	Yes	Yes	No	No	No	No
Control for 1937 land value	No	No	Yes	Yes	No	No	No	Yes
Street FE	No	No	No	Yes	No	Yes	Yes	Yes
# of obs.	179	179	169	169	107	107	107	107
Mean of DV	0.639	0.639	0.639	0.639	0.682	0.682	0.682	0.682

Notes: we compute organizational flexibility z-score as the average standardized value of the above four characteristics. Director address requirements and mandatory rotations are considered as constraints imposed on the management team (so we take the opposite value), whereas the other two clauses signal flexibility.

Migration and firms' medium run outcome

Measurement

- ▶ How do we measure medium run outcomes?
 - ▶ For the firms that do not migrate, most of them were nationalized during the Communist Revolution. A few international companies survived without the Shanghai branch, and a few local firms survived by cooperating with the new regime (so their assets are reinstated after 1978). We collect those information from the County Gazetteers and various online sources.
 - ▶ For firms that do migrate to Hong Kong, we observe their operation (and dissolution) reported by the Firm Registry.
- ▶ Only 15% of the firms who didn't migrate survived till 1960, whereas about 54% of the firms in Hong Kong were still operating by 1960 (and at least 11% survive today).

Migration and firms' medium run outcome

Results

- ▶ $\widehat{\text{Emigration}}_i = \alpha \times \text{Bombed}_i + X_i \Gamma + \varepsilon_i$
- ▶ $\text{Survival}_i = \beta \times \widehat{\text{Emigration}}_i + \tilde{X}_i \tilde{\Gamma} + \epsilon_i$
 - ▶ $\text{Bombed}_i = 1$ if a firm i is located within 200 meter radius of bombing centers (following our baseline definition); X and \tilde{X} includes a full set of sector FE, nationality FE, entry timing FE, neighborhood FE, and land value controls.

	Years of survival after 1937				Returning to China after 1978			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Emigration (instrumented)	49.56** (24.60)	54.23** (26.99)	42.09* (22.23)	44.33* (25.05)	0.300 (0.358)	0.397 (0.393)	0.458 (0.379)	0.470 (0.424)
First stage F stats	6.77	5.22	4.59	3.28	6.77	5.22	4.59	3.28
# of obs.	1,569	1,537	1,541	1,541	1,569	1,537	1,541	1,541
Mean of DV	4.785	4.785	4.785	4.785	0.060	0.060	0.060	0.060
Nationality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entry decade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Control for 1937 land value	No	No	Yes	Yes	No	No	Yes	Yes
Street FE	No	No	No	Yes	No	No	No	Yes

Episode 2: Out of Hong Kong

Taking stock, and episode 2: out of Hong Kong

	Out of Shanghai	Out of Hong Kong
Who are the migrants	Match universe Shanghai business in 1930s with HK firm registry after 1940	
How much wealth needed to cover migration costs? <i>[income effects]</i>	<ul style="list-style-type: none">▶ Identification based on timing of entry to real estate market and differential appreciation across neighborhoods▶ Appreciation of real estate value stimulated moving	
	Wealth elasticity of migration = 0.50	
How much migrants would potentially forgo by leaving? <i>[price effects]</i>	Bomb hit firms' properties accidentally increased staying cost	<ul style="list-style-type: none">▶ Increased cost to stay ⇒ increased migration

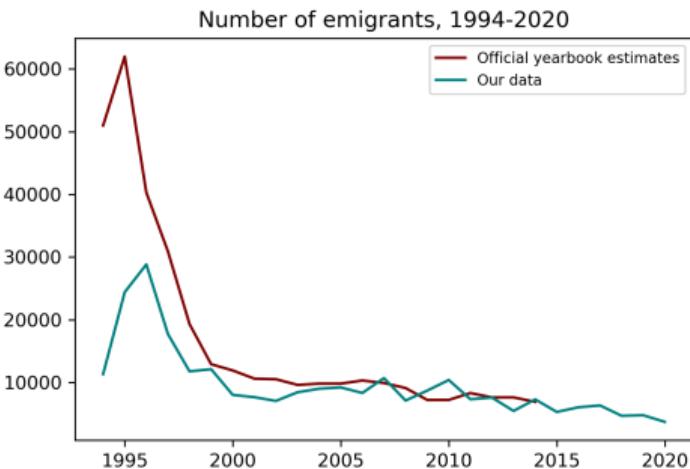
Identifying movers

- ▶ Permanent migration is usually associated with liquidation of all real estate assets in the country of origin (51.2% hhs are homeowners in HK, according to HK Govt).
- ▶ We identify emigrants from the universe of housing transactions in Hong Kong from 1991 to 2021 (N = 2.45 million).
 - ▶ Data source: Hong Kong Land Registry Integrated Registration Information System.
 - ▶ For each transaction, we observe the names of the buyer(s) and seller(s), closing prices, special terms (e.g., death), as well as a range of unit-level observations such as location, amenities, and year of construction.
- ▶ Define migrants as households who have sold all real estate assets by 2021Q3 and made no new purchases.

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- ▶ Define migrants as households who have sold all real estate assets by 2021Q3 and made no new purchases. We also...
 - ▶ Cross-checked the scope of our transaction data with company databases (28HSE, the most widely-used property-sales portal): our data is more comprehensive; [▶ Details](#)
 - ▶ Excluded deaths, bequests, and mortgage defaults; [▶ Details](#)
 - ▶ Identified and included stayers who did not participate in the housing market transactions during 1991 and 2021. [▶ Details](#)
 - ▶ Discarded unsuccessful purchases, etc. [▶ Additional details](#)

Comparison with govt's aggregate emigrant records



- ▶ Although Hong Kong residents traveling abroad are not required to declare to the Government their purpose of travel, Hong Kong Yearbooks (1996-2014) published some estimated official statistics. Unfortunately, that section has been removed since 2014.
- ▶ Re-migrants, the ones who left but came back to Hong Kong after a few years, are coded as non-migrants in our sample (may explain the lower estimate in the earlier period).
- ▶ More accurate proxy for out-migration than (widely cited) applications to police no conviction records,
 - ▶ Details
 - ▶ Details, or airport net exit travelers count.

Who are the movers?

	Emigration rate	
	Bivariate	Multivariate
	(1)	(2)
Panel A: Demographic characteristics (2011)		
% male	-0.00078** (0.00033)	0.00080* (0.00048)
Median age	0.00013 (0.00021)	0.00062** (0.00025)
Panel B: Education and income (2011)		
College education	0.03542*** (0.00637)	0.02213 (0.02037)
Medium income	0.00075*** (0.00015)	0.00004 (0.00029)
Panel C: Chinese vs. foreign orientation (2016)		
% residents who are able to read English	0.00032*** (0.00005)	0.00043*** (0.00013)
% residents who are able to read Mandarin Chinese	-0.00007 (0.00007)	0.00037*** (0.00012)
Panel D: Political orientation (2011)		
Pro-democracy vote share	-0.00561 (0.00404)	-0.00564 (0.00376)

► Emigration rate (0.014) = $\frac{\text{Number of households migrated (26,828)} \times \text{Avg household size (2.9)}}{\text{Total population (7,070,388)}}$

How much wealth needed in order to cover migration costs?

Road map of empirical strategies

How much wealth needed in order to cover migration costs?

