Understanding Conflict: What China's Warlord Era Tells Us

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Abstract

This paper studies the impact of civil conflict on inter-regional economic activity, with a focus on trade between provinces and treaty ports during China's Warlord Era (1916-1928). Trade with treaty ports was the major channel through which provinces acquired foreign goods, especially advanced industrial products, and thus played an important role in regional industrialization. Warlords strategically formed or left military factions due to conflict. These changes in military alliances among warlords affected economic connections among the regions they controlled. Exploiting newly digitized internal trade data, I show that the trade cost between a province and a treaty port increased significantly when they were controlled by warlords in different military factions using a structural gravity model. The rise in trade costs led to increases in prices of foreign goods in local markets. Using the 1917 Russian Revolution as an exogenous supply shock, I show that the demand for foreign goods was elastic. Together, the results imply that conflict reduced the local demand for foreign goods substantially, which had a profound impact on regional development. Moreover, the impact of conflict varied across regions due to heterogeneities in treaty ports and demand elasticities, which provides insights into the observed regional disparities during the Warlord Era.

1 Introduction

Conflict has persistently marked the course of human history, and civil conflict, in particular, has influenced the destinies of numerous nations. This holds true even for China, who had experienced long periods of unity for much of its history. Civil conflict erupted during the nation's initial steps towards industrialization and modernization in what is called the Warlord Era (1916-1928). After the fall of Qing, China's last imperial dynasty, the Warlord Era was filled with disorder and civil wars. The central government collapsed and military rulers, usually called warlords, controlled their locality. Warlords competed for power and resources, and people suffered from endless civil wars. Yet at the same time, China began to broadly industrialize and modernize. Modern technologies and ideologies were introduced, prompting massive transformations. But these changes were unevenly distributed. Some regions achieved unprecedented growth, whereas others faced stagnation or even decline.

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This paper linked domestic upheavals and uneven growth during the Warlord Era by investigating the impact of civil conflict on the spatial distribution of economic activity, specifically, inter-regional trade. Even though conflict did not cause much direct destruction during the Warlord Era (Rawski, 1989; Sheridan, 1983), it still had a profound impact on regional economies. In particular, I reconsider the conventional view that warlordism did not strengthen regional divisions in China. Sheridan (1983) argues that

> The regional power of the warlords did little to strengthen regional divisions in China.[.....] The regional units that had cultural and economic importance in a unified China became the natural units into which the country disintegrated, and the natural territorial bases for warlords. But the very fact that the regions had a normal existence within a unified China meant that warlord regionalism was a less destructive force than it might otherwise have been.

Contrary to his view, I argue that conflict, or the threat of potential conflict, constantly shifted military alliances among warlords, introducing extra and volatile divisions among existing regional units. These changing relationships among warlords were reflected in the inter-regional economic activities among regions they controlled. I show that conflict created extra barriers to inter-regional trade. When an integrated country fell apart, it became more difficult for regions to exchange resources, resulting in greater divergence in regional development. To be sure, civil conflict was not particular to China. Many countries had experienced domestic upheavals during their efforts to industrialize and modernize. In this regard, my study of China' Warlord Era offers insights into interwar economic history with wider relevance.

Hsieh (1975) points out that during the Warlord Era, China was governed by two interdependent systems. One was the formal administrative system and the other was the native, informal, local political order. The formal system created nationwide bureaucratic hierarchy, running from the capital to the smallest village, but it was limited in effectiveness during the Warlord Era. The latter captured unstable and subjective relationships among regional governors and elites, which impacted local and regional trade and commerce. This paper explores the role of conflict in the informal order. Conflict shifted military connections among warlords. Warlords strategically formed or exited military factions in response to conflict or threats of potential conflict. Since warlords were the *de facto* civilian governors of regions they controlled, these military factions could also be regarded as political alliances. The changes in political connections further affected economic connections among regions these warlords controlled. The tension between two warlords created barriers to the economic interaction between regions they controlled. I show that the bilateral trade cost between two regions increased significantly when they were controlled by warlords belonging to different military factions. Conflict eroded cross-regional market linkages, which was particularly crucial during the

Warlord Era, since regions had to rely on inter-regional trade to acquire important industrial materials.

My study of inter-regional trade exploits one of the most influential economic intuitions in China throughout late Qing to WWII – the Treaty Port System. Treaty ports were cities in China that were forcibly opened to foreign trade under unequal treaties signed by the Qing government with foreign powers. More than 40 treaty ports were established during the late Qing and they continued to exist after the collapse of Qing. Treaty ports did not officially disappeared until the establishment of PRC. Although they were established as a result of military failures, treaty ports facilitated the entry of advanced foreign goods into China. Under the Treaty Port system, all imports and exports were required to go through these designated ports. To import foreign goods or export native products, regions other than port cities[1] had to trade with treaty ports. Treaty ports were situated in various provinces across China and traded different commodities based on their geographical location, foreign presence, and economic strengths.

This paper focuses on the trade between provinces and treaty ports. Each provinces traded with several treaty ports per year.[2] This type of inter-regional trade was unarguably one of the most important economic activities in China, since it was the major channel through which a province obtained materials from foreign countries for industrialization. I show that the bilateral trade cost between a province and a treaty port increased when the province and the province where the treaty port located were controlled by different military factions. For each province, conflict thus altered the relative prices of getting a commodity from different treaty ports. I demonstrate how trade between provinces and treaty ports responded to conflict on both the extensive margin (i.e., which ports a province traded with in each year) and the intensive margin (i.e., how much a province traded with each port).

Furthermore, I provide suggestive evidence for the counterfactual scenario, i.e., what would have happened had there been no conflict. Using the 1917 Russian Revolution as an exogenous supply shock, I show that the demand for foreign goods was elastic. Increases in trade costs naturally led to higher prices of foreign goods in local markets. If conflict had not increased trade costs, the demand for foreign goods would have been much higher. Foreign goods were a key driver of structural transformations in China, since they brought new ideas and technologies into the lagged-behind China. Conflict suppressed the local demand for foreign goods and thus left profound impacts on regional development. The demand elasticities varied across regions. Although the demand for foreign goods was always elastic, I find that wealthier areas had relatively

[1] Treaty port cities were indeed not considered fully Chinese territories because the unequal treaties granted foreign privileges, such as extraterritoriality and tariff exemptions, within these cities. This effectively limited the sovereignty of the Chinese government over these areas.

[2] Even for the treaty ports located inside the province, the province still need to trade with it to import foreign goods or export native goods. But in this case, the province and the port were always in the same faction.

less elastic demand than poorer areas. This finding suggests that conflict hurt poorer regions more, which widened the wealth gaps within the country.

