THE CONSEQUENCES OF HIGH GOVERNMENT DEBT: REINHART AND ROGOFF VERSUS PUNDITS

F.F. Wiley says the Reinhart-Rogoff controversy over government debt reflects badly on the pundits

By the onset of the 2008–09 global financial crisis, anyone with a passing interest in the consequences of excessive debt was familiar with economists Carmen Reinhart and Kenneth Rogoff.

Reinhart and Rogoff (I'll call them 'RR') had spent years studying debt crises, and few economists were as qualified as RR to interpret events as they unfolded. They accurately predicted that the hangover from the crisis would be long and painful—and that public debt would increase rapidly to offset any contraction on the private side.

The second prediction, in particular, led to further research on government debt. In a 2010 paper, titled 'Growth in a Time of Debt,' RR suggested that economic growth tends to be unusually low after government debt rises above 90% of GDP.[1] They confirmed this result in a second paper in 2012, which dug deeper into the growth-debt relationship.[2] The 90% result soon became RR's best-known work, familiar to policymakers throughout the world.

RR in the crosshairs

But fame has its drawbacks, as RR learned the hard way. They were a prime target for populist economists who prefer to downplay the risks of excessive government borrowing. Even though their conclusions were consistent with the findings of other researchers, RR were the best known of the bunch and most clearly in the crosshairs.

Relatively unknown research team sparks media frenzy

Enter three University of Massachusetts scholars: Thomas Herndon, Michael Ash, and Robert Pollin, who quickly became known as 'HAP.' In April, HAP released a harsh critique of RR's 2010 paper, arguing that it contained fatal errors.[3] They revealed an embarrassing calculation error in one of RR's spreadsheets, which they examined as part of their critique. They also argued that RR omitted data points without justification and used an unconventional weighting method in their statistical averages. In response, RR acknowledged the calculation error but defended their dataset and weighting methods.[4]

The academic dispute quickly went viral, with heavy coverage by bloggers, newspapers and even *The Colbert Report*. But instead of a measured, balanced assessment of the perspectives of two teams of academics, we saw what happens when a politically charged research debate lands in the laps of pundits with preconceived ideas about what the

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research should say. Media reports were filled with misinformation.

My first goal here is to straighten out several fallacies that took hold. I'll then add editorial comments and 'scores' on each of the parties involved, as well as observations on the poor quality of the contributions from much of the punditocracy.

For all the public focus on RR's calculation error, it didn't have a meaningful effect on their results.

The second goal is to share an example of the value of RR's extensive government debt database. I've been using this data in my own research for a few years, and recently published a study exploring the outcomes of 63 high government debt episodes. The conclusions challenge conventional thinking about the implications of rising public debt.

It's always politics—Never personal

Before starting with the fallacies in the RR-HAP controversy, it's important to recognise the principal combatants' biases. First, it's clear that RR truly believe that excessive government debt leads to lower growth—on a conceptual basis—as do many other people. Second, these beliefs don't sit well with HAP, who argue that RR have too much influence over public policy decisions in the United States and Europe.

HAP suggest that policy could be less austere in both regions. They don't like to hear politicians repeat RR's warnings about the dangers of high debt, and hoped to discredit RR and end RR's perceived role in current policies. HAP's paper concludes with the statement:

> RR's findings have served as an intellectual bulwark in support of austerity politics. The fact that RR's findings are wrong should therefore lead us to reassess the austerity agenda itself in both Europe and the United States.

