



Munich Personal RePEc Archive

When the North Last Headed South: Revisiting the 1930s

Reinhart, Carmen and Reinhart, Vincent

University of Maryland, College Park, Department of Economics

March 2009

Online at <https://mpra.ub.uni-muenchen.de/22612/>

MPRA Paper No. 22612, posted 11 May 2010 10:45 UTC

When the North Last Headed South: Revisiting the 1930s

CARMEN M. REINHART

University of Maryland, NBER, and CEPR

VINCENT REINHART*

American Enterprise Institute

ABSTRACT

The U.S recession of 2007 to 2009 is unique in the post-World-War-II experience by the broad company it kept. Activity contracted around the world, with the advanced countries of the North experiencing declines in spending normally the purview of the developing economies of the South. The last time that the economies of the North similarly headed south was the 1930s. This paper examines the role of policy in fostering recovery in that decade. With nominal short-term interest rates already near zero, monetary policy in most countries took the unconventional step of delinking currencies from the gold standard. However, analysis of a sample that includes developing countries shows that this was not as universally effective as often claimed, perhaps because the exit from gold was uncoordinated in time, scale, and scope and, in many countries, failed to bring about a substantial depreciation against the dollar. Fiscal policy was also active in the 1930s—many countries sharply increased government spending—but prone to *reversals* that may have undermined confidence. Countries that were more consistent in keeping spending high tended to recover more quickly.

JEL F3, H6, N1, N10

* A slightly revised version of this paper is published in *Brookings Papers on Economic Activity*, Fall 2009, 251-272. We have benefited from the comments of our discussants, the editors, other participants at the Brookings Panel conference, and Kenneth Rogoff. We also thank Meagan Berry, Adam Paul, and Gregory Howard for their assistance and the Smith Richardson Foundation for its ongoing support.

I. Introduction

The financial and economic dislocations of the past two years have been sharp and widespread. Yet there is ample precedent for such crises—and for the economic adjustment that follows to be wrenching. Among the advanced economies, those earlier crises occurred either before World War II or in open economies that were out of sync with the global cycle.¹ Crashes and severe contractions have been more common in emerging market economies. In the current episode, however, activity collapsed in unison in developed and developing countries around the world. Indeed, the rarity of current circumstances is why we rely on an event three-quarters of a century old, the Great Depression, as the main comparator.²

Given the importance of that precedent in understanding the current contraction, it is useful to cast a sharp focus on the role that policy actions played in shaping recovery in the 1930s. Unconventional monetary policy action has been called (Svensson 2003) a “foolproof way” of preventing deflation in especially an open economy that can generate additional demand through depreciation of its currency. But when the global pie is shrinking, such action may be less effective. In the 1930s, moving off the gold standard bought fiscal authorities in many countries more space for stimulus because their central banks had room on their balance sheets to purchase more government securities and to generate additional income. It also allowed each country to devalue relative to gold.³ Those actions, however, were mostly uncoordinated in time, scale, and scope. As a consequence, the record of success among countries abandoning the gold standard, both in avoiding a severe contraction and in speeding the recovery, is quite mixed. It

¹ Reinhart and Rogoff (2009) provide many comparisons and a full explanation of the data.

² Eichengreen and O’Rourke (2009) provide useful comparisons to that episode as well.

³ This strategy is discussed in Eichengreen (1992) and Romer (1992).

should be no surprise that the benefits of competitive devaluations (or less charitably “beggar-thy-neighbor” policies, as described by Nurkse, 1944) went to the first movers—for those that followed this path later, it merely allowed for “catch-up” for lost competitiveness.

The 1930s also saw massive increases in government spending in many countries, but fiscal authorities were prone to reverse themselves. As a result, some of the direct benefits of that spending were offset by harmful effects stemming from its volatility.

II. The Appropriate Precedent

The Business Cycle Dating Committee of the National Bureau of Economic Research has put the peak of the current U.S. cycle at the end of 2007. There is no such equivalent formalism at the world level, but indicators for most other countries started turning down about six months later, consistent with the view that the United States led the way down. Robert Barro and José Ursúa (2008) have demonstrated that occasional large, adverse shocks hit national economies without the reason for those shocks always being clear. The current episode is particularly unusual because so many economies around the world contracted simultaneously.

Table 1 provides a historical perspective on the rarity of events like those of recent years, by documenting changes in real exports during past systemic crises from 1890 to today, for samples ranging 35 to 111 countries. The episodes included in the table are those that saw spikes in the number of banking crises worldwide, as reported by Carmen Reinhart and Kenneth Rogoff (2009). As is evident from the table, it is not unprecedented for a majority of countries to experience declines in real exports coincident with systemic financial crises. Many of the median changes listed in the last column are negative, and the largest declines (which the preceding column reports for each country) are quite large indeed. The scale of the most recent experience,

however, has only one precedent, namely, the early 1930s: more than four-fifths of countries in both periods saw contractions in exports of greater than 15 percent. The scope of the problem also distinguishes the Great Depression and the current, second “Great Contraction”: only in those two episodes did virtually all of the nations of the world witness shrinking trade flows. No other crisis period in the past century matches that experience.

This commonality of the experience in these two episodes makes an examination of the setting of policy in the 1930s relevant for consideration today. We will deal with the actions of the monetary and fiscal authorities in turn.

Table 1. Declines in Real Exports during Crisis Episodes

Episode	Year	No. of countries	Countries experiencing real export decline (percent of total)			
			Any	Greater than 15 percent	Largest decline (percent)	Median change (percent)
Barings crisis	1890	35	34.3	5.2	-18.0	2.2
	1891	35	57.1	8.6	-47.5	-1.0
Panic of 1907	1907	73	31.5	4.1	-27.4	6.9
	1908	75	66.7	20.0	-33.6	-5.4
Commodity crash	1920	70	48.6	31.4	-60.9	1.4
	1921	73	76.7	54.8	-73.7	-19.8
Great Depression	1929	94	43.6	13.8	-36.2	1.3
	1930	94	88.3	48.9	-51.2	-13.9
	1931	95	100	88.4	-73.5	-33.3
	1932	95	80.0	62.1	-53.8	-17.1
Sterling crisis	1967	104	48.5	23.3	-92.0	0.4
End of Bretton Woods	1973	111	11.7	4.5	-79.4	39.1
First oil shock	1975	110	41.8	29.1	-78.3	1.8
Latin American debt crisis	1981	106	60.4	31.1	-70.7	-3.6
	1982	108	62.3	29.2	-77.2	-4.0
Nordic crises	1991	93	57.0	26.9	-75.8	-1.4
Exchange Rate Mechanism crisis	1992	95	36.8	14.7	-65.6	3.9
Tequila crisis	1995	105	23.8	11.4	-79.3	9.4
Asia, Russia, LTCM crises	1997	109	40.4	13.8	-83.8	2.8
	1998	107	51.4	22.4	-62.4	-1.4
September 11	2001	108	74.1	28.7	-39.8	-9.6
“Great Contraction”	2008	87	86.2	52.9	-74.1	-16.6
	2009 ^a	42	100.0	92.9	-62.2	-36.6
Averages	1890-1939	70	41.1	18.0	-82.2	4.5
	1957-2008	99	33.0	14.6	-92.0	9.2

Sources: Reinhart and Rogoff (2009, appendix A); League of Nations, *Statistical Yearbook*, various issues; national sources; Maddison (2004); Mitchell (2003 a, b, and c).

a. Through April.