Previous studies have examined the impact of conflict on economic and social development before the advent of modern and industrial society. Stasavage (2016) argues that conflict was a primary driver of long-run political development in Europe. Rulers traded political freedoms for funds, which gave elites chances to participate in public affairs. On the other hand, conflict in imperial China led to autocratic re-entrenchment since the emperor had enough power to extract tax funds without giving up political control (Dincecco and Wang, 2018). Rosenthal and Wong (2011) points out that warfare is a double-edged sword which makes it more likely that either a country would be poor if war was too destructive or it would initiate the path towards capital deepening earlier. Europe luckily experienced the latter. Crafts moved to cities to seek protection during wartime, which encouraged the adoption of new techniques. However, the role of conflict might have changed with the emergence of modern economic activity, which places greater value on cross-regional exchanges. In this regard, Betrán and Huberman (2022) investigates trade policies of Spain during its interwar period, which aimed to balance both international pressures and domestic concerns, and concluded that trade policies were not enough to shelter Spain from the economic shocks brought by the domestic chaos. As for more recent conflict, Korovkin and Makarin (2023) shows that the 2014 Russia-Ukraine Crisis lowered trade through eroding inter-group trust.

Adding to the literature, my work highlights the impact of conflict on economic interactions within a country, rather than between countries. I study conflict in a unique setting. China was a giant but underdeveloped agricultural economy that had been unified for most of its history. This paper offers insights into what happened when an integrated economy fell apart. Instead of taking the country as a whole, China's size makes it possible to study the divergences within the country. Unlike Haber, Maurer, and Razo (2003), which explores the selective protection of property rights offered by warlords in Mexico during the interwar period, I emphasize the frictions inside the country created by warlords. Tensions among warlords undermined the economic connections among regions they controlled. Conflict therefore impacted a region's ability to acquire resources from other regions. The effect held particular significance during the Warlord Era because this period marked the initial stage of China's industrialization. To the best of my knowledge, this paper is the first to offer quantitative evidence on how conflict influences the spatial distribution of economic activity within a country.

The rest of the article is organized as follows. Section 2 introduces the conflict and the economic growth during the Warlord Era. Section 3 introduces the treaty port system. Section 4 discusses my data collection.

Section 5 presents the empirical estimates of the impact of conflict on trade and the demand elasticity. Section 6 briefly links trade to actual economic outcomes. A final section concludes the article.

2 The Warlord Era

The Hsinhai Revolution (Oct 10, 1911-Feb 12, 1912) ended the Qing dynasty, China's last imperial dynasty. The Republic of China was established, with Yuan Shih-kai as the first president. Although the transition occurred without much violence, the new form of government did not bring the stability that had been expected. Three years later, in 1915, Yuan Shih-kai decided to restore the hereditary monarchy, by appointing himself as the Hongxian Emperor. Yuan Shih-kai's about-face alienated many of his supporters. China then split into regions under the control of local military leaders. The era of warlords ruling China's regions began in 1916 following Yuan Shih-kai's death and lasted until 1928, when the Kuomintang officially unified the country under Chiang Kai-shek.

The Warlord Era was marked by chaos as well as transformation. The demise of the millennium-long monarchy system weakened the power of the central government, leading to disintegration and disorder. At the same time, getting rid of the conservative Manchu government, China had the opportunity to experiment with new political and economic initiatives. In the following two subsections, I introduce the Warlord Era from the perspective of civil conflict and economic development separately.

2.1 Conflict

During the Warlord Era, warlords fought incessantly, competing for power and resources. Table 1 lays out the major civil wars during this period. There was hardly a year without a major war, not to mention the countless small-scale conflicts occurring nationwide. Yet, despite the frequency of violence, military action caused only limited direct damage. For example, although the total number of troops mobilized during the Chihli-Anhwei War was 120,000, the number of casualties was no more than 3,600.[3] Military action was responsible for less than 1 percent of mortality during the Warlord Era.[4] These figures are in no way comparable to those from wars happening in other countries during the same timeframe. [5] The total number of casualty estimated during the whole Warlord Era was $400,000$, which is not a small number but is almost

[3] *China's Prewar Economy*, Table 1.8, p37

[4] *China's Prewar Economy*, Table 1.8, p38

[5] For example, in the Battle of Verdun during World War I alone, nearly two million troops from Germany and France were deployed. French casualties and German casualties all exceeded three hundred thousand at Verdun.

trivial given China's geographic and population size.[6]

Previous studies have shown that both financial and geographic conditions limited the direct damage caused by warfare. Rawski (1989) points out that most warlords were poorly financed and therefore could not afford large armies. Moreover, many troops had nearly no firearms and thus were incapable of causing massive destruction. Ch'i (1976) finds that the locus of fighting was always restricted. In the mountainous areas, because of inadequate modern communications, armies usually fought in highly concentrated areas and wars only affected the immediate vicinity of the battlefield. Even on the plains, troops were concentrated to defend the main communication arteries and the area of fight was restricted.

However, the limited direct damage of warfare should not lead to the conclusion that conflict had no impact on the economy during the Warlord Era. Previous literature finds that one key negative aspect of the economic climate during the Warlord Era was the uncertainty brought by the military. Ch'i (1976) observed that "political unrest and civil wars made any long-range investment extremely precarious."[7] Although some stable military governments tried to support commercial activity, it was common for military units to extract tribute and practice robbery. Warlords requisitioned factories and manipulated currency in preparing for wars.

Uncertainty was not the only consequence brought by conflict. This paper underscores the impact of conflict on inter-regional economic exchanges. The impact was likely reflected in various cross-regional economic activities and this paper focuses on inter-regional trade, one of the major economic activities. During the Warlords Era, provinces were controlled by different warlords. Driven by concerns about conflict, warlords formed alliances to counter potential threats. Table 2 lists major military factions. The first three factions were named by one province, but this does not mean that they only controlled one province. A faction was usually named after the hometown of its key figure. Although a faction usually controlled the province in its name, it could still exist if it lost that province (an example is given later). The Kuomintang was certainly the best known among these factions. It reunified China under Chiang Kai-shek in 1928 and ruled mainland China from 1927 to 1949. However, during the most time of the Warlord Era, the KMT was influential only in southern China. The actual controlled areas of a faction changed over time. The bases listed in Table 2 are provinces that each faction held for relatively long time, but they are not the only provinces a faction held nor the provinces a faction always held.

Warlords of the same military faction typically maintained amicable relationships, while warlords from opposing factions were hostile to one another. However, these military factions were not binding. Warlords

[6] *China's Prewar Economy*, p36
[7] *Warlord Politics, p171-172.*

occasionally changed their factions of their own will. An notable example is a controversial general – Feng Yu-hsiang. Feng was first a follower of Yuan Shih-kai, but he stood on the opposite side of Yuan during the National Protection War. He joined the Chihli Faction in against Fengtien Faction during the First Chihli-Fengtien War, but he chose to betray the Chihli Faction during the Second Chihli-Fengtien War. He later again betrayed the Fengtien Faction and joined the KMT during the Northern Expedition. And he eventually left the KMT and joined the CPC.

Furthermore, major wars affected the territories controlled by each faction. On the eve of the Anhwei-Chihli War, the Anhwei Faction controlled Shantung, Anhwei, Chekiang, and Fukien. Defeated by the Chihli Faction, the Anhwei Faction lost control over Shantung and Anhwei. The Chihli Faction became the largest faction after it defeated the Fengtien Faction during the First Chihli-Fengtien War. However, it lost control over all the provinces in Northern China after the second Chihli-Fengtien War. Moreover, the Chihli Faction split after the war, with Wu P'ei-fu and Sun Ch'uan-fang each controlling a few provinces.