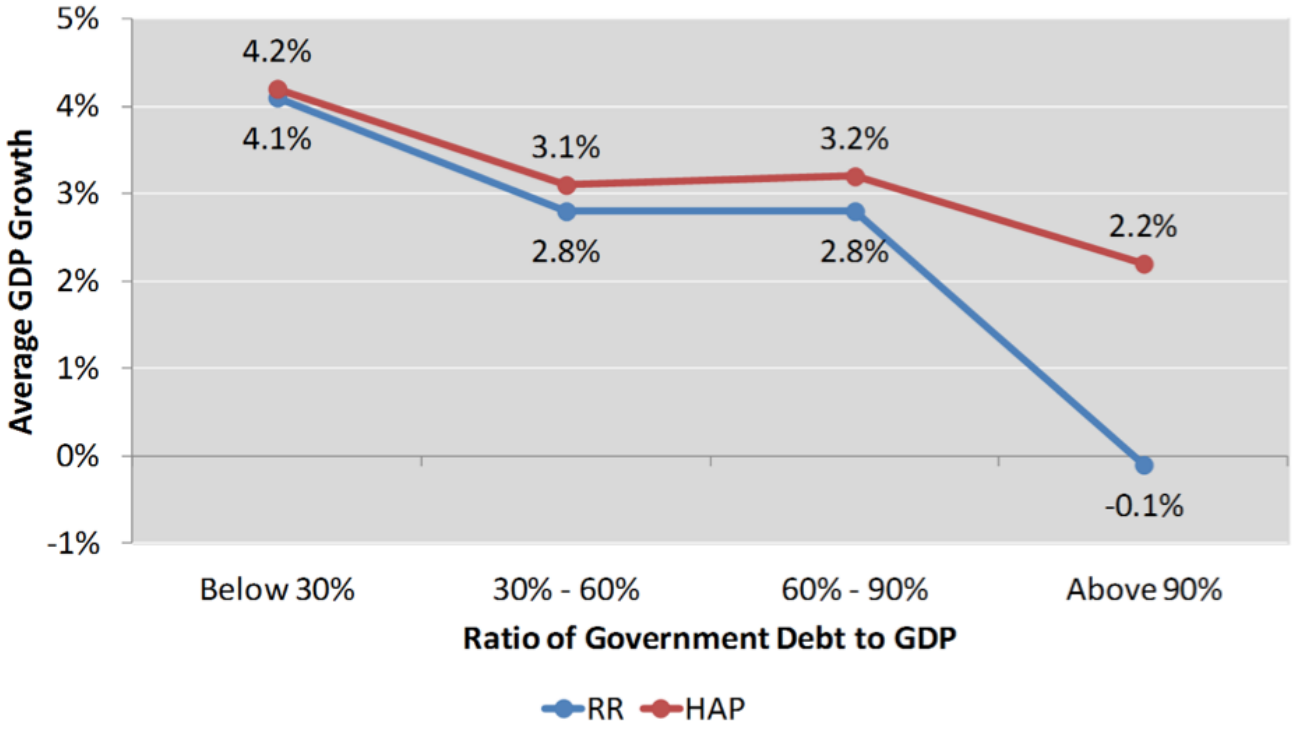
But HAP didn't challenge the full breadth of RR's thinking and research. Instead, they focused on one calculation in RR's first paper on debt and growth—arithmetic average economic growth rates from 1946 to 2009. Figure 1 shows the competing views on these average growth rates.

From this simple chart, pundits launched a giant game of 'whisper down the lane.' We were fed a succession of incomplete, exaggerated, misleading and erroneous reports, as explained in these eight observations:

1. For all the public focus on RR's calculation error, it didn't have a meaningful effect on their results. As reported by HAP in their paper (p. 7), it changed the arithmetic average in the >90% bucket on the right hand side of the chart by 0.3%. That's pocket change. But the error's insignificance was emphasised in only two of the many early accounts I read (by Justin Fox of the *Harvard Business Review* and Brad Plumer of the *Washington Post*).[5] In a couple of the very earliest reports on HAP's paper, pundits eventually backtracked by adding a mix of clarifications, corrections and updates to their original posts, presumably after recognising they overstated the error's significance.[6] But both left their prose written in a way that continued to emphasise it. And their later clarifications didn't stop other commentators from reporting that the growth differences shown were explained entirely by the error, which is untrue. Nor did they prevent sensational titles such as 'How an Excel error fueled panic over the federal debt' (*LA Times*), 'FAQ: Reinhart, Rogoff and the Excel error that changed history' (*Bloomberg BusinessWeek*), 'Math in a time of Excel: Economists' error undermines influential paper' (*DailyFinance*).[7]

2. Much of the reporting extended beyond the 2010 paper, leading readers to believe that HAP's critique invalidates RR's other work, including their 2009 bestseller, *This Time is Different*.[8] An *LA Times* report even claimed that RR 'popularized' the 90% threshold in their book. In fact, the book did no such thing, nor did RR publish any similar results before 2010.

Figure 1: HAP results versus RR results



Sources: Carmen M. Reinhart and Kenneth S. Rogoff, 'Growth in a Time of Debt,' *American Economic Review* 100 (18 January, 2010); Thomas Herndon, Michael Ash, and Robert Pollin, 'Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff,' Working Paper Series 322 (Political Economy Research Institute, University of Massachusetts, Amherst: April 2013); Cyniconomics.

