FOREIGN CURRENCY DEBT, DEVALUATION AND RECOVERY IN THE GREAT DEPRESSION

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- Foreign currency debt thought to raise "financial fragility"
  - (cf. Asian Crisis and 2007-08 in Eastern Europe)

- "Original sin" afflicted emergers and even center countries in the 19^{th} century, in the inter-war, and even now

1930s & Currency Instability

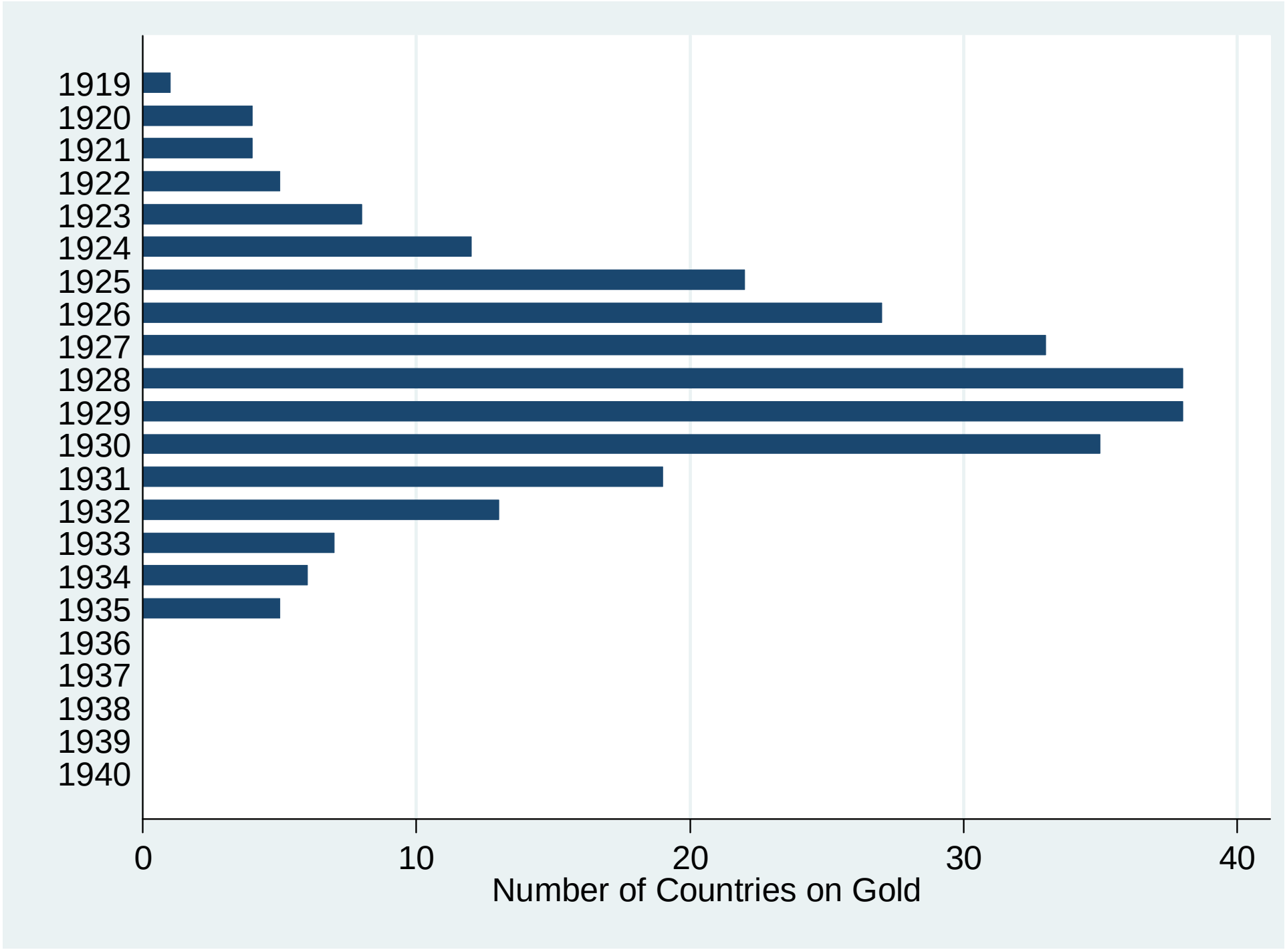
- Did foreign currency debt influence exchange rate policy?
  - If so, could this type of debt be associated with the pace of recovery?
- Were devaluations contractionary?

Outline

- The Great Depression and Exchange Rates Redux
  - The Great Depression and Debt Redux
- Modern Views on Devaluations and Output
- Foreign Currency Debt and Exchange Rate Policy
- Exchange Rates, Foreign Currency Debt and Recovery
- (very) Tentative Conclusion

Great Depression & Exchange Rates

- Gold (exchange) standard is restored 1927-1928
  - US, Britain (1925) and France (1926/1928)
- Terms of trade shocks lead to suspension of gold standard
  - 1929: Argentina, Australia, Brazil, Uruguay
- September 21, 1931 UK announces departure
  - Germany and Austria from the summer


1919
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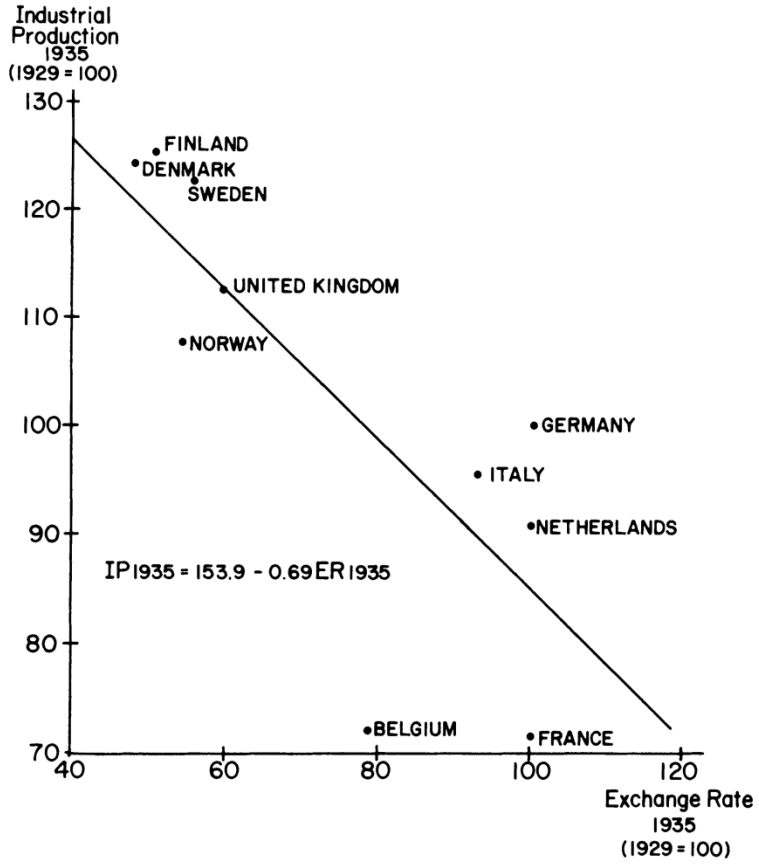
30
40
Number of Countries on Gold

Great Depression & Exchange Rates

- The gold standard transmitted a shock and delayed recovery
  - (Choudhri and Kochin, 1980; Eichengreen and Sachs, 1985; Campa, 1990)



Eichengreen, B. and Sachs, J (1985)
"Exchange Rates and Economic Recovery" Journal of Economic History 45 (4), pp. 925-946.

