

Exchange Rates and Economic Recovery in the 1930s: An Extension to Asia

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Abstract

Scholars have found a positive relationship between the magnitude of currency depreciation and the extent of recovery from the Great Depression for Europe and Latin America. The relationship between currency depreciation and economic activity during the Great Depression for Asian economies has not yet been explored. This paper examines this topic using data from 13 Asian economies: China, India, Indonesia, Iran, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Turkey, and Vietnam. We find that Asian economies responded in a similar way to currency depreciation during the Great Depression as did European and Latin American countries.

JEL Codes: E42, F33, N25

Key Words: exchange rates, economic recovery from the Great Depression, Asian economies, gold standard, silver standard

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1 Introduction

In the midst of the Great Depression, Asian economies were split into several currency zones: the yen bloc (Japan, Korea, and Taiwan), the sterling bloc (India, Malaysia, Singapore, Thailand, and to some extent Turkey), the dollar bloc (Philippines), the gold bloc (Indonesia and Vietnam), and the silver bloc (China and Iran).¹ In this paper we address a question concerning the economic performance of Asia during the Great Depression: was there a link between the currency arrangement and the extent of recession? The variety of Asian currency arrangements, ranging from the most rigid to the most flexible exchange rate regimes, offers a good chance to answer this unexplored question.

To search for the answer, we survey how the 1930s unfolded for the Asian economies, focusing on what policy instruments were used to combat the impact of the Great Depression. We gather relevant information from a diverse set of studies, compiling an annual dataset for 13 Asian economies over the period 1929-35. The data are collected from a variety of publications, including the *League of Nations Statistical Yearbook*, national statistics, and reconstructed Asian regional data constructed by numerous economic historians in recent decades. The data set, which contains annual information regarding monetary standards, exchange rates, wholesale price indexes, industrial production indexes, and export volumes, is used for quantitative analysis.

The empirical contributions of this paper are twofold. First, in the Asian context we show that there was also a positive relationship between the magnitude of currency depreciation and the extent of recovery from the Great Depression. The economic performance of the Asian economies depended crucially on currency blocs. Second, given that existing studies on the impact of the Great Depression on Asia are less developed, this paper fills the gap in the literature.

Beginning with Choudhri and Kochin (1980), many empirical studies find that there is a positive relationship between the magnitude of currency depreciation and the extent of recovery from the Great Depression. Eichengreen and Sachs (1985) identify this relationship using a sample of 10 European countries, with the sample broadened to 24 European countries by Bernanke and James (1991). Campa (1990) extends the analysis to 10 Latin American countries and confirms the same relationship. As Peter Temin (1993, p. 92) concludes, ‘The single best predictor of how severe the Depression was in different countries is how long they stayed on gold.’

¹ Here, currency bloc refers to a group of countries that have the same exchange rate regime. It does not necessarily imply that countries in the same currency bloc have formal monetary cooperation or agreements. However, monetary (interest rate) policies within the same currency bloc were linked by the need to maintain a fixed exchange rate.

In this paper we extend the analysis to a sample of 13 Asian economies.

Why should we expect the same relationship to hold for the Asian economies? The majority of the Asian economies were exporters of agricultural products and raw materials in the early-1930s. Many of them were either European or Japanese colonies in Asia, where policies were formulated by the metropolitan state and were not necessarily consistent with the interests of the colonies. They suffered from the impact of the Great Depression, firstly because of the collapse of primary commodity prices and secondly because of the tight monetary regime imposed on them by the metropolitan states in order to stay with the gold-exchange standard.² The fact that currency devaluation was initiated by the metropolitan states underscores the close relation between colonial and metropolitan economic activity. Currency depreciation helped the economies rise out of the depression through two mechanisms. First, currency depreciation raised the prices of imports relative to domestic goods, switching expenditures toward domestic goods. Second, currency depreciation (and control over foreign exchange) stimulated domestic demand by allowing monetary expansion and lower interest rates.

In addition to exchange rate policy, Asian economies also responded to the depression by adopting other policies, which were equally important for their recovery from the depression. With the exception of Japan and probably Vietnam, fiscal expansion was not a policy choice. Trade protection and tariff preference between colonies and their respective metropolitan states were two common policies in the 1930s. Our goal is to show that the exchange rate stood out as being among the most important factors even when other factors were also at work. In fact, our review of the Asian experience indicates that the more rigid a currency was, no matter what caused that rigidity, the more crucial trade protection and tariff preferences became.

The rest of the paper is structured as follows. Section 2 describes the relevant historical context in which Asian countries made decisions about their exchange rate policy. Section 3 presents quantitative analyses concerning the effects of exchange rate depreciation. The final section concludes.

2 Policy responses to the Great Depression in Asia

Table 1 summarizes the monetary standards of our sample economies, the principal measures that affected these standards around the Great Depression, and the policy

² A gold standard refers to a monetary system that is based on coinage containing a specific quantity of gold. In the gold-exchange standard, the silver token currency, currency notes, and banknotes are based on a gold standard maintained at par by gold reserves. Although there may not be any gold coins in circulation under a gold-exchange standard, it basically functions like a strict gold standard. Colonies in Asia were on a gold-exchange standard. Throughout the text, gold and gold-exchange standards are used interchangeably, because this distinction is of little importance to our purpose.

responses. The impact of the Great Depression was transmitted to the Asian economies through two channels: firstly by a sharp fall in export commodity prices and secondly by the decline in world demand for exports. Table 1 shows that Asian economies, except Iran and two Japanese colonies (Korea and Taiwan), experienced a sharp fall in export commodity prices that ranged from 26 to 64 per cent.

