Hard to say goodbye to yesterday: War memories, patriotism, and individual investors' investment preferences

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Research question

- *Whether do collective memories of wars affect individual investors' investment preferences?*
  - Individuals have never directly experienced the wars.
  - Mechanisms that strengthen the effect of collective memories of wars on investors' investment preferences.

Why collective memory of war

- Collective memory represents past events associated with the values, narratives and biases specific to that group.
- Collective memory defines the group and provides a sense of continuity through time.
  - Halbwachs (1950); Wertsch and Roediger (2008)
- Mass war death is an integral part of modern national collective memory (Gillis, 1994).
  - Countries invested enormous administrative efforts in memorial projects for fallen soldiers and victims (Mosse, 1994).
  - But the understanding on the effect of collective memory on economic behaviors is very limited.

From collective war memories to equity investment

- Collective memory hands information down from generation to generation, helping avoid the adverse effect of negative consequences.
  - Pfister (2009); Fanta, Salek, and Sklenicka (2019).
- For same wars, the negative consequences are partially due to ill-equipped and poorly trained military forces.
  - E.g., The defeat of the Chinese armies in the early stage of the second China-Japan War is often attributed to the ill-equipped armies.
  - There have been frequent calls for modernizing China's military forces to avoid humiliations in the future.
- Individuals affected by the collective memory of war have a stronger incentive to support the military industry.
  - One way is to buy stocks of publicly listed companies in the industry.

Identification

- We focus on the Second China-Japanese War of 1937-1945
  - One of the largest interstate war conflicts in the world.
- Treatment sample
  - Individual investors who reside in the Chinese cities that experienced at least one major military battle during the War
- Control sample
  - Individual investors who reside in the other Chinese cities

Treatment vs. Control

- The treated cities have more residents who suffered directly during the war
  - They transmit painful war experiences to younger generation via story-telling
  - E.g., Auerhahn and Laub (1998); Felsen (1998)

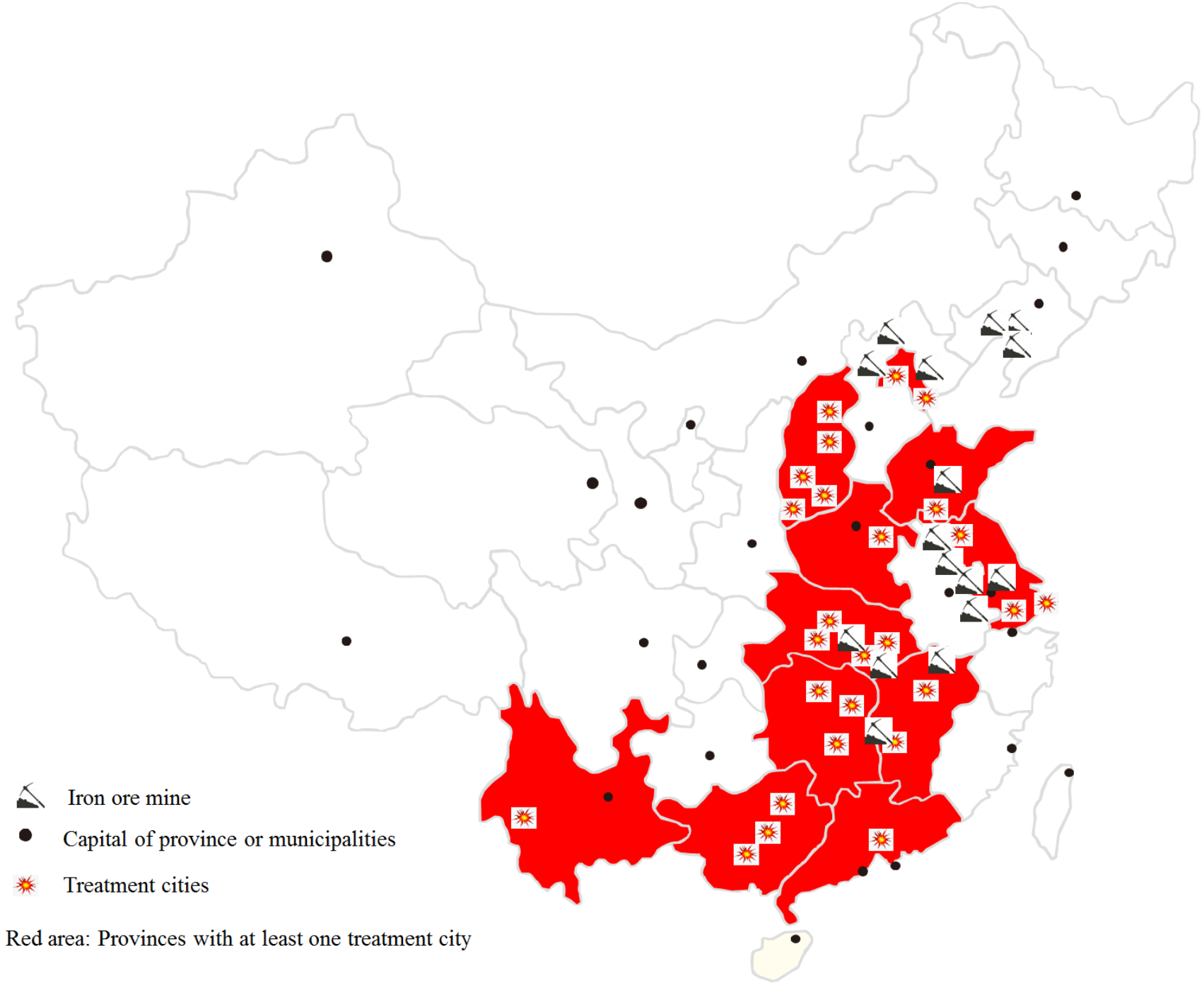
- The local media of the treatment cities provide more coverage of the War.
  - E.g., Kitch (2005); Neiger, Meyers, Zandberg (2011)