II. Monetary and Exchange Rate Policy during the Great Depression

The wrenching adjustment in activity around the world strained the confidence of many public officials in the speed and extent to which the market system would correct. As a consequence, the range of policy response was wide. The major form monetary policy experimentation took was to expand central bank balance sheets by lowering the gold content of the home currency. As will be discussed below, countries devalued relative to gold at different points over the decade and by different amounts. The mechanism through which this was expansionary can best be understood by considering a single country's experience.

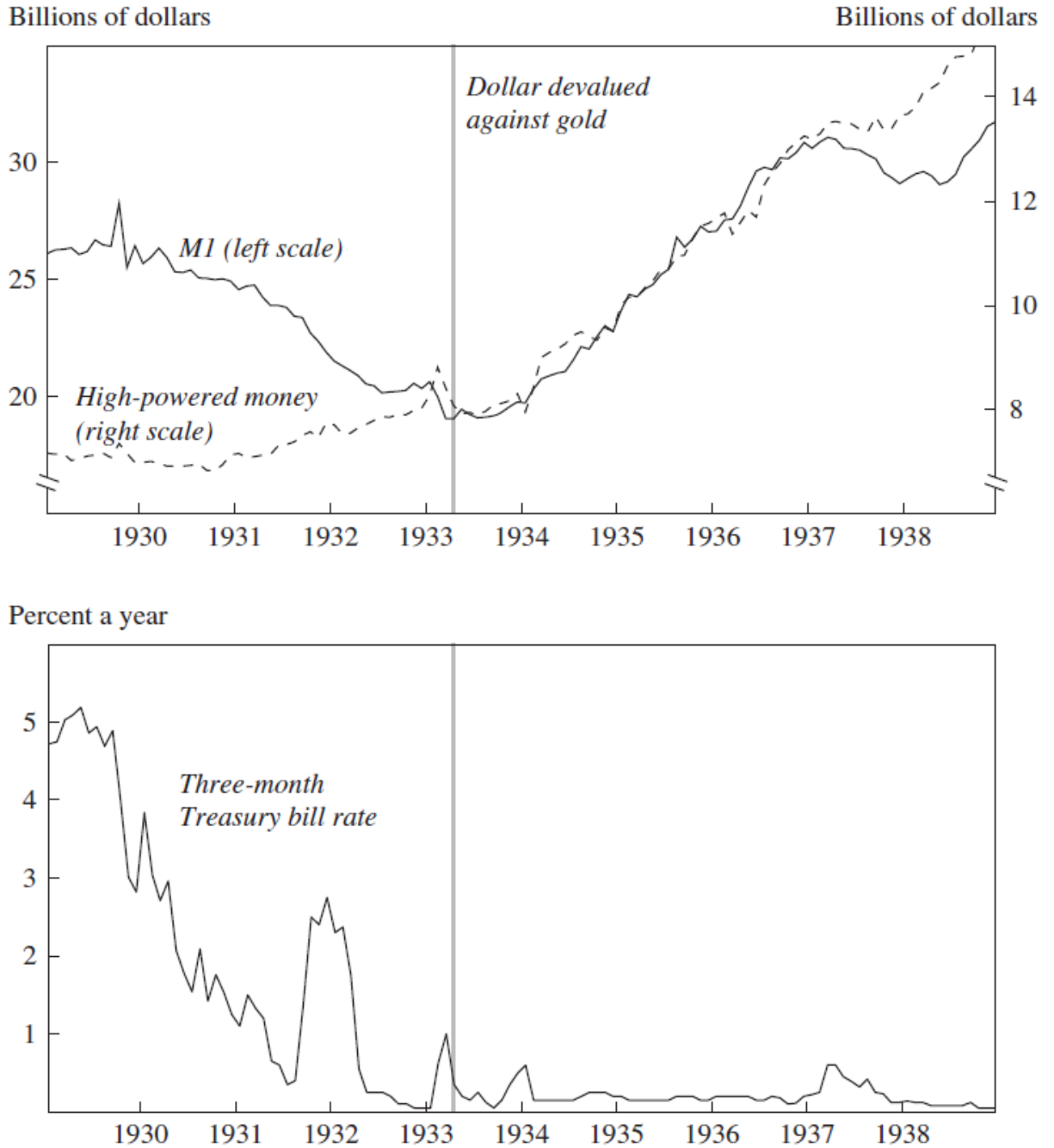
In the United States, the key decision in the early 1930s that shifted the stance of monetary policy decisively toward ease was not made by the nation's principal monetary authority, the Federal Reserve. Rather, it was the devaluation of the dollar in terms of gold by newly inaugurated President Franklin Roosevelt in April 1933, followed by a sharp increase in gold inflows as a result of political instability in Europe, that produced a marked relaxation of monetary conditions, through a large increase in high-powered money.^{4 5} As shown in figure 1, high-powered money in the United States (essentially, currency in circulation, vault cash, and banks' deposits with the Federal Reserve) increased by 60 percent from March 1933 to May 1937 (the trough and peak, respectively, of the business cycle); the M1 measure of the money supply expanded by about the same amount from 1933 to 1937. Short-term nominal interest rates, proxied in the bottom panel by the three-month Treasury bill rate, were already close to

⁴ There were two steps in the process. Executive Order 6102 in April 1933 lowered the gold-content of the dollar and prohibited the public from holding gold. The value of the dollar vis-à-vis gold was subsequently lowered again with the [Gold Reserve Act](#) of 1934.

⁵ Eichengreen (1992), Romer (1992), and Bernanke (2004) explain the mechanics. Important earlier contributions include Choudhri and Kochin (1980) and Hamilton (1988).

zero. Thus, in the decade from 1932 onward, policy impetus cannot be measured by reference only to the level of the short-term interest rate.

Figure 1. Monetary Conditions in the United States, 1929–39



Sources: Friedman and Schwartz (1963, tables A.1 and B.3); Board of Governors of the Federal Reserve System (1943, pp. 439–42 and 448–451).

Then as now, the size and the composition of the monetary authority's balance sheet had the potential to influence financial markets and the economy. An enlarged balance sheet also provided fiscal authorities more space to be aggressive, if they felt so inclined.⁶ All this meets the definition of "unconventional" monetary policy and quantitative easing (as in Bernanke and Reinhart 2004). In the standard rendering, there were three acts to this episode of quantitative easing.

In the first act, in 1932, U.S. policymakers extended their mistake of the prior three years of not addressing a crisis of confidence. After the Stock Market Crash of 1929, the public sought to build up a cushion of safe assets. For households, this meant holding more currency. For banks, the demand for reserves rose. Declines in asset values and increased liquidity demand strained the financial system, leading to a daisy chain of bank failures. But these bank failures further heightened demands for safe assets.⁷ High-powered money did expand, but by too little to offset increases in desired currency and reserve holdings, as detailed by Milton Friedman and Anna Schwartz (1963) and by Philip Cagan (1965).⁸ Next, President Roosevelt's decision to devalue relative to gold in 1933 triggered an expansion in the monetary authority's balance sheet

⁶ Open market purchases of Treasury securities can lower yields on government debt if assets are imperfect substitutes for each other. Even if they are perfect substitutes, the swap of interest-bearing government debt for non-interest-bearing reserves works to lower debt service. Also, a decline in real interest rates improves measures of debt sustainability. Two issues arise, however. First, the macroeconomic effects will depend on whether the public capitalizes the income stream of central bank profits. Second, paying interest on reserves lessens the reduction in the debt burden associated with open market purchases.

⁷ Harold James (2009) argues that these two episodes are distinct. The year 1929 marked a major asset revaluation and 1931 was a year of banking collapse. Kaminsky and Reinhart's (1999) approach to dating banking crises would argue that the fall of 1929 marked the beginning of the banking crisis and 1932 its peak.

