



# Once an enemy, forever an enemy? The long-run impact of the Japanese invasion of China from 1937 to 1945 on trade and investment



Yi Che <sup>a</sup>, Julan Du <sup>b,\*</sup>, Yi Lu <sup>c</sup>, Zhigang Tao <sup>d</sup>

<sup>a</sup> Antai College of Economics & Management, Shanghai Jiao Tong University, Shanghai, China

<sup>b</sup> Department of Economics, Chinese University of Hong Kong, Shatin, N.T., Hong Kong

<sup>c</sup> Department of Economics, National University of Singapore, AS2 #06-02, 1 Arts Link, 117570, Singapore

<sup>d</sup> Faculty of Business and Economics, University of Hong Kong, Pokfulam Road, Hong Kong

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## ABSTRACT

In this study, we exploit one of the most important conflicts of the 20th century between what are currently the world's second and third largest economies, that is, the Japanese invasion of China from 1937 to 1945, to investigate the long-term impact of conflicts between countries on cross-border trade and investment. We find that Japanese multinationals are less likely to invest in Chinese regions that suffered greater civilian casualties during the Japanese invasion, and these regions also trade less with Japan. Our study shows that historical animosity still influences international trade and investment, despite the trend toward an increasingly globalized world.

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## 1. Introduction

We are living in an increasingly globalized world with substantial cross-border trade and investment due to the dramatic reduction in trade barriers and advancements in communications technology and logistics. Yet we have also witnessed continuous conflicts between countries, some of which are even referred to as a clash of civilizations (Huntington, 1996). There is little understanding of whether these conflicts and their legacies have long-term impacts on cross-border trade and investment. In this study, we exploit one of the most important conflicts of the 20th century between the current world's second and third largest economies, the Japanese invasion of China from 1937 to 1945, to investigate its long-run impacts on contemporary trade and investment between these two countries.

The eight-year Japanese invasion caused tremendous damage to China in terms of civilian and military casualties and property losses. More importantly, even seven decades after the end of the war, the two countries have not reached any reconciliation. The lingering war memories, ongoing territorial rows, and repeated disputes over

Japan's war responsibility might well cast shadows on current bilateral economic relations. Taking advantage of the fairly large degree of variation in war losses across Chinese regions<sup>1</sup> due to the country's vast size, we use the percentage of civilian casualties caused by the Japanese invasion (the number of civilians who suffered minor wounds, sustained major wounds, or died due to the Japanese invasion in a region, divided by its pre-war total population) to capture the severity of the damage caused by the Japanese invasion across Chinese regions. The outcome variables in our study concern the direct investment made by Japanese multinationals across Chinese regions and the bilateral trade between Chinese regions and Japan.

To identify the long-run impacts that the Japanese invasion of China has had on contemporary trade and investment between these two countries, we employ the difference-in-differences (DD) estimation method. Specifically, our identification strategy is to compare both the Japanese investment in a Chinese region and the trade between this region and Japan with the corresponding values of other foreign countries, and then examine the variations in these differences across Chinese regions that suffered different degrees of civilian casualties from the Japanese invasion.

\* Corresponding author. Tel.: +852 3943 8008.

E-mail addresses: [tccheyi@sjtu.edu.cn](mailto:tccheyi@sjtu.edu.cn) (Y. Che), [julandu@cuhk.edu.hk](mailto:julandu@cuhk.edu.hk), [juland@gmail.com](mailto:juland@gmail.com) (J. Du), [ecsluyi@nus.edu.sg](mailto:ecsluyi@nus.edu.sg) (Y. Lu), [ztao@hku.hk](mailto:ztao@hku.hk) (Z. Tao).

<sup>1</sup> Regions here refer to province-level administrative units in China. Specifically, there are 22 provinces, 4 municipalities directly under the supervision of the central government, and 5 minority autonomous regions.

In those Chinese regions that suffered greater civilian casualties, Japanese multinationals were late in making direct investments, launched a smaller number of enterprises, and invested a smaller amount. Specifically, a one-percentage-point decrease in the ratio of civilian casualties would cause the number of direct investment projects from Japan to increase by 7.9%, the contemporary investment from Japan in 2001 to increase by 23.3%, the accumulated investment from Japan until 2001 to increase by 16.3%, and the investment from Japan to enter half a year earlier.

Those Chinese regions hit harder in the Japanese invasion imported less from Japan, although their exports to Japan were much less affected or even unaffected. Hence, they have less aggregate trade with Japan at present. Specifically, a one-percentage-point decrease in the ratio of civilian casualties would, in a single year of 2001, cause China's imports from Japan to increase by 14.7%, and its total trade with Japan to increase by 15.9%. Obviously, if viewed with a longer time horizon, the cumulative losses caused by war legacies in trade value from 1945 (the end of the Japanese invasion), especially 1978 (China's adoption of open-door policy), to 2001 and beyond, should reach a large amount. A similar conclusion also applies to the cumulative loss of the Japanese direct investment in China.

It is noteworthy that our results are robust to the use of an alternative estimation strategy (i.e., Poisson pseudo-maximum likelihood estimation by Santos Silva and Tenreiro, 2006) to deal with zero investment or zero trade value.