Exports in current prices also declined substantially in most countries except Iran, Japan, and its colonies Korea and Taiwan - the countries which aggressively depreciated their currencies at the beginning of the depression. Export volume also declined, but was less dramatic than export value. Export volume for Thailand, Turkey, and Vietnam also increased, while it remained almost unchanged in the Philippines.

Trade policy explains the increase in export volume for those countries whose exchange rate remained rigid or devalued only later in the depression. There was free trade between the United States and the Philippines. The privileged position enjoyed by the latter's sugar exports to the American market explained why its exports remained buoyant during the Great Depression (Brown, 1989). Vietnam had a similar relationship with France (Booth, 2000). The aggressive protectionism by the French government permitted the rapid expansion of Vietnam's exports to France and the French Empire, even though Vietnam's piastre was overvalued. In Turkey, the government moved quickly towards protectionism and greater control over foreign trade. The government also shifted to a policy of import-substitution based industrialization and also started a new strategy, called *étatisme*, which used state capital to foster industrialization (Pamuk, 2000).

The exchange rate policy of the European and Japanese colonies was determined by the metropolitan state (Booth, 2000). Even after going off the gold standard, their currencies remained fixed to that of the metropolitan state, but their ability to undertake devaluation to counter the depression varied. The sterling bloc (India, Malaysia, and Singapore) devalued by 24 per cent in September 1931; the yen bloc (Japan, Korea, and Taiwan) devalued by 40 per cent in December 1931; the Philippines peso followed the United States dollar and devalued in June 1933; Indonesia and Vietnam, followed the Netherlands and the France, and remained on gold until 1936.

Independent countries had some autonomy to formulate their own policy. China's silver currency appreciated after the pound sterling and the Japanese yen went off the gold standard. To gain control over the money supply, China abandoned the silver standard and adopted a managed currency in November 1935 (Ho and Lai, 2016). Both Iran and Turkey introduced foreign exchange controls that saved them from a contractionary monetary policy, although Iran's currency devalued by 54 per cent while Turkey's currency revalued against the pound sterling (Pesaran, 1997;

Rothermund, 1996, p. 77).

Devaluation might not have aided recovery from the Depression if the degree to which Asian economies were dependent on foreign trade was low. The degree of openness, defined as the ratio of foreign trade (or exports) to GDP, for the Asian economies around 1929 was: China, 3-7 per cent, based on exports (Myers, 1989); India, 12 per cent, based on trade (Ho, 2016); Indonesia, 29 per cent, based on exports (Maddison, 1990); Iran, 40 per cent, based on trade (Esfabani and Pesaran, 2009); Japan, 39 per cent, based on trade (Mizoguchi and Umemura, 1988); Korea, 43 per cent, based on trade (Mizoguchi and Umemura, 1988); Malaysia, 135 per cent of trade (Nazrin, 2000); Philippines, 36.5 per cent, based on trade (Hooley, 1996); Singapore, 522 per cent, based on trade (Sugimoto, 2011; Huff, 1994); Taiwan, 61 per cent, based on trade (Mizoguchi and Umemura, 1988); Turkey, 19 per cent, based on trade (Özel, 2000); and Vietnam, 25 per cent, based on exports (Booth, 2003). As a benchmark, the ratios of exports to GDP for France, Germany, Japan, Netherlands, and U.K. in 1929 were about 14 per cent, 15 per cent, 16 per cent, 29 per cent, and 16 per cent, respectively (Maddison, 1990). Therefore, by this measure, Asian economies, with the exception of China and Thailand, were highly dependent on foreign trade. Despite China's low exports to GDP ratio, it was substantially integrated into the world economy because its domestic grain prices were closely linked to international prices (Brandt, 1985). Thailand's share of trade to GDP is not available, but it seems that a low level of direct dependence on export commodities for the majority of the population mitigated the impact of the recession (Dixon, 1999, p. 59).

Was foreign public debt a factor that affected the decision of exchange rate policy? Colonies were expected to be self-supporting and usually followed a strictly balanced budget. Foreign debt was limited and was floated in the metropolitan capital market. For examples, debt services as a percentage of gross national expenditure between 1926 and 1930 were only 1.70 per cent for Korea and 1.23 per cent for Taiwan (Kimura, 1989). In the Philippines, funds obtained from bond sales, which were subject to a ceiling of ten per cent of annual fiscal revenues, peaked in the 1920s and the outstanding bonds were redeemed in the 1930s (Hooley, 2005). To maintain parity between the Straits dollar and pound sterling, both the Straits Settlements and the Federated Malay States held large balances in England. These balances earned extremely low interest rates, and were effectively extended loans from the colony to Great Britain (Booth, 2007). Foreign debt of the independent Asian countries was similarly limited. Iran under the Reza Shah regime avoided foreign debt by means of a large increase in indirect taxes (Keddie, 2006, p. 95). To maintain independence from imperialist occupation, the Thai government borrowed very little abroad in the pre-1940 era (Booth, 1990). For the above-mentioned economies, foreign public debt

was not a factor that affected exchange rate policy, because devaluation would not increase the cost of servicing debt or disqualify them from foreign loans.