⁸ This failure can be explained as the Federal Reserve being either hamstrung by the gold standard (as argued in Eichengreen 1992) or focused too much on reserve supply rather than reserve demand (as in Meltzer 2003). Either case amounts to a lack of willingness to use the appropriate policy tools, not lack of ability. Hsieh and Romer (2006) show that a short-lived monetary accommodation in 1932 did not trigger concerns in markets or among policymakers about a destabilizing exit from the gold standard.

and sent a clear signal of the intent to reflate.⁹ In the final act, policymakers repeated their initial mistake and contracted policy by sterilizing gold inflows in 1936 and increasing reserve requirements in 1937, stalling the expansion of high-powered money.¹⁰ This third act highlights the danger of a premature exit from policy accommodation, as Christina Romer has recently pointed out.¹¹ It is the middle act, the move off the gold standard, that has been most widely praised and that offers the best evidence that unconventional policy action can spur recovery. But although the U.S. experience can be interpreted that way, the wider international record is more mixed.

Devaluing a nation's currency in terms of gold has three distinct effects.¹² First, the home-currency value of the monetary authority's resources expands. If, as in the U.S. case in 1933, short-term interest rates are near the zero bound, this amounts to unconventional monetary policy. Second, if other countries remain at an unchanged gold parity (or devalue by less than the home country), the exports of the home country become priced more competitively on world markets. Third, devaluation might be interpreted as a regime switch, signaling higher inflation in the future and therefore working to lower real interest rates immediately.

Table 2 gives a year-by-year chronology of countries' exits from the gold standard during the 1930s, along with some information about the course of economic contraction and recovery in each country. The first column reports the year that output peaked—usually 1928 or 1929. The second column reports the peak-to-trough decline in real output. This was, indeed, a

⁹ Romer (1992) stresses the multiplier effects of the former; Eichengreen and Temin (2000) emphasize the change in the zeitgeist as rekindling inflation expectations.

¹⁰ Meltzer (2003) and Orphanides (2004) review this experience.

¹¹ Christina D. Romer, "The Lessons of 1937," *The Economist*, June 18, 2009.

¹² Eichengreen and Sachs (1986) work through the effects in a simple model.

wrenching contraction, with the 29 percent decline in the United States on the high side of experience. Small open economies that were reliant on commodity production, such as Chile, Nicaragua, and Uruguay, were hit especially hard. Closed economies, such as Italy and Portugal, in contrast, fared better.

The last column in the table provides a metric for recovery: the number of years it took for output to return to the previous peak. This seems an intuitive way to measure a downturn, but it is also quite conservative. Ongoing expansion in potential output implies that a return to prerecession production is not synonymous with an elimination of economic slack. What is striking in this column is how varied was the experience and how long was the typical path to recovery.

In the event, abandoning the gold standard was not a foolproof solution for economic recovery. Figure 2 plots for each country in table 2 the peak-to-trough decline in real GDP against the number of years it took after 1929 for the country to devalue or leave the gold standard. There is no obvious association between the timing of devaluation and the severity of the downturn. Early leavers (those in 1929 and 1930) experienced output contractions ranging from 13 to 36 percent. Late exiters (from 1933 onward) suffered output declines from 6 to 32 percent.

Table 2. Depth and Duration of the Great Depression by Year of Exit from the Gold Standard

Country	Year of business cycle peak	Peak-to-trough decline in real GDP per capita ^a (percent)	Years until return to precrisis real GDP
<i>December 1929 and 1930 exits from gold standard</i>			
Australia	1926	17.3	10
New Zealand	1929	17.8	7
Argentina	1929	19.4	15
Brazil	1928	13.3	8
Uruguay	1929	36.1	17
Venezuela	1929	24.1	6
<i>1931 exits from gold standard</i>			
United Kingdom	1929	6.6	5
Austria	1929	23.4	10
Canada	1928	29.0	12
Finland	1929	6.1	5
Germany	1928	17.8	7
Japan	1929	9.3	4
Norway	1929	1.9	3
Sweden	1930	4.8	4
Chile	1929	46.6	16
El Salvador	1928	11.3	9
Hungary	1929	11.4	7
India	1929	8.2	31
Korea	1928	12.7	5
Malaya ^b	1929	17	35
Mexico	1929	31.1	16
Portugal	1929	2.4	2
<i>1932 exits from gold standard</i>			
Colombia	1929	3.8	3
Costa Rica	1928	15.7	9
Greece	1930	6.4	4
Nicaragua	1929	43.0	24
Peru	1929	25.4	6
Romania	1931	8.0	7
<i>1933 exits from gold standard</i>			
United States	1929	28.9	10
Guatemala	1930	23.6	6
Honduras	1931	32.0	36
Philippines	1929	13.1	8
<i>1934 exits from gold standard</i>			
Italy	1929	6.4	6
<i>1935 exits from gold standard</i>			
Belgium	1928	10.4	11
<i>1936 exits from gold standard</i>			
France	1929	15.9	10
Netherlands	1929	16.0	21
Switzerland	1929	9.8	9
Netherlands East Indies ^b	1929	14.3	9
Poland	1929	24.9	9

Sources: Reinhart and Rogoff (2009); Eichengreen (1992); League of Nations, *Statistical Yearbook*, various issues; Officer (2001); Maddison (2004); Mitchell (2003 a, b, and c).

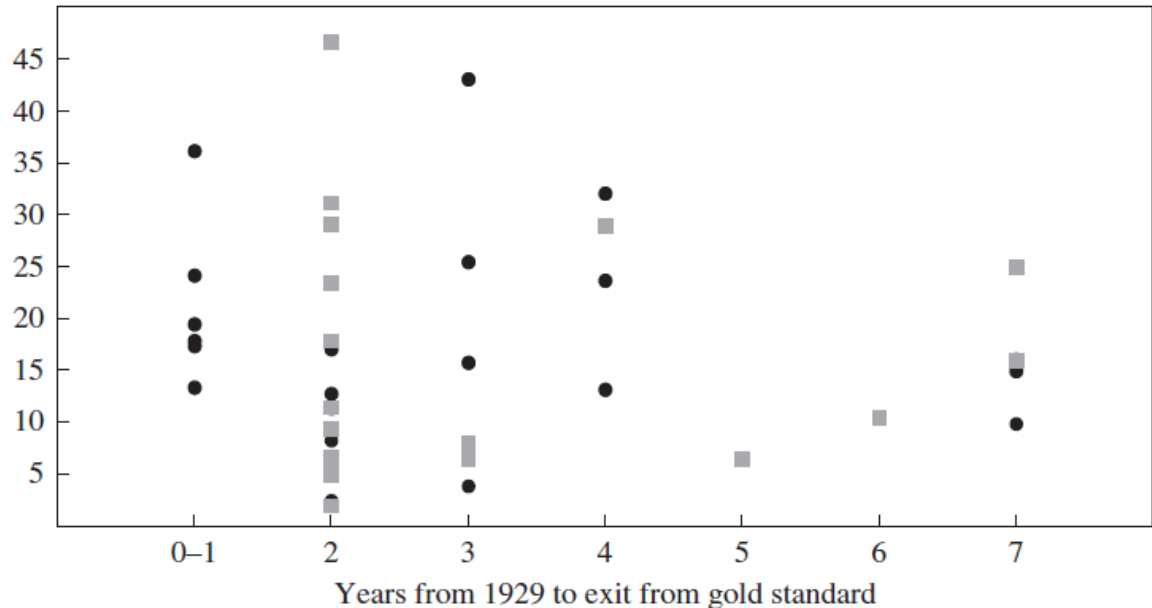
a. GDP is measured in 1990 international Geary-Khamis dollars, see Maddison (2004).

b. Present-day Malaysia and Singapore.

c. Present-day Indonesia.