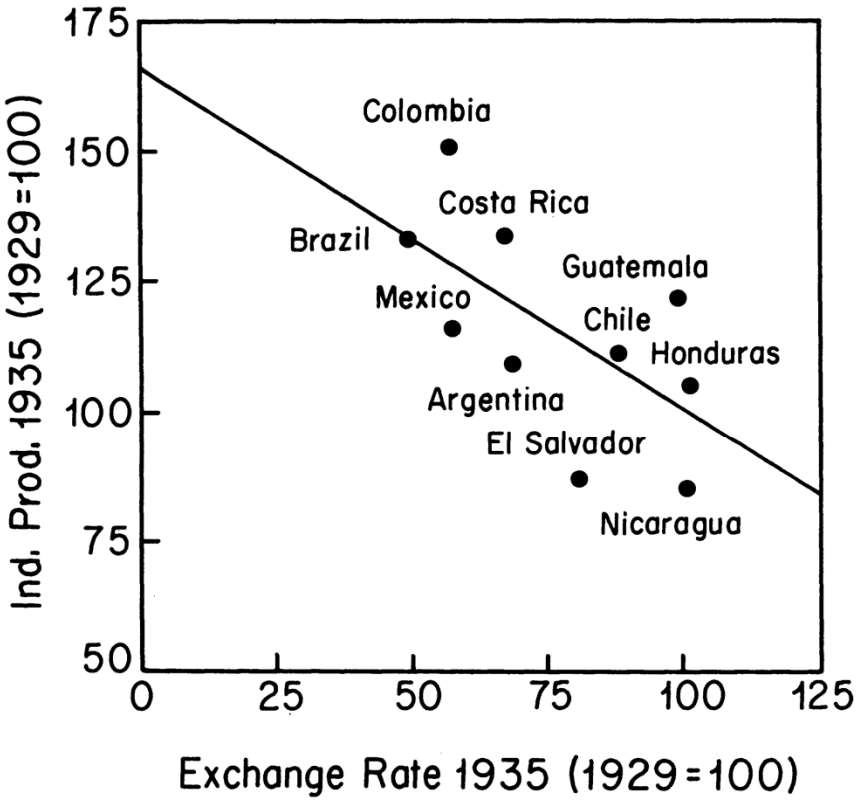


FIGURE 1

CHANGES IN INDUSTRIAL PRODUCTION, 1929–1935

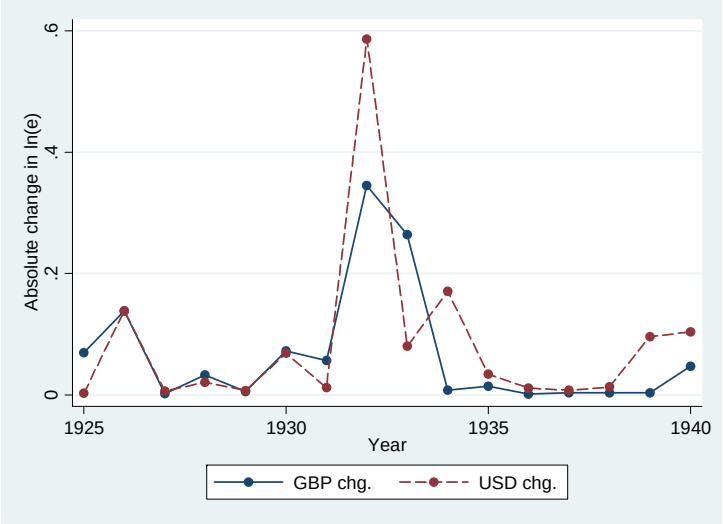
Campa, J . M. (1990)
"Exchange Rates and Economic Recovery in the 1930s: An Extension to Latin America" Journal of Economic History 50 (3), pp. 677-682.

Great Depression & Exchange Rates

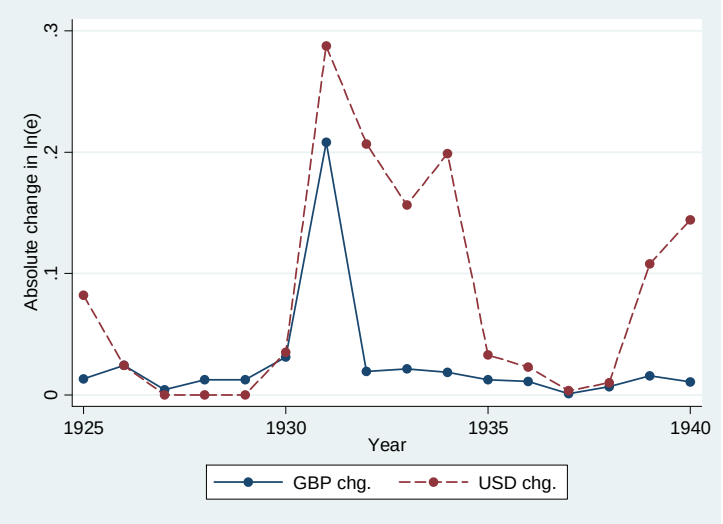
- But, countries continued to opt for fixed exchange rates
  - Sterling bloc
  - Canada/US
  - Gold Bloc

- Depreciation can be contractionary under heavy F.C. debt burdens. So, did the response to exchange rates depend on the level of F.C. debt?