In our empirical analysis, the use of the DD method allows us to eliminate all of the differences (such as regional capacity for economic development, distance to the coast, access to transport facilities, wage costs, and education levels) across Chinese regions that may be correlated with civilian casualties and outcome variables, and to remove all of the differences (such as institutional quality, cultural affinity with China, language distance to China, and market size) across foreign countries that may also affect civilian casualties and outcome variables. Therefore, in our opinion, the long-term impacts of war casualties most likely stem from the war-induced chronic psychological conditions (or sequelae) reflected in the deep-seated animosity and estrangement between the Chinese and the Japanese. Indeed, two recent papers show that personal feelings have significant effects on trade among countries. Guiso et al. (2009) find that bilateral trust has a substantial impact on trade and investment within Europe, whereas Michaels and Zhi (2010) show that the negative attitude between France and the U.S. significantly affected their bilateral trade relation from 2002 to 2003.

To support our conjecture, in Subsection 5.3, we present evidence using data from the Survey of Global Views conducted by the Chicago Council on Global Affairs in 2006. Specifically, we find that in regions with more civilian casualties caused by the Japanese invasion, the Chinese residents contemporarily have on average a lower level of trust toward the Japanese. They are more likely to hold a negative view of the role of Japan in Asia, want Japan to have a smaller influence in the world, and urge Japan to consider China's interests in formulating its foreign policy. Similarly, we find that in regions with higher civilian casualties, there is a higher percentage of Chinese residents who hold the view that Japan practices unfair trade with China.

Our study sheds new light on the long-term impacts of conflicts and wars on foreign direct investment. It also contributes to an emerging line of literature examining the effects of conflicts on bilateral trade (Blomberg and Hess, 2006; Martin et al., 2008; Glick and Taylor, 2010).<sup>2</sup> Our study differs from this literature by using cross-region (instead of cross-country) data to examine the long-run (instead of short-run) impact of one major war (instead of multiple and different types of

conflicts).<sup>3</sup> We demonstrate how war memories intensified by a lack of reconciliation over war responsibility can add to distrust and cast a shadow over current bilateral economic relations. This paper also contributes to the international economics literature by being one of the few studies examining the non-economic determinants of trade. One recent exception is Head et al. (2010) who study the effect of independence on post-colonial trade using cross-country data, whereas we examine war's effects on trade using within-country and cross-region data.

The rest of this paper is organized as follows. The historical background of the Sino-Japanese war of 1937–1945 is provided in Section 2. The data are described in Section 3, and our identification strategy is discussed in Section 4. The empirical findings are presented in Section 5, and Section 6 concludes the paper.

## 2. Historical background

The Marco Polo Bridge Incident on July 7, 1937 marked the beginning of a total war between China and Japan. By 1941, Japan had occupied much of northern and coastal China. After the Japanese attack on Pearl Harbor in 1941, the war became a major front of the Pacific War in World War II, and lingered until August 1945 when Japan surrendered.

The eight-year Japanese invasion resulted in tremendous losses sustained by the Chinese people. Official Chinese statistics put China's civilian and military casualties at 20 million dead and 15 million wounded during the 1937–45 period.<sup>4</sup> Most Western historians agree that the total number of casualties was at least 20 million.<sup>5</sup> The war also wreaked havoc on the Chinese economy. The property losses suffered by the Chinese were estimated to be US\$383 billion based on the currency exchange rate in July 1937, roughly 50 times the GDP of Japan at that time.<sup>6</sup>

Although the civilian casualties caused by the Japanese military invasion were widespread in China, there was still a fairly large degree of variation in war atrocities across regions owing to the country's vast size. Fig. 1 shows the geographic distribution of civilian casualties across China, with the darker color representing more severe civilian casualties (i.e., higher percentages of civilian casualties in total population; see Section 3 for details on the data sources and the construction of this measure). Clearly, civilian casualties were concentrated in China's central corridor, starting in Shanxi all the way down to Guangxi and passing through Henan, Hubei, Hunan, and Jiangxi. This was because of the strategic intention of the Japanese army to build a supply line for its war in the Pacific Ocean (so-called Operation Ichi-Go).<sup>7</sup> The central corridor regions also suffered the most because they formed the boundary between the Chinese resistance regions and the Japanese occupied regions where conflicts occurred frequently. In contrast, there were far fewer casualties in coastal regions, except in the case of Jiangsu where the notorious Nanking Massacre took place. Western China (consisting of Chinese resistance areas) suffered primarily from the Japanese bombing, but the casualties were much less severe. This large variation in war damage provides an ideal setting for us to identify the invasion's effect on Japan and China's contemporary trade and investment.

<sup>2</sup> There are studies examining the effects of conflicts on other outcome variables, such as population (Davis and Weinstein, 2002), the poverty trap (Miguel and Roland, 2011), and development (Przeworski et al., 2000).

<sup>3</sup> Felbermayr and Groschl (2014) find that the historical Union–Confederacy border in the United States lowers the contemporary trade between U.S. states across the border by about 13%. They attribute this border effect to the Civil War, which took place 150 years ago. Their study is similar to ours in that both examine the long-term effects of historical conflicts. However, our study differs by using a direct measure of the war damage caused by the Japanese invasion of China and examining the long-term effects on direct investment as well as trade between Japan and China's regions.

<sup>4</sup> See "Remember Role in Ending Fascist War". Chinadaily.com.cn, Aug 15, 2005.

<sup>5</sup> See "Nuclear Power: The End of the War Against Japan", by Duncan Anderson, bbc.co.uk/history, Feb. 17, 2011.

<sup>6</sup> See Ho Ying-chin (1979), Who Actually Fought the Sino-Japanese War 1937–1945?, Lee Ming Co., Inc.

<sup>7</sup> For more information, see [http://en.wikipedia.org/wiki/Operation\\_Ichi-Go](http://en.wikipedia.org/wiki/Operation_Ichi-Go).

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