Figure 2. Timing of Exit from the Gold Standard and Severity of Output Decline, 1929–36^a

Peak-to-trough decline in real GDP per capita^b (percent)



In his work with different coauthors on the interwar gold standard, Barry Eichengreen has argued that devaluation against gold was an engine of reflation.¹³ The simple scatterplot in figure 2 suggests that those benefits were not always evident. But the figure implicitly differs from the prior literature in three ways: the choice of the measure of activity, the window of observation, and the country coverage; these differences can be addressed systematically.

Table 3 reports regressions that seek to explain various measures of economic recovery in the 1930s for different sets of countries. The first column reproduces what might be called “exhibit A” for those arguing that the change in the exchange rate regime was crucial in fostering economic recovery. That column, following the literature, relies on information collected in real time by the League of Nations. The change in industrial production from 1929

¹³ See Eichengreen (1992), Eichengreen and Sachs (1985), and Eichengreen and Temin (2000).

to 1937 for the 14 countries for which data are available from that source is regressed against the number of years after 1929 that the country exited the gold standard. For these 14 countries, leaving the gold standard had a statistically significant effect on industrial production over that common time period. Indeed, the coefficient on the timing variable is quite large. Leaving the gold standard at the start rather than at the end of the period prevented a decline in industrial output of more than one-half.

It might be argued that the more pronounced effect on industrial production in part reflects the higher cyclical amplitude of this narrower slice of economic activity. It could also be due to the greater dependence of manufacturing on international trade. The second column therefore repeats the exercise for the same countries but uses the change in real GDP per capita in place of the change in industrial production. The results, although smaller, remain significant and quantitatively important for this broader measure of activity. According to this estimate, delaying the exit from the beginning to the end of this fixed window is associated with about a 20 percent loss in real GDP per capita.

Table 3. Regressions Explaining the Depth and Duration of the Great Depression by Date of Exit from the Gold Standard^a

Independent variable	Dependent variable: Change in industrial production or real GDP per capita, 1929-37 (percent)			Dependent variable: Peak-to-trough decline in real GDP [p.cap?] (percent)		Dependent variable: Years until return to precrisis level (percent)	
	Industrial production ^b	Real GDP per capita ^b	Real GDP per capita				
Constant	50.521 (9.196)	20.014 (3.523)	9.066 (4.763)	18.105 (3.367)	7.865 (4.521)	10.176 (2.567)	5.848 (3.923)
Exit from gold standard (years after 1929)	-8.051 (2.247)	-3.731 (0.861)	-1.959 (1.338)	-0.346 (0.946)	1.019 (0.954)	0.213 (0.721)	0.836 (0.828)
Dummy for Axis power					3.558 (5.489)		-1.473 (4.763)
Dummy for Latin America					14.815 (3.918)		5.313 (3.400?)
Dummy for British Commonwealth					6.285 (5.427)		5.770? (4.709)
Adjusted R^2	0.478	0.573	0.055	-0.023	0.228	-0.025	-0.002
Standard error of the regression	19.065	7.305	15.662	11.072	9.619	8.44	8.346

Source: Authors' regressions using data from League of Nations, *Statistical Yearbook*, various issues; Eichengreen (1992); Officer (2001); Maddison (2004); Mitchell (2001[2003a b c?]).

a. Sample consists of 37 countries except where noted otherwise.

b. Sample consists of 14 countries.

The previous literature's use of the League of Nations sample puts particular weight on the experience of large countries and of countries in Europe. The third column therefore broadens the sample to include 37 countries, including many in Latin America. Although the coefficient on the timing variable remains negative, it is no longer statistically significant. Thus, some of the purported benefits of the 1930s regime switch are apparently sensitive to the country set.

In addition, because countries left the gold standard at different times, the literature's use of a single time period to measure recovery across that experience might be inappropriate. An alternative is to determine the width of the observation window country by country. We ran regressions using the date of exit from the gold standard to explain, first, the peak-to-trough decline in real GDP (fifth and sixth columns in table 3), and second, the number of years it took for real GDP to return to its pre-crisis level (final two columns). Because of the varied country set, the table reports both the simple regression using the date of exit and an augmented one that also includes dummy variables for whether the country was an Axis power, in Latin America, or a member of the British Commonwealth. In no case does the date of exit from the gold standard help to explain the depth or duration of the downturn, confirming the message from the earlier scatterplot.

All told, the evidence that countries exiting the gold standard early fared better is apparently fragile. Indeed, once one expands the sample to a broader set of countries and considers other measures of the business cycle, leaving the gold standard early was not always a reliable route to a shorter or less severe recession.

Why did exiting the gold standard generate so little benefit in the larger sample? The answer in part was already evident in table 2. Countries left the gold standard at different times.

Moreover, when they did leave, the range of variation in bilateral exchange rates vis-à-vis the U.S. dollar was wide, indicating that policymakers did not follow a common roadmap. The greatest number of countries left in 1931, but those that did so in 1932 adjusted by more. A few that moved to some form of floating arrangement saw their currencies unhelpfully appreciate against the dollar.

The important point for the United States is that almost all of these devaluations relative to gold produced an appreciation relative to the dollar, which added to the force of contraction domestically. Not until 1933 was some of that force pushed back, and even then the dollar still appreciated against the currencies of many economies. For contemporaneous observers, these swings in bilateral exchange rates smacked of “beggar thy neighbor” policy. From that experience was born a mistrust of floating exchange rates and a desire for a more managed system (famously expressed by Ragnar Nurkse 1944, among others). The net effect of these currency changes was to worsen the external drag on the U.S. economy, exactly when the appropriate policy was to reflate.

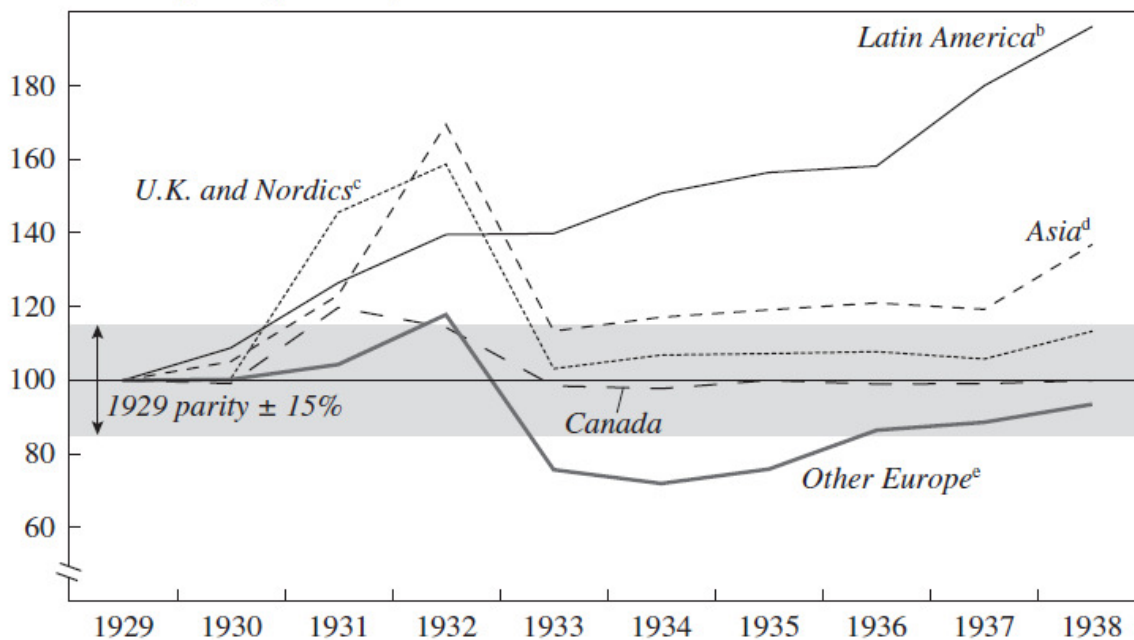
Some sense of the net external drag can be gotten from figure 3, which plots effective exchange rate indices between the United States and five country groups. The base is set to 100 in 1929, and the shaded area represents the range from plus to minus 15 percent of that parity. There are three main messages. First, the shaded area encompasses the experience from 1933 and thereafter, suggesting that external relative price adjustment was not the crucial means of rebalancing. Second, Canada’s vaunted embrace of floating exchange rates produced a result suggestive of considerable management in that market outcome.¹⁴ Third, most of the lines