Identification

- Relevant dependent variable
  - A well defined dependent variable can help rule out alternative explanations.
- Using the military stock holding as a dependent variable
  - It captures the weight assigned to military stocks in individuals' portfolios.
- $HR\ (Mil)_{j,t} = \alpha_0 + \alpha_1 \times Treatment_j + \alpha_2 \times X_{j,t} + \alpha_3 \times \delta_{year\text{-}month} + \alpha_4 \times \theta_{province} + \varepsilon_{j,t}$
- It is difficult to come up with an alternative explanation.
  - Factors affect the incidence of wars and individuals' preferences on military stocks?

Identification

- Propensity score matching
  - Matched based on important observable individual characteristics
  - Gender, Risk preference, Age, Account opening month, Trading frequencies,. Adjacent city
- Use geographic proximity between the city and the major iron ore mines found before the war as an instrumental variable.
  - One important strategic goal of Japanese army in the war is to occupy mineral resources in China (Yukio, 1995).


Iron ore mine
Capital of province or municipalities
Treatment cities
Red area: Provinces with at least one treatment city

Data

- Individual investors' brokerage accounts
  - One of the largest nationwide brokerage firms in China under the condition of anonymity.
- Demographic information and trading information
  - Age, gender, residential address at the city level, etc.
  - Buy vs. sell, security type, the quantity of a trade, the dollar value of a trade.
- To get the holding information, we start with 216,732 unique brokerage accounts opened between January 1, 2010, and April 30, 2012.
- We select a random sample of 75,045 (about one third) unique brokerage accounts.
  - Cover all transactions an individual investor has made during 2010 to the end of 2015.
  - The final sample contains 48,525 unique individual investor accounts

Main findings

	(1) Full sample	(2) PS matched sample	(3) PS + Pair-city matched sample	(4) First stage	(5) Second stage
VARIABLES	Mil holding ratio (%)	Mil holding ratio (%)	Mil holding ratio (%)	Treatment	Mil holding ratio (%)
Treatment	0.345***	0.378***	0.502***		
	(6.32)	(5.59)	(9.06)		
Distance				-0.001***	
				(-15.49)	
Fitted(Treatment)					3.130***
					(12.75)
Controls	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Province, year-month	Province, year-month	Province, year-month	Province, year-month	Province, year-month
Observations	1,619,630	1,033,702	411,168	1,619,630	1,619,630

The magnitude of the coefficient on suggests that investors in the treated cities hold around 10% more military-stocks than investors in the control cities

Sharpen the identification

- Effect of military casualty intensity
  - The intensity of the battles varies significantly across cities
  - The memory of war would be more vivid if the casualty intensity is higher.
- Age effect
  - Collective war memory decays as time passes(Candia et al. 2018)
  - Estimate how long it will take to eliminate the effect of collective war memory.
- Media effect
  - Propaganda is important in shaping the collective memory (Neiger, Meyers, Zandberg, 2011)
  - Local media bias and the incremental effect of local media bias on individuals' preferences on military stocks.
- Event study based on the Diaoyu Islands Dispute
  - A DID approach to test how individuals response differently to new conflicts due to their different exposure to collective war memory.

