Graduate Institute of
International Studies | Geneva
Economics

HEI Working Paper No: 05/2006

Shake Hands or Shake Apart?

Pre-war Global Trade and Currency Blocs:

the Role of the Japanese Empire

Toshihiro Okubo
Graduate Institute of International Studies

Abstract

Despite world-wide bloc economies after the Depression, Japan had a tight relationship with the British Commonwealth and created tight connections with the Sterling and the Gold blocs in the late 1930s. The world-wide bloc economies did not isolate Japan.

Shake Hands or Shake Apart?

Pre-war Global Trade and Currency Blocs:

the Role of the Japanese Empire

Toshihiro Okubo[1]

Graduate Institute of International Studies, Geneva

March 2006

ABSTRACT

Despite world-wide bloc economies after the Depression, Japan had a tight relationship with the British Commonwealth and created tight connections with the Sterling and the Gold blocs in the late 1930s. The world-wide bloc economies did not isolate Japan.

JEL Classification: F10, F15, N70.

Keywords: Trade/ Currency Blocs; Trade Diversion and Creation.

[1] I would like to thank Professor Richard E. Baldwin for his comments. Correspondence: okubo3@hei.unige.ch

Tel +41-22-908-5918, Fax: +41-22-733-3049, 11a Ave de la Paix, Geneve 1201, Switzerland

1 INTRODUCTION

With the onset of the Great Depression, world trade contracted steadily. Countries formed bloc economies worldwide, and protectionism and regionalism became widespread. This paper investigates the position of the Japanese Empire's trade bloc in the evolving world pattern of trade. Eichengreen and Irwin (1995) estimated trade diversion and creation in the pre-war blocs: the British Commonwealth and the Reichsmark as trade bloc, the Sterling area, the Gold bloc, and the exchange control countries as currency bloc. They found significant trade-creating effects in the British Commonwealth and the Reichsmark bloc, reflecting increased protectionism. However, their observed trade-diversion effects were not significant. On the other hand, with regard to currency blocs, the Sterling area and exchange control members did not have significantly large trade-creating effects. Exchange control members had a significant trade-diversion effect, while the Gold bloc slightly increased trade with non-bloc members due to their indiscriminate use of trade restriction. Overall, substantially significant trade-creating effects were found in trade blocs and no substantial trade-diversion and creation was observed in currency blocs except trade diversion in Exchange control members.[2]

Eichengreen and Irwin did not analyze the Japanese Empire due to data restriction. Okubo (2006) estimated the bloc border effect and found a sizeable and increased border effect. In other words, the Japanese empire had substantial trade creation effect within the empire, but that paper did not look at the relationship with any other blocs in the 1930s.

This short paper focuses on the trade diversion effect in the Japanese Empire in relationship with other blocs using Okubo (2006)'s data resources. Using a gravity-model we investigate: 1)

[2] Interestingly, this non-substantial trade creation by a currency bloc stands in contrast with the current currency union (Rose, 2000).

whether a substantial trade diversion can be observed in the Japanese trade in the 1930s, 2) whether the Japanese foreign trade with any other major blocs declined or increased, and 3) whether Eichengreen and Irwin's findings are robust. The paper also adds to the current "Multilateralism versus Regionalism" debate on economic integration with econometric evidence on interwar trade blocs (Bairoch and Kozul-Wright, 1996). The remainder of this paper is structured as follows: stylised facts are presented in Section 2, econometric methodology and the estimation results in Section 3, and conclusions in Section 4.

2 STYLISED FACTS

Japan acquired its first colony, Formosa (Taiwan), in 1895 as a result of the Sino-Japanese war. Korea was annexed in 1910 as a consequence of the Russo-Japanese War. When the Great Depression and the financial crises of 1929-1930 struck, mainland Japan had developed a tight relationship with Korea and Formosa. The reaction in Japan, as in the rest of the world, was to increase protection between the Japanese Empire and the rest of the world, but not within the Empire itself. As shown in Yamazawa and Yamamoto (1974), Japanese protectionism increased in tariff and quota over time. Likewise, 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). Also, in several European countries import quotas were imposed. On the other hand, in the United States, the Smoot-Hawley Tariff Act was passed in 1930, and the Reciprocal Trade Agreements Act was passed in 1934, which promoted the bilateral trade agreements with specific countries (Irwin, 1998). We can say that series of these incidents more or less affected the

Japanese bloc's trading relationship with other blocs. This qualitative analysis suggests a number of testable hypotheses.