Things were different for India, Indonesia, and Vietnam, which held much larger foreign debts. India's so-called home charges, to be paid in sterling and about half of which consisted of interest payments on debt, amounted to 27 per cent of public expenditure in 1933 (Kumar, 1983, p. 937). Indonesia made substantial use of foreign loans in the early-1920s and again in the 1930s. By the late-1930s, total foreign public debt was about 47 per cent of national income, a figure substantially higher than for India (Booth, 1990). Vietnam's public debt increased sharply during the Great Depression. The proportion of debt service in government expenditures increased from 3.5 per cent in 1931 to 26.7 per cent in 1935 (Robequain, 1944, pp. 152-3). The need to make payments in sterling made India reluctant to lower the rupee exchange rate, because a depreciation of the rupee would have caused a rise in government expenditures (Kumar, 1983, p. 937). The pegging of Vietnam's piastre to the franc allowed Vietnam to borrow capital in France to finance its budget deficits during the depression (Brocheux, 2000, p. 257).

India, Indonesia, and Vietnam did not have an autonomous exchange rate policy, as policy was dictated by their metropolitan power. India's proposal for a devaluation of the rupee, even knowing this would increase expenditures for home charges, was refused by the British government, because London was afraid that in case India was unable to meet its sterling obligations, the British government might be forced to assume these obligations (Kumar, 1983, p. 941). Both India and Indonesia could have followed China, Turkey, and several Latin American countries and resorted to debt default, but such a solution was excluded by the metropolitan powers (Maddison, 1990). That the exchange rate policy was dictated by the metropolitan rather than colonial interests is clearly summarized by van Laanen: 'In this respect the interests of the Netherlands, as typical highly-developed creditor nation, did not coincide with those of the Netherlands India, a debtor nation that depended heavily on an annual surplus on the commodity account of its balance of payments' (van Laanen, 1980, pp. 29-30).

Even as foreign debt increased the cost of devaluation, a policy of non-devaluation was not necessarily better. The overvalued exchange rate imposed deflationary hardships on Indonesia, which could have been mitigated by simultaneous devaluation along with sterling (Maddison, 1990). Citing the Indian case, Rothermund (1996, p. 90) suggests that non-devaluation only postponed debt payments. If the gold standard had been maintained and the currency therefore overvalued, then there would have been no immediate danger of increased debt payments. However, if this had endangered the export surplus and reduced receipts of foreign reserves, then the

problem of debt service would eventually emerge. Furthermore, after Britain abandoned the gold standard countries no longer had easy access to international financial markets. The potential improvements in access to capital from core western countries derived from adherence to the gold standard, along the lines proposed by Bordo and Rockoff (1996), were in doubt. In fact, one reason why Japan went off gold was that adherence to the gold standard only worsened economic conditions without bringing the promised benefits (Shizume, 2011).

Finally, to what extent had quantitative restrictions in importing countries reduced the export-stimulating effects of devaluation? This issue is beyond the scope of the current study and deserves a separate treatment. Sporadic evidence from Japan, the country that was the main target of tariffs and quotas imposed by other countries, seems to suggest that the effects should not be overestimated. Sugihara (2010) argues that the formation of the British preferential tariff bloc actually facilitated trade between sterling bloc countries and other areas, rather than making them more exclusionary. For example, the share of the bloc's imports from Japan rose from 2.8 per cent in 1928 to 7.1 per cent in 1935, and the share of the bloc's exports to Japan did not follow a steady downward trend. Japan undertook trade negotiations with India in 1933 and Indonesia in 1934. However, as Kagotani (2010, p. 199) shows, Japan's textile exports remained at the same level even after the trade negotiations. In the case of Indonesia, cheap Japanese goods were continuously imported, firstly to satisfy the needs of native consumers at a time when their purchasing power was weak, and secondly to protect the interests of the Dutch importers. The Philippines and Japan reached an agreement in 1935. The Japanese yarn and textile producers agreed to restrict their exports to the Philippine market voluntarily (Booth, 2000). However, the Philippines was only a small market for Japanese exports. The price advantage resulting from yen devaluation made Japanese cotton goods continue to flow into Asia, Africa, and Latin America (Sugihara, 1989). We caution that Japan's case may be specific and may not represent the experience of other Asian economies.

3 Quantitative analyses

3.1 Sample countries

In this section we provide quantitative evidence regarding the association between exchange rate depreciation and recovery from the Great Depression. The data for the analysis, as well as an appendix that describes in detail the sources of data, are downloadable from the internet.³ The construction of the variables follows closely

³ <http://mx.nthu.edu.tw/~tkho/research/data.html>.

that of Eichengreen and Sachs (1985).

Thirteen Asian economies are included in our sample: China, India (formerly British India), Indonesia (formerly Dutch East Indies), Iran (formerly Persia), Japan, Korea, Malaysia (formerly Malaya), Philippines, Singapore, Taiwan, Thailand (formerly Siam), Turkey, and Vietnam (formerly part of French Indo-China).⁴⁵

The selection of sample economies is dictated by data availability. In 1928, the 13 economies accounted for 93 per cent of total Asia trade and about 14 per cent of world trade, and these numbers remained roughly the same in 1935. With the exception of Japan, they were all exporters of agricultural products and raw materials in the early-1930s.

Despite this common feature, these economies differ in their trade relationships. As shown in Table 2 (and Figure 4 below), China, Indonesia, Japan, and Malaysia traded extensively with other Asian economies. Korea, Philippines, and Taiwan traded overwhelmingly with their respective metropolitan states. India, Thailand, and Vietnam traded extensively with non-Asian economies, but not solely with their metropolitan states. India and Thailand also had important trade partners in Asia: Japan for India and Malaysia for Thailand. The trade of both Iran and Turkey with Asian economies was tiny. The diverse trade relationships in the sample reduce the effect of possible sample selection bias on our conclusions.