Road map of empirical strategies

- ▶ $\text{Emigration}_i = \beta \times \Delta \log(\text{Asset value})_i + \gamma_{\text{start year}} + \eta_{\text{building}} + \varepsilon_i$
- ▶ Cumulative asset value changes until 2014; migration decision after 2014.
 - ▶ Everyone who left before 2014 is excluded from our sample.
 - ▶ If someone owns multiple assets, we compute the logged difference of asset value for each property separately and add them together.
- ▶ For units not traded in year t , we impute their market value based on their neighbors' average unit price. ▶ Details

We use three complementary empirical strategies:

1. Exploring variation in years entering housing market + location-specific appreciation trajectory;

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We use three complementary empirical strategies:

1. Exploring variation in years entering housing market + location-specific appreciation trajectory;
2. Using opening of MTR stations as instrument for appreciation of housing value; ▶ Details
3. Using timing of deeds relative to the 2047 takeover as instrument for depreciation of housing value, following He et al. (2023). ▶ Details

Appreciation of asset value \Rightarrow increased moving

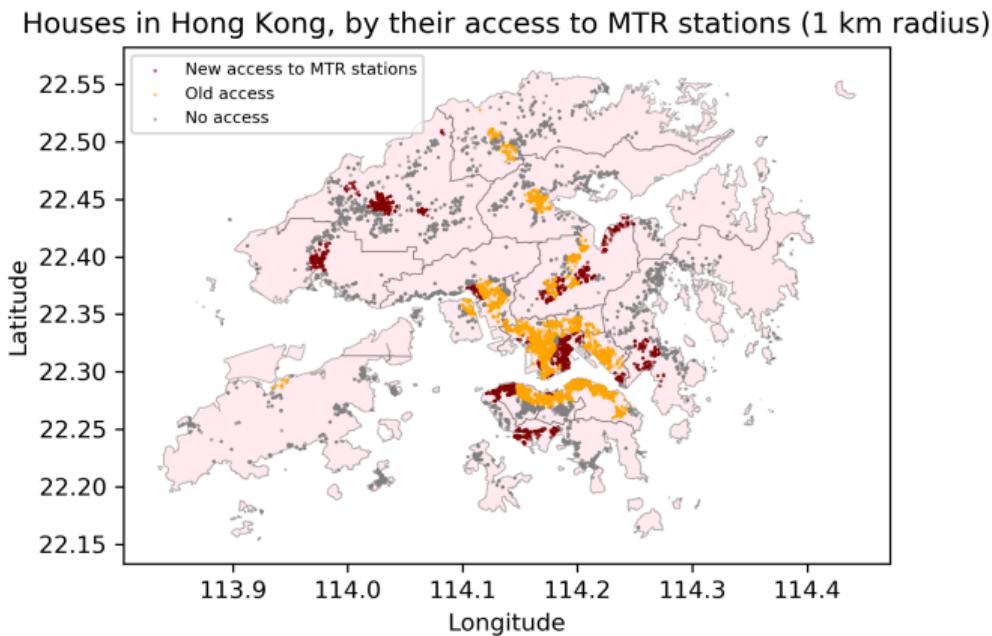
1. Years entering housing market + location-specific appreciation trajectory

	Emigration after 2014		
	(1)	(2)	(3)
$\Delta \log(\text{Asset value})$	0.0153*** (0.0002)	0.0153*** (0.0002)	0.0162*** (0.0003)
Mean of Dep. Var.	0.0185	0.0185	0.0185
Mean of Indep. Var.	0.823	0.823	0.823
# of obs.	1,601,161	1,601,157	1,599,314
Entry year FE	No	Yes	Yes
Entry neighborhood FE	No	No	Yes

- ▶ Elasticity of migration w.r.t housing wealth = 0.88.
 - ▶ A 10% additional increase in asset appreciation would lead to a 0.15 pp (8.11%) increase in emigration probability.
 - ▶ The difference of emigration probability between households at the top decile and those at the bottom decile is 2.21 pp (119.4%).
- ▶ Results are robust measured in levels; ▶ Results in current US dollars
- ▶ Results are robust on the subsample of single-house owners. ▶ Results

Appreciation of asset value \Rightarrow increased moving

2. IV strategy: MTR opening



Appreciation of asset value \Rightarrow increased moving

2. IV strategy: MTR opening, 1st stage

	$\Delta \text{Log(asset gain until 2014)}$		
	(1)	(2)	(3)
New MTR access < 1 km radius	0.1689*** (0.001)	0.1635*** (0.001)	0.3215*** (0.002)
# of obs.	1,601,053	1,601,049	1,599,206
Mean of DV	0.823	0.823	0.823
Entry year FE	No	Yes	Yes
Building FE	No	No	Yes

- ▶ Balance check: Demographics and socio-economic conditions do *not* predict MTR shock, controlling for baseline fixed effects. [► Results](#)
- ▶ Results are robust to alternative measures of MTR shock: using different choices of radius, or making the Δ distance to the nearest MTR station a continuous variable, or counting only substantial changes in distance ($> 1\text{km}$) to MTR. [► Results](#)

Appreciation of asset value \Rightarrow increased moving

2. IV strategy: MTR opening

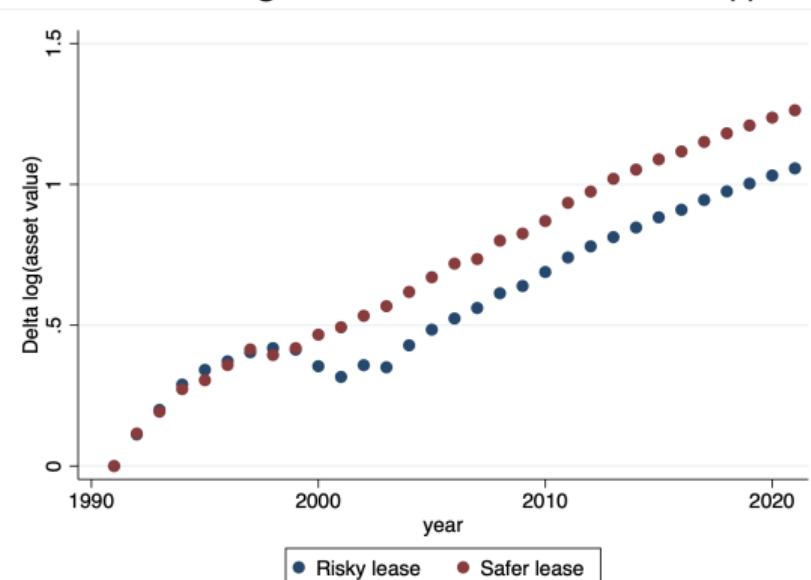
	Emigration					
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \text{Log(asset value)} (\text{instrumented})$	0.0078*** (0.001)	0.0094*** (0.002)	0.0071*** (0.001)			
New MTR access < 1 km radius				0.0014*** (0.000)	0.0017*** (0.000)	0.0025*** (0.000)
# of obs.	1,601,053	1,601,049	1,599,206	1,626,653	1,626,649	1,625,073
Mean of DV	0.018	0.018	0.018	0.018	0.018	0.018
Entry year FE	No	Yes	Yes	No	Yes	Yes
Building FE	No	No	Yes	No	No	Yes

- ▶ Cols 1-3 show 2SLS estimates (implied elasticity of migration w.r.t. housing wealth = 0.394), Cols 4-6 show reduced form estimates.
- ▶ Results are again robust to alternative measures of MTR shock: using different choices of radius, or making the Δ distance to the nearest metro station a continuous variable, or counting only the number of substantial changes in distance. ▶ Results

Appreciation of asset value \Rightarrow increased moving

3. IV strategy: timing of deeds renewal

- ▶ Properties whose ground lease expires after July 1, 2047 are prone to political uncertainty.
 - ▶ By HK Basic Law, leases that expire on or before June 30, 2047 are automatically granted an additional 50 years extension signed by the current government, while people are uncertain about how leases that expires afterwards will be extended, if they can be extended at all.
- ▶ We use timing of deeds as an instrument for appreciation (depreciation) of housing value.