3 ECONOMETRIC ANALYSIS

We employ gravity model analysis to study trade creation/diversion in the internal and external trade of the Japanese Empire. Our econometric strategy is to adopt an empirical specification based on Eichengreen and Irwin (1995). We have data for the trade of three parts of the Japanese Empire (mainland Japan, Korea and Formosa) with 24 non-Empire countries, which were major trading partners of the Japanese Empire.[3] We do not include trade among the 24 non-Empire nations due to lack of the data for each country in each period. We have data for 1915, 1920, 1925, 1930, 1935 and 1938.

3.1 Estimation Strategy

Following Eichengreen and Irwin (1995), we focus on the sign and significance of dummies between the Japanese Empire and the members of the other blocs. We singled out blocs which included many major trading partners of the Japanese Empire: the British Commonwealth (a trade bloc), as well as the Sterling area, the Gold bloc and Exchange control countries (currency blocs). Pooling all of the 6 years, we estimate yearly bloc dummies with feasible generalised least-squares (FGLS) panel estimation where we allow heteroskedastic variances across panels but no cross-sectional correlation in the error structure:

$$TRADE_{ijt} = \alpha_0+\alpha_1 GDP_{it} +\alpha_2 GDP_{jt} +\alpha_3 DIS_{ij}+\alpha_4 CAP_{it} +\alpha_5 CAP_{jt}+\sum_{\tau=15}^{38} \alpha_{6\tau} BLOC_{ij\tau}$$
$$+\sum_{\tau=15}^{38} \alpha_{7\tau} JPNDUM_{ij\tau}+\sum_{\tau=20}^{38} \alpha_{8\tau} \mathrm{YEARDUM}_{\tau}+\varepsilon_{ijt}$$

[3] See Data Appendix about the components of 24 non-Empire countries and the member countries in each bloc.

where $BLOC \in$ (*British*, *Sterling*, *Gold, Exchange*)

The dependent variable (*TRADEijt*) is year t's logarithm of nominal trade in Japanese yen from country or region *i* to country or region *j*. In other words, it denotes exports or imports of mainland Japan, Korea and Formosa with each trading partner as well as the six intra-Empire trade flows (imports and exports between the three nations). The first five right-hand side variables are the classic control variables for the gravity equation. *GDP* denotes the logarithm of the GDP (in Japanese yen,1935), *DIS* indicates the logarithm of bilateral distance (in km) between the capitals or the seats of government, and *CAP* indicates the logarithm of GDP per capita for the exporting '*i*' and the importing '*j*' countries.[4]

JPNDUM takes on a value of unity for intra-empire trade (trade among Mainland Japan, Formosa and Korea) and zero for non-Empire trade flows and other border effect analyses. This can test trade-creating effect within the Japanese Empire in the sense that trade within the Japanese bloc is higher than would be expected, controlling for standard gravity equation factors.

The variable of interest in this regression equation is each *BLOC* dummy, i.e. *British*, *Sterling*, *Gold* and *Exchange* dummies, which takes the value one for the Japanese trade with its bloc members. If the coefficients of the bloc dummies decline over time and become negative, this indicates a trade-diversion effect. On the other hand, if the coefficients are significant and increase over time, this represents a trade-creation effect. We also allow for year-specific fixed-effects to control for unobservable factors that are common across all pairs by including year dummies (*YEARDUM*).

Our sample includes 75 trade pairs compromised of 72 trade pairs between the 3 Empire countries and 24 non-Empire nations plus the 3 intra-Empire trade flows. Since we have import

[4] Seoul (Taipei) is regarded as the capital of Korea (Formosa).

and export data separately for each pair, there are 150 ‘columns’ in the panel. There are six years in our data so the total number of observations is 900 (i.e. 150 times 6).

3.2 Estimation Results

As seen in the Table, *British* dummies are all significantly positive and increase over time. In particular, the late 1930s saw high values. *Sterling* dummies are significant in the 1930s. *Gold* dummies, not so robust, are also significantly positive in the 1930s, while *Exchange* dummies are unclear. Overall, despite the increased protectionism and regionalism in the world, a trade-diversion effect by bloc formation cannot be clearly observed. Rather, the Japanese Empire had gradually established tight relations with the British Commonwealth over time in the interwar period. Concerning the two currency blocs, the Sterling area and the Gold bloc, we find significant and positive values in the late 1930s. In particular, the Japanese Empire had established a solid economic relationship with the Sterling area. The closer relationship with the Gold bloc might reflect the fact that the Gold bloc members did not implement so many discriminatory trade policies.