¹⁴ Indeed, “fear of floating” in the Calvo and Reinhart (2002) sense seems evident.

follow a track above 100 (that is, an appreciation of the U.S. dollar), implying that exchange rates worked to offset some of the domestic U.S. monetary policy stimulus.

Figure 3. Exchange Rates of Selected Country Groups against the U.S. Dollar, 1929–38

Local currency units per dollar, 1929 = 100^a



Sources: Reinhart and Rogoff (2009) and sources cited therein; authors calculations.

a. Each index is calculated from the simple unweighted average for the countries in the group.

b. Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Uruguay, and Venezuela.

c. Finland, Norway, Sweden, and United Kingdom.

d. China, India, Japan, Korea, Netherlands East Indies, Philippines, Sri Lanka, Taiwan, and Thailand.

e. Austria, Belgium, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, and Romania.

This brings to mind Robert Mundell's (1968) insights about the $N + 1$ currency problem. In a system of $N + 1$ floating exchange rates, depreciation of the N currencies must come from an appreciation of the $N + 1$ currency. This creates a need for the economy using that anchor currency to overcompensate with domestic stimulus for that force of external restraint. The advantage of the gold standard was that all N could cheapen their currencies without putting a special burden on any one nation, given that the $N + 1$ price was the value of gold. In the event, however, the adjustment was not so smooth.

III. Fiscal Policy during the Great Depression

Sustained fiscal impetus in the major countries was similarly needed in the 1930s. And it was tried in many countries, but seldom consistently. Indeed, in many cases fiscal policy contracted as the national economy shrank, worsening the downturn. This record of policymaking is summarized in table 4, which reports for a group of 30 countries the year in which economic activity hit its cyclical low, as well as real government spending in that year, indexed so that the 1929 level equals 100.¹⁵ We rely on government spending to measure the fiscal impetus, rather than the more commonly used budget balance, for two reasons. First, revenue typically falls off in economic contractions, irrespective of policy intent, thus worsening the fiscal balance without necessarily providing much impetus. Second, we are somewhat more confident about the

¹⁵ Because of data limitations inherent in a large historical sample, the table uses statistics on central government spending only, which is problematic for countries with a federal system that allows discretion at the state or province level, such as the United States and Argentina, among others. Local budgetary pressures may have necessitated spending retrenchment that offset any federal impetus.

reliability of spending data over time and across countries than about that of revenue (see Kaminsky, Reinhart, and Végh 2005).

The countries in table 4 are listed according to the co-movement of government spending and the economic cycle, from the most procyclical to the most countercyclical. Quite clearly, fiscal policy sometimes imparted considerable restraint rather than stimulus. As the third column shows, real government spending contracted in at least one year in 24 of the 30 countries, sometimes by a large amount.

The United States was not among the countries where the trend of real government spending amplified the business cycle: by the trough in 1933, real government spending was almost twice its level of 1929. Figure 4 plots real government spending in the United States and Canada, again indexed to 100 in 1929. There were three distinct episodes of large increases in spending, first at the end of President Herbert Hoover's administration in 1932 and then under Roosevelt in 1934 and 1936. Contrary to the popular perception, Hoover did significantly enlarge the role of government.¹⁶ In contrast, the governments of the United Kingdom and the Nordic countries provided less impetus, and fiscal policy in the Latin American countries was decidedly procyclical until 1934. The last group was no doubt hampered by a lack of access to funding, as well as institutional problems evident, among others, in Argentina and Brazil.

¹⁶ Akerlof and Shiller (2009) applaud the aggressiveness of both Hoover and Roosevelt but lament the unevenness of their policies.

Table 4. Real Government Spending in Selected Countries, 1929-36^a

Country	Year of trough in real GDP per capita	Real government spending at trough (1929 = 100)	Largest annual decline in real spending (percent)	Year of largest decline in real spending
Chile	1932	53.0	34.4	1932
Peru	1932	55.7	25.7	1932
Venezuela	1932	73.8	33.2	1931
Finland	1932	79.4	28.7	1932
Austria	1933	79.9	21.8	1933
Germany	1932	94.1	9.8	1931
Netherlands East Indies	1934	94.9	4.0	1931
Brazil	1931	96.4	15.4	1931
Mexico	1932	96.9	7.2	1931
Japan	1931	99.7	8.9	1931
Colombia	1931	102.0	32.7	1929
Norway	1931	105.5	None	NA
New Zealand	1932	106.1	3.7	1932
Argentina	1932	110.2	3.9	1931
Uruguay	1933	110.7	13.3	1929
Hungary	1932	111.8	10.2	1932
India	1938	112.6	9.9	1932
Poland	1933	114.0	None	NA
Australia	1931	115.7	3.1	1929
Belgium	1932	116.2	0.2	1932
Greece	1932	117.5	38.8	1931
United Kingdom	1931	118.3	None	NA
Korea	1932	120.2	None	NA
France	1932	138.9	None	NA
Canada	1933	149.0	11.9	1933
Portugal	1936	151.9	3.9	1930
Sweden	1933	152.3	None	NA
Netherlands	1934	154.2	3.6	1934
Italy	1934	178.5	31.1	1929
United States	1933	191.6	2.1	1933
Median		111.3		
Standard deviation		31.9		

Sources: Mitchell (2003a, 2003b, 2003c); Reinhart and Rogoff (2009) and sources cited therein; and authors' calculations.