Clearly, control of a region could oscillate among various military factions. Since warlords acted as the *de facto* civil governors, such shifts imply that the political ties between a region and others were also in a state of constant flux. The changes in political connections further affected inter-regional trade. An example is the trade of Opium. Opium from Yunnan and Kweichow was shipped over a well-established trade route to Western Hunan, where it could be sent northward to the Yangtze Valley or southward to the Canton delta. The allegiance of the warlord controlling western Hunan determined which route would be selected.[8] Although the trade of opium was not something to be encouraged, this example illustrates the connection between military alliance and inter-regional trade. This type of connection has also been recognized in numerous textual records. For example, a treaty port report[9] notes that

> The tea trade has not prospered during the decade owing to the great difficulties and risks attending all interprovincial commercial transactions since the inauguration of the Republic, and more especially during the years of warfare between Yunnan and Szechwan.

This paper studies the impact of conflict on inter-regional economic activity through trade between provinces and treaty ports using rigorous econometric methods.

[8] The Cambridge History of China, vol. 12. Republican China 1912–1949, part 1., p296

[9] *Decennial Reports on the Trade Navigation Industries, etc., of the Ports Open to Foreign Commerce in China and Corea, and on the Conditions and Development of the Treaty Port Provinces*, 1912-1921, p 372

2.2 Massive but Uneven Transformations

The overall growth of China during the Warlord Era is controversial in the literature. According to Yeh's estimate (1977), China's GDP per capita grew at only 0.33% during 1914-1918 and 1931-1936. Yeh's estimate is one of the most influential works on prewar China and his findings imply the stagnation of China's economy. However, Rawski (1989) revises the per capita GDP growth to 1.1-1.2%, a figure comparable to Japan in the same period. Rawski argues that China had experienced economic expansion before WWII. Rawski's estimate is remarkably optimistic, since his estimate hinges on an upward revision in agricultural output, which accounted for more than 60% China's GDP (Ma, 2008). Ma (2008) revises Rawski's estimate to 0.53%.

Although the overall growth remains debatable, there is no doubt that China's economy began its transformation into a modern and industrialized one. According to Rawski (1989), between 1912-1936, the annual average growth rate of mining and manufacture was 9.4%, which was higher than Japan's 6.6% and UK's 4.4%; factory production grew by 8.1%, which was slightly lower than Japan's 8.8% but much higher than US's 2.8%.[10] Chinese statistics exceeded those of many other countries, although the starting points of China were also smaller. However, the growth of all kinds was unevenly distributed across China. Based on Ma (2008)'s calculation, the per capita income in the Lower Yangzi was 55 percent higher than China's average. [11] In terms of real agricultural wage growth, Fukien and Yunnan achieved a growth of 3.3% and 5%, but Szechwan and Hupeh had -3% and -4.3%.[12] Rawski shows the total manufacturing output in 1933 was 2645.5 million yuan, but 39.7% was produced in Shanghai and 14.2% was produced in Manchuria.[13] Rawski concludes that "Chinese industrialization was primarily a regional phenomenon."

The role of conflict in these massive but uneven transformation is understudied in the literature. This paper explores the impact of conflict on trade between provinces and treaty ports. This type of trade played a key role in regional transformations because this was the major, if not the only, way for regions in China to get advanced foreign products crucial for industrialization.

3 The Treaty Port System

My empirical analysis leveraged data from the Treaty Port system. A succinct overview of the system is provided in this section to enable a clearer understanding of the data and the historical context of my study. For a comprehensive discussion on the Treaty Port system and China's foreign trade, reference is made to

[10] *Economic Growth in Prewar China*, p 70
[11] *Economic Growth in Prewar China*, p73
[12] *Economic Growth in Prewar China*, p 296
[13] *Economic Growth in Prewar China*, p 74

Figure 1: A Map of Treaty Ports

Keller and Shiue(2020).

After the First Opium War of 1840-1842, the British gained control of five cities on the China coast, namely Shanghai, Canton(Guangzhou), Ningpo(Ningbo), Foochow(Fuzhou), and Amoy(Xiamen). These cities were forcibly opened to foreign trade and became so-called "treaty ports." In the following decades, the Qing government signed several treaties with the foreign powers, including the British, the Americans, the French, and the Russians, and eventually more than 40 treaty ports were established in China. All the treaty ports were established before the collapse of the Qing dynasty, but they remained operational throughout the Warlord Era. Figure 1 presents a map of treaty ports. Initially, most of these ports were established along China's coastline. Later, several were also established in important inland locations. Most provinces possessed at least one treaty port.

Under the Treaty Port system, treaty ports served as the exclusive entry and exit points for foreign trade. All the imports into China and exports out of China had to go through these designated ports. Any region within China had to trade with treaty ports if it sought to acquire foreign goods or export its local

products.[14] Therefore, treaty ports were valuable resources that gave regions in China access to foreign trade. When China was unified, provinces could trade with treaty ports in other provinces at relatively low costs. However, this might no longer have been true when China fragmented.

Although all the treaty ports engaged in foreign trade, it is important to note the significant heterogeneities among them, especially what commodities they traded. Most commodities were traded in some, not all ports. The price and the quality of a commodity could also vary across ports. A province, therefore, always traded with multiple ports. Conflict-induced changes in trade costs influenced a province's choice of trade partners (treaty ports) and the trade volumes with each, leading to shifts in the availability and costs of certain commodities. The commodity structures at treaty ports were determined by various factors, which is addressed in a separate paper, but it can be stated that the demand of a province was at most partially important. Thus, by affecting trade between provinces and treaty ports, conflict affected the variety, quantity, and quality of both foreign goods accessible to a region and native goods it could sell, which had a substantial impact on regional development.

The importance of the Treaty Port system in China's modern development has been recognized by many studies. For example, Keller, Li, and Shuie (2011) demonstrate that the expansions of the treaty port system, in terms of both the number of ports and the diversity of products, facilitated the diffusion of foreign goods. Ma (2019) argues that the treaty port system, which acted as an independent civil and tax bureaucracy, contributed to the rise of China's modern banking and financial market. He believes that treaty ports offered some form of commitment to secure property rights and the repayment of government bonds. The impact of treaty ports is still felt today. Jia (2014) points out that treaty ports have achieved faster growth than other areas after the 1978 opening due to human capital and social norms left from the Treaty Port Era. This paper explores the linkage between the Treaty Port System and Chinese domestic politics. Conflict shifted provinces' access to treaty ports, in other words, foreign trade. The unequal access to foreign trade finally led to divergences in regional growth.

[14] In the remaining text, I use "foreign goods" and "imports" interchangeably. They both refer to goods produced outside China and brought into China through treaty ports. I use "native goods" and "exports" to refer to goods produced within China that are targeted at overseas markets.