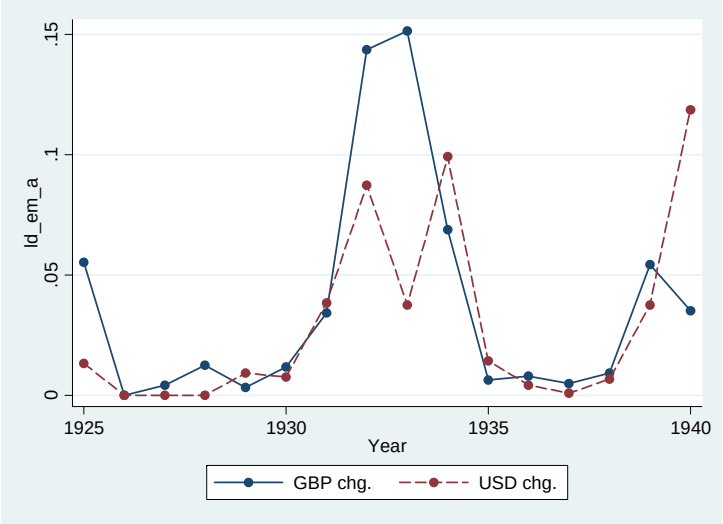
Japan



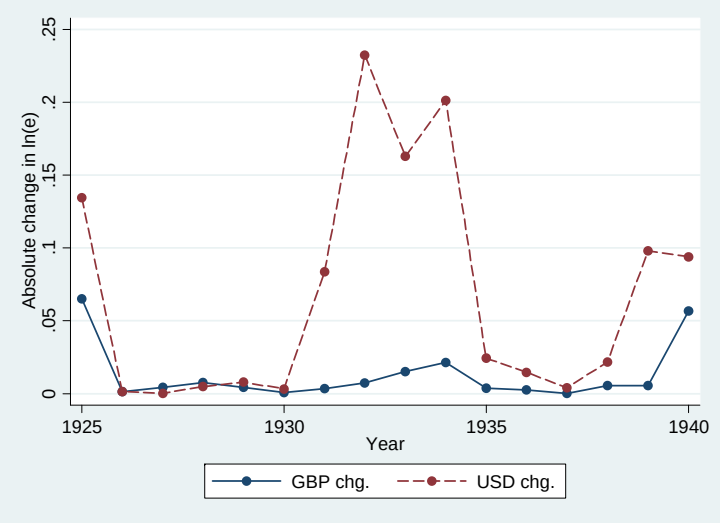
Australia



Canada



India



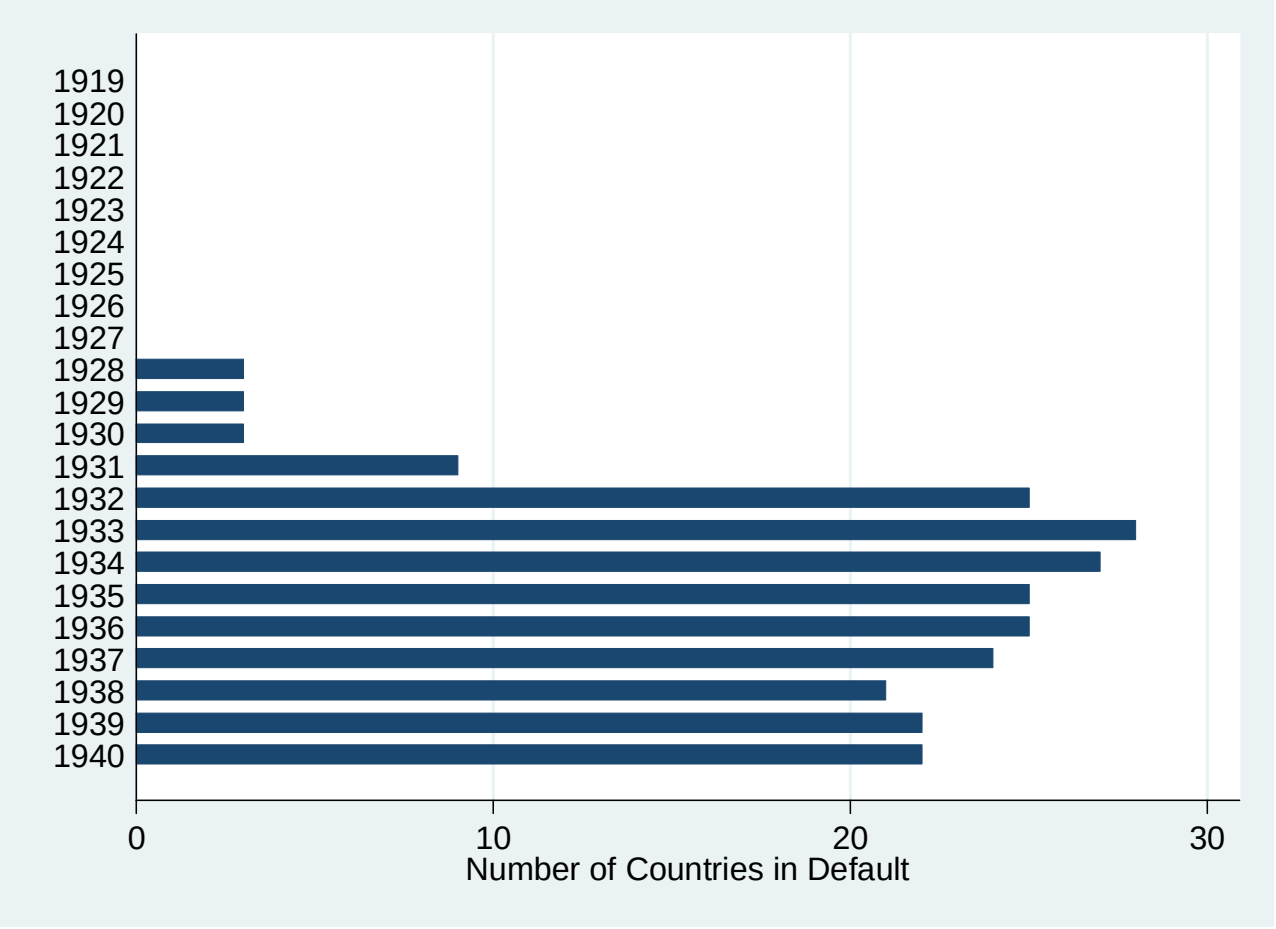
Time series plot of the absolute value of annual changes in the nominal exchange rate against the USD and GBP.

Debt Default and the Great Depression

- Default commonly seen as a response to (massive) terms of trade shocks
  - Many in Latin America

- Special cases:
  - Germany- War debts
  - Inter-allied war loans (most were forgiven or left unpaid)
  - USA: abrogates gold clause in 1933

Number of Sovereigns in Default, 1919-1940



Time series plot of the absolute value of annual changes in the nominal exchange rate against the USD and GBP.

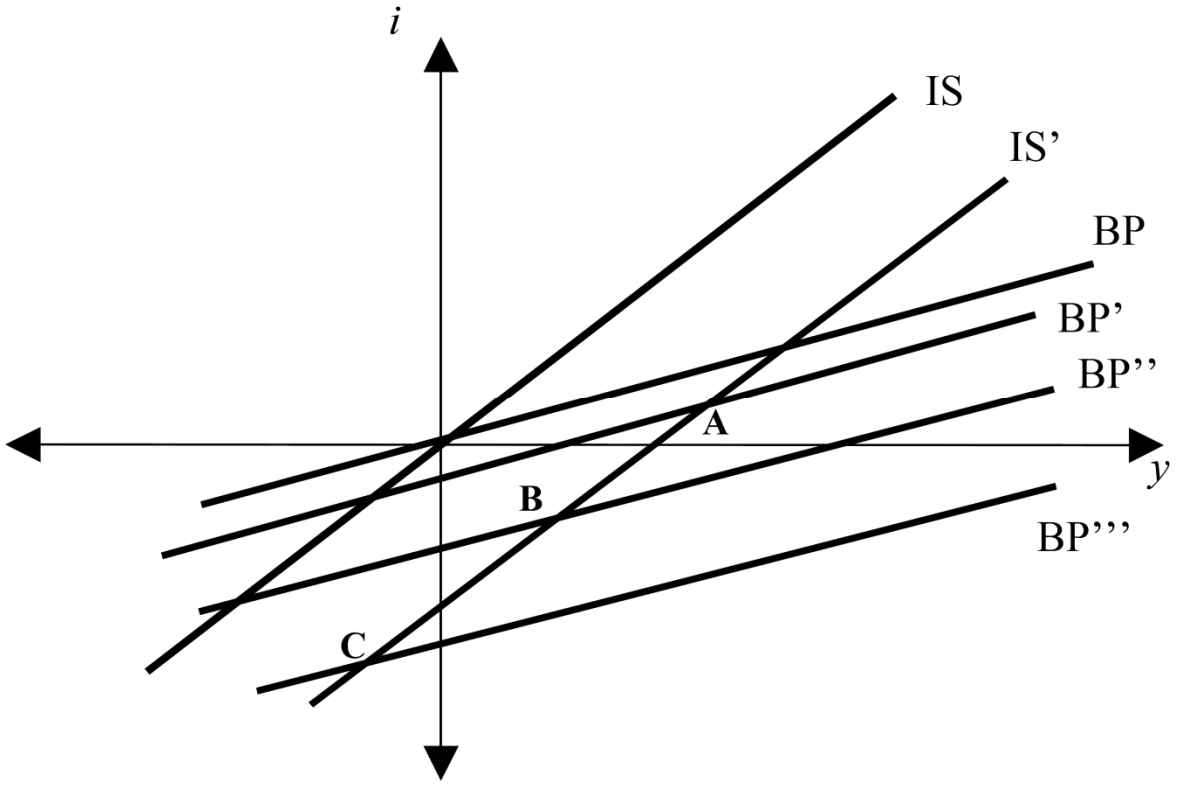
Debt Default and the Great Depression

- What was the economic cost of default vs. repaying under lower terms of trade/ depreciated exchange rate?
  - Eichengreen and Portes report a positive relationship between recovery and default

"Original Sin" as a problem

- Cespedes, Chang and Velasco "IS-LM-BP (in the Pampas)"
  - Standard expenditure switching effect of depreciation
- Assume credit market frictions: the risk premium rises as the exchange rate depreciates
  - Net worth falls as the exchange rate depreciates