	Δ Asset value till 2014	
	(1)	(2)
Safe lease	0.687*** (0.009)	0.899*** (0.013)
# of obs.	440,060	437,468
Mean of DV	3.00	3.00
Building FE	No	Yes
Entry year FE	Yes	Yes

Appreciation of asset value \Rightarrow increased moving

3. IV strategy: timing of deeds renewal

	Emigration after 2014			
	(1)	(2)	(3)	(4)
$\Delta \log(\text{Asset value till 2014})$ (instrumented)	0.0146*** (0.001)	0.0119*** (0.002)		
Deed end dates (reduced form)			0.0054*** (0.000)	0.0049*** (0.001)
First stage F stats	5926	4267	/	/
# of obs.	440,060	437,468	440,060	437,468
Mean of DV	0.018	0.018	0.018	0.018
Building FE	No	Yes	No	Yes
Entry year FE	Yes	Yes	Yes	Yes

- ▶ Cols 1-2 show 2SLS estimates (implied elasticity of migration w.r.t. housing wealth = 0.66), Cols 3-4 show reduced form estimates.

How much would migrants potentially forego by leaving?

How much would migrants potentially forego by leaving?

Shocks to cost of staying and migration decision: empirical strategy

- ▶ Emigration_{it} = $\beta \sum_k z_{ik} u_{kt} + \gamma_t + \lambda_i + \varepsilon_{it}$,
 - ▶ where z_{ik} measures the industry share (fixed at 2016) of industry k at voting district i and u_{kt} the unemployment rate (or wage growth rate) of industry k at year t .
 - ▶ We collect voting district level industrial shares data from 2016 by-census, and industrial level annual unemployment rate and wage growth rate from Hong Kong Census and Statistics Department from 2004 to 2021.
 - ▶ Our baseline unit of observation is a voting district (District Council Constituency Area). There are about 430 voting districts across the city, with a population average of about 17,000.

Increased cost of staying \Rightarrow stimulated moving

	Annual emigration rate			
	(1)	(2)	(3)	(4)
Panel A: Unemployment shock				
Industry-level unemployment \times industry shares	0.0905*** (0.0323)	0.0896** (0.0427)	0.102* (0.0562)	0.100* (0.0558)
Panel B: Wage shock				
$\Delta \text{Log}(\text{Industry-level wage}) \times \text{industry shares}$	-0.0358*** (0.0124)	-0.0558*** (0.0195)	-0.0897*** (0.0233)	-0.0931*** (0.0243)
Observations	7,758	7,758	7,758	7,758
Mean of Dep. Var.	0.005	0.005	0.005	0.005
Mean of Indep. Var.	0.031	0.031	0.031	0.031
Year FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Demographics \times Year FE	No	Yes	Yes	Yes
Pre-period wage and education \times Year FE	No	No	No	Yes
Political leaning \times Year FE	No	No	No	Yes

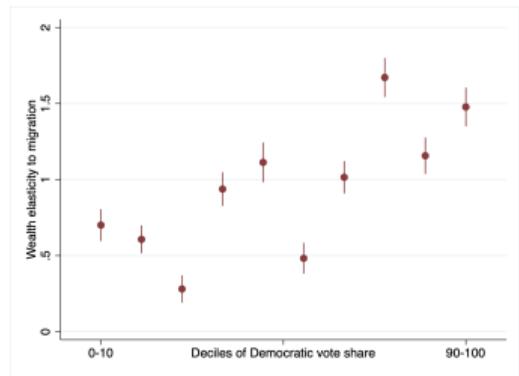
- ▶ A 1% increase in annual wage across all industries would lead to a 0.036 percentage point (7.5%) decrease in annual migration rate.
- ▶ The difference of emigration probability between regions at the top decile of highest wage growth and those at the bottom decile is -0.17 percentage points (35.6%).
- ▶ Balance checks following Goldsmith-Pinkham et. al. (2020). ▶ Results

Cost in the short run: fire sale

	Unit price of transaction			
	(1)	(2)	(3)	(4)
Exit sales	-168.3114*** (3.655)	-147.5765*** (3.559)	-164.6641*** (3.551)	-175.6662*** (4.685)
# of obs.	2,572,802	2,572,725	2,571,016	2,571,012
Mean of DV	6154.389	6154.389	6154.389	6154.389
Street FE	Yes	No	No	No
Block FE	No	Yes	No	No
Building FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Entry year FE	No	No	No	Yes

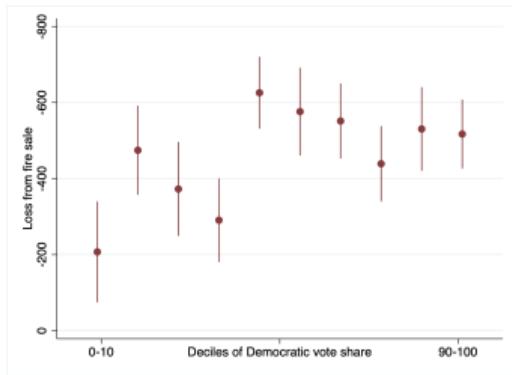
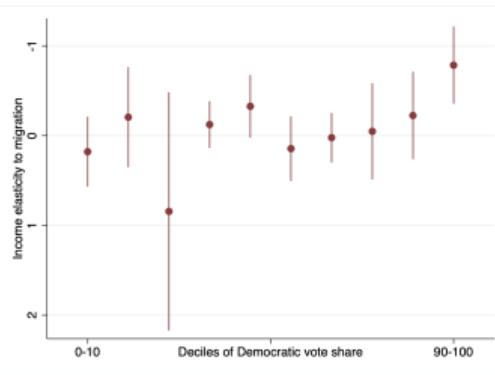
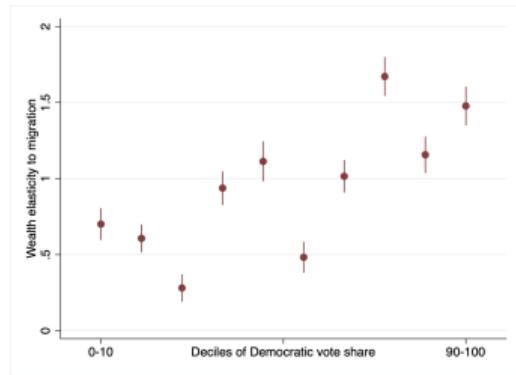
- Units: HK dollars per square feet.
- On average, emigrants sell their property at about 100,000 HKD lower than the market price — about 1.95% of their total property value, and 2.99% of their average wealth increase.
- Buyers are more likely to be first-time & local home-buyers. ▶ Results

Heterogeneity along political alignment



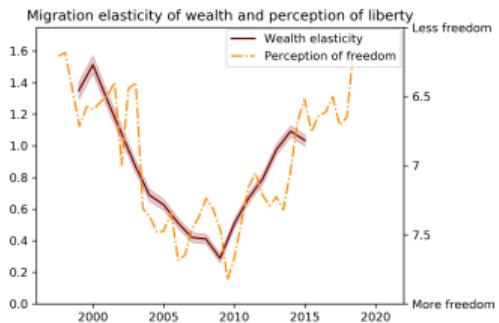
- ▶ We run a separate regression for each decile of political mis-alignment with the CCP regime, measured by the % of votes the Democratic Party got in 2019. The bottom decile (0-10) is the most pro-Beijing district. Average vote share is 57%, with a standard deviation of 0.068.
- ▶ Results are robust controlling for income. [► Results](#)