Table 1: Major Civil Wars

War	Start	End	Estimated Army[a]
The National Protection War	1915-12-25	1916-07-25	100,000
The Constitutional Proection Movement	1917-07-17	1918-05-21	100,000
The Chihli-Anhwei War	1920-04-09	1920-07-19	160,000
The First Chihli-Fengtien War	1922-04-28	1922-05-05	220,000
The Szechwan War	1923-07-25	1924-02-09	300,000
The Kiangsu-Chekiang War	1924-08-18	1924-10-20	200,000
The Second Chihli Fengtien War	1924-09-15	1924-10-23	420,000
The First Eastern Expedition	1925-02-01	1925-03-20	100,000
The Second Eastern Expedition	1925-10-01	1925-11-30	60,000
The Nankou War[b]	1926-04-15	1926-08-15	300,000
The Northern Expedition	1926-07-09	1928-12-29	1,000,000

[a]The total number of combatants on both sides, which is estimated based on army organizations in *A Military History of the Republic of China*.

[b]It is generally believed that this battle was a preparation for the Northern Expedition. It attracted the main forces of the Chihli and Fengtien factions, leaving the south vulnerable and effectively supporting the advance of the Northern Expedition.

Table 2: Major Factions in China 1916-1949

Name	Representative Figures	Bases
Anhwei Faction	Tuan Ch'i-jui	Anhwei, Chekiang, Shantung
Fengtien Faction	Chang Tso-lin	Fengtien, Kirin, Heilungkiang
Chihli Faction	Wu P'ei-fu, Sun Ch'uan-fang	Chihli, Honan, Kiangsi, Hupeh
Kuomintang	Sun Yat-sen, Chiang Kai-shek	Kwangtung, Kwangsi

4 Data

4.1 Trade Data

The main trade dataset is based on reports published by the Chinese Maritime Custom (CMC). Founded in 1854 in Shanghai by foreign consuls, the Chinese Maritime Custom was in charge of collecting trade taxes to ensure that China would pay indemnities owed after military defeats. Later, it established stations in major treaty ports. The CMC collected treaty port data on the value and the quantity of imports, exports, re-exports, inland transit, etc. The quality of the data is usually considered to be high since most CMC employees were highly skilled graduates of universities such as Cambridge, Harvard, and Yale, who were accountable to both bondholders and the Chinese treasury (Keller, Li, and Shuie, 2011).

My main dataset contains province-port trade data during 1914-1928 from the **Inland Transit** section in the CMC trade reports. My dataset documents the value of foreign goods(imports) and native goods(exports) that transited between treaty ports and provinces under the Transit Pass [15] during each year. Provinces,

[15]The system of transit passes was initially created to give foreign merchants the option of either paying all internal taxes as the were levied by local officials, or instead receiving an exemption from all further taxes by paying the Maritime Customs

Figure 2: Provinces' Trade with Shanghai in 1920

as I have noted, traded with treaty ports to acquire foreign goods or export native products. The trade between provinces and treaty ports occurred within China but it involved goods that were either imported from foreign countries or about to be exported aboard. My dataset records the total import volume and total export volume for each province-port pair. However, it does not detail the values for individual commodities. Commodity-level data unfortunately did not exist for trade between provinces and treaty ports. Figure 2 shows provinces' trade with Shanghai in 1920. The blue star marks Shanghai. Darker colors represent higher trade volumes. Pure white means no trade. The figure illustrates that, as one of the largest treaty ports, Shanghai engaged in trade with multiple provinces. However, the trade intensity varied across provinces. In the following section, I decompose the trade costs from these varied bilateral trade volumes.

Although province-port trade data do not include details on commodity composition, I address this limitation by further collecting data on the commodity-level imports and exports at each treaty port from the **Analysis of Foreign Trade** section in CMC trade reports. This dataset provides the quantity and the value of each commodity imported or exported annually *at each port*. However, as mentioned, each port engaged in trade with multiple provinces, so this port-level dataset does not explicitly reveal the composition of trade for a specific province-port pair. Nevertheless, it could still provide some clues for the possible commodities that provinces traded with each port.

In the baseline specifications, I aggregate the trade volumes of both imports and exports for each province-port pair. In my dataset, province-port pairs that never engaged in trade are excluded. Any province-port

a fifty percent surcharge on the regular customs duties. Chinese merchants were included after 1876. Transit passes could be purchased for both foreign imports shipping to inland areas and inland goods being shipped to treaty ports. There were controversies regarding the implementation of policies. See Matthews (1999) and Brown (1978).

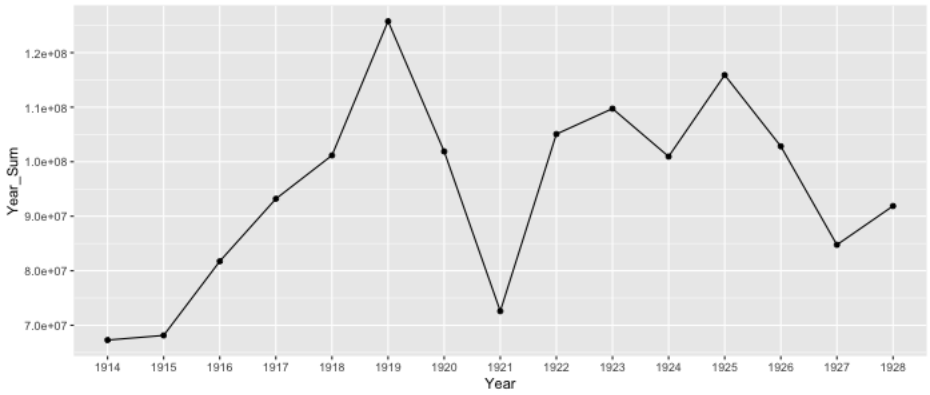

Figure 3: Total Volume of Trade by Year

pair that traded at least once is included, and I code that pair as zero aggregate trade volumes for periods without trade.[16] I also exclude trade data from provinces that not actively involved in China's domestic affairs during the Warlord Era, e.g., Sinkiang, Mongolia, and Chinghai. To clarify, this paper works on the transit of imports and exports *within* China. My results provide insights into the spatial distribution of foreign trade in China.

To ensure that values are comparable cross years, I convert all the values to 1907 USD. The annual exchange rates between the currency used by the CMC and the US dollar were provided in the CMC reports, and I adjusted all dollar values to their 1907 USD equivalents using Consumer Price Index.[17] Figure 3 shows the total volume of trade by year. It shows that the total volume of trade fluctuated but never collapsed. Every year the trade flows between provinces and treaty ports totaled at least tens of millions dollars. However, the distribution of trade changed all the time. Figure 4 plots the value of trade between Chihli and Hankow by year. Chihli(later called Hopeh, or Hebei) was the province surrounding Peking(Beijing), while Hankou(Wuhan) in Hupeh(Hubei) was one of the largest treaty ports. Figure 4 shows that in some years Chihli and Hankow traded intensively, while in some years there was no trade at all. This paper investigates the impact of conflict on the distribution of trade.

4.2 Faction Data

Integrating information from various source, I manually assign each province into one military faction during each year. Besides the major factions mentioned in the previous section, there were also smaller factions.

[16] If a port had no trade in a year, all the province-port pairs associated with that port in that year were removed.