Depreciation in a "Financially Vulnerable" Country: 3 Cases



Cespedes, L. Chang, R. and Velasco, A. "IS-LM-BP in the Pampas" NBER wp 9337

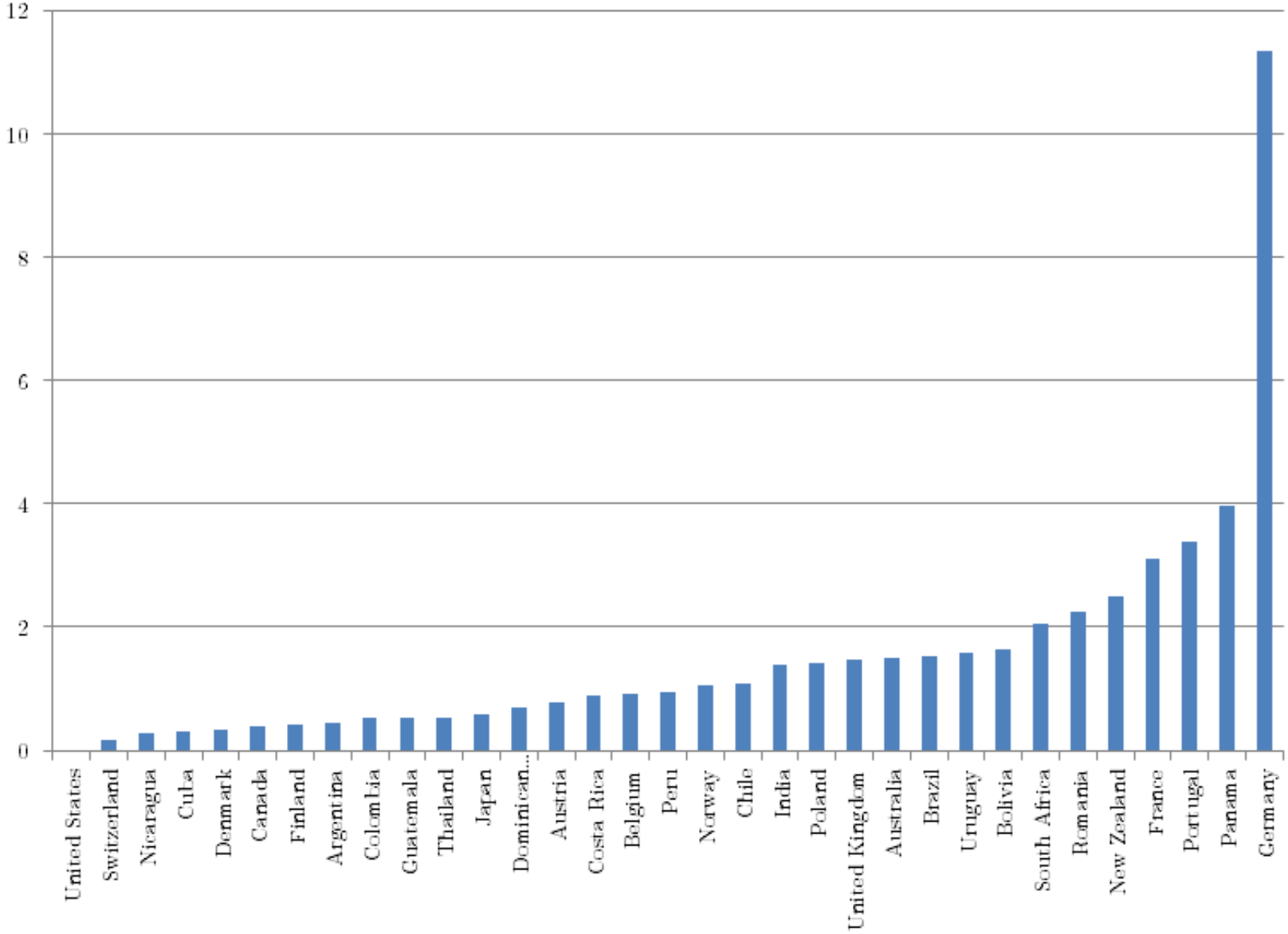
Original Sin in History

- Original sin was on the scene in the 19^{th} century.
- Despite suffering from OS, the US, Australia, Canada, NZ + others avoided the currency drop/debt default scenario
- Other countries: Spain, Italy, Argentina, Brazil had more difficulty even with lower levels of foreign currency/gold debt

Foreign Currency Debt in the 1920s

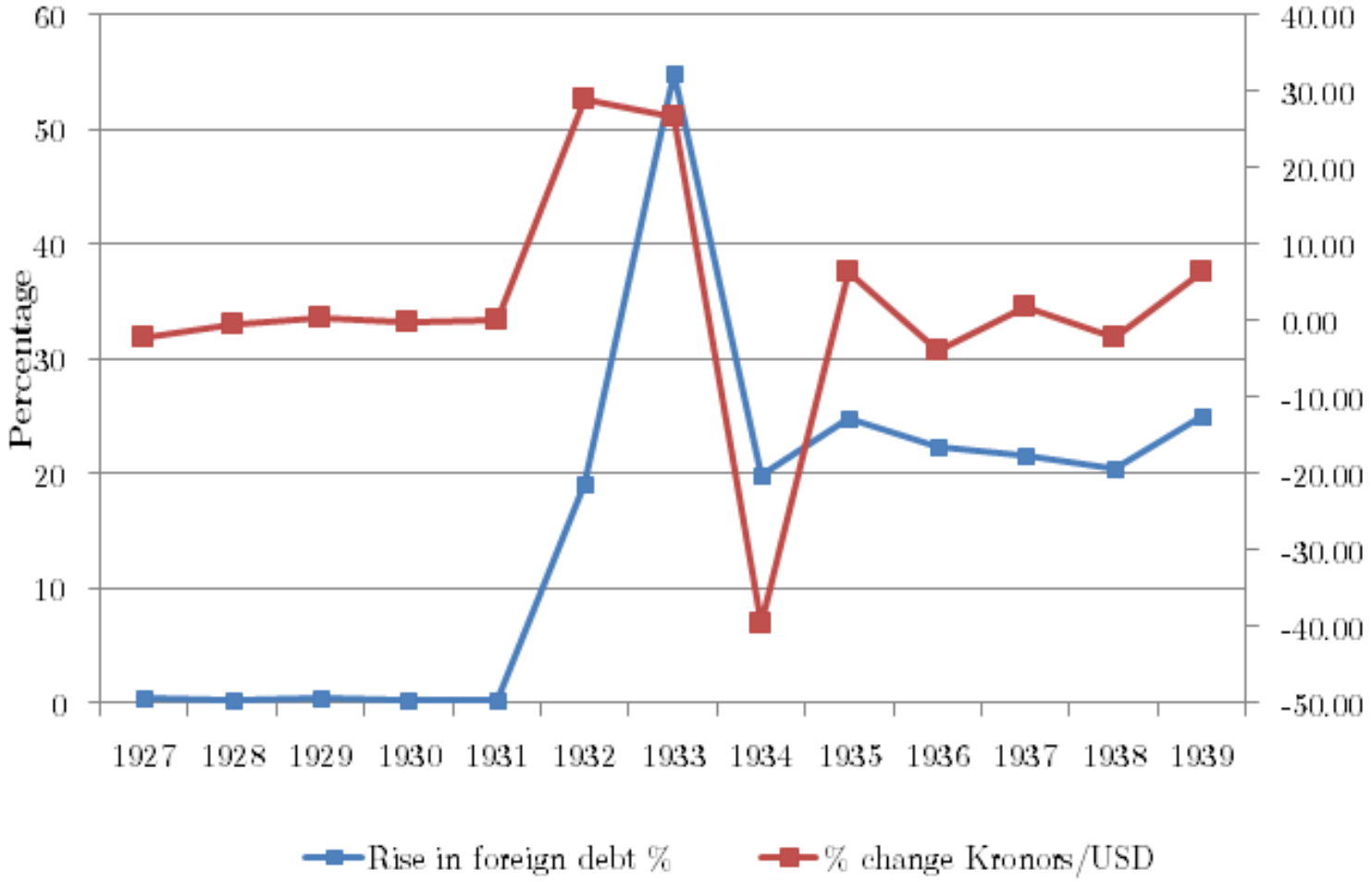
- Chitu, Eichengreen and Mehl (2012) construct data on sovereign debt issued and payable in foreign currency at constant exchange rates.
  - Not all countries have available data on currency composition (e.g., Germany, Italy, Sweden…)
  - League of Nations and United Nations compiled total foreign debt which was usually synonymous with F.C. debt