3.2 Country-specific effects of depreciation

Figure 1 plots the relationship between exchange rate depreciation and changes in the wholesale price index. The variable on the x-axis is the exchange rate to the American dollar in 1935 relative to that in 1929. The variable on the y-axis is wholesale prices in 1935 relative to that in 1929. The export price index is used as a substitute in cases where the wholesale price index is not available (Philippines and Thailand). The two variables are negatively correlated, implying countries that depreciated their currencies tended to suffer less from deflation. The contrast between Indonesia and Iran is particularly striking. By adhering to the gold parity, the price level in Indonesia fell by over 50 per cent between 1929 and 1935, while Iran, which depreciated its currency, saw its price level increase by over 40 per cent during the same period. Vietnam, which joined the gold standard in 1930, experienced exchange rate appreciation similar to Indonesia. Both Vietnam and Indonesia also suffered from

⁴ For consistency, we refer to our sample countries by their modern day names.

⁵ In this paper Malaysia refers to Malaya. Following Nazrin (2006), Malaya comprises the Straits Settlements territories of Penang, Malacca, and Dinding; the Federated Malay States of Perak, Selangor, Negeri Sembilan, and Pahang; and finally, the Unfederated Malay States of Johore, Kedah, Perlis, Kelantan, and Trengganu.

serious deflation.

Countries belonging to the same currency bloc experienced almost identical changes in their price levels. This is true for the yen bloc, consisting of Japan and its colonies Korea and Taiwan, and the sterling bloc in Asia, consisting of India, Malaysia, Singapore, and Thailand.⁷ The yen bloc depreciated more than the Asian sterling bloc, and deflation in the yen bloc was less severe than that in the Asian sterling bloc.

We have regressed the price level on the exchange rate, and the results are reported in column I of Table 3. The estimates indicate that changes in the exchange rate and changes in the price level are negatively and significantly correlated, as expected. The slope coefficient is significant at the 1 per cent significance level. The R^2 is 0.60, which is remarkably high for a cross-sectional regression with 13 observations.

Figure 2 shows the relationship between exchange rate depreciation and economic activity. We use the industrial production index as an indicator for economic activity. In cases where this index is not available, national income data are substituted (Indonesia, Iran, Malaysia, Philippines, Singapore, Taiwan, Thailand, and Vietnam). Figure 2 shows that currency depreciation and economic activity are negatively correlated; countries that depreciated their currencies tended to suffer less from the depression. The estimated coefficient on industrial production is significant at the 10 per cent significance level. However, because we were forced to use national income rather than industrial production for over half of the sample, our regressions may underestimate the impact of the Great Depression on the manufacturing sector. Column II indicates that the R^2 value for this regression is 0.27, substantially lower than the regression on the wholesale price level.

Figure 2 shows that Korea stands out as an outlier, as its actual industrial production is much higher than what the regression predicts. Because of Korea's ideal location to launch an invasion into China, from 1931 the Japanese colonial rulers attempted to transform the country into a military supply base by offering tax breaks and subsidies to large Japanese industrial groups to set up heavy industry (Cha, 1998). This politically motivated industrialization after 1931 explains why Korea experienced an extraordinary expansion of industrial production at that time.

Figure 3 plots the relationship between exchange rate depreciation and export performance. Note that of the three economic indicators used in this study, export volume is probably the most reliable. It can be seen that currency depreciation and export performance are strongly and positively correlated. The relationship between the two is stronger than the relationship between exchange rates and industrial

⁷ Thailand was an independent country rather than a British dominion or colony. However, like the Scandinavian countries, Thailand linked the value of its currency to sterling. Its exchange rate against sterling was almost constant between 1929 and 1938. It therefore is treated as part of the sterling bloc.

production shown in Figures 2. The R^2 value in column III of Table 3 shows that currency depreciation explains about 35 per cent of the variation in export volume.

To understand the association between colonial and metropolitan export performances, we also add four colonial powers to Figure 3: France, the Netherlands, United Kingdom, and the United States. Figure 3 shows that Philippine export performance was better than its metropolitan state (the United States). Vietnam likewise had a better export performance than France. As already mentioned above, both the Philippines and Vietnam enjoyed a protected metropolitan market, which allowed their exports to remain vigorous during the depression. Therefore, even if the Philippines had followed the same exchange rate policy, its export performance would have been different from the United States. The same was also true for Vietnam.

The other Asian colonies, which followed the exchange rate policies of their metropolitan states, experienced export performances similar to their metropolitan states. The export performances of the colonies are also regressed on that of the metropolitan states, and the results are reported in column IV of Table 3. The R^2 for the regression is 0.56, and the coefficient on metropolitan state is significant, although not statistically equal to one.

Putting aside the Philippines, Turkey, and Vietnam, Figure 3 clearly delineates the Asian countries into three groups. The first group includes the yen bloc and Iran, which allowed their currencies to depreciate substantially and experienced good export performance. The second group includes the sterling bloc plus China, whose currencies depreciated little relative to the dollar. The third group includes Indonesia, whose currency appreciated strongly and which suffered the largest decline in exports.