3. The dispute centres on the slope and significance of the line in Figure 1, particularly the last segment leading to the 90% bucket, not whether it's rising or falling. But that didn't stop pundits from writing their accounts in ways that suggested disagreement about the line's direction. Moreover, RR pointed out that they placed more emphasis on medians than averages (which is entirely consistent with a review of their work), and the medians escaped HAP's critique without comment (more on this below). The fact that HAP's average economic growth calculations yielded similar results to RR's medians received almost no attention in the public discussion.

4. Despite RR's data being posted on their websites for public access, pundits outrageously claimed that it wasn't made available.[9] It's not clear why they got this so wrong, but the accusation became a part of many reports, just like the other falsehoods. In late May, RR finally posted screenshots from the 'WayBack Machine,' an independent site that stores whole web pages from the past, to prove that their data was accessible as far back as October 2010.[10] Unfortunately, it was too late to sway many of those who had read about RR's alleged secrecy, formed their conclusions, and moved on.

5. Contrary to claims by HAP, the austerity push in Europe wasn't triggered in any way, shape or form by RR's research. It's based on northern Europe's struggle to limit the potential damage to its own economies from fiscal crises in the peripheral countries in the context of the European Monetary Union.[11] In other words, it's largely a matter of regional politics. What's more, to the

extent that policymakers even noticed RR's advice, they would have heard a message of caution about austerity. The public record shows quite clearly that RR was opposed to policies of 'withdrawing fiscal stimulus too quickly,' choosing instead to emphasise the critical importance of structural reforms, and in some cases, debt write-downs.[12]

RR never presented 90% as a magic number—where 89.9 is a clear, sunny day and 90.1 a class 5 hurricane—nor did they neglect to recognise that correlation is not causation.

6. While HAP and many others made a fuss about RR's alleged influence over the media, with much complaining about a particular *Washington Post* editorial that referenced the 90% threshold, this part of their story was thankfully refuted by, well, the *Washington Post*. Weighing in on the dispute, the 'WaPo' editors noted that it was 'preposterous' to blame RR for global austerity, and that RR's hold on their own thinking was 'rather overstated in some quarters.'[13]

7. Similarly, RR aren't puppet-masters controlling Republican budget strategies in the United States, notwithstanding Paul Ryan's reference to their research, which was discussed by HAP in their paper and repeated many times by RR's critics. I'm not aware of any public comments from Ryan on the matter, but it seems unlikely that we'll wake up one day and read about his conversion to the 'debt doesn't matter' school based on HAP's critique.

8. Finally, RR never presented 90% as a magic number—where 89.9 is a clear, sunny day and 90.1 a class 5 hurricane—nor did they neglect to recognise that correlation is not causation. The 90% threshold is similar to the 200 mg/dL cholesterol level that the American Heart Association (AHA) warns will 'raise your risk' of heart disease; neither figure implies a sharp drop-off or 'cliff' at the exact threshold point. As an example of a correct interpretation of RR's research, Tyler Cowen of Marginal Revolution—one of the most heavily trafficked economics blogs—wrote in 2010 that 90% wasn't 'sacred' or 'stable.'[14] I always saw it as merely the upper limit on one of RR's buckets and a reasonable marker to use in conclusions. Such markers are needed to make sense of complicated risks. And yet, anti-RR pundits suggest that it's bad research to attempt an answer to the question: 'At what point does debt become a problem?' This is just as illogical as a slam on the AHA for its advice that we should lay off the fats if our cholesterol rises above 200.

Keeping score

And now for the scorecard I promised. I'll start with RR.

-0.5 for an Excel error that should have been caught before publication. But this is a minor issue, as I pointed out above. I reread the paper to check the effect, and the error didn't change a single word. We all make mistakes, and this one wasn't even a factor. It's like the stumble that costs a distance runner a fraction of a second but doesn't change his position in the race. I repeat: *It didn't change a single word.*

No score on the debate over the weighting method. RR have a clear and logical defence for their approach, while HAP offered a reasonable criticism. This happens all the time in academia. People think and act differently, and they also approach research differently.

No score on HAP's accusation that RR selectively omitted certain data points. I have no reason to doubt RR's defence that their dataset wasn't complete when they wrote the paper. I've used their data on several occasions and seen it evolve, with significant additions to their government defaults in 2011, for example. And it takes time to build such a large dataset that you can use with confidence, let alone share with your peers as RR have done graciously.