Heterogeneity along political alignment



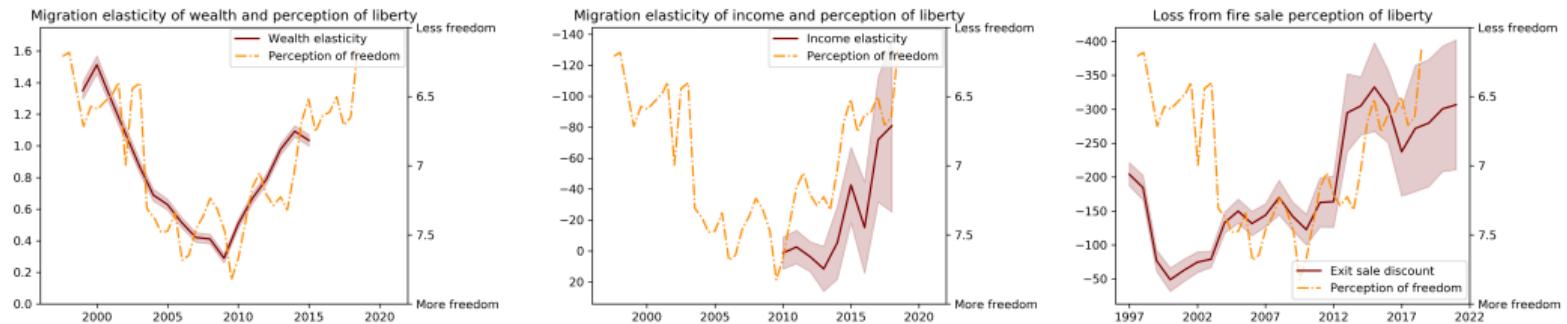
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Heterogeneity along political uncertainty



- ▶ For each year t on the first plot, the dependent variable is migration in the 5-year window starting from year t , and the independent variable is total logged asset value growth up until the start of year t . For each year t on the second plot, we run a district-year level regression on the subsample of $[t - 2, t + 2]$. For each year t on the third plot, we estimate the negative premium of exit sales at that particular year.
- ▶ We overlay the figure with the population level freedom perception score from the HKU Public Opinion Programme.

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Recap: migration during political turbulence

- ▶ Migration to another country is one approach to avoiding risks from political turmoil (e.g., Jews fleeing Nazi Germany). What drives individuals (both families and firms) to move during those uncertain circumstances?
- ▶ Economic calculus behind migration during times of political turmoil through two major episodes in China over the past century. Exit decisions are responsive to:
 - ▶ Changes in “income” to compensate for moving due to wealth shocks, as measured by differential real estate appreciation;
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 - ▶ Even in highly politically uncertain times, economic incentives make a big difference in migration decisions; increased political uncertainty may even exacerbate these elasticities.

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- ▶ How do political and economic incentives interact?
 - ▶ Even in highly politically uncertain times, economic incentives make a big difference in migration decisions; increased political uncertainty may even exacerbate these elasticities.
 - ▶ Real estate market acts as a modulating force: fire sale and decreased cost of staying could make migration decision socially substitutable.

Migration during political turbulence: discussion

- ▶ Too few people migrate in general:
 - ▶ This is true for economic migrants, given the ample presence of economic opportunities elsewhere. (e.g., Banerjee and Duflo 2019)
 - ▶ Migration during political turbulence is (at least in part) an economic decision, which may make under-migration even more stark since many facing political risks live in relatively affluent part of the world.

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- ▶ Future questions:
 - ▶ Examine median run costs that business and individuals who migrate have to pay — esp. relevant when political uncertainty takes a long time to settle, and economic prosperity may not be affected until much later.
 - ▶ Inheriting political acuteness as a business trait: is this individual (manager) specific, or can it be embodied and passed down through organizational structure?



SHANGHAI'S PAST, HONG KONG'S FUTURE

5.12.2020



BY JAMES CARTER & JEFFREY WASSERSTROM

Sometimes, when a city changes, residents are suddenly forced to ask themselves hard questions: Should we stay, or cut our losses and leave to start afresh somewhere else? Will this place still be enough like the community we love in a year or a decade to make it worth sticking it out? If we don't leave now and things get worse, will we still be able to get out? Even if we're okay now, what about our children? And all these personal questions boil down to bigger ones: What does it mean for a city to be free? What happens when a free city loses its freedom? And when does that occur?

Seventy-one years ago today, these questions were being asked by many residents of the most cosmopolitan city on the China coast: Shanghai. Some had considered leaving in 1937, when the Japanese took over all Chinese-run parts of Shanghai, and again in 1941, when the city's two enclaves of foreign privilege, the International Settlement and the French Concession, fell to Japan. But they had stayed, only to face a choice early in 1949, when the Red Army advanced toward the great metropolis of the Yangtze Delta. While many locals welcomed the Communist Party's arrival, others, Chinese and non-Chinese alike, feared that their way of life would be dramatically changed once Mao Zedong's forces took over, and changed for the worse. As the first battles outside the city began on May 12, 1949, those who had remained surely wondered if they'd made a mistake.

Seven decades later, the same questions are being asked again, but in Hong Kong. In the Pearl River Delta's most cosmopolitan city, the people asking the

APPENDIX

Quotes from firm director reports in 1949 expressing alternative views

▶ Back

- ▶ "Millington Ltd. is desirous of maintaining a Branch Register in Shanghai. A substantial part of the business of Millington Ltd. is carried on or near Shanghai." (Millington Ltd., 1949, similar quotes also by Rielly, Simmons, and Milne, Ltd., 1949)
- ▶ "We are now making preparation for a resumption of business in Shanghai, and it maybe a[n] accomplished fact in the very near future." (New Asia Hotel, Ld., 1951)
- ▶ "Except for a period after the liberation of Shanghai, the club's flats and chambers were fully occupied by its Members . . . with increased club amenities and social activities introduced, the Club was able to maintain a fair membership" (Shanghai Race Club, 1951)

Describing firms in Shanghai

▶ Back

- ▶ We obtain the name, address, type of business, as well as the name of owner / managers from the *North China Desk Hong List*. It has two versions. The July version, which focuses on Shanghai, is published annually from late 19th century to 1941. The January version, which is a more comprehensive list covering all major ports in China, is published annually from the 1910s.
- ▶ We distinguish Chinese ownership and foreign ownership from the names of the owner. The assumption is that anyone bearing a French-sounding name back in the days won't be a British citizen.
- ▶ We identify the year of firm's incorporation from the first year of its presence in the *Hong Lists*.
- ▶ We label foreign presence utilizing the manager list we digitized. Once again, nationalities are inferred by their names and manager lists.
- ▶ Data on land value are digitized from tax surveys. ▶ Details

Firm migration rate, by industry

[Back](#)

Sector	# firms	% emigration
Panel A: Industries w./ highest migration rate		
Tobacco	21	0.38
Insurance	117	0.29
Real estate	70	0.24
Finance	72	0.22
Telegraph and radio	18	0.22
Panel B: Industries w./ lowest migration rate		
Bookstores	14	0
Furniture	12	0
Apartment leasing	15	0
Catering	39	0
Architect	15	0
Doctor	134	0.01

- ▶ Only sectors with more than 10 firms are included in this table.

Appreciation of asset value \Rightarrow increased moving

▶ Back

	Emigration		
	(1)	(2)	(3)
Δ land value (thousand current US dollars)	0.099*** (0.032)	0.079*** (0.028)	0.078* (0.042)
# of obs.	1346	1346	1346
Mean of DV	0.127	0.127	0.127
Entry decade FE	No	Yes	Yes
Street FE	No	Yes	Yes
Control for land value in 1937	No	No	Yes

Notes: Standard errors are clustered at cadastral level as the variation of price comes at cadastral level. We are using unit price per square feet here because we don't know exactly what's the area of land that each firm is occupying if more than one firm is located in a cadastre.

- ▶ Following Madison (1998), we convert one taels of silver in 1933 to US dollars in 1990 at a rate of 89.75 : 1. Following World Bank calculations, we convert US dollars in 1990 to current US dollars at a rate of 1 : 2.3.