Military casualty intensity

VARIABLES	(1) Mil holding ratio (%)	(2) Mil holding ratio (%)
Chinese army mortality/ km2	0.014*	0.012***
	(1.93)	(4.94)
Japanese army mortality/km2	-0.014	
	(-0.28)	
Other Controls	Yes	Yes
Fixed Effects	Military Capital, Province, year-month	Military Capital, Province, year-month
Observations	543,402	543,402
R-squared	0.001	0.001

Age effect

	(1)	(2)
VARIABLES	Mil holding ratio (%)	Mil holding ratio (%)
Age×Treatment	0.012***	
	(4.59)	
Age	-0.003	
	(-1.22)	
First post-war generation × Treatment		0.380***
		(5.93)
First post-war generation		-0.080
		(-1.62)
Other Controls	Yes	Yes
Fixed Effects	City, year-month	City, year-month
Observations	1,033,702	1,033,702
R-squared	0.004	0.004

Under the strict assumption of linearity, it takes around 59 years for the difference between the treated cities and control cities to disappear completely

Media effect

1. Identify the most widely circulated local party newspaper and local non-party newspaper from a popular newspaper database, WISENEWS.
2. Identify all the articles whose titles contain any of the following keywords: anti-Japanese, patriotic, anti-war, Second World War, Sino-Japanese.
3. Manually read the identified articles and exclude irrelevant articles

	N	Mean	Std
Yearly # of related news in all cities	1192	28.14	19.29
Yearly # of related news in treatment cities	108	39.81	35.86
Yearly # of related news in control cities	1084	26.97	16.35
Diff(Treatment-Control)		21.31***	

VARIABLES	Mil holding ratio (%)
Highmedia dummy×Treatment	0.417***
	(3.39)
Highmedia dummy	0.052
	（0.61）
Other Control	Yes
Fixed Effects	City, year-month
Observations	944,065
R-squared	0.003

Diaoyu islands dispute

- The ownership of Diaoyu Islands is a focal point in the post war China-Japan relationship.
  - Both China and Japan claim the ownership of the islands
- Japanese government has not allowed any party to develop the Islands, but it attempted to nationalize the Islands via a series of public actions from April 2012 to September 2012.
  - First proposed in April 2012 and completed in September 2012
- The Chinese government confronted Japan over a series of actions during the event window

Diaoyu islands dispute

VARIABLES	Mil holding ratio (%)
Treatment×React-period	0.200**
	(2.28)
Treatment×Post-react-period	-0.021
	(-0.25)
Log(Province quarterly GDP)	-1.140***
	(-2.65)
Fixed Effects	Individual, year-month
Observations	312,289
R-squared	0.702

Robustness

- Rule out information story that treatment groups have more information about the fundamentals of the military stocks.
- Robust to alternative measure (indicator variable) of military stock holdings.
- The effect is not concentrated in a single city but exists in most of the treatment cities.
- No effect on portfolio risk.

Conclusion

- Individual investors in the cities experienced the Second China- Japan War assign a higher weight to Chinese military stocks.
  - Cities that saw higher Chinese military casualties during the War.
  - Older investors who are likely to have stronger memories about the War.
  - Cities where the local newspapers have more discussions on the War.
  - Investors in the treated cities have a greater response to Diaoyu Islands dispute and hold more military stocks during the event period.

- The collective memories of wars that occurred long ago, transmitted across generations, can have a significant and long lasting impact on the investment decisions of individual investors today

Thank you

Additional Tests

	Full Sample	**P-score Sample**
VARIABLES	Mil holding ratio (%)	Mil holding ratio (%)
Eastern China	0.335***	0.444***
	(5.30)	(6.07)
Westen China	1.877***	2.805***
	(6.48)	(9.16)
Central China	0.242**	0.006
	(2.14)	(0.04)
Other Controls	Yes	Yes
Fixed Effects	Province, year-month	Province, year-month
Observations	1,619,630	1,033,702
R-squared	0.002	0.002

Panel A	Full Sample	P-score Sample
VARIABLES	Mil holding dummy	Mil holding dummy
Treatment	0.011***	0.010***
	(11.59)	(8.27)
Other Controls	Yes	Yes
Fixed Effects	Province, year-month	Province, year-month
Observations	1,619,630	1,033,702
R-squared	0.004	0.004

Additional Tests

	(1)	(2)
VARIABLES	Mil holding ratio (%)	Mil holding ratio (%)
Treatment	-0.036	0.304***
	(-0.54)	(5.27)
Age×Treatment	0.013***	
	(8.13)	
First post-war generation ×Treatment		0.361***
		(8.27)
War generation ×Treatment		0.577***
		(2.95)
Other Controls	Yes	Yes
Fixed Effects	Province, year-month	Province, year-month
Observations	1,054,738	1,054,738
R-squared	0.002	0.002

Additional Tests

VARIABLES	(1) Portfolio return volatility
Treatment	0.000
	(0.10)
Other Controls	Yes
Fixed Effects	Province
Observations	30,410
R-squared	0.075