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# Trade bloc formation in inter-war Japan.
# A gravity model analysis

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Received 7 January 2005; revised 12 January 2006

Available online 21 February 2006

**Okubo, Toshihiro**—Trade bloc formation in inter-war Japan.

The purpose of this paper is to discuss the trading system in the inter-war period concerning the Japanese Empire by means of border effect analysis in the gravity model. The results show sizeable and steadily increasing trading bloc border effects from the 1910s through the 1930s. This sizeable border effect might have resulted from many possible factors: trade diversion and creation due to increased protectionism and industrialisation in Korea and Formosa, certain political factors, and Japanese migration to Korea and Formosa, which contributed to a 52% increase of bloc border effects in mainland Japan. *J. Japanese Int. Economies* **21** (2) (2007) 214–236. Graduate Institute of International Studies, Geneva, Switzerland.
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## 1. Introduction

World War I was a huge shock to the world economy and trading system. Although trade recovered steadily in the 1920s, the trade system had been unstable and gradually turned to protectionism, causing the emergence of a world wide block economy after the Depression. Previous literature has extensively studied the impact of protectionism on the inter-war world trade system through quantitative and historical analysis. This paper discusses the inter-war period more in-

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tensively and more in detail: We aim at providing econometric evidence of the Japanese Empire's trade in the inter-war period by means of border effect analysis in the gravity model.

To support our discussion, we review briefly the most relevant existing literature and highlight the main issues. Kindleberger (1973), one of the most familiar and excellent studies on world trade during the inter-war period, presented a well-known spiral diagram that vividly portrays the shrinkage of world trade that occurred from 1929 to 1933. In dealing with the Depression, it is often said that countries attempted to form bloc economies all over the world through raising their tariff rates and imposing quotas.[1] Protectionism and regionalism in international trade thus became widespread all over the world, causing a sharp contraction of world trade. World trade decreased by 8% due to tariff and by 6% due to non-tariff barriers (Madsen, 2001).[2] Kindleberger also drew attention to the rise of trade between the major countries and their politically close trading partners as a sign of the emergence of blocs after the Depression.[3]

Indeed, the Depression caused increased protectionism, but for the Japanese case it is useful to investigate longer periods with considering rapid economic growth. Figure 1 shows the total amount of Japan's trade, with its colonies (consisting of Formosa and Korea), and with all non-bloc countries. We can clearly observe increased intra-empire trade as compared to Japan's trade with non-bloc countries. Interestingly, the rise of intra-empire trade (trade among mainland Japan, Korea and Formosa) had already started in the 1910s and 1920s. At the same time, GDP growth was substantial within the Japanese Empire all over the inter-war period. Furthermore, the Japanese Empire's economic growth had outstripped every other country, as can be seen in
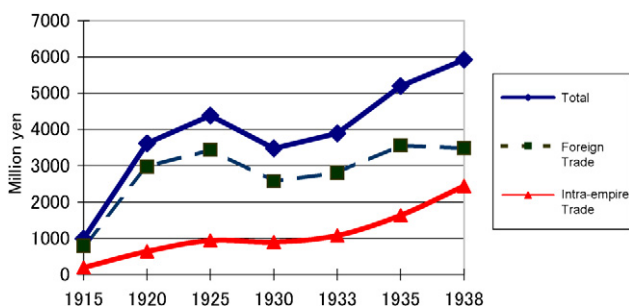


Fig. 1. Japan's trade, 1915–1938. Source: Mizoguchi and Umemura (1988), Nihon Boueki Seiran (Foreign Trade of Japan—A Statistical Survey), Chosen Yusyutu 3 nen taisyouhyou (Government of Taiwan), Taiwan Boueki 40 nen hyou (Government of Taiwan).

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[1] In the British Commonwealth, the Imperial Economic Conference at Ottawa was held in 1932 and the United Kingdom, its dominions and India ratified reciprocal trade agreements and some agreements on tariffs. Macdougall and Hutt (1954) studied the quantitative effect of the Ottawa Agreements. Also, in several European countries import quotas were imposed. By contrast, in the United States, the Smooth–Hawley Tariff Act was passed in 1930, and the Reciprocal Trade Agreements Act was passed in 1934, which promoted bilateral trade agreements with specific countries (Hiscox, 1999; Bailey et al., 1997).

[2] Madsen (2001) showed that world trade decreased by 14% due to the decrease in income. Crucini and Kahn (1999) suggested that, even if the share of trade was small, the increases in tariff rates had a significantly negative impact on GDP in the 1930s.

[3] Miyazaki et al. (1981) estimated that the proportion of UK exports to British Empire nations increased from 30% in 1929 to 42% in 1937 and likewise imports grew from 44 to 50%. The ratios of Korea, Formosa, and Manchuria in the total trade of Japan increased from 20% of exports in 1929 to 41% in 1937 and from 24 to 55% of imports over the same period.