Foreign Currency Debt/Exports, 1928

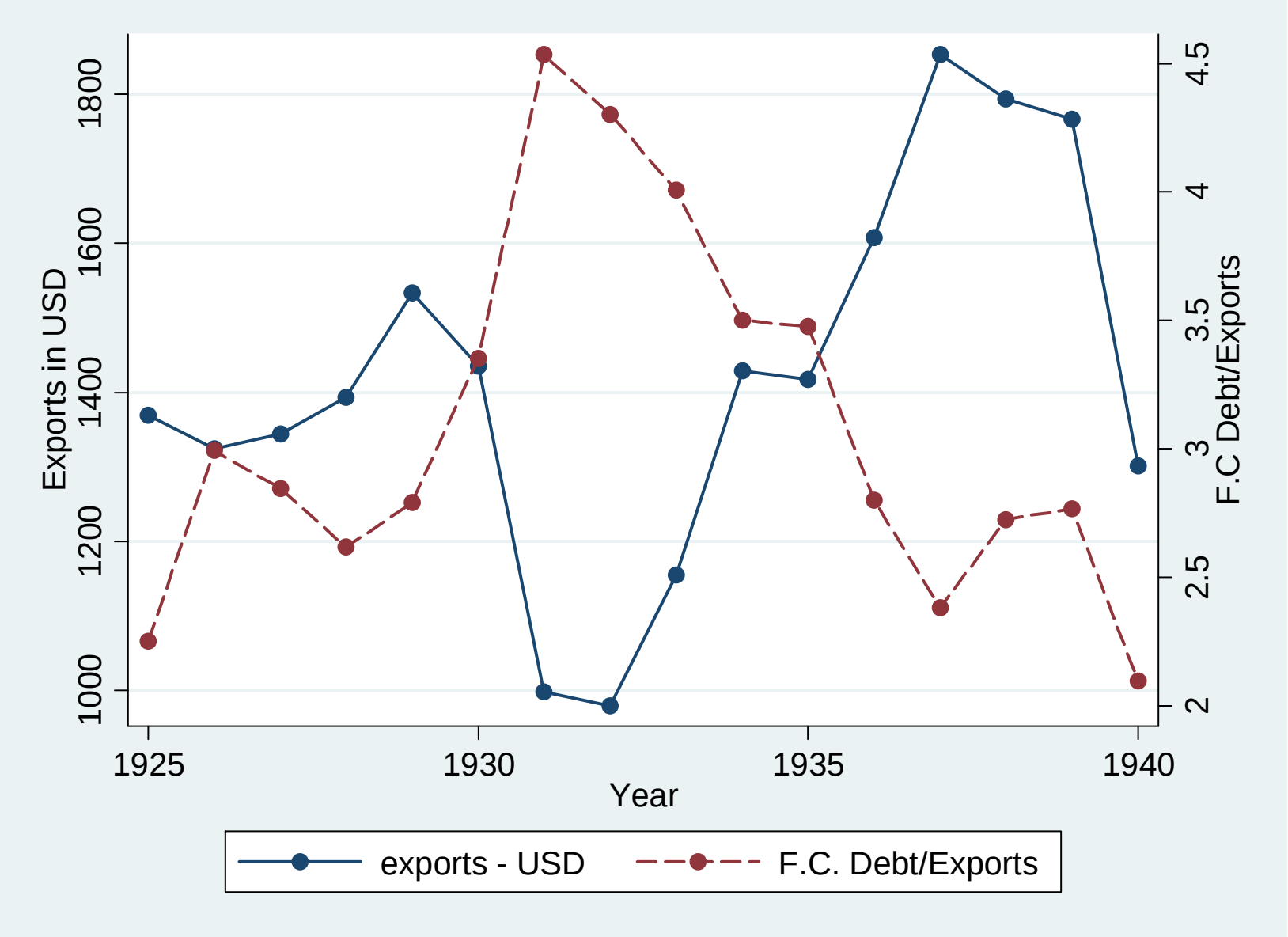


Chitu, L. Eichengreen, B. Mehl, A. "When did the Dollar Overtake Sterling as the Leading International Currency? Evidence from the Bond Markets" NBER WP 18097. based on United Nations (1948) "Public Debt, 1914-1946"

Exchange Rate Changes Alter Debt Values in Local Currency: Denmark, 1927-1939



Exports and the ratio of foreign currency debt to exports, New Zealand, 1925-1940



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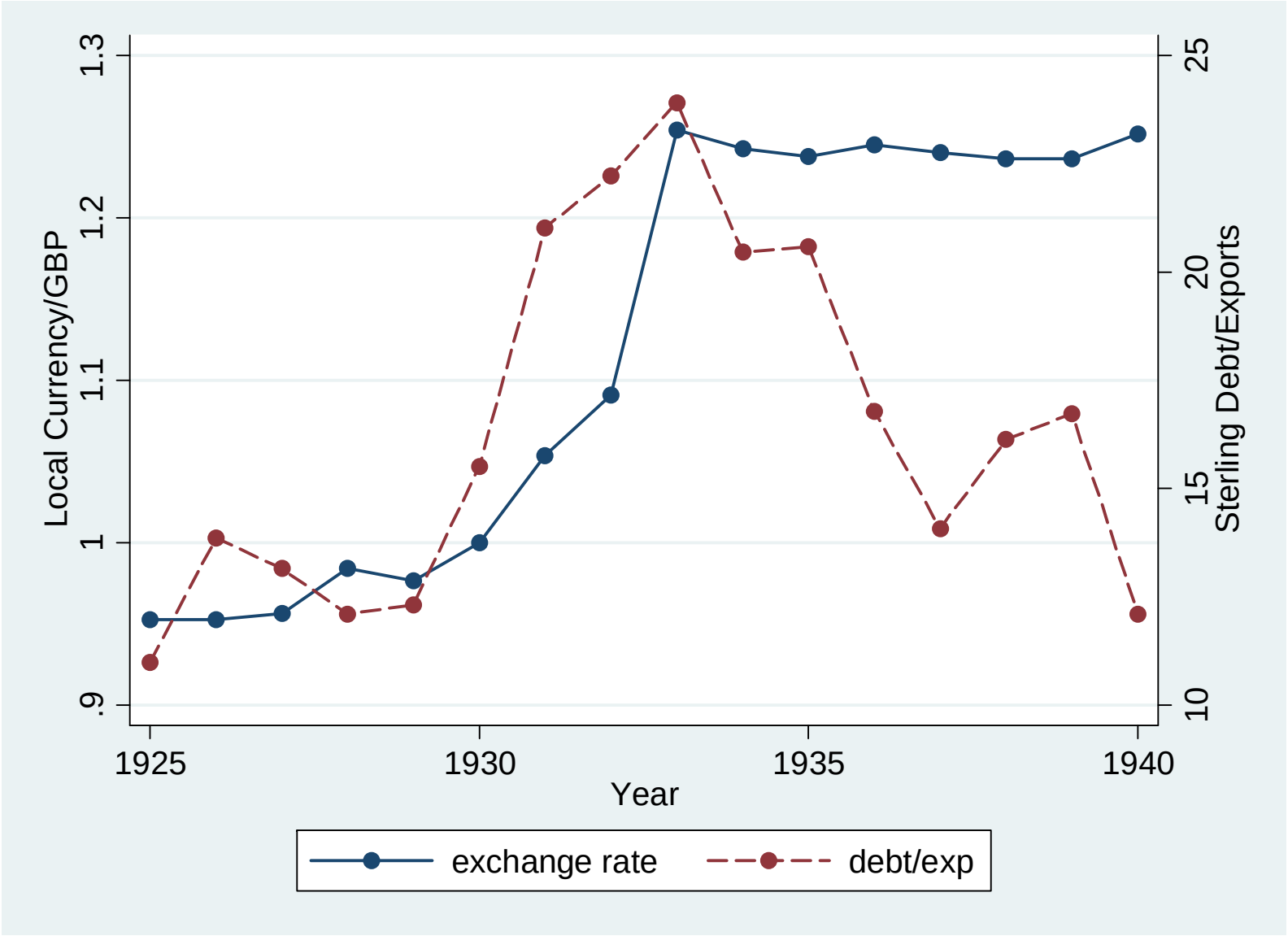


What did Countries Do?

- Choice 1: Stay on Gold
  - Deflation
  - Likely to experience appreciation
  - Debt implications: depends on foreign demand curve

What did Countries Do?

- Choice 2: "Devalue"
  - Reflation
  - Devaluing $\neq$ Depreciation. Going off gold may mean re-pegging to GBP or dollar.
  - Debt Implications: Is export boost sufficient?
    - Will investment suffer?

What did Countries Do?

- Choice 3: "Default"
  - Debt Implications: clears the debt, but additional funding may not be available.
  - May or may not be associated with devaluation

Default and the Gold Standard

Countries that defualted *AFTER* going off the gold standard					Countries that defualted *BEFORE* going off the gold standard			
Country	Year Default	Year off Gold	Difference		Country	Year Default	Year off Gold	
Austria	1932	1931	1		Belgium	1932	1935	3
Brazil	1931	1930	1		Cuba	1933	1934	1
Bulgaria	1932	1931	1		Ecuador	1929	1932	3
Czechoslovakia	1932	1931	1		France	1932	1936	4
Germany	1932	1931	1		Italy	1932	1936	4
Greece	1932	1931	1		Mexico	1928	1931	3
Hungary	1932	1931	1		Panama	1932	1933	1
Paraguay	1932	1929	3		Peru	1931	1932	1
Turkey	1928	1915	13		Poland	1932	1936	4
United Kingdom	1933	1931	2					
Uruguay	1933	1929	4					
Average Difference (w/o Turkey)			1.6		Average Difference			2.5

Countries that went off gold the SAME year as a default		
	Year Default	Year off Gold
Bolivia	1931	1931
Chile	1931	1931
Colombia	1932	1932
Costa Rica	1932	1932
Guatemala	1933	1933
Nicaragua	1932	1932
Romania	1932	1932
United States	1933	1933

Explaining Exchange Rate Changes

$$\left|\Delta \ln(e_{ijt})\right| = \alpha_0 \left(\frac{T_{ijt}}{Y_{ijt}}\right) + \alpha_1 \left(\frac{Debt(j)_{it}}{Exports_{it}}\right) + \alpha_2 (default_{it}) + \alpha_3 \left(\left(\frac{Debt(j)_{it}}{Exports_{it}}\right) \times (default_{it})\right) + x_i\beta + \delta_t + \varepsilon_{ijt}$$