[17] Consumer Price Index is retrieved from Federal Reserve Bank of MInneapolis. https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1800-

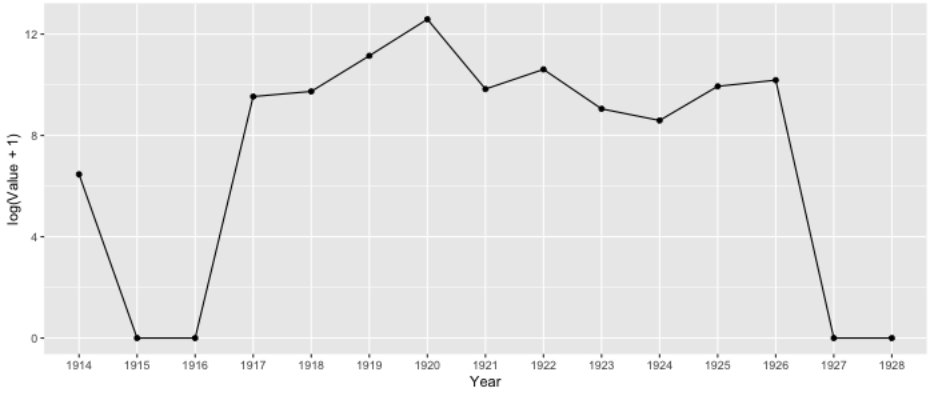

Figure 4: Volume of Trade between Chihli and Hankow by Year

Some smaller factions possessed only one province for most of the time (e.g., Yen Hsi-shan's Shansi). Also some military factions existed only shortly. It should be noticed that the unit of my dataset is province. However, sometimes a province was divided. In such a case, I choose the faction that controlled the most part of it. If the province was mired in turmoil (like Szechwan), I list itself as a separate faction because it is hard to say which faction it belonged to. I recognize that there were conflicts within provinces, but my trade data does not allow for analysis at a more granular level.

5 Empirical Framework

5.1 Naive Regression

I begin by examining how trade along a route was affected when it transitioned from linking two allied provinces to connecting provinces in opposing military factions. The estimating equation is given by

$$\log(Value_{ijt} + 1) = \beta Diff\_Faction_{ijt} + \gamma_{ij} + \gamma_t + \epsilon_{ijt}. \tag{1}$$

$Value_{ijt}$ is the trade volume along the trade route linking Province i and Port j in Year t and $Diff\_Faction_{ijt}$ is a binary variable that indicates whether Province i and the province hosting Port j were controlled by warlords in the same military faction (1 for in different military factions). γ_{ij} is the Province-Port(trade route) fixed effects, which captures all the route-specific time-invariant characteristics. γ_t is the Year fixed effects. β captures the change in the trade volume along a trade route when it linked rival provinces compared to the trade volume when it connects allied provinces. β estimates the with-in trade route effects.

Table 3 presents the results. The dependent variable in Column (1) the trade volume, while in Column

Table 3: The With-In Trade Route Impact of Conflict

Dependent Variables:	log(Value+1)	Exist
Model:	(1)	(2)
Variables		
Diff_Faction	0.0938	0.0191
	(0.1563)	(0.0179)
Fixed-effects		
Route	Yes	Yes
Year	Yes	Yes
Fit statistics		
Observations	2,980	2,980
R^2	0.83279	0.64698
Within R^2	0.00020	0.00056

Clustered (Port_Province) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

(2), I replace the trade volume by a binary variable indicating whether there was positive trade (1) or not (0). The results seem to suggest that being in different military factions had negligible, or possibly even positive, effects on trade.

However, this simplistic method is not suitable for this study as it overlooks the mutual influence among trade routes. That is, a change in one trade route would impact all other trade routes, even if they themselves remained unchanged. For example, consider a province that was allied with only one port before and suddenly breaks off its alliance with the province holding this port. Now, the province is not allied with any of the ports. However, among all these rival ports, it still has to trade with one or a few of them because foreign trade is crucial. Consequently, it reallocates its trade, and it is possible that one route suddenly receives a large amount of trade, even though it connects this province with a rival port ($Diff\_Faction = 1$). It is also possible that the trade volume on the route, which connects it with the former allied port, remains high because the province simply has no better option. Therefore, β in equation (1) is unable to distinguish between the actual impact of military alliances on trade and provinces' strategic allocations of trade. The gravity model, discussed in the next subsection, includes an explicit trade cost function and allows for interactions among trade routes. It provides a more accurate estimate of the impact of military alliance.

5.2 Gravity Model

My major estimating equations are based on the gravity model of trade, a conventional approach for estimating the determinants of trade flows. I adopted the setting from Anderson and van Wincoop (2003), which is used by many studies, e.g., Berger et al. (2013).

$$V_{ijt} = \frac{Y_{it} \cdot Y_{jt}}{Y_t^T} \left[\frac{\tau_{ijt}}{P_{it} P_{jt}} \right]^{1-\sigma} \tag{2}$$

V_{ijt} denotes the trade flow between Province i and Port j during Year t. Y_{it}, Y_{jt}, and Y_t^T are the size terms for Province i, Port j, and the entire economy in Year t, respectively. The parameter σ is the elasticity of substitution between goods. τ_{ijt} measure the bilateral trade cost between Province i and Port j in Year t. P_{it} and P_{jr} are multilateral resistance terms for Province i and Port j, which are complex non-linear functions of the full set of bilateral cost barriers τ_{ijt}. In this model, a change in the bilateral trade cost between any province and port will impact all the trade routes.

Taking natural logs and rearranging gives:

$$\log(V_{ijt}) = \log(Y_{it}) + \log(Y_{jt}) - \log(Y_t^T) + (1-\sigma)\tau_{ijt} - (1-\sigma)[\log(P_{it}) + \log(p_{jt})] \tag{3}$$

I assume that the trade cost function contains five variables: $Diff\_Faction_{ijt}$, $Distance_{ij}$, $Border_{ij}$, $Railway_{ij}$, and $River_{ij}$. $Diff\_Faction_{ijt}$ is the variable of interest. It measures whether Province i and Port j's province were in different factions in Year t. $Distance_{ij}$ measures the geographic distance between Province i and Port j and $Border_{ij}$ indicates whether i and Port j's province share a border. They are variables common in the literature. $Railway_{ij}$ measure whether Province i and Port j's province were connected by a railway line. Notice that this variable is not time-varying because during the sample period, there was hardly any new inter-provincial railway. $River_{ij}$ indicates whether Province i and Port j are both along the Yangtze River. Yangtze River is the major, if not the only, riverway connecting the west and the east of China. This variable aims to measure the accessibility of river transportation for trade between Province i and Port j. Given the underdevelopment of modern transportation in China during that period, being able to use waterway could possibly reduce trade costs. The trade cost function is given by:

$$\tau \equiv e^{\mu_1 \ln(Distance_{ij}) + \mu_2 I_{ij}^{Border} + \mu_3 I_{ij}^{Railway} + \mu_4 I_{ij}^{River} + \nu I_{ijt}^{Diff\_Faction}}. \tag{4}$$

Therefore, the estimating equation is given by

$$\log(V_{ijt}) = \alpha_1 \log(Distance_{ij}) + \alpha_2 I_{ij}^{Border} + \alpha_3 I_{ij}^{Railway} + \alpha_4 I_{ij}^{River} + \beta I_{ij}^{Diff\_Faction} + \gamma_{it} + \gamma_{jt} + \epsilon_{ijt} \quad (5)$$

$\log(Y_{it})$, $\log(Y_{jt})$, $\log(Y_t^T)$, and $(1-\sigma)[\log(P_{it}) + \log(p_{jt})]$ are all absorbed by Province-Year fixed effects (γ_{it}) and Port-Year fixed effects (γ_{it}). $\alpha \sim (1-\sigma)\mu$ and $\beta \sim (1-\sigma)\nu$. That is to say, I cannot estimate σ and parameters in the trade cost function separately. Keep this in mind, when I interpret the estimated coefficients, I interpret each of them in relative to each other. The variable of interest is β, which measures the impact of belonging to different factions on trade.