Appreciation of asset value \Rightarrow increased moving

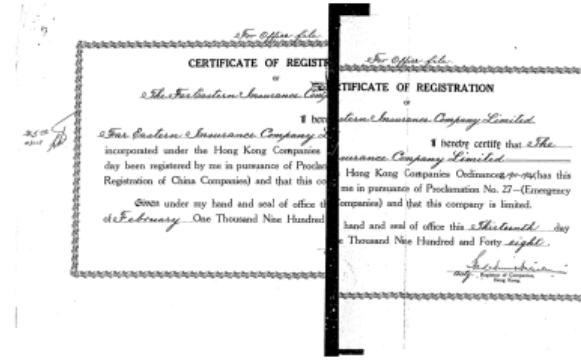
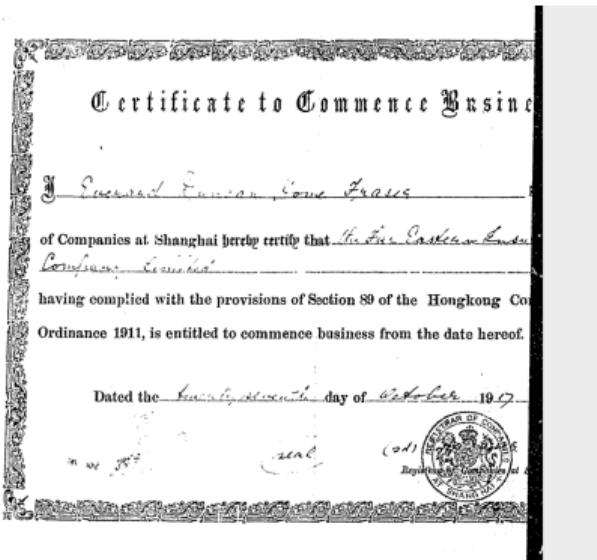
▶ Back

	Emigration		
	(1)	(2)	(3)
Panel A: Foreign firms			
$\Delta \text{Log}(\text{land value})$	0.083*** (0.026)	0.073*** (0.021)	0.072*** (0.021)
Panel B: Chinese firms			
$\Delta \text{Log}(\text{land value})$	0.052*** (0.018)	0.061* (0.034)	0.058* (0.033)
# of obs.	1335	1335	1335
Mean of DV	0.127	0.127	0.127
Entry decade FE	Yes	Yes	Yes
Street FE	No	Yes	Yes
Control for land value in 1937	No	No	Yes

Notes: Standard errors are clustered at cadastral level as the variation of price comes at cadastral level.

Another mover example: Far Eastern Insurance Co.

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Shanghai headquarter address: 26 Bund Road. — less than 120 meters from one of sites hit by wartime bombing.

Robustness check: different radius of control group

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	Emigration			
	(1)	(2)	(3)	(4)
Panel A: Radius = 600m				
Bombed	0.0364** (0.0157)	0.0367** (0.0161)	0.0325** (0.0158)	0.0439** (0.0204)
Panel B: All firms				
Bombed	0.0364** (0.0155)	0.0359** (0.0158)	0.0318** (0.0156)	0.0411** (0.0199)
# of obs.	1,778	1,745	1,745	1,745
Mean of DV	0.133	0.133	0.133	0.133
Nationality FE	Yes	Yes	Yes	Yes
Entry decade FE	Yes	Yes	Yes	Yes
Sector FE	No	Yes	Yes	Yes
Control for 1937 land value	No	No	Yes	Yes
Street FE	No	No	No	Yes

Balance check for bombed areas

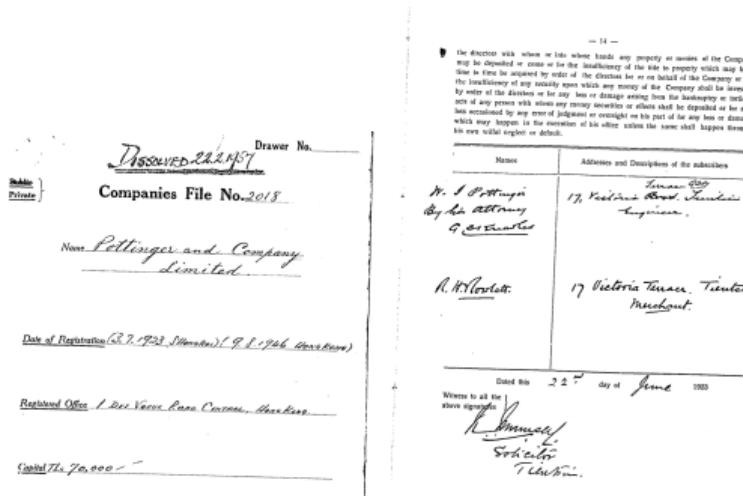
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	Hit by bomb (200m radius)	Distance to bomb
	(1)	(2)
Panel A: Ownership		
Chinese-owned	-0.0549 (0.0379)	19.2790** (8.3254)
British-owned	0.0230 (0.0367)	-6.1601 (7.1230)
Panel B: Presence in China		
Decade of incorporation in Shanghai	-0.0316 (0.0197)	7.2164 (4.4977)
Business presence in other parts of China	0.0069 (0.0110)	-1.6519 (2.2821)
Panel C: Foreign presence		
Total number of foreign staff	-0.0000 (0.0059)	-0.1067 (1.2147)
Δ foreign employee from 1934 to 1937	0.0154 (0.0109)	-2.6789 (2.5686)
% of foreigners in the managerial board	0.0659 (0.0448)	-10.2479 (10.2734)
Panel D: Land value and assets		
Land value at 1937 (in logarithm)	0.0084 (0.0090)	-1.7072 (1.9308)
Panel E: Industry		
Finance sector	0.0278 (0.0602)	-10.5441 (14.2253)
Groceries, restaurants and clothing	-0.0808 (0.0503)	13.4111 (11.7484)

Organizational structure and migration choices

▶ Back

- ▶ Some firms' charters can be observed on both sides. For them, we find that the difference are merely up to translation errors. (e.g. Jardine Engineering Co., Ault & Wiborg Co., etc.)
- ▶ We find that some firms inherited their old charters from Shanghai when they move to Hong Kong. (e.g. Pottings & Co.) The microfilmed charters below shows that the firm, incorporated in 1923 in Shanghai, submitted their original charter when registering in Hong Kong in 1946.