-1 for the interactional effects of their various methods. Based on the mix of methods that RR chose, HAP pointed out that the average growth rate for RR's >90% bucket assigned a 14% weight to a single year's growth in New Zealand. The year happened to be 1951, when New Zealand's economy reportedly (but not correctly—see HAP's scores below) contracted by 7.6%. This seems too much weight for such an extreme result and it would have been helpful for RR to highlight its effect. But it's hardly the intellectual travesty HAP made it out to be. Empirical work is always vulnerable to outliers in the data. The important thing is not to make your methods perfect, which is impossible, but to recognise their limitations.

+10 for their contribution to their field. Yes, I'm biased in that I believe RR have built the world's most comprehensive history of the types of risks that are most threatening to us today. Their dataset and book are tremendous accomplishments. And remember, they operate in the field of macroeconomics. If you were to review all the published papers in this field for the last, say, 100 years, and weigh them against real-life events, the vast majority could be shown to have major shortcomings. Many have done real damage, leading policymakers to adopt views that are hopelessly disconnected from reality. It's no exaggeration to say the foundations of conventional macroeconomic theory have been discredited repeatedly in the last century. And of most concern are the papers that rely on unrealistic, abstract theories, not a 2% disagreement in a historical average. By comparison, HAP versus RR is ho-hum.

Here are my scores for HAP:

+2 for delivering a helpful critique on one aspect of RR's paper, with a comprehensive collection of charts that clearly illustrates the historical results.

-2 for the way it was done. Reports from both sides suggest that RR gave their spreadsheets to HAP but didn't even receive an advance copy of the critique. Before RR knew of the analysis, blogger Rortybomb had already read HAP's critique, interviewed the authors, examined their spreadsheets, and written the first article to hit the blogosphere, triggering an avalanche of coverage on financial and political sites. Because of this ambush, many people formed their opinions without seeing both sides of the story.

-1 for the analysis of interactional effects. While these effects were noteworthy, it turns out that HAP got them wrong. As Reinhart disclosed on her website, she discovered that the 1951 New Zealand GDP data in RR's initial dataset (they had turned to other sources by the time of their 2012 paper) was incorrect, thanks to an error in a third-party database that's heavily used and highly regarded by economists.[15] HAP then compounded the error by adding New Zealand data for 1946 to 1950, which was also incorrect.[16] That New Zealand featured so prominently isn't surprising; I too had dropped the country from unrelated research published in March 2013 because I hadn't sorted discrepancies in data obtained from different sources.[17] Considering HAP's vehemence in attacking RR's data choices, HAP should have investigated these choices more thoroughly before publishing their critique.

It's no exaggeration to say the foundations of conventional macroeconomic theory have been discredited repeatedly in the last century.

-3 for failing to acknowledge the most important of RR's results on the empirical relationship between growth and debt. HAP had no comment whatsoever on the very first result cited in RR's 2010 paper—the finding that the median growth rate is about 1% lower when debt rises above 90% of GDP. And HAP also failed to comment on the first result cited in RR's 2012 paper, which also referenced a growth difference of about 1%. Based on RR's papers and interviews, it should be no surprise that pre-2013 accounts of their research highlighted the 1% difference, as John Mauldin and Jonathan Tepper do in their 2011 book, *Endgame*: 'Rogoff and Reinhart show that when the ratio of debt to GDP rises above 90 percent,

there seems to be a reduction of about 1 percent in GDP.'[18] But HAP chose to focus exclusively on arithmetic averages over a single time period and calculated a revised difference of, well, about 1%. In other words, they asked us to cross out RR's 1% and replace it with their more 'accurate' 1% (see Figure 2). So what exactly was the difference we were arguing about?

Overall, HAP certainly offered some analysis for consideration, while pointing out weaknesses in the 2010 paper, as is expected in a critique. But they just as certainly failed to disprove RR's thesis that high debt tends to be associated with lower growth.