Table 4 represents the results of the baseline specifications. The first three columns show that distance and belonging to different factions were negatively associated with trade (positively with trade costs), while being connected by Yangtze, being connected by railway, and sharing a border were positively associated with trade (negatively with trade costs). Provinces in different factions faced higher trade costs, and, in particular, the magnitude of the negative effect was more than one-third that of the positive effect of being connected by railway. Notice that all the results here show correlation rather than causality. However, endogeneity is less a concern in this case. When a warlord made a faction decision, he might avoided decisions that would severely harm the trade in his province. Therefore, I have self-selection bias that leads to the underestimation (in absolute value) of β. The last column of Table 4 shows the impact of faction on the extensive margin. I replace $\log(Value + 1)$ with the binary variable indicating whether there was trade (1) or not (0). The results show that the province and the port were less likely to have trade if they were in different factions. All these findings show that conflict created barriers to domestic trade and led to the distortions in the equilibrium outcomes of the trade network.

As previously mentioned, the coefficients in Table 4 is the product of $(1-\sigma)$ and μ or ν. I cannot separate these two components without knowing the value of σ. Suppose I set the value of σ to 8, which is commonly used in the literature when varieties are to some extent similar. I choose this number because I assume that although available commodities were different across ports, but ports still shared many goods, so the trade flows are "similar". This gives the trade cost function

$$\tau_{ijt} = e^{0.314 \log(Distance_{ij}+1) + 0.157 I_{ij}^{Diff_Faction} - 0.488 I_{ij}^{River} - 0.091 I_{ij}^{Border} - 0.455 I_{ij}^{Railway}}.$$

Belonging to different military factions increased the bilateral trade cost by 17%, while being connected by railway decreased the bilateral trade cost by 37%.

In the baseline specifications, the dependent variable is the log of total trade volume, which is the sum of imports and exports. Table 5 reports the impact of conflict(faction) on imports only. The results in Table 5 are similar to the results in Table 4. It is not surprising since, at that time, imports constituted the majority of trade. In the remaining part of the article, I focus on imports since it played a more important role in China's industrialization.

Table 4: The Impact of Faction on Trade

Dependent Variables:	log(Value+1)			Exist
Model:	(1)	(2)	(3)	(4)
Variables				
Constant	20.88***			
	(0.5568)			
log(Distance+1)	-2.201***	-3.000***	-2.220***	-0.1492***
	(0.0936)	(0.1183)	(0.1245)	(0.0112)
Diff_Faction	-0.9876***	-1.783***	-1.096***	-0.0979***
	(0.2004)	(0.2685)	(0.2764)	(0.0268)
River			3.415***	0.1529***
			(0.4386)	(0.0353)
Border			0.6350***	0.0883***
			(0.1955)	(0.0185)
Railway			3.187***	0.1844***
			(0.2937)	(0.0262)
Fixed-effects				
Port_Year	No	Yes	Yes	Yes
Province_Year	No	Yes	Yes	Yes
Fit statistics				
Observations	2,980	2,980	2,980	2,980
R^2	0.20021	0.53620	0.57436	0.45246
Within R^2		0.33595	0.39057	0.22602

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

5.3 Counterfactual Analysis

The results above have shown that provinces belonging to different factions faced significantly higher trade costs, but what remains unanswered is the counterfactual scenario: what would trade have been like if there had been no conflict? I cannot provide a direct answer to this question, but I can gauge the significant influence of the increases in trade costs by estimating the demand elasticity for foreign goods. The rise in trade costs caused foreign goods' prices in local markets to increase, and demand elasticity indicates how demand reacted to these higher prices. Notice that in the baseline specifications, the dependent variable

Table 5: The Impact of Faction on Imports

Dependent Variables:	log(Imports+1)			Exist
Model:	(1)	(2)	(3)	(4)
Variables				
Constant	20.35***			
	(0.5524)			
log(Distance+1)	-2.147***	-2.936***	-2.166***	-0.1489***
	(0.0928)	(0.1221)	(0.1278)	(0.0113)
Diff_Faction	-0.9174***	-1.649***	-0.9851***	-0.0919***
	(0.1988)	(0.2655)	(0.2738)	(0.0270)
River			3.033***	0.1362***
			(0.4173)	(0.0350)
Border			0.6388***	0.0928***
			(0.1931)	(0.0188)
Railway			3.218***	0.1953***
			(0.2879)	(0.0262)
Fixed-effects				
Port_Year	No	Yes	Yes	Yes
Province_Year	No	Yes	Yes	Yes
Fit statistics				
Observations	2,977	2,977	2,977	2,977
R^2	0.19349	0.52874	0.56634	0.45438
Within R^2		0.32546	0.37929	0.22643

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

is the total volume of trade, the sum of imports and exports. In this subsection, I focus on imports for methodological reasons. In most cases, imports outweighed exports and held greater economic significance, which is explained in the next subsection.

The following analysis hinges on the assumption that increases in trade costs led to higher prices for foreign goods in the local market. Unfortunately, this assumption cannot be justified with concrete numbers because local prices data, especially for foreign goods, are largely unavailable for China during the Warlord Era. However, this assumption conforms to the natural laws of economics and textual records also supports this assumption. For example, in CMC's Decennial Report for Szemao (Simao, Sichuan), it mentions that the steadiness in the local price of rice was due to the inaccessibility of the country.[18] Conflict nevertheless enhanced this inaccessibility. Moreover, in its report for Canton (Guangzhou, Guangdong), it notices that the activities of pirates usually coincided with the degree of political unrest that exists at the moment, seriously affecting trade and agriculture and causing shortage of necessities and high prices.[19]

I digitize the commodity-level imports at all the treaty ports ($N = 44$) for 1912-1926 from the CMC reports. There are hundreds of commodities. Some examples include cotton blankets, beans, iron and mild steel wire, candles, coal, agricultural machinery, and etc. For most commodities, I have both value and quantity data, so I can calculate their unit prices. The interpretation of the following results lies on the assumption that the consumption behavior recovered at treaty ports could represent the whole country.