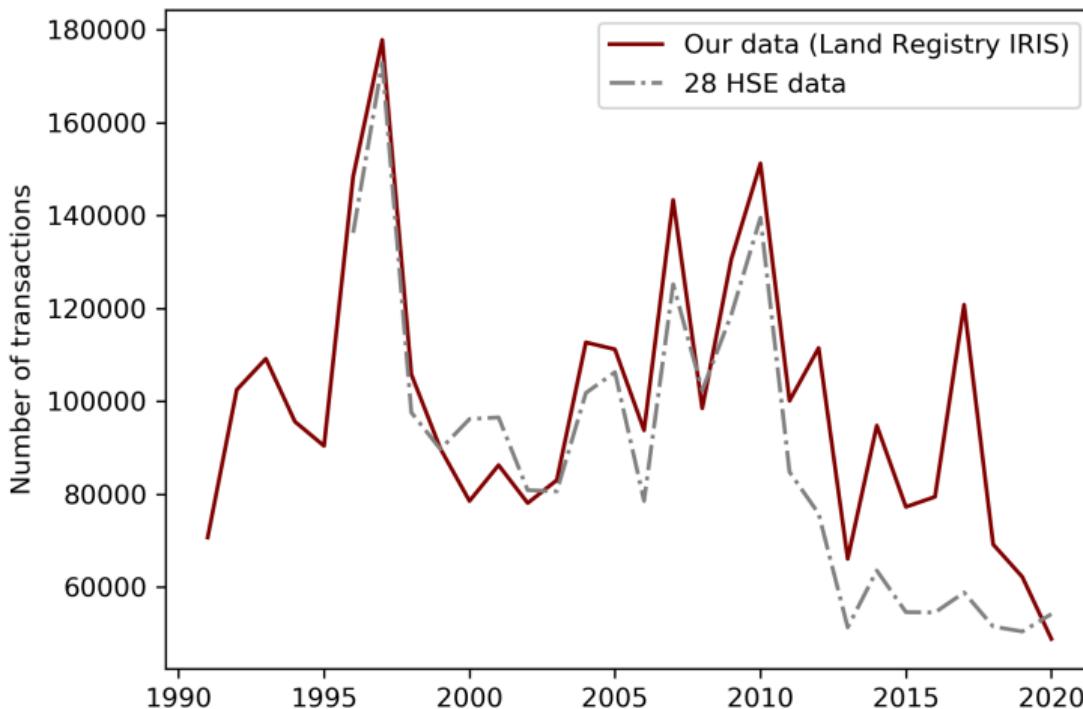


Organizational structure and migration choices

▶ Back

	Emigration			
	(1)	(2)	(3)	(4)
Panel A: Family business				
Bombed × Family business	-0.0704** (0.0264)	-0.0654** (0.0250)	-0.0534* (0.0288)	-0.0528* (0.0290)
Bombed	0.0707** (0.0273)	0.0688** (0.0274)	0.0713** (0.0336)	0.0691** (0.0337)
Family business	-0.0693*** (0.0200)	-0.0500** (0.0190)	-0.0707*** (0.0188)	-0.0710*** (0.0190)
Panel B: Limited liability shareholders				
Bombed × Ltd.	0.119*** (0.0336)	0.104*** (0.0344)	0.125*** (0.0373)	0.126*** (0.0373)
Bombed	-0.00136 (0.0166)	0.00381 (0.0169)	0.00405 (0.0241)	0.00201 (0.0240)
Ltd.	0.136*** (0.0265)	0.119*** (0.0287)	0.121*** (0.0259)	0.120*** (0.0258)
# of obs.	1,778	1,745	1,745	1,745
Mean of DV	0.133	0.133	0.133	0.133
Nationality FE	Yes	Yes	Yes	Yes
Entry decade FE	Yes	Yes	Yes	Yes
Sector FE	No	Yes	Yes	Yes
Control for 1937 land value	No	No	Yes	Yes
Street FE	No	No	No	Yes

Data comprehensiveness check

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Identifying mortgage defaults, death and gifts

▶ Back

- ▶ Mortgage defaults will not show up as a separate row of transaction in our data, but if the seller of the next transaction is a bank or financial institution that does not match with the current buyer, we count it as a mortgage default.
- ▶ Whenever a person dies, no longer can anyone execute his property right in his name. Therefore, similar to a mortgage default, a death entails a mismatch between the current seller and the previous owner.
- ▶ Using this strategy, we identified a 15% of our population of housing market participants who might have died. This is consistent with some back-of-the-envelope calculations:
 - ▶ The crude death rate of HK is 5-6 per thousand per year, and we're observing a window of 30 years.
 - ▶ We validate our data with a random sample of deeds downloaded from the Land Registry, where deaths are recorded.

Identifying stayers who never switched houses

▶ Back

- ▶ Any household who made at least one transaction from 1991 to 2021 will appear in our transaction records. But if a non-migrant owned properties before our sample period and didn't participate in any of the housing market transactions from 1991-2021 (entire sample), we won't be able to know who they are.
- ▶ While we don't know exactly who owned those un-traded houses, we know where those houses are. A plausible assumption to proceed with is that within each building, the #s of units on each floor are the same
 - ▶ Example: If we observe unit 1, 2 and 3 on second floor but only 1, 3 on the third floor, then assume that 3F/unit 2 is a stayer
- ▶ We validate our data with a random sample of raw deeds downloaded from the Land Registry, where records sometimes extend 10 years longer.

Additional details on data cleaning

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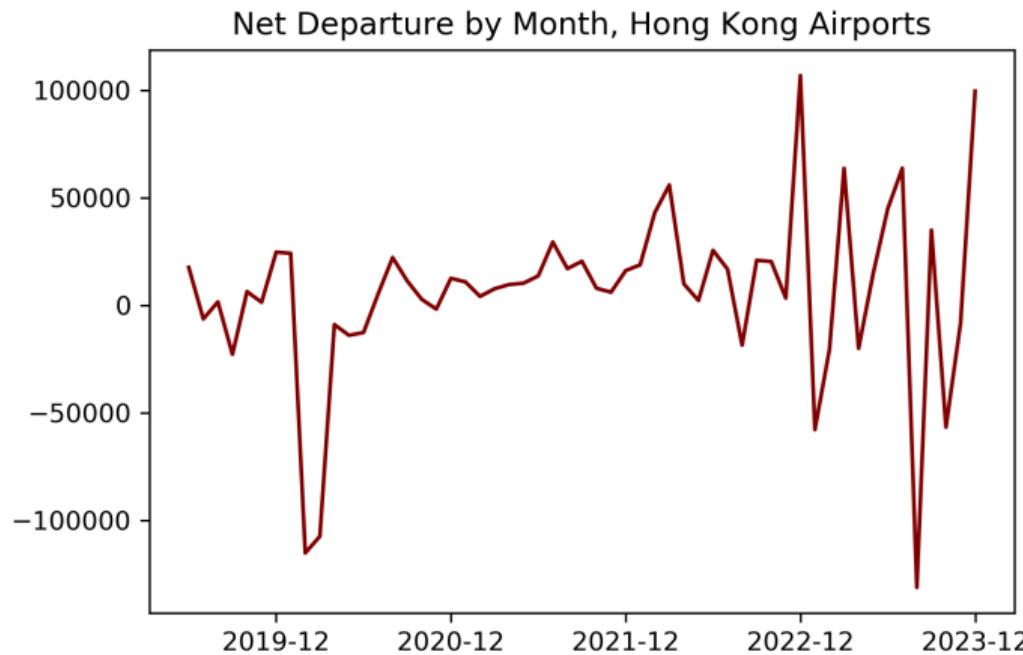
- ▶ Unsuccessful purchases sometimes appear in our dataset. We discard them from our sample by only keeping the second transaction if two consecutive records on the same unit appear to have the same seller.
- ▶ We carefully handled the name alias possibilities during matching.
 - ▶ Hong Kongers sometimes use an English name alongside their legal Chinese name in the documents.
 - ▶ To test whether Sam Cheung in unit A and Kevin Sam Cheung in unit B are the same person, we exploit the fact that, unless rare occasions like death, the last person who bought the house should be the same person who sold it in the next transaction.
 - ▶ We create a dictionary focusing on the buyer-seller pairs of consecutive transactions. If Sam Cheung and Kevin Sam Cheung at least once appear as the same person, then we treat them as one observation.
- ▶ When it comes to joint tenancy, we sorted the order of the names so that a reshuffling won't affect our matching. When the names are in the form of A,B and Others, we use the same strategy as above, building our alias dictionary from consecutive transactions.

Comparing different numbers of estimated emigration

▶ Back

- ▶ Post-2014 emigration numbers are estimated from the number of applications to Hong Kong Police No Conviction Records. We obtain data from 2012-2016 from Hong Kong legislative website link, and data from 2017 onward from CEIC database.
- ▶ When applying for immigration-visas (e.g. BMO), one have to obtain a certificate of no-conviction record from the police first. Therefore, the number of applications to No-Conviction records is highly correlated with actual migration. These numbers were also cited by a few media sources when they tried to show that people were really checking out, when nobody had official numbers. (e.g. Bloomberg example)

Alternative migration number: airport departures

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Appreciation of asset value \Rightarrow increased moving

▶ Back

	Emigration after 2014		
	(1)	(2)	(3)
Δ Asset value till 2014	0.0226*** (0.0004)	0.0197*** (0.0004)	0.0307*** (0.001)
Mean of DV	0.018	0.018	0.018
# of obs.	1,602,804	1,602,800	1,600,958
Start year FE	No	Yes	Yes
Start neighborhood FE	No	No	Yes

- ▶ Units are in million U.S. dollars.