The fact that changes in colonial exports were closely correlated with changes in the corresponding metropolitan state may reflect either that: (a) a similar monetary-exchange rate policy caused changes in economic activity, (b) the economic activity of the metropolitan state determined colonial economic activity, or (c) a combination of the two. To disentangle these effects, we examine the weight of exports to the metropolitan state for the years 1928 and 1935 in Figure 4.

Notice that the trade weights presented here records only direct exports from the colony to the metropolitan state. It does not give a complete account of the total exports from the colony to the metropolitan state, because transit trade via third countries was not included. However, as long as the depression did not substantially change the trade routes between the colony and the metropolitan state, the trade weights presented in Figure 4, although admittedly deficient, still capture the changing importance of metropolitan trade to the colony.

Keeping the above caveats in mind, Figure 4 shows that, with the exception of Korea, all colonies experienced an increase in their weight of exports to the

metropolitan state. The cases of Indonesia (from 17 per cent to 22 per cent) and Vietnam (from 21 per cent to 34 per cent) are noteworthy. By adhering to the gold standard and being deprived of the exchange rate instrument, these two colonies had to depend on trade restrictions and a preferential trade system to protect their balance of payments. The same was also true for the late-devaluer, the Philippines, which experienced an increase in its export weight to the metropolitan state from 75 per cent to 80 per cent. While commenting on the Philippine exchange rate policy, Hooley concluded that: ‘Whereas the pre-independence policy was to compensate for the export-depression effects of an overvalued peso by use of abnormally low (United States) tariffs on Philippine exports, the independence period strategy attempted to compensate for the import-stimulating effects of peso overvaluation by quantitative controls and abnormally high tariffs on imports. Both strategies share a common element: the reliance on interventionist policies to compensate for a disequilibrium exchange rate’ (Hooley, 1996). The same observation is made by Irwin (2011) for the European countries during the Great Depression. In such a case, an increased trade weight with the metropolitan state was not a sign of strength, but rather a sign of defects in the adjustment mechanism. The other economies experienced only a slight increase in their export weight to the metropolitan state.

Following the above discussion, we construct a dummy variable that represents the metropolitan tariff preference. The dummy variable takes a value of one for the Philippines and Vietnam and zero for the other economies. Next, we rerun the regression for export volume and also include the dummy variable. Here, column V of Table 3 shows that the coefficient of the dummy is positive, but not significant. Using a dummy variable to capture metropolitan tariff preference does not perfectly capture the factors described above, and thus we interpret the insignificant result with caution.⁹ The coefficient of the exchange rate variable remains significant even after controlling for the metropolitan tariff preference.

The above dummy variable may not be able to capture the full effect of the metropolitan tariff preference. On the other hand, the changes in export weight to the metropolitan state may contain both outcomes of the metropolitan state and tariff preference. The export performance is regressed on the exchange rate and export weight to the metropolitan state. A two-stage regression is used to purge out the potential effects of the exchange rate on the export weight. We see that column VI of Table 3 shows that the coefficient of the exchange rate remains negative and significant. The coefficient on the export weight to the metropolitan state is negative, but insignificant. This suggests that once the effects of the exchange rate on the export weight are controlled for, changes in the export weight to the metropolitan state do not

⁹ We thank the referee for mentioning this caveat to us.

have additional effects on export performance in addition to the exchange rate.

Using dominance analysis, a technique to gauge the contribution of each factor in a multiple regression proposed by Azen and Budescu (2003), we find that the contribution of the exchange rate to the R^2 value is 0.4332, while that of the export weight to the metropolitan state is 0.0016 (with total $R^2=0.4348$). The regression suggests that the effects of the metropolitan states are negligible. It was mainly a similar monetary-exchange rate policy that closely linked the changes in colonial and metropolitan exports.

4 Conclusions

This paper provides an overview of the impact of exchange rate policy on Asian economies during the Great Depression. Our study reconfirms the relationship between currency depreciation and economic recovery from the Great Depression as identified by previous studies in the literature.

There are some caveats to our analysis, however. Even though a link between currency depreciation and extent of recovery is established herein, we have not explored the mechanisms through which currency depreciation helped the Asian economies to recover from the impact of the Great Depression. In addition to exchange rate policy, a more thorough analysis should also take into account simultaneously the impact of fiscal, trade, and industrial policies. This needs to be done on a country by country basis and with the help of long-term time series data. For example, Ho and Lai (2016), use counterfactual simulations based on a general equilibrium model to show that being on a silver standard insulated China from the Great Depression by saving the country both from a tightening of monetary conditions and from detrimental internal deflation. Cha (2003) and Shibamoto & Shizume (2014) use structural VAR models to evaluate the contribution of exchange rate depreciation to Japan's recovery from the Great Depression. We hope that data availability in the future will enable us to explore this issue.