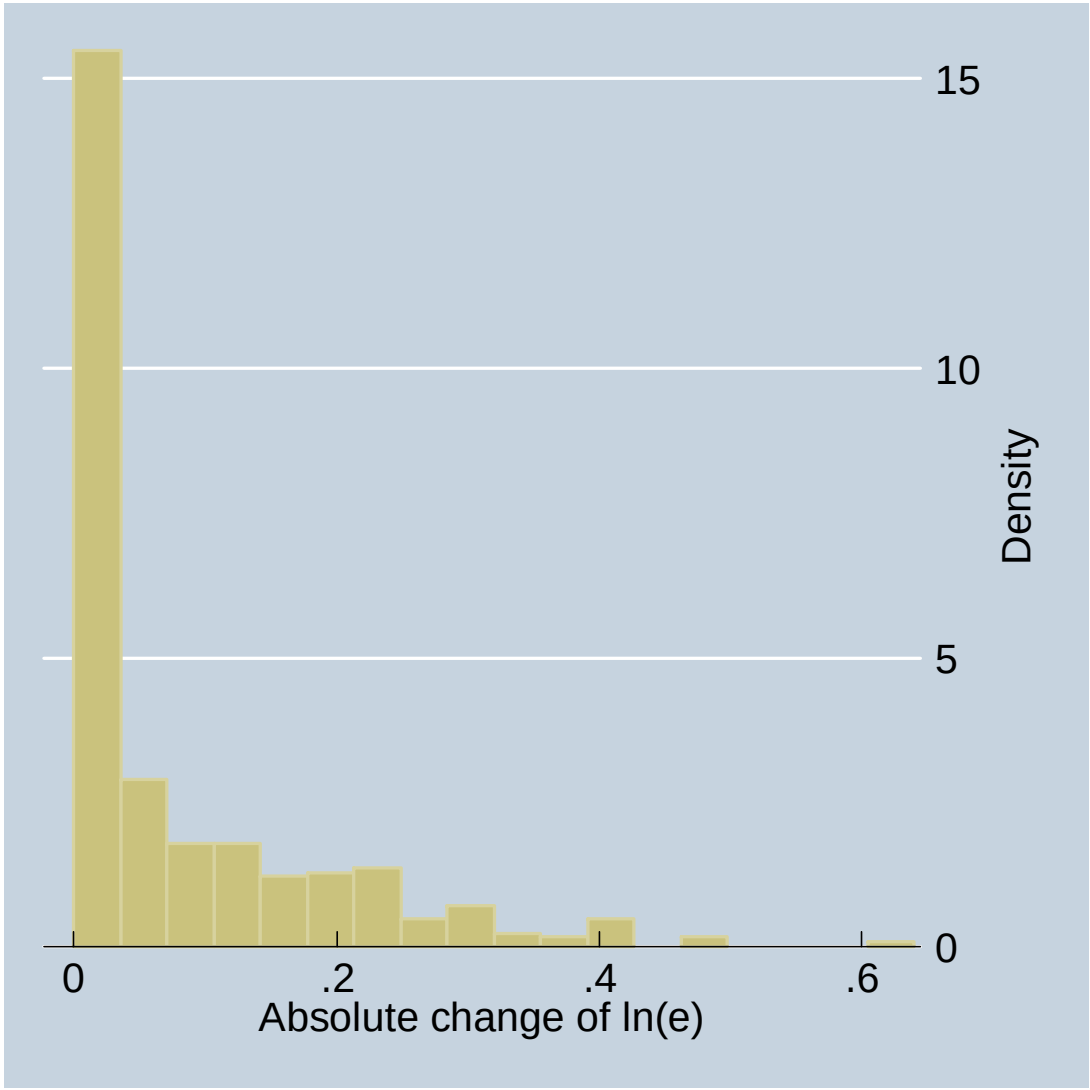


Figure shows the empirical density of the absolute annual change in the log of the bilateral nominal exchange rates. N= 349

Explaining Exchange Rate Changes: Panel Model

	Coefficient	Std. Err.		
Bilateral Trade/Y	-1.71	2.03		-
Debt (j)/Exports	-0.04	0.00	***	-
{Debt (j)/Exports} x Default	0.04	0.01	***	
Default	0.09	0.36		
Chg. ln (reserves)	0.04	0.25		
Chg. ln (Ex/Im)	1.09	0.47	***	
Observations	349			

Dependent variable is the absolute value of the annual change in the log of the nominal exchange rate. Country and year indicators are included but not reported. Estimation is by Poisson PML. Robust standard errors clustered on the country are reported.

Explaining Exchange Rate Changes

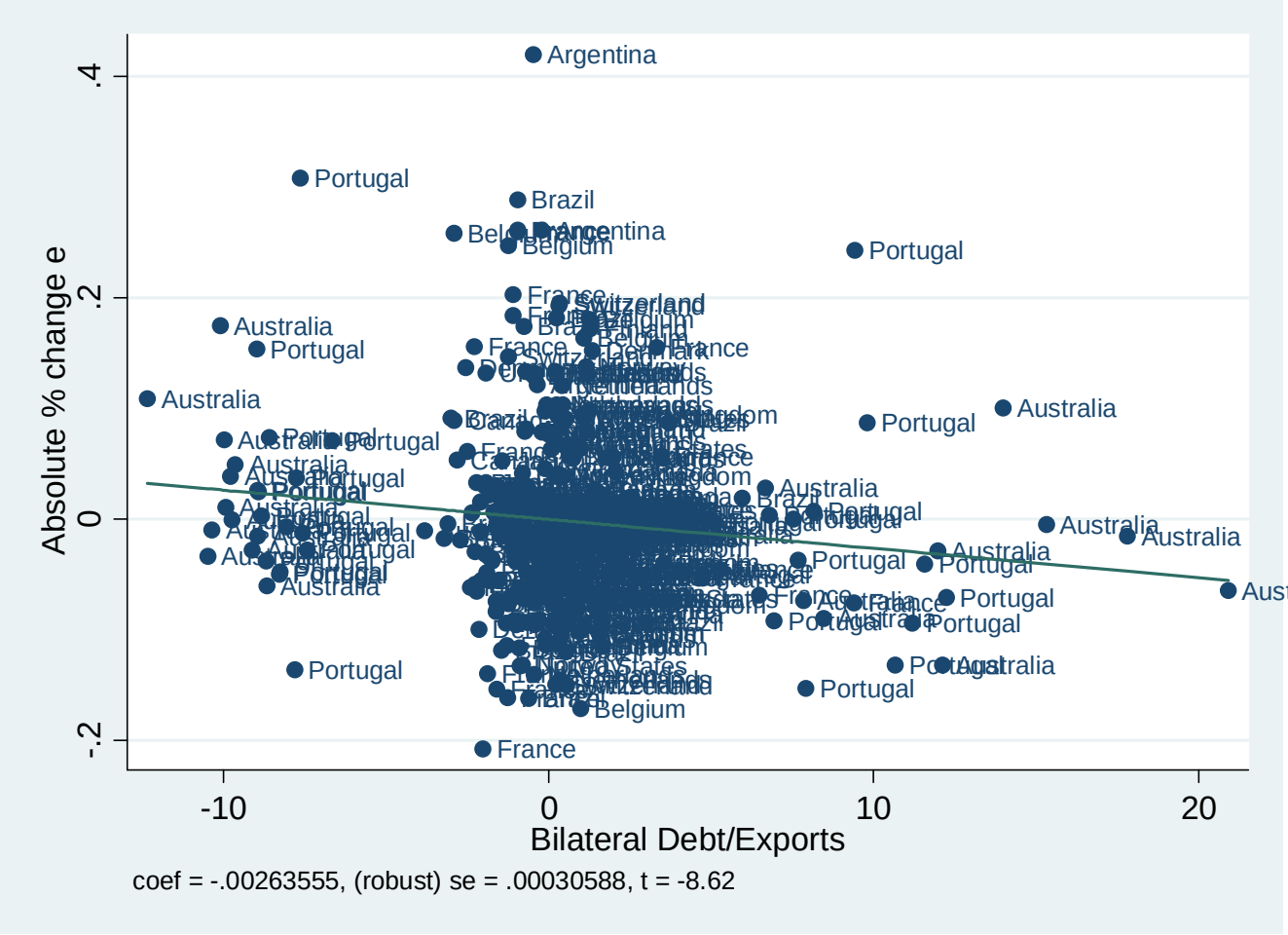


Figure shows the (conditional) relationship between the absolute annual change in the log of the bilateral nominal exchange rate and debt denominated in GBP or USD. Estimation is a linear OLS regression. Robust standard error is reported.