These results contrast those in Eichengreen and Irwin (1995), which suggested no significant influence of currency bloc formation on the pattern of trade: no remarkable trade diversion or trade creation effects. In the current context, our results are somewhat similar to NAFTA’s experience, in which the trade diversion effect is weak, regardless of a trade-creation being observed (Krueger 1999; 2000; Soloagta and Winters, 2002). However, our results are also different from Rose (2000): the pre-war currency blocs never excluded Japan but strengthened the connection with the Japanese Empire. Also, our result contrasts with the features of the current Japanese economy, though the prewar bloc was of course very different from the current level of economic integration. Wall (2002) found that Japan in the 1980s and 1990s was isolated

from world trade in the sense that economic integration has significantly reduced Japan's trade with the member countries of trading blocs.

4 CONCLUSION

While the Japanese Bloc, which represented trade between Japan and its colonies, had a substantial trade-creating effect, it had gradually created tight connections with other blocs in the worldwide bloc economy period in the 1930s. In particular, the Japanese Empire had a tight relationship with the British Commonwealth over a long period, as well as with the Sterling area and the Gold bloc in the 1930's, although the relationship with the other blocs was not so clear. The Japanese relationship with them intensified overtime. We can conclude that inter-war Japan was not isolated from other world-wide trade and currency blocs and rather sought to build tighter relationships with them.

DATA APPENDIX

The data set of all variables is taken from Okubo (2006). 24 non-bloc countries are India, the Netherlands Indies, China, Russia, the United Kingdom, Canada, Australia, New Zealand, Norway, Denmark, Sweden, Switzerland, Italy, Germany, France, Belgium, the Netherlands, Spain, Argentina, Mexico, Brazil, the United States, Chile, and Peru.

Components of the Countries in Each Bloc

The British Commonwealth: the United Kingdom, Australia, New Zealand, India, Canada

The Sterling Area: the United Kingdom, Australia, New Zealand, India, Norway, Denmark, Sweden, Argentina

The Gold Bloc: Belgium, France, Italy, the Netherlands, Switzerland, the Netherlands Indies

Exchange Control Members: Denmark, Italy, the Netherlands, the Netherlands Indies, Spain, Sweden, Germany

REFERENCES

Bairoch,P. and R.Kozul-Wright (1996) "Globalisation myths: Some historical reflections on integration, industrialization and growth in the world economy", *UNCTAD DP* No.113.

Eichengreen.B, and D.A.Irwin (1995) `Trade blocs, currency blocs and the reorientation of world trade in the 1930s' *Journal of International Economics* 38: pp1-24.

Irwin,D.A. (1998) "The Smoot-Hawley Tariff: A Quantitative Assessment," *Review of Economics and Statistics* 80, pp.326-334.

Krueger,A.O. (1999) "Trade creation and trade diversion under NAFTA", *NBER WP* 7429.

Krueger,A.O. (2000) "NAFTA's effects: A preliminary assessment ", *World Economy*, 23: pp761-775.

Okubo,T (2006) `Trade Bloc Formation in Inter-war Japan -A gravity model analysis', *Journal of the Japanese and International Economies*.

Rose,A (2000) "One Money, One Market: Estimating the Effect of Common Currencies on Trade", *Economic Policy* 30, 9-45.

Macdougall,D. and R.Hutt (1954) "Imperial Preference: A Qualitative Analysis", *Economic Journal*, 64: pp233-257.

Soloaga,I. and L.A.Winters (2001) "Regionalism in the nineties: What effect on trade?", *North American Journal of Economics and Finance*, 12 (1): pp1-29.

Yamazawa,I and Yamamoto.Y. (1974), *Chouki-Toukei-Keizai 14 Boueki-to-Kokusai-Shuushi,* .Toyo-Keizai Shinpousha

Wall,H.J. (2002) 'Has Japan been left out in the cold by regional integration?' *Federal Reserve Bank of St. Louis Review*, 84, pp25-36.