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Table 1: Principle measures affecting exchange rates and policy responses to counter the Great Depression

Country	Monetary Standard	Official Suspension of Gold Standard	Exchange Control	Active Fiscal or Monetary Policy	Change in Export Price Index (%)	Per centage Change in Export Volume (Value)	Customs Tariff or Protection
China	Silver (until 11/1935)		Oct. 1934	No active fiscal policy; expansionary monetary policy after 11/1935	-26	-19 (-46)	Increased import tariff after 5/1933
India	Gold (1927-1931)	1931		No active fiscal or monetary policy	-39	-16 (-51)	Import tariff and Imperial tariff preference
Indonesia	Gold (1925-1936)	1936		No active monetary policy	-58	-28 (-67)	Import quotas after 9/1933
Iran	Silver (until 1933)		May 1932	No active fiscal policy; foreign exchange controls enabled an expansion of money supply	-4	29 (21)	Effective tariff autonomy first in 1936; state monopoly of trade after 2/1930

Japan	Gold (1930-1931)	1931	May 1933	Expansionary fiscal and monetary policy after Japan went off the gold standard in 12/1931	-32	97 (17)	Tariff protection encouraged import substitution
Korea	Gold (1930-1931)	1931		No active fiscal and monetary policy; benefited from yen devaluation in 12/1931	0	59 (59)	Protected Japanese market
Malaysia	Gold (1925-1931)	1931		No active fiscal or monetary policies	-41	-20 (-41)	Imperial tariff preference; international agreements to control the world supply of rubber and tin

Philippines	Gold (1919-1933)	1933		No active fiscal or monetary policy	-41	-3 (-43)	Protected U.S. market; initial tariff restriction and then quota against Japanese cotton textiles
Singapore	Gold (1925-1931)	1931		No active fiscal or monetary policy	-41	-27 (-48)	Imperial tariff preference
Taiwan	Gold (1930-1931)	1931		No active fiscal and monetary policy; benefited from yen devaluation in 12/1931	-8	40 (29)	Protected Japanese market
Thailand	Gold (1928-1932)	1932		No active monetary policy; fiscal policy was even contractionary	-42	18 (-31)	Increased tariff for protection purposes only after late 1930s

Turkey	Fiat money (1915-1944)		1929	No active fiscal and monetary policy; shift to a policy of import-substitution industrialization and state capital to foster industrialization	-50	25 (-38)	Increased import tariff after 10/1929
Vietnam	Gold (1930-1936)	1936		Expansionary fiscal policy between 1930 and 1934	-64	21 (-52)	Subsidies for tea and sisal exports and reduction of export tax on rice; protected French market

Sources: See online data appendix.

Table 2: Mutual trade weights in 1928 and 1935 (per cent)

	China	India	Indonesia	Iran	Japan	Malaysia	Philippines	Thailand	Turkey	Vietnam	Others
China	---	2.9	2.4	0.1	29.0	1.5	0.6	0.5	0.0	0.9	62.1
India	2.8	---	3.8	1.3	8.0	2.5	0.1	0.3	0.1	0.5	80.5
Indonesia	2.2	1.4	---	0.0	7.5	19.5	0.3	1.0	0.1	1.2	64.2
Iran	0.1	1.0	0.2	---	1.0	0.0	0.0	0.0	1.8	0.0	95.8
Japan	37.3	13.3	14.0	2.8	---	1.4	1.0	0.4	0.1	0.6	50.9
Malaysia	1.5	2.6	18.7	1.1	2.8	---	0.2	7.7	0.0	1.7	65.5
Philippines	0.5	0.1	0.4	0.0	1.3	0.3	---	0.0	0.0	0.8	97.0
Thailand	0.9	0.7	0.7	0.0	0.9	7.7	0.0	---	0.0	0.6	89.4
Turkey	0.0	0.1	0.0	0.6	0.1	0.0	0.0	0.0	---	0.0	98.0
Vietnam	2.7	0.4	0.9	0.0	0.4	1.5	0.3	0.9	0.0	---	93.7
Others	52.1	77.6	61.6	94.1	27.1	63.9	97.2	88.3	99.3	93.0	---

Source: *The Network of World Trade*, League of Nations, 1942.

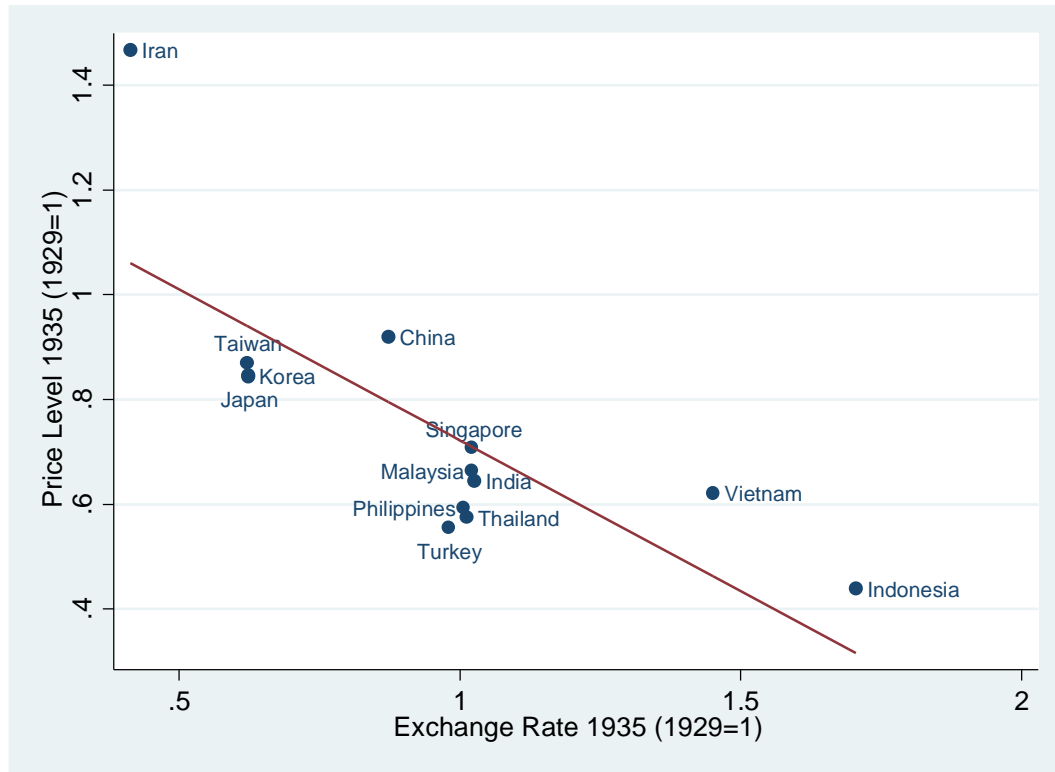
Note: The triangular above the diagonal reports the mutual trade weights in 1928 while the triangular below the diagonal reports the mutual trade weights for 1935. Japan includes Korea and Taiwan. Malaysia includes Singapore.