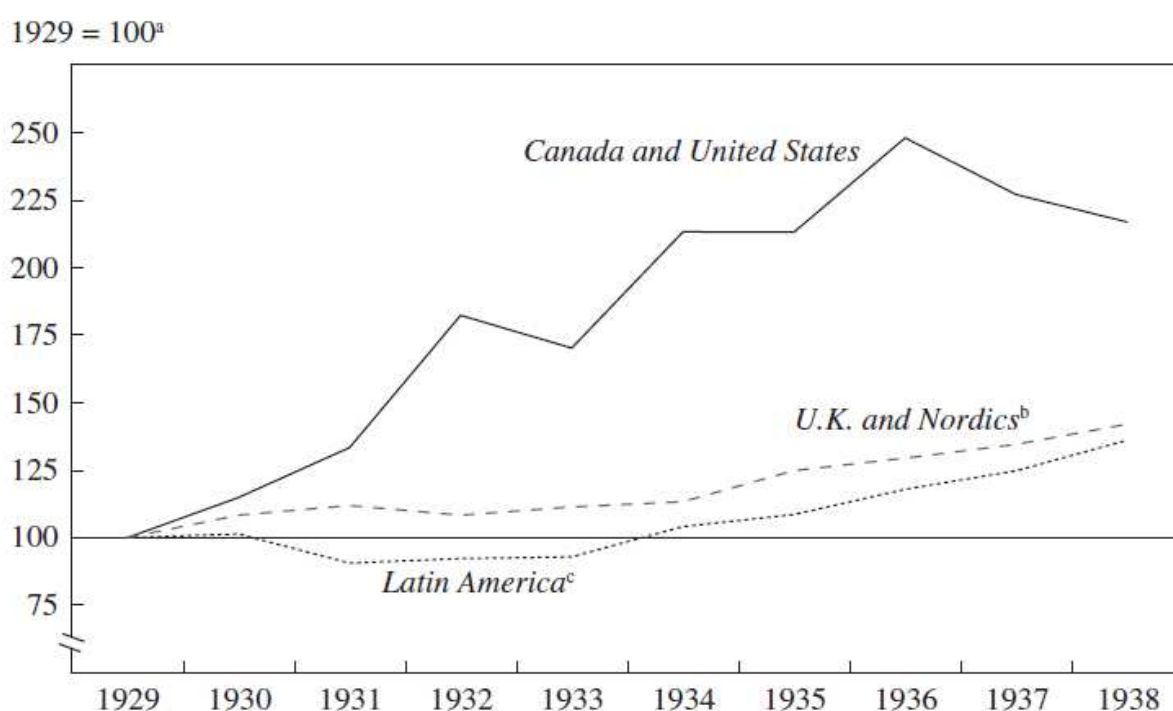
a. Central government only.

Although fiscal impetus was forceful in some countries, in almost all it was also erratic.

Figure 4 further reveals that each of the three large increases in spending in the United States and Canada was followed by some retrenchment. The impetus from government spending in the United States in 1932, 1934, and 1936 appeared on track to provide considerable lift to the economy, but after each of those years real spending dropped off, imparting an arithmetic drag

on expansion. The fact that fiscal expansion has been aggressive in many countries in 2009 works to help contain the contraction in the global economy. That such policy will continue to do so is far from assured, if history is any guide.

Figure 4. Real Government Spending for Selected Country Groups, 1929–38



Sources: Mitchell (2003a, 2003b, 2003c); Reinhart and Rogoff (2009) and sources cited therein; and authors' calculations.

a. Each index is calculated from the simple unweighted average for the countries in the group. Spending is central government spending only.

b. Nordics are Finland, Norway, and Sweden.

c. Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, and Venezuela.

Table 5 examines the ebbs and flows of real government spending across countries from 1929 to 1939. The first column reports the most conventional measure of spending volatility, the standard deviation of annual percentage changes in spending. Fiscal policy was indeed volatile in this period, with six countries posting a standard deviation of spending of more than 30 percent. A second indicator of the inconsistency of fiscal policy is the frequency with which government

spending sharply reverses course. We calculate the “amplitude” of such a reversal as the sum of the percentage changes in spending in two consecutive years in which the first year sees a rise in spending and the second a decline. The second column of table 5 reports the amplitude of the largest such reversal in real spending growth for each country, the third lists the year of that reversal, and the fourth reports the number of times such reversals exceeded 10 percentage points in amplitude. Again and again, fiscal policy lacked follow-through in providing consistent impetus. Every one of the 29 countries in the table experienced a reversal of real spending in at least one year of the decade, and all but one country suffered at least one reversal with an amplitude of more than 10 percentage points.

This volatility of fiscal spending could, in principle, have blunted some of the force of the fiscal impetus if it made rendered economic planning more difficult. Table 6 examines the extent to which such a mechanism was at work: using data from a sample of 30 countries from 1929 to 1939, the table reports regressions that attempt to explain the variation in the depth and duration of the business cycle with a measure of the growth of real government spending standardized by its volatility; to be precise, it is the average annual change in real government spending from 1929 to 1939, divided by its standard deviation. These regressions were performed with and without dummy variables for regions and for whether the country was an Axis power; the regressions including the dummy variables also include the logarithms of real GDP per capita and population in 1928, to capture any effects of country size.

As is evident from the first pair of regressions, the depth of the cycle appears unrelated to the volatility of government spending. However, the remaining regressions at least produce coefficients that match the intuition. Higher standardized spending hastened the return of output to pre-crisis levels and added to real GDP growth. However, the standard deviation of spending

is in the denominator of that explanatory variable, implying that greater volatility of real government spending tended to delay economic recovery and to reduce the net change in real GDP per capita. Thus, there may have been real costs associated with policy wavering.

Table 5.
Volatility of and Reversals in Real Government Spending in Selected Countries, 1929-1939

Country	Standard deviation of annual changes in real government spending (percent)	Amplitude of largest fiscal reversal ^a (percentage points)	Year of largest reversal	No. of reversals with amplitude > 10 percentage points
Italy	105.4	227.7	1937	3
Greece	61.3	159.2	1931	3
Peru	45.0	64.8	1929	5
United States	33.8	47.5	1933, 1935 ^b	3
Brazil	31.5	55.0	1933	5
Finland	30.6	33.0	1929	4
Portugal	29.7	66.6	1937	2
Japan	28.9	42.3	1937	4
Chile	27.6	51.5	1929	4
Colombia	27.6	68.0	1929	3
Venezuela	24.7	46.8	1929	4
France	21.5	15.1	1936	2
Germany	21.2	21.5	1929	2
Canada	16.6	39.9	1933	2
Sweden	16.5	31.4	1934	2
Austria	16.4	18.5	1931, 1932 ^b	3
Uruguay	16.4	24.1	1929	2
Argentina	15.2	21.2	1935	3
Netherlands	12.5	20.7	1932	3
Mexico	12.0	24.4	1937	1
Korea	11.9	16.6	1932	3
Netherlands East Indies	11.7	30.3	1938	1
India	10.0	13.5	1931	2
Hungary	9.6	20.1	1932	1
United Kingdom	9.0	12.8	1933	1
Norway	8.6	11.9	1933	1
Poland	7.8	12.8	1937	1
Australia	7.2	11.8	1932	1
New Zealand	6.5	8.9	1932	0

Sources: Mitchell (2003a, 2003b, and 2003c); Reinhart and Rogoff (2009) and sources cited therein; authors' calculations.

a. A reversal is defined as a year of rising followed by a year of declining government spending; the amplitude of a reversal is calculated as growth in year t plus growth in year $t + 1$. For instance, if real spending rose by 15 percent in year t and declined by 12 percent in the following year, the amplitude would be 27 percentage points.

b. Reversals in the two years were comparable in amplitude

Table 6.
 Real government spending and the shape of economic
 recovery
 1929 to 1939, across 30 countries

<i>Independent variables:</i>	Dependent variable: Peak-to-trough decline in real GDP (percent)		Dependent variable: Years until return to pre-crisis level, number		Dependent variable: Change in real GDP per capita, 1929 to 1937 (percent)	
Constant	14.22 <i>11.42</i>	25.15 <i>11.26</i>	10.51 <i>6.56</i>	9.88 <i>7.15</i>	-2.30 <i>14.05</i>	-7.51 <i>15.83</i>
Average growth of real government spending divided by standard deviation of that growth (a)	1.49 <i>7.71</i>	-9.50 <i>7.90</i>	-0.83 <i>4.42</i>	-1.58 <i>5.01</i>	5.63 <i>9.48</i>	11.86 <i>11.11</i>
Dummies for:						
Axis power?		3.38 <i>5.70</i>		-0.75 <i>3.62</i>		-4.71 <i>8.02</i>
Latin American?		15.54 <i>4.91</i>		3.61 <i>3.11</i>		-9.65 <i>6.90</i>
Commonwealth?		3.05 <i>5.21</i>		5.19 <i>3.30</i>		-4.13 <i>7.32</i>
<hr/>						
Adjusted R ²	0.00	0.29	0.00	0.14	0.01	0.09
Standard error of the regression	11.04	9.83	6.33	6.24	13.57	13.82

Note: Standard errors are given in italics.