The naive OLS yields biased results. Consider a simple equation relating price and quantity. That is, $Price = \beta Quantity + \epsilon$. $Price$ and $Quantity$ are both observed in equilibrium. $\hat{\beta}$ from naive OLS can be biased either positively or negatively. If one considers the demand only, then an increase in ϵ leads to an increase in $Price$, which tends to drive down the quantity demanded, so $cov(Quantity, \epsilon) < 0$. However, the market outcome is the point where demand and supply intersects. So one also needs to think from the supply side. From the supply side, an increase in ϵ leads to higher price, which boosts quantity supplied. In this case, $cov(Quantity, \epsilon) > 0$. As a result, the bias can go either way.

I therefore uses the 1917 Russia Revolution as an exogenous supply shock to estimate the demand. Russia was an important trade partner of China at that time, exporting hundreds of commodities to China every year. However, the revolution in 1917 disrupted the production within Russia, leading to decreased in China's imports from it. Table 5 shows that the imports from Russia collapsed after the revolution and had not recovered by the end of the sample period. This shock was exogenous to China. Moreover, the degree

[18] *Decennial Reports on the Trade Navigation Industries, etc., of the Ports Open to Foreign Commerce in China and Corea, and on the Conditions and Development of the Treaty Port Provinces*, 1912-1921, p 384

[19] *Decennial Reports on the Trade Navigation Industries, etc., of the Ports Open to Foreign Commerce in China and Corea, and on the Conditions and Development of the Treaty Port Provinces*, 1912-1921, p 226-227

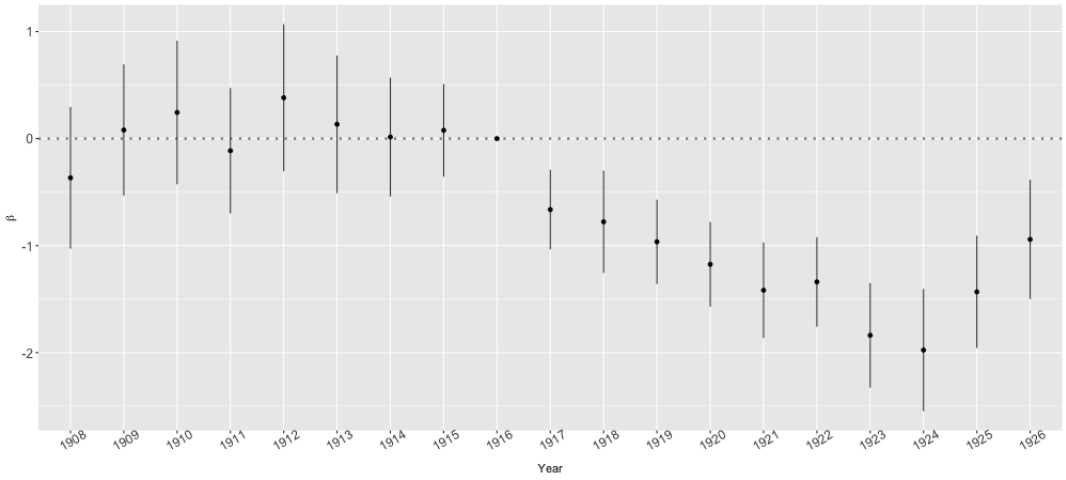

Figure 5: China's Imports From Russia by Year

Figure 5 plots the estimated β in the regression $\log(Value_{o,c,t}) = \beta Russia_o * Year_t + \alpha Year_t + \gamma_o + \gamma_t$, where $Value_{o,c,t}$ is the total value of Commodity c from Country o in Year t. $Russia_o$ indicates where the origin country is Russia. $Year_t$ is a categorical variable indicating the year. γ_o and γ_t are the Origin fixed effects and Year fixed effects respectively. The reference is year 1916. The estimated results show that Russia's exports to China collapsed after the revolution and had not recovered by the end of the sample period.

of the shock varied by port and commodity. Ports closer to Russia traded with it more tightly before the revolution and felt the shock more strongly. Commodities that Russia mainly supplied were impacted more by the revolution.

Inspired by the shift-share instrument, my IV for the quantity of each commodity at each port is given by:

$$IVQ_{i,c,t} = d_i * Q_{Russia,c,t} + r_{i,c} * Q_{Rest,c,t}, \tag{6}$$

for $t = 1917 - 1926$. $Q_{Russia,c,t}$ is the imports of Commodity c from Russia in Year t and $Q_{Rest,c,t}$ is the imports from the rest of the world. d_i is the share of Russian supply for Port i, which is inversely related to its distance to Russia. $r_{i,c}$ is the share of imports from countries other than Russia for Port i, which is calculated using pre-trends data (1912-1916). That is, $d_i = \frac{e^{-\log(Dist_{Russia,i})}}{\sum_{j=1}^{N} e^{-\log(Dist_{Russia,j})}}$ and $\tilde{r}_{i,c} = Average_{1912 \leq t \leq 1916}(\frac{Q_{i,c,t}}{Q^T_{c,t} - Q_{Russia,c,t}})$. Note that for each c, the sum of $\tilde{r}_{i,c}$ across all the ports may not exactly equal to 1. $r_{i,c}$ is the rescaled $\tilde{r}_{i,c}$, so that for each c, $\sum_i r_{i,c}$ equal 1.

The first part of this IV measure the accessibility of a port to imports from Russia, which, because of the revolution, was largely exogenous to China's demand. The second part borrows the idea of the shift-share instrument. The averaged share of the previous years is likely unrelated to later demand.

Then I estimate a simple demand equation,

$$\log(Price_{ict}) = \beta \log(Q_{ict}) + \gamma_i + \gamma_c + \gamma_t + \epsilon_{ict}, \tag{7}$$

where Q_{ict} was instrumented by IVQ_{ict} defined above. γ_i, γ_c and γ_t are Commodity fixed effects, Port fixed effects, and Year fixed effects respectively.

Table 6 presents the results. The first thing to note is the number of observations. As mentioned above, there are hundreds of commodities. The large number of commodities brings noises to my estimation. Therefore, following the classification in the CMC reports, I classify all the commodities into 9 categories: cotton textile (e.g., shirts, sheetings), other textile (e.g., woollen, silk), animal products (e.g., bones, skins), vegetable products (e.g., cereals, fruits), other daily goods (e.g., paper, stationary), chemical products (e.g., acids, wax), industrial products (e.g., bedsteads, electronic devices), raw materials (e.g., coal, wood), and metal and minerals (e.g., iron and steel, copper). I merge all the commodities in each category. That is to say, c in the equation actually represents class, not commodity. I also perform the same analysis on commodity-level, and I get qualitatively similar results.

The first two columns represent the results from the full set of data. Both OLS and IV regressions show that the demand elasticity, $\sigma_d = 1/\beta$, is greater than 1. In other words, the demand was elastic. Column (3) and Column (4) show the results for daily goods and industrial goods separately. I assume that the first five categories are daily goods, while the last four are industrial goods. The key difference between these two types of goods is that daily goods required less technology and China could produced them itself, while industrial goods were more difficult to produce and China were not able to produce many of them. The results are not surprising. Given China could not produce many industrial goods, it had to rely on foreign supply, so the demand was less elastic. But even for industrial goods, the demand elasticity was still greater than 1.