Estimation Results

	1	2	3	4	5	6
GDPI	2.358	2.377	2.300	2.297	2.385	2.318
	[51.40]**	[44.08]**	[43.88]**	[44.74]**	[45.45]**	[46.07]**
GDPE	2.786	2.795	2.695	2.702	2.814	2.781
	[55.56]**	[46.58]**	[45.81]**	[45.29]**	[48.05]**	[54.51]**
GDPCAPI	0.779	0.880	1.105	1.145	0.718	0.553
	[7.80]**	[6.59]**	[8.31]**	[9.58]**	[5.43]**	[4.90]**
GDPCAPE	1.818	1.999	2.235	2.261	1.923	1.690
	[15.29]**	[14.14]**	[15.57]**	[15.32]**	[13.14]**	[13.74]**
DIS	-2.259	-2.402	-2.621	-2.692	-2.339	-2.112
	[-23.23]**	[-19.99]**	[-21.30]**	[-20.84]**	[-20.45]**	[-19.23]**
JPNDUM-1915	4.708	4.401	3.888	3.626	4.454	5.120
	[3.96]**	[3.59]*	[3.16]**	[2.93]**	[3.63]**	[4.33]**
JPNDUM-1920	5.448	5.232	4.737	4.480	5.387	6.146
	[4.58]**	[4.27]**	[3.85]**	[3.62]**	[4.39]**	[5.19]**
JPNDUM-1925	6.186	5.773	5.367	5.144	5.843	6.878
	[5.18]**	[4.70]**	[4.35]**	[4.14]**	[4.74]**	[5.79]**
JPNDUM-1930	7.245	6.943	6.446	6.378	7.217	8.174
	[6.09]**	[5.67]**	[5.24]**	[5.15]**	[5.88]**	[6.91]**
JPNDUM-1935	6.831	6.475	5.954	5.688	6.930	7.783
	[5.74]**	[5.29]**	[4.84]**	[4.60]**	[5.64]**	[6.58]**
JPNDUM-1938	7.100	6.749	6.044	5.676	6.792	7.587
	[5.97]**	[5.51]**	[4.92]**	[4.59]**	[5.52]**	[6.41]**
British-1915	1.436					1.639
	[4.72]**					[4.39]**
British-1920	1.970					2.379
	[6.46]**					[6.38]**
British-1925	2.148					2.762
	[7.04]**					[7.41]**
British-1930	2.117					2.857
	[6.94]**					[7.67]**
British-1935	2.885					3.627
	[9.42]**					[9.74]**
British-1938	2.925					3.264
	[9.54]**					[8.76]**
Sterling-1915		0.585			0.754	
		[1.48]			[1.74]*	
Sterling-1920		0.947			1.191	
		[2.41]**			[2.75]**	
Sterling-1925		0.380			0.614	
		[0.97]			[1.42]	
Sterling-1930		0.890			1.108	
		[2.26]**			[2.56]**	
Sterling-1935		1.249			1.726	
		[3.17]**			[3.99]**	
Sterling-1938		1.326			1.650	
		[3.37]**			[3.81]**	
Gold-1915			-0.133		0.302	0.376
			[-0.38]		[0.81]	[0.92]
Gold-1920			0.222		0.574	0.898
			[0.65]		[1.54]	[2.21]**
Gold-1925			0.081		0.428	0.872
			[0.24]		[1.14]	[2.14]**
Gold-1930			-0.075		0.359	0.571
			[-0.22]		[0.96]	[1.40]
Gold-1935			0.376		1.022	1.382
			[1.09]		[2.73]**	[3.39]**
Gold-1938			-0.101		0.782	0.785
			[-0.29]		[2.08]**	[1.93]*
Exchange-1915				-0.391	-0.284	0.187
				[-1.27]	[-0.82]	[0.52]
Exchange-1920				-0.170	-0.191	0.611
				[-0.55]	[-0.55]	[1.69]*
Exchange-1925				-0.196	-0.253	0.624
				[-0.64]	[-0.73]	[1.72]*
Exchange-1930				0.163	0.136	1.187
				[0.53]	[0.39]	[3.27]**
Exchange-1935				-0.016	-0.100	1.139
				[-0.05]	[-0.29]	[3.14]**
Exchange-1938				-0.643	-0.860	0.590
				[-2.09]**	[-2.48]**	[1.63]
Observations	900	900	900	900	900	900
Groups of Sample	150	150	150	150	150	150
Chi-squared	13278.19	10578.17	10236.63	9858.93	10099.2	13391.63
Loglikelihood	-2250.151	-2250.151	-2253.555	-2254.816	-2249.503	-2211.613

1. **/* significance at the 5/10% level.
2. z-statistics in brackets.
3. YEARDUMs and CONST are omitted.