Table 3: Regression results, 1929-35

Dependent Variable	Constant Term	Exchange-Rate Term	R^2	N	Sum of Square Residuals	
I. Wholesale Price Index	1.30 ^{***}	-0.58 ^{***}	0.60	13	0.32	
	(0.14)	(0.14)				
II. Industrial Production	1.63 ^{***}	-0.49 [*]	0.27	13	0.95	
	(0.25)	(0.24)				
III. Export Volume	1.73 ^{***}	-0.63 ^{**}	0.35	13	1.10	
	(0.26)	(0.26)				
IV. Export Volume	Constant Term	Metropolitan Export				
	0.63 ^{***}	0.42 ^{**}	0.56	9	0.34	
	(0.16)	(0.14)				
V. Export Volume	Constant Term	Metropolitan Tariff Preference	Exchange-Rate Term			
	1.77 ^{***}	0.17	-0.69 ^{**}	0.37	13	1.06
	(0.28)	(0.27)	(0.29)			
VI. Export Volume	Constant Term	Export Weight to Metropolitan	Exchange-Rate Term			
	1.67 ^{***}	-0.32	-0.55 [*]	0.43	8	0.38
	(0.31)	(2.73)	(0.28)			

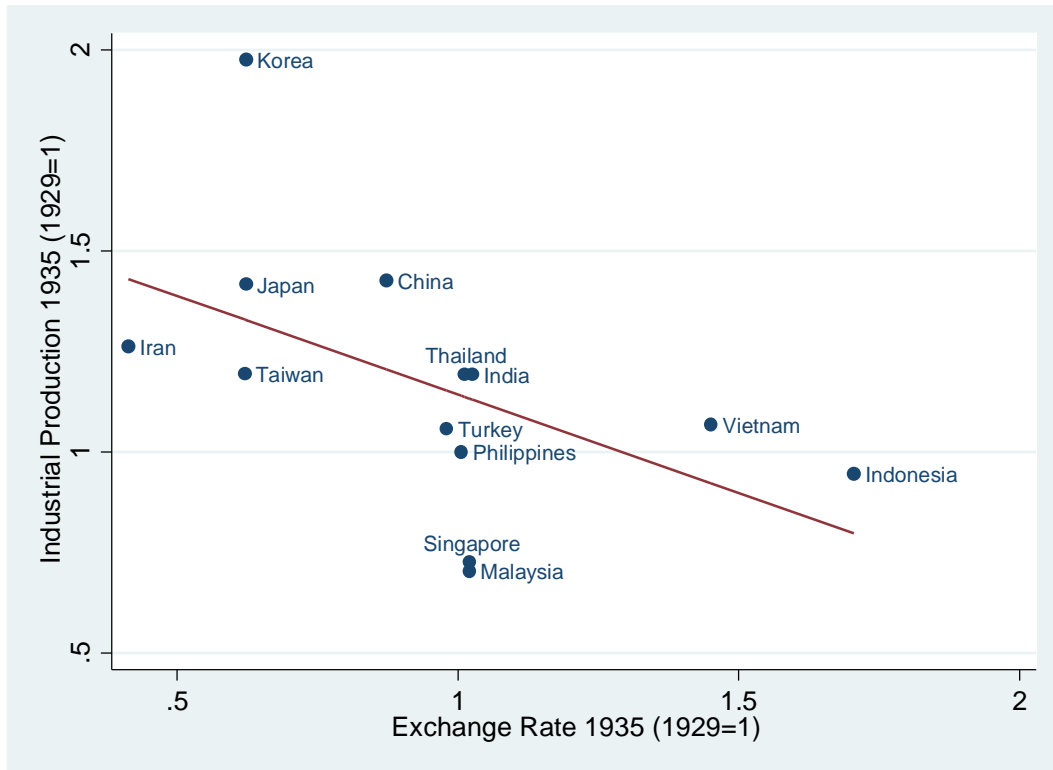
Note: Standard errors in parentheses. ***, **, * indicate significance at the 1, 5, 10 percent levels, respectively.