(a) Sample from 1929 to 1939

IV. Some Lessons

Unconventional monetary policy and aggressive fiscal policy were used extensively in the 1930s, in a considerable number of countries. They were not, however, employed consistently. Monetary policy was hampered by beggar-thy-neighbor problems as countries devalued relative to gold at different times and by different amounts. As a consequence, countries derived less benefit from exiting the gold standard than they could have, if indeed they saw any benefit at all. The United States was in the vanguard of aggressive use of fiscal policy at the central government level, but there and in many other countries this fiscal impetus was partly reversed soon after. The net effect was to raise volatility—and therefore uncertainty—and potentially to lessen the stimulus provided.

A message from the 1930s is that national authorities must recognize that the openness of the global economy sometimes works to blunt the effectiveness of policy in one country. In the 2000s the $N + 1$ currency has been the U.S. dollar, whose special reserve-currency status meant that the United States received flight-to-safety flows even as it was the epicenter of the financial crisis.¹⁷ Like the appreciating U.S. dollar in the first part of the 1930s, this flight to the safe haven by capital holders outside the United States, by bolstering the dollar, augments the forces of restraint at home.

Such a force may strengthen the case for concerted fiscal stimulus, but here an unpleasant reality intrudes: financial markets do not view all countries alike. Some have a history of uncertain repayment of their debt. Indeed, as shown by Reinhart, Rogoff, and Miguel Savastano

¹⁷ We raised this point in Reinhart and Reinhart (2008) when we asked whether the United States was too big to fail. Note the parallel with the discussion of the Federal Reserve's failure in the early 1930s. Policymakers need to recognize that safe-haven flows increase demand, necessitating even greater increases in supply.

(2003), some countries are “debt intolerant” and tend to default at debt-to-income ratios that elsewhere would be an entry ticket to European Monetary Union under the Maastricht Treaty. Progress in institution building has been significant in many of these emerging market economies. But national authorities take that lingering lack of acceptance very seriously and are unlikely to act in a fashion that threatens a reminder of earlier excesses. This implies that the advanced economies may be the only agents with significant scope for fiscal stimulus during a global crisis.¹⁸

¹⁸ Another reason the advanced economies may have to shoulder more of the burden is systematic differences in fiscal multipliers across the North and the South, as discussed in Iizetzki, Mendoza, and Végh (2009).

References

- Akerlof, George A., and Robert J. Shiller. 2009. *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*. Princeton University Press.
- Barro, Robert J., and José F. Ursúa. 2008. "Macroeconomic Crises since 1870." *BPEA*, no. 1: 255-350.
- Bernanke, Ben S. 2004. *Essays on the Great Depression*. Princeton University Press.
- Bernanke, Ben S., and Vincent R. Reinhart. 2004. "Conducting Monetary Policy at Very Low Short-Term Interest Rates." *American Economic Review* 94, no. 2: 85-90.
- Board of Governors of the Federal Reserve. 1943. *Banking and Monetary Statistics, 1890-1941*. Washington.
- Cagan, Phillip. 1965. *Determinants and Effects of Changes in the Stock of Money, 1875-1960*. Columbia University Press.
- Calvo, Guillermo A., and Carmen M. Reinhart. 2002. "Fear of Floating." *Quarterly Journal of Economics* 117, no. 2: 379-408.
- Choudhri, Ehsan U., and Levis A. Kochin. 1980. "The Exchange Rate and the International Transmission of Business Cycle Disturbances: Some Evidence from the Great Depression." *Journal of Money, Credit and Banking* 12, no. 4, part 1: 565-74.
- Eichengreen, Barry. 1992. *Golden Fetters: The Gold Standard and the Great Depression 1919-1939*. Oxford University Press.
- Eichengreen, Barry, and Kevin H. O'Rourke. 2009. "A Tale of Two Depressions." *VoxEU* www.voxeu.org/index.php?q=node/3421 (June).
- Eichengreen, Barry, and Jeffrey Sachs. 1985. "Exchange Rates and Economic Recovery in the 1930s." *Journal of Economic History* 45, no. 4: 925-46.
- _____. 1986. "Competitive Devaluation and the Great Depression: A Theoretical Reassessment." *Economics Letters* 22, no. 1: 67-71.
- Eichengreen, Barry, and Peter Temin. 2000. "The Gold Standard and the Great Depression." *Contemporary European History* 9, no. 2: 183-207.
- Friedman, Milton, and Anna Jacobson Schwartz. 1963. *A Monetary History of the United States, 1867-1960*. Princeton University Press.
- Hamilton, James D. 1988. "The Role of the International Gold Standard in Propagating the Great Depression." *Contemporary Policy Issues* 6, no. 2: 67-89.

- Hsieh, Chang-Tai, and Christina D. Romer. 2006. "Was the Federal Reserve Constrained by the Gold Standard During the Great Depression? Evidence from the 1932 Open Market Purchase Program." *Journal of Economic History* 66, no. 1: 140-76.
- Ilizetzi, Ethan, Enrique Mendoza, and Carlos Végh. 2009. "How Big (Small) Are Fiscal Multipliers?" University of Maryland.
- James, Harold. 2009. *The Creation and Destruction of Value*. Harvard University Press.
- Kaminsky, Graciela L., Carmen M. Reinhart, and Carlos A. Végh. 2005. "When It Rains, It Pours: Procyclical Capital Flows and Policies." In *NBER Macroeconomics Annual 2004*, edited by Mark Gertler and Kenneth Rogoff. MIT Press.
- Maddison, Angus. 2004. *Historical Statistics for the World Economy: 1–2003 AD*. Paris: Organisation for Economic Co-operation and Development. www.ggdc.net/maddison/.
- Meltzer, Allan H. 2003. *A History of the Federal Reserve, Volume 1: 1913-1951*. University of Chicago Press.
- Mitchell, Brian R. 2003a. *International Historical Statistics: Africa, Asia, and Oceania, 1750–2000*. London: Palgrave Macmillan.
- . 2003b. *International Historical Statistics, Europe, 1750–2000*. London: Palgrave Macmillan.
- . 2003c. *International Historical Statistics: The Americas, 1750–2000*. London: Palgrave Macmillan.
- Mundell, Robert A. 1968. *International Economics*. New York: Macmillan.
- Nurkse, Ragnar. 1944. *International Currency Experience: Lessons of the Interwar Period*. Geneva: League of Nations.
- Officer, Lawrence H. 2001. "Gold Standard." In *EH.Net Encyclopedia*, edited by Robert Whaples. eh.net/encyclopedia/article/officer.gold.standard (October 1).
- Orphanides, Athanasios. 2004. "Monetary Policy in Deflation: The Liquidity Trap in History and Practice." *North American Journal of Economics and Finance* 15, no. 1: 101-24.
- Reinhart, Carmen M., and Vincent R. Reinhart. 2008. "Is the US Too Big to Fail?" VoxEU, November, at <http://www.voxeu.org/index.php?q=node/2568>.
- Reinhart, Carmen M., and Kenneth S. Rogoff. 2009. *This Time Is Different: Eight Centuries of Financial Folly*. Princeton University Press.