Explaining Exchange Rate Changes

	Coefficient	Std. Err.	
$(\text{Bilateral Trade/Y})_{1929}$	-2.26	0.66	***
$[\text{Debt (j)/Exports}]_{1929}$	-0.08	0.01	***
$\{\text{Debt (j)/Exports}\}_{1929}$ x # Default Years	0.01	0.00	***
# of Years in default	0.03	0.01	***
ln (reserves_{1929})	0.02	0.00	***
ln $(\text{Ex/Im})_{1929}$	-0.28	0.06	***
Observations	26		

Dependent variable is the average of the absolute value of the annual change in the log of the nominal exchange rate. Country indicators are included but not reported. Estimation is by Poisson PML. Robust standard errors clustered on the country are reported.

Recovery and Exchange Rates: Redux

	Coefficient	Std. Err.	
% Depreciation on USD	22.38	12.32	*
$[\text{Debt (j)/Exports}]_{1929}$	8.64	1.66	***
$[\text{Debt (j)/Exports}]_{1929}$ x % Depreciation on USD	12.70	3.69	***
No Default 1929-1935	14.71	8.17	*
Constant	81.71	4.84	***
Observations	20		

Dependent variable is the index of industrial production (1929 = 100). Estimation is by OLS. Robust standard errors are reported. A depreciation relative to the dollar is equivalent to a rise in the exchange rate. Depreciation measured as the sum of annual log changes in the nominal exchange rate 1929-1935.

Recovery and Exchange Rates: Redux

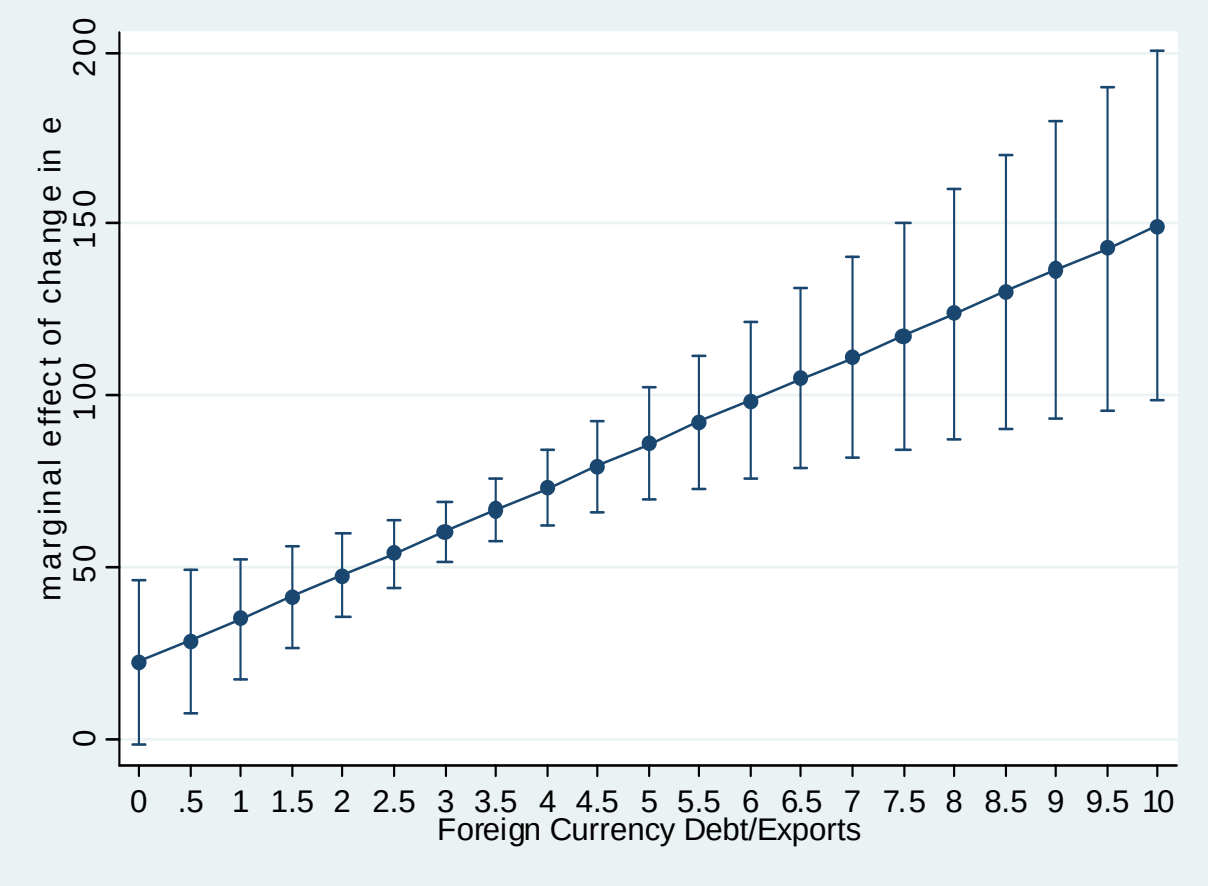


Figure shows the marginal impact on change in IP (1929-1935) of depreciation against USD at various levels of foreign currency debt/exports.

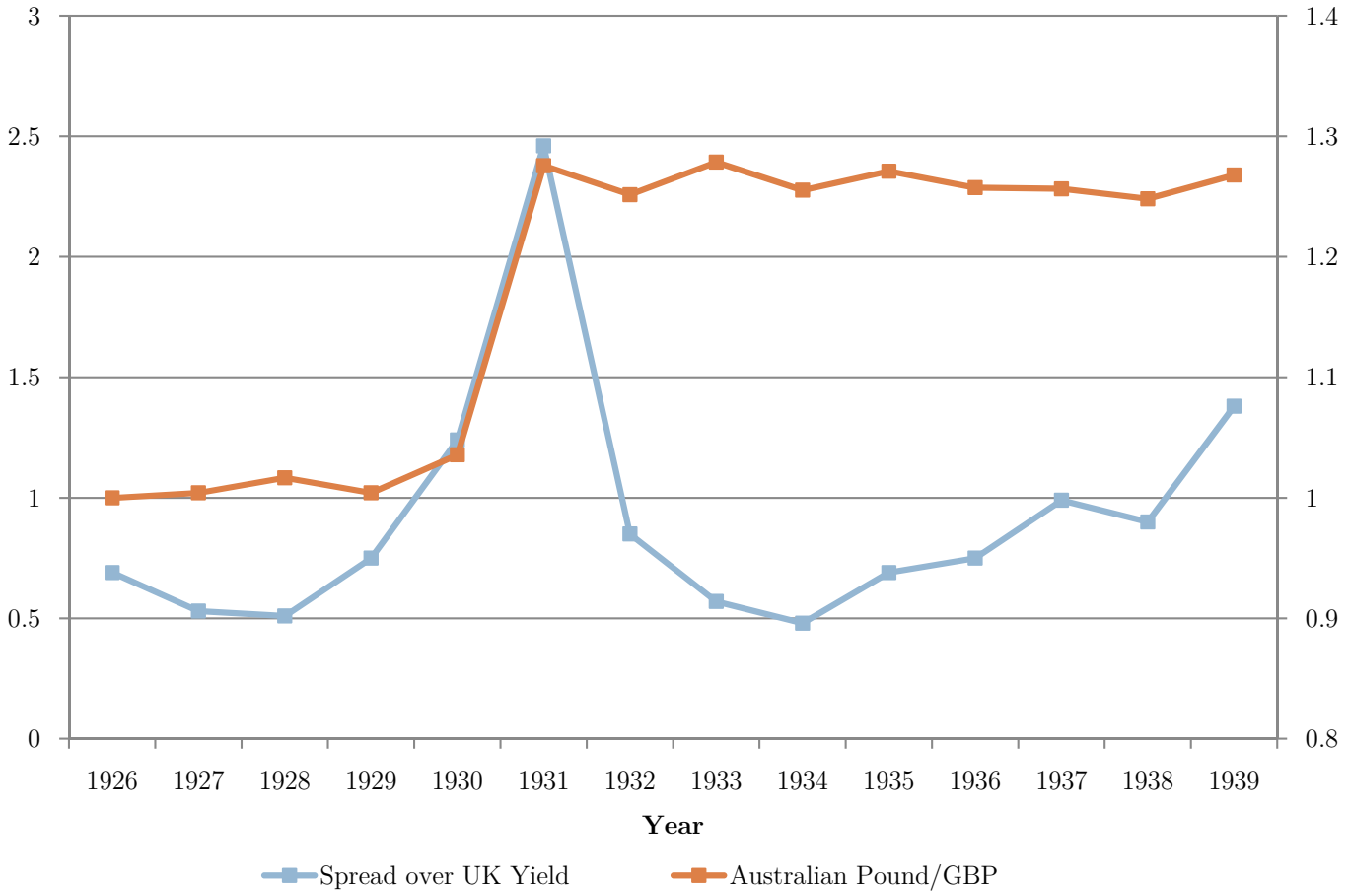
New Zealand

- 40% fall in GBP price of exports
  - 9m GBP in interest due.
- This raised the burden of interest payments by 2/3
- "New Zealand is linked with Great Britain by strong ties of sentiment, trade and debt, and it would be inadvisable to make any permanent change in the basis of New Zealand currency without full discussion of the matter with the British authorities"
  - Eventually the nominal depreciation was about 30%