Figure 1: Changes in exchange rates and wholesale price index, 1929-35



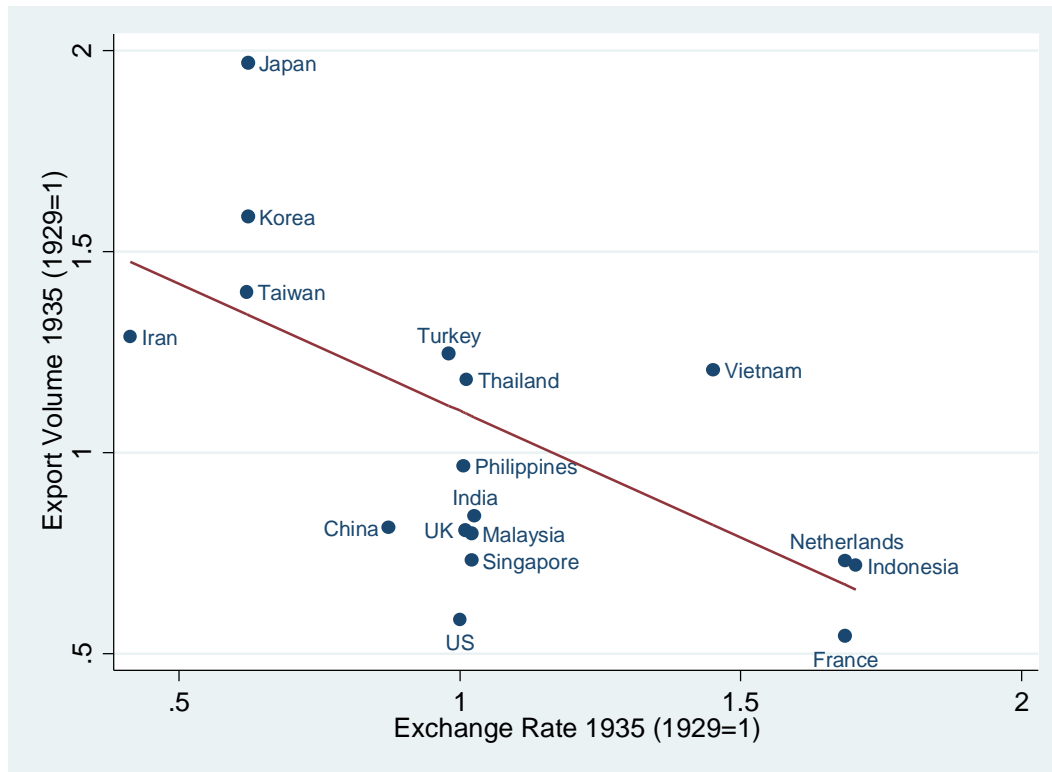
Note: The line in the graph is the fitted regression line.

Figure 2: Changes in exchange rates and industrial production, 1929-35



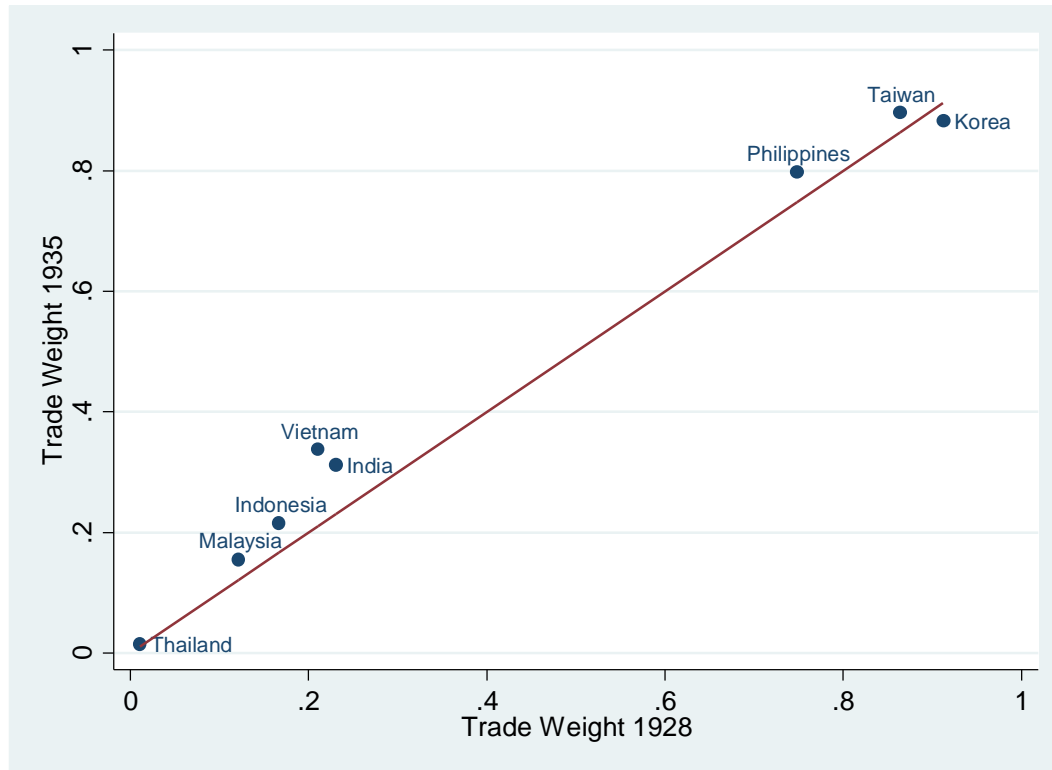
Note: The line in the graph is the fitted regression line.

Figure 3: Changes in exchange rates and export volume, 1929-35



Note: The line in the graph is the fitted regression line (without France, Netherlands, United Kingdom, or the United States).

Figure 4: Weight of export trade with Metropolitan States in 1928 and 1935



Note: The line in the graph is the 45 degree line.

Sources: *The Network of World Trade*, League of Nations, 1942; For Korea and Taiwan, *Statistical Yearbook*, 1936-37, League of Nations.