Appreciation of asset value \Rightarrow increased moving

▶ Back

	Emigration after 2014		
	(1)	(2)	(3)
$\Delta \log$ (asset value till 2014)	0.0298*** (0.002)	0.0098** (0.005)	- -
Mean of DV	0.018	0.018	0.018
# of obs.	640,277	640,277	640,277
Entry year FE	Yes	Yes	No
Entry neighborhood FE	No	Yes	No
Entry year \times entry neighborhood FE	No	No	Yes

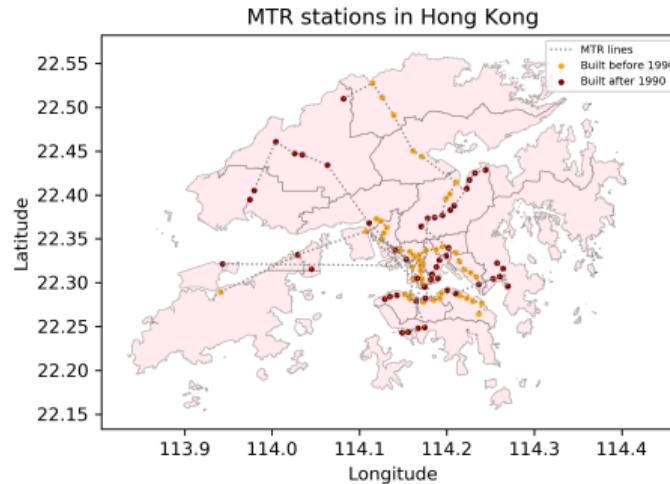
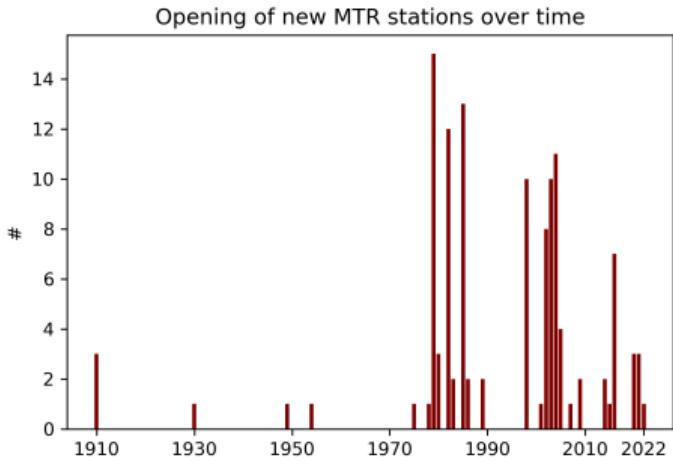
- ▶ Sample: Movers and non-movers who never switched houses over the whole sample period.
That's about 40% of all Hong Kong households.
- ▶ Entry year \times entry neighborhood fixed effects absorbs all the variation in column 3.

Estimating asset price when there's no transactions

▶ Back

- ▶ Computing asset appreciation for those who sold their houses is simple. If there's no transaction for unit i in year t , we use the following strategies to impute its housing price.
 - ▶ We use the average (unit) price within the same block (usually a few buildings) in the same year t .
 - ▶ If none of the units in the same block is sold, then we use the average (unit) price within the same neighborhood (by the same developer) in year t . More than 80% of the price imputations fall into the above two categories.
 - ▶ If there's still no transaction thereof, we exploit the time-series variation. We predict the unit price of unit i in year t by fitting a linear model with building and year fixed effects.
 - ▶ Our baseline results are robust with more flexible functions of price imputation.

MTR stations, timing and location

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- ▶ The time frame of our housing transaction data is 1991-2021Q3.
- ▶ In the left panel we plot the number of new MTR stations opened across the years; in the right panel we plot their geo-location. The MTR stations built after 1990 are marked in red.

Variation of deed expiration dates

▶ Back

- ▶ He et. al. (2023) finds that houses whose ground lease expires after July 1, 2047 are prone to political uncertainty. By Basic Law, leases that expire on or before June 30 are automatically granted an additional 50 years extension signed by the current government, while people are uncertain about how leases that expires afterwards will be extended, if they can be extended at all. We exploit this variation by using the timing of deeds as an instrument for appreciation (depreciation) of housing value.
- ▶ Real estate developers sign separate leases with the government for each block (usually a handful of buildings). The lease terms are documented on the deeds from the Land Registry.
- ▶ Following the same practice of He et. al. (2023), we compare the group of buildings whose lease expires on June 30, 2047, versus the group of buildings whose lease expires between July 1, 2047 and 2067.

MTR balance checks

[Back](#)

	MTR shock	
	(1)	(2)
% English writing ability	-0.000841 (0.00137)	-0.000756 (0.00131)
% Mandarin writing ability	-0.000399 (0.00122)	-0.000630 (0.00116)
College education	-0.148 (0.209)	-0.138 (0.198)
% Male	-0.00104 (0.00499)	-0.000207 (0.00479)
Median age	-0.00294 (0.00325)	-0.00390 (0.00313)
Median income	-1.65e-07 (3.03e-06)	-4.32e-07 (2.90e-06)
Average family size	0.0348 (0.0299)	0.0364 (0.0290)
% Pro-democracy rate (2011)	0.0149 (0.0938)	0.0194 (0.0886)
# of obs.	1,889,292	1,889,286
Mean of DV	0.184	0.184
Building FE	Yes	Yes
Entry year FE	No	Yes

Notes: Standard errors clustered at voting district level
are reported below the parentheses.

Appreciation of asset value \Rightarrow increased moving

IV strategy: MTR opening, 1st stage Back

	Δ asset gain until 2014		
	(1)	(2)	(3)
Panel A: New MTR access < 1 mile radius			
MTR shock	0.0666*** (0.002)	0.0684*** (0.002)	0.0414*** (0.002)
Panel B: Δ distance to nearest MTR station (km)			
MTR shock	0.0691*** (0.001)	0.0771*** (0.001)	0.0533*** (0.001)
# of obs.	961,947	961,947	507,831
Mean of DV	1.87	1.87	1.87
Building FE	No	Yes	No
Unit FE	No	No	Yes
Entry year FE	Yes	Yes	Yes

Appreciation of asset value \Rightarrow increased moving

IV strategy: MTR opening, 2nd stage [Back](#)

	Emigration		
	(1)	(2)	(3)
Panel A: New MTR access < 1 mile radius			
Δ asset value (instrumented)	0.0061*** (0.001)	0.0081*** (0.001)	0.0119*** (0.003)
Panel B: Δ distance to nearest MTR station (km)			
Δ asset value (instrumented)	0.0062*** (0.0003)	0.0101*** (0.0003)	0.0148*** (0.001)
# of obs.	961,947	961,947	507,831
Mean of DV	0.011	0.011	0.011
Building FE	No	Yes	No
Unit FE	No	No	Yes
Entry year FE	Yes	Yes	Yes

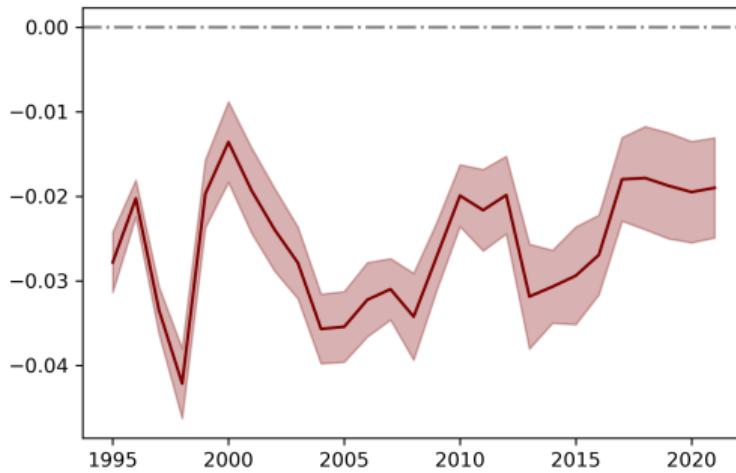
Does wealth elasticity vary across political alignment?