Reinhart, Carmen M., Kenneth S. Rogoff, and Miguel A. Savastano. 2003. "Debt Intolerance." *BPEA*, no. 1: 1-62.

Romer, Christina D. 1992. "What Ended the Great Depression?" *Journal of Economic History* 52, no. 4: 757-84.

Svensson, Lars E. O. 2003. "Escaping from a Liquidity Trap and Deflation: The Foolproof Way and Others." *Journal of Economic Perspectives* 17, no. 4: 145-66.

Appendix Table 1

Properties of the Data Set

Country	Exit from the Gold Standard		Country attributes		
	Year	Years until exit after 1929	Axis country?	Latin American?	British Commonwealth member?
Argentina	1930	1	0	1	0
Australia	1930	1	0	0	1
Austria	1931	2	1	0	0
Belgium	1935	6	0	0	0
Brazil	1930	1	0	1	0
Canada	1931	2	0	0	1
Chile	1931	2	0	1	0
Colombia	1932	3	0	1	0
Costa Rica	1932	3	0	1	0
El Salvador	1931	2	0	1	0
Finland	1931	2	0	0	0
France	1936	7	0	0	0
Germany	1931	2	1	0	0
Greece	1932	3	0	0	0
Guatemala	1933	4	0	1	0
Honduras	1933	4	0	1	0
Hungary	1931	2	0	0	0
India	1931	2	0	0	1
Indonesia	1936	7	0	0	0
Italy	1934	5	1	0	0
Japan	1931	2	1	0	0
Korea	1931	2	0	0	0
Malaysia (Malaya)	1931	2	0	0	0
Mexico	1931	2	0	1	0
Netherlands	1936	7	0	0	0
New Zealand	1930	1	0	0	1
Nicaragua	1932	3	0	1	0
Norway	1931	2	0	0	0
Peru	1932	3	0	1	0
Philippines	1933	4	0	0	0
Poland	1936	7	0	0	0
Portugal	1931	2	0	0	0
Romania	1932	3	0	0	0

Sweden	1931	2	0	0	0
Switzerland	1936	7	0	0	0
UK	1931	2	0	0	1
US	1933	4	0	0	0
Uruguay	1930	1	0	1	0
Venezuela	1930	1	0	1	0

Sources:

1. Eichengreen, Barry, 1992. *Golden Fetters: The Gold Standard and the Great Depression, 1919-1939*
2. Maddison, Angus, 2004. *Historical Statistics for the World Economy, 1-2003 AD*
- 3a. Mitchell, Brian R. 2003a. *International Historical Statistics: Africa, Asia, Oceania, 1750-2000*
- 3b. Mitchell, Brian R. 2003b. *International Historical Statistics, Europe, 1750-2000*
- 3c. Mitchell, Brian R. 2003c. *International Historical Statistics: The Americas, 1750-2000*
4. Officer, Lawrence H. 2001. "Gold Standard."
5. League of Nations, Statistical Yearbook (various).

Appendix Table 2

Economic performance, 1929 to 1937

Country	Change in real GDP per capita, percent			Years to recover	Change in industrial production 1929 to 1937
	1929 to 1937	peak-to- trough decline			
Argentina	-5.5	19.4	15	.	
Australia	9.2	17.3	10	.	
Austria	-14.7	23.4	10	3	
Belgium	-1.8	10.4	11	-3.7	
Brazil	9.9	13.3	8	.	
Canada	-11.7	29	12	-0.5	
Chile	-7.9	46.6	16	31.6	
Colombia	16.4	3.8	3	.	
Costa Rica	13.9	15.7	9	.	
El Salvador	2.3	11.3	9	.	
Finland	26.7	6.1	5	55.6	
France	-4.7	15.9	10	-18.3	
Germany	15.6	17.8	7	17.2	
Greece	18.2	6.4	4	51.2	
Guatemala	28.2	23.6	6	.	
Honduras	-29.1	32	36	.	
Hungary	2.7	11.4	7	21.5	
India	-7.1	8.2	31	.	
Indonesia	-2.5	14.3	9	.	
Italy	7.3	6.4	6	.	
Japan	14.3	9.3	4	70.8	
Korea	39.7	12.7	5	.	
Malaysia (Malaya)	-22.2	17	35	.	
Mexico	2.2	31.1	16	24	
Netherlands	-4.5	16	21	2.8	
New Zealand	15.9	17.8	7	.	
Nicaragua	-39.8	43	24	.	
Norway	23.8	1.9	3	29.6	
Peru	1	25.4	6	.	
Philippines	1.1	13.1	8	.	
Poland	-9.5	24.9	9	8.6	
Portugal	9.1	2.4	2	.	
Romania	-1.9	8	7	31.7	

Sweden	25.3	4.8	4	49
Switzerland	-2.5	9.8	9	.
UK	13	6.6	5	23.6
US	-6.8	28.9	10	-7.8
Uruguay	-10	36.1	17	.
Venezuela	13.7	24.1	6	.

Appendix Table 3

Real government spending, 1929 to 1937

Country	Real government spending,			Normalized by standard deviation	
	Maximum impetus	Annual change Mean	Standard deviation	Maximum impetus	Mean
Argentina	132.61	15.17	8.47	15.66	1.79
Australia	115.68	7.16	4.95	23.35	1.45
Austria	122.56	16.44	12.47	9.83	1.32
Belgium	135.22	6.99	5.71	23.67	1.22
Brazil	139.77	31.54	16.83	8.31	1.87
Canada	169.10	16.56	11.70	14.46	1.42
Chile	109.89	27.57	18.25	6.02	1.51
Colombia	112.37	27.58	14.32	7.85	1.93
Costa Rica	.	.	.	.	.
El Salvador	.	.	.	.	.
Finland	153.24	30.56	21.15	7.24	1.44
France	148.29	21.47	19.25	7.70	1.12
Germany	125.40	19.20	14.36	8.73	1.34
Greece	220.46	61.30	41.60	5.30	1.47
Guatemala	.	.	.	.	.
Honduras	.	.	.	.	.
Hungary	124.46	9.61	10.69	11.65	0.90
India	119.65	10.03	6.79	17.62	1.48
Indonesia	126.97	11.72	10.13	12.53	1.16
Italy	372.00	105.38	63.12	5.89	1.67
Japan	237.27	28.94	17.07	13.90	1.70
Korea	191.15	11.89	7.00	27.31	1.70
Malaysia (Malaya)	.	.	.	.	.
Mexico	144.38	11.96	9.27	15.58	1.29
Netherlands	166.13	12.46	8.71	19.07	1.43
New Zealand	151.39	6.45	5.60	27.05	1.15
Nicaragua	.	.	.	.	.
Norway	109.04	8.58	8.52	12.80	1.01
Peru	101.50	45.03	26.13	3.88	1.72
Philippines	.	.	.	.	.
Poland	136.61	8.25	5.50	24.83	1.50
Portugal	151.87	29.68	17.86	8.50	1.66
Romania	.	.	.	.	.

Sweden	159.25	16.54	9.25	17.22	1.79
Switzerland	.	.	.	.	.
UK	124.93	8.96	8.59	14.54	1.04
US	330.89	33.80	20.40	16.22	1.66
Uruguay	152.64	16.43	10.40	14.68	1.58
Venezuela	165.99	24.68	16.92	9.81	1.46