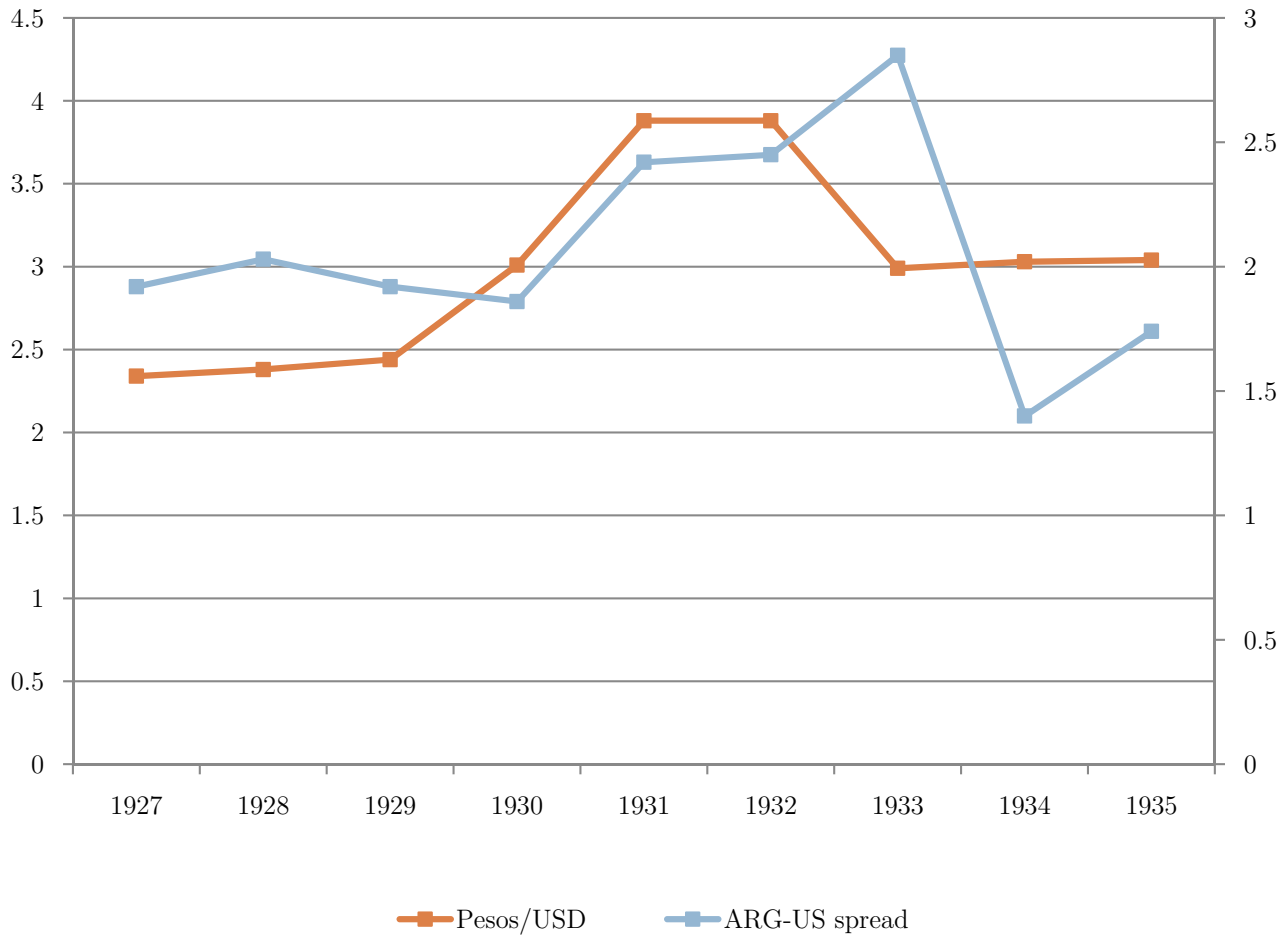
Australia

- 68% fall in export prices in gold terms by 1931-32
  - 25% depreciation of Australian pound from 1930-maintained against sterling after 9/1931
- Debt: internal conversion + war debt relief
- One idea: issue a loan in London to compensate exporters
  - Default risk rises
- Bond yields in Australia reportedly fell from June 1931

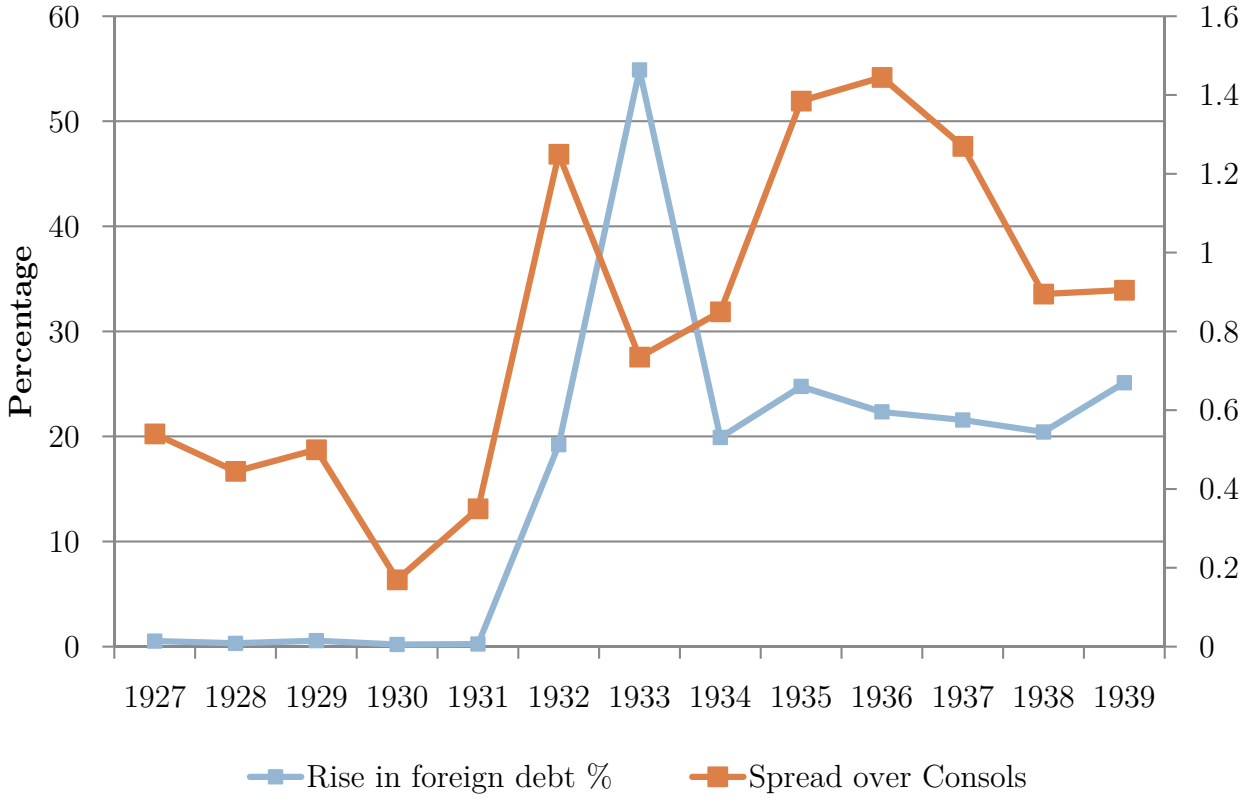
Australia: Bond Yields and the Exchange Rate, 1926-1939



Argentina: Bond Yields and the Exchange Rate, 1927-1935



Denmark: Bond Yields Foreign Currency Debt, 1927-1939



Discussion

- Small open-economies took three routes
  - Depreciation
  - Default
  - Gold standard
- On average, foreign currency debt was associated with greater exchange rate stability
- If depreciation was associated with recovery it appears that expenditure switching effects dominated any hypothesized capital market frictions
  - May depend on country characteristics
  - The role of the center