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	Emigration					
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \log(\text{asset value}) \times \% \text{ Pro-democratic votes}$	0.0222*	0.0212*	0.0359**	0.0333**	0.0317**	0.0478***
	(0.0128)	(0.0124)	(0.0152)	(0.0130)	(0.0127)	(0.0158)
$\Delta \log(\text{asset value})$	0.00231	0.00334	-0.00398	-0.0133	-0.0114	-0.0221**
	(0.00722)	(0.00683)	(0.00837)	(0.00809)	(0.00784)	(0.00989)
% Pro-democratic votes	-0.0295**	-0.0291**	-0.0594***	-0.0415***	-0.0406***	-0.0779***
	(0.0121)	(0.0120)	(0.0168)	(0.0120)	(0.0121)	(0.0189)
$\Delta \log(\text{asset value}) \times \text{Household income}$				0.000273***	0.000258***	0.000342***
				(5.06e-05)	(5.09e-05)	(6.48e-05)
Household income				-0.000255***	-0.000242***	-0.000469***
				(3.71e-05)	(3.69e-05)	(8.04e-05)
Mean of DV	0.018	0.018	0.018	0.018	0.018	0.018
# of obs.	1,400,855	1,400,853	1,399,157	1,379,676	1,379,674	1,377,986
Entry year FE	No	Yes	Yes	No	Yes	Yes
Entry neighborhood FE	No	No	Yes	No	No	Yes

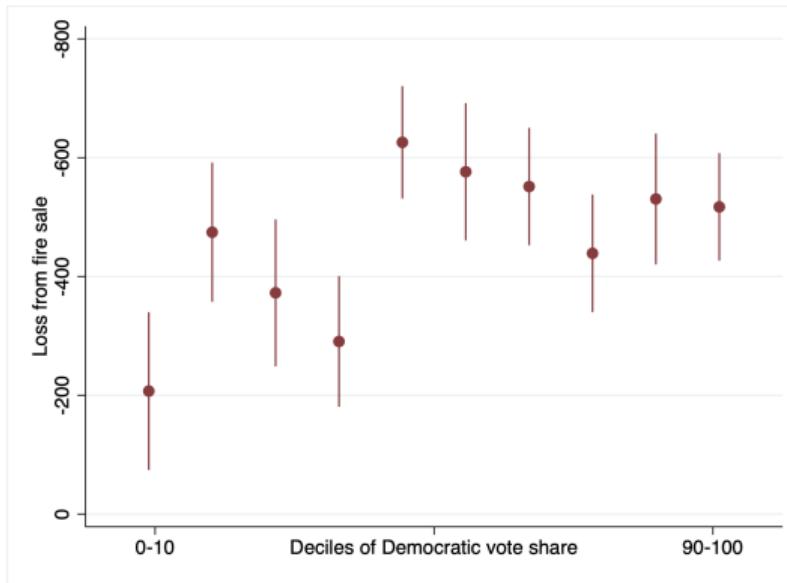
- Standard errors clustered at voting district level are reported below the estimates. We collect Pro-democratic vote share from 2019 local election and household income data from 2016 Hong Kong by-census. Pro-democratic vote share is a continuous variable $\in [0, 1]$. The unit of housing income is thousand Hong Kong dollars.

Short-run costs: heterogeneity across time

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- ▶ In this figure we plot the price discount of fire sales across years. Units are % of total price. Building fixed effects are controlled in all regressions. Confidence intervals are shadowed around point estimates.
- ▶ Gaps widen significantly during eras of political turbulence, including the 1997 handover, 2004 protest against the governor, and 2014 protests for electoral rights.

Short-run costs: heterogeneity across space

[Back](#)

- In this figure we plot the price discount of fire sales across regions with different political alignment. Units are in Hong Kong \$ per square feet. Building fixed effects are controlled in all regressions, sample period is 2015-2021. We run a separate regression for each decile of political mis-alignment with the new regime, measured by the % of votes the Democratic Party got in 2019. The bottom decile (0-10) is the most Pro-Beijing region.

Who are the buyers?

[Back](#)

Purchasing a unit from an emigrant				
Panel A: New homeowners vs. others				
New homeowners	0.028*** (0.0004)	0.027*** (0.0004)	0.023*** (0.0004)	0.023*** (0.0004)
Panel B: Hong Kong residents vs. outlanders				
Mainlanders	-0.025*** (0.001)	-0.012*** (0.001)	-0.005*** (0.001)	-0.006*** (0.001)
# of obs.	2,381,311	2,378,711	2,378,050	2,378,041
Mean of DV	0.132	0.132	0.132	0.132
Building FE	No	Yes	Yes	Yes
Year FE	No	No	Yes	Yes
Control for price	No	No	No	Yes

- ▶ Mainlanders names are identified with an RNN-name-classifier ([github](#))
- ▶ Mean of New homeowners = 43%, Mean of Mainland buyers = 5%

Balance check for Bartik regression

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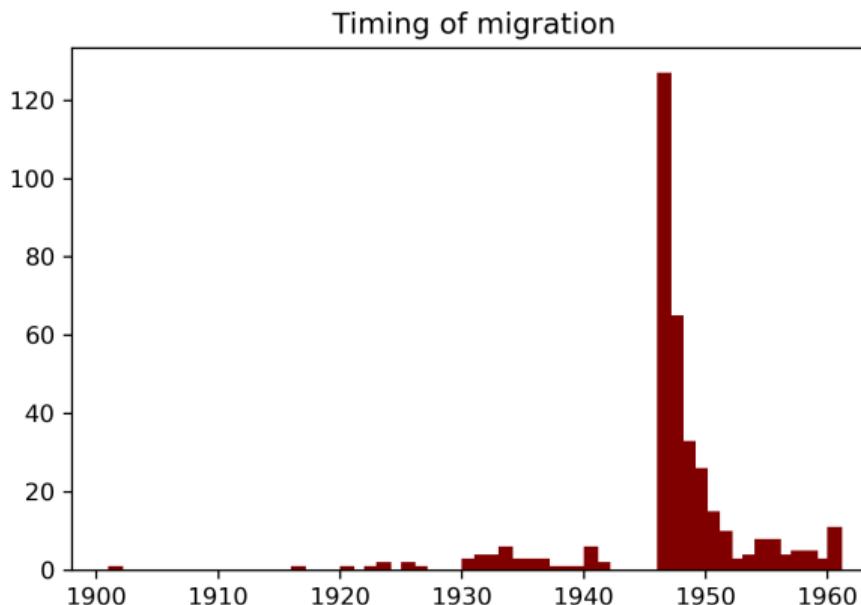
- ▶ $\text{Share}_i(p) = (X_{i,2021} - X_{i,2006})' \beta + \varepsilon_i$
 - ▶ Where $\text{Share}_{i(p)}$ is the share of industry- p -employment in district i in our baseline period, and $(X_{i,2021} - X_{i,2006})$ is a vector measuring changes in demographics and social economic conditions during our sample period.

	% Food	% Real estate	% Trade
Δ median household income	4.2570*** (1.269)	2.8043*** (0.628)	1.7307 (1.522)
Δ % male	-0.0013 (0.041)	-0.0377 (0.026)	0.0501 (0.039)
Δ median age	0.0011 (0.001)	0.0008 (0.001)	0.0016 (0.001)
Δ % college	0.0538 (0.066)	-0.0555 (0.032)	0.0886 (0.071)
Δ % private-house ownership	0.0019 (0.010)	0.0126* (0.007)	0.0161 (0.010)

- ▶ We chose the three sectors with the largest Rotemberg weights (0.14, 0.13, 0.09), computed following Goldsmith-Pinkham et. al. (2020).

Moving firms concentrated after 1940

▶ Back



- ▶ Firm registration in Hong Kong paused during the Japanese occupation (1941 and 1945).
- ▶ 32% of new firms newly registered in Hong Kong during 1940s, or 18.2 % of all firms by 1949 were migrants from Shanghai. (Source: *Registrar General's Department Annual Report, Hong Kong 1976-77*)