The last two columns present the results for large treaty ports (i.e., Shanghai, Tientsin (Tianjin), Canton (Guangzhou), Hankow (Wuhan), Dairen (Dalian)) and small treaty ports separately. They show that although the demand was elastic in both cases, large treaty ports had relatively less elastic demand. There were two competing explanations. One is that commodity structures at large treaty ports were different from those at small treaty ports. Large treaty ports sold essential industrial products that were unavailable at small treaty ports. The relatively less elastic demand at large treaty ports was driven by these valuable but exclusive commodities. The other one is that people whoever traded with large treaty ports were on average

wealthier than those traded with small one. Wealthier people were less sensitive to price change than poorer people. This is plausible since a large portion of imports at each treaty port served for people who lived in the treaty port cities. There is no doubt that people living in large treaty ports were the wealthiest in the country at that time.

I test the first explanation by including only the commodities that appeared at least at 35 ports each year. That is, when I create categories described above, I include only generally available commodities and merge their values and quantities. This way ensures that the compositions of each category were similar for all the ports. Table 7 presents the results. Note that the number of observations decreases a bit when I strict my sample, because the price or the quantity is not longer available for some ports for some categories. Column (1) and (2) in Table 7 show the results of OLS and IV for the full sample. The estimates are very close to those in Table 6. Column (3) and Column (4) in Table 7 show the results for large treaty ports and small treaty ports separately. The difference between their estimates becomes smaller compared to that in Table 6 but still exists. The results suggest that commodity structures may partially explain the difference in demand elasticities between large ports and small ports, but wealth effects also existed.

Columns (3) and (4) in Table 7 demonstrate that people of different wealth levels exhibited varying demand elasticities. Specifically, wealthier individuals tended to have less elastic demand. These results offer valuable insights into regional disparities in China. Poor areas were more sensitive to price change, so their demand for foreign goods was reduced more significantly by price increases caused by conflict. Although conflict affected both wealthy and poor areas, it hurt poor regions more. Conflict therefore increased the regional gaps in China.

Summary of Results

Using a gravity framework and trade flows between provinces and ports, I show that conflict created trade barriers to domestic trade. Provinces in different factions faced higher trade costs between them and had less chance to trade with each other. Using the 1917 Russia revolution as an exogenous supply shock, I estimate the demand elasticity using imports data at treaty ports. Assuming the demand curve at treaty ports represented the entire country, these two analyses together suggest that conflict significantly suppressed the demand for foreign goods in local markets. Conflicted increased trade costs, which led to increases in prices of foreign goods in local markets. Since people were sensitive to prices, their demand decreased substantially when prices increased. I provide suggestive evidence that demand elasticity varied by wealth. Richer areas had less elastic demand than poorer areas. Conflict seemed to hurt poor areas more.

Table 6: Demand Elasticity

Dependent Variable:	log(Price)					
Model:	(1) OLS	(2) IV	(3) Daily	(4) Industrial	(5) Large	(6) Small
Variables						
log(Quantity)	-0.4074***	-0.4750***	-0.4183***	-0.6597**	-0.8177***	-0.4539***
	(0.0515)	(0.0860)	(0.0817)	(0.1955)	(0.0994)	(0.0839)
Fixed-effects						
Commodity	Yes	Yes	Yes	Yes	Yes	Yes
Port	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics						
Observations	3,918	3,918	2,179	1,739	450	3,468
R^2	0.78151	0.77686	0.77237	0.76813	0.90060	0.77394
Within R^2	0.43583	0.42382	0.40384	0.39481	0.65984	0.41810

Clustered (Commodity) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Table 7: Commodity Structures Not Entirely Drive Elasticity

Dependent Variable:	log(Price)			
Model:	(1)	(2)	(3)	(4)
Variables				
log(Quantity)	-0.4097***	-0.4544***	-0.6680***	-0.4411***
	(0.0586)	(0.1020)	(0.1263)	(0.0967)
Fixed-effects				
Commodity	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Port	Yes	Yes	Yes	Yes
Fit statistics				
Observations	3,888	3,888	450	3,438
R^2	0.78656	0.78457	0.90070	0.77601
Within R^2	0.43904	0.43381	0.53011	0.42885

Clustered (Commodity) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

6 Trade to Economic Performance

How trade translated into actual economic outcomes is a complex details. For details, please see my paper on foreign trade access and manufacturing activity. Here I provide an brief overview. Rawski (1989) notes in his book that

> Economic growth was rooted in the expansion of foreign trade. New overseas demands for agricultural exports contributed to the acceleration of a trend towards commercial farming that predated the breaching of China's trade barriers in the mid-nineteenth century. The penetration of foreign goods created opportunities for introducing new products, materials, and processes into China's economy.[20]

Rawski's quote effectively summarizes the role of foreign trade in Warlord China. Global supply shocks caused by WWI created demand for China's exports (Mitchener and Yan, 2014; Liu, 2020). However, China mainly exported low-tech goods and exports only took up a small portion of foreign trade even in 1920s after China had experienced expansions in its exports. Imports, which provided advanced industrial goods that could not be produced within China, was the major driver of structure transformation occurring in this period. Commodity-level show that China imported a substantial amount of machinery, steel, chemical, and other goods crucial for industrialization every year. There was no way for China to establish modern factories without these imports.

More importantly, The commodity-level imports at treaty ports reveal significant heterogeneities among the ports, in terms of commodity varieties. The differences among ports may not have been important during periods of unification since there were few barriers to inter-provincial trade. However, when China was split, as it was during the Warlord Era, the differences became crucial. Conflict continuously shifted economic connections among regions, leading each province to adjust its trade in response to changing trade costs. As shown above, the adjustments took place on both the external margin (i.e., which ports a province traded with) and the internal margin (i.e., how much a province traded with a port). That, in turn, changed the costs of certain commodities massively more than others, since many commodities were only traded at some, not all, ports. Moreover, because of conflict, a province could have a "comparative advantage" in certain industries because it had convenient access to certain foreign goods that were not easily available to other provinces. Conflict and trade together shaped the industrial structure in each province and provided an explanation for the regional disparities observed during the Warlord Era.

[20] *Economic Growth in Prewar China*, p344

7 Conclusion

The Warlord Era marked China's first attempt to modernize and industrialize. This is an era of both disorder and transformation. This paper links the internal strife and the uneven growth by investigating the impact of military alliance on trade between provinces and treaty ports. Conflict created barriers to inter-regional economic activity and affected a region's ability to acquire resources from other regions. The increases in trade costs significantly reduced the demand for foreign goods in local market since the demand elasticity was high. Moreover, conflict hurt poorer areas more because the wealthier had relatively inelastic demand.

My study sheds light on the observed regional disparities during the Warlord Era. The Treaty Port System facilitated the entry of foreign goods into China, yet it also inherently led to unequal access to foreign trade among regions. Conflict during the Warlord Era caused further distortions in a region's engagement with treaty ports. My findings position foreign trade as a key driver of the regional disparities during China's Warlord and motivate further research in this topic.

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