Assigning a score to the pundits

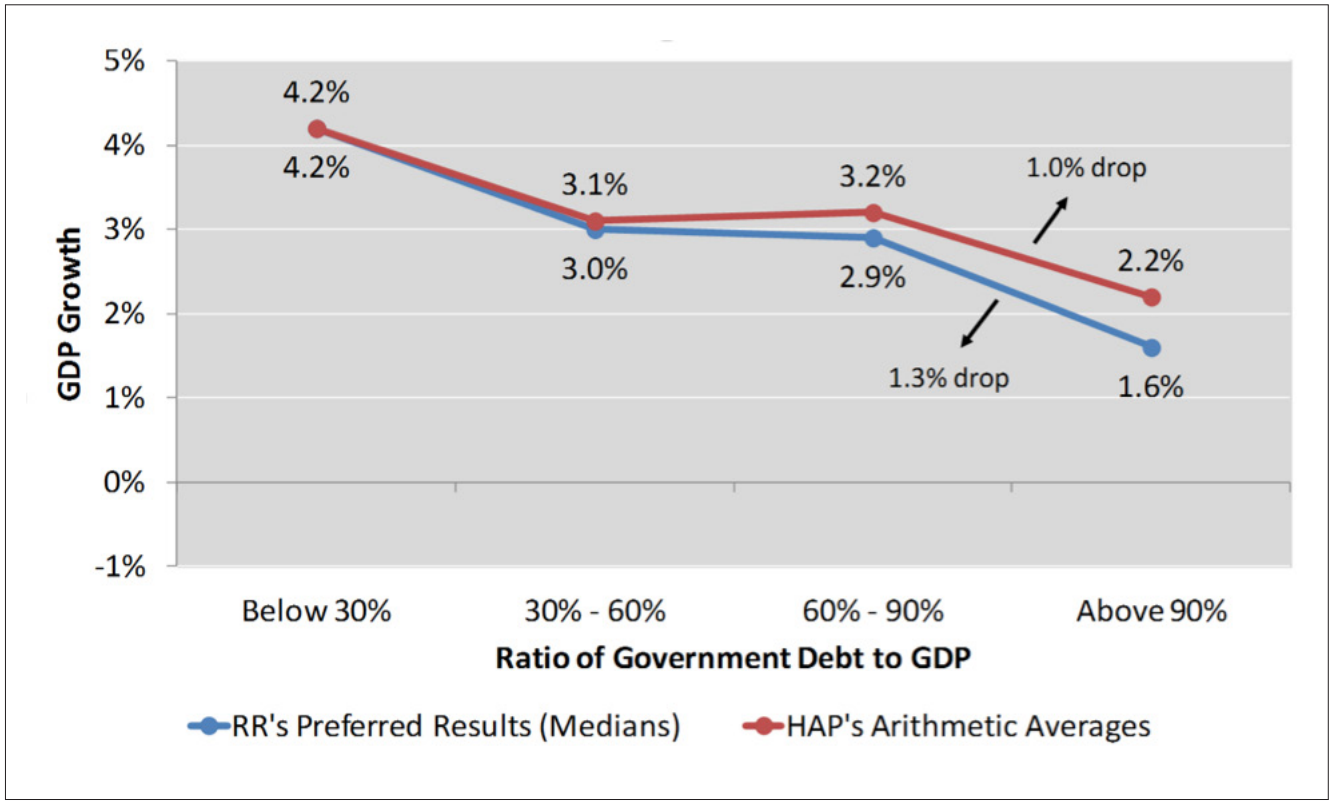
In the meantime, pundits inclined towards loose fiscal policy launched a character assassination of remarkable force. One only needed to read a few of the more critical essays and comment threads to see RR subjected to a treatment normally reserved for crooks and felons.

Most remarkable about this episode is how everyone became instant experts on exactly how RR described their research to policymakers all over the world. I must have been the only one who missed the nightly *Reinhart and Rogoff Hour* on national television.

Which brings me to the scoring for the pundits who unleashed the frenzy. Their contribution isn't so much a number but an odour. They left a stench of hypocrisy and a strong whiff of political trickery by using sensational language and misrepresenting the real issues.

It's easy to see why they sided with HAP—the pundits are philosophically opposed to any

Figure 2: HAP results versus RR preferred results



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research suggesting that high government debt can have unwanted consequences. Moreover, they emphasised the insignificant spreadsheet errors because no one would have otherwise paid attention to their rhetoric.

In using HAP's critique as an opportunity for political chest banging, pundits themselves made clear errors in articles written to heap scorn on someone else's errors. Add the many critical points they failed to mention, and much of the Reinhart-Rogoff reporting amounted to nothing more than a witch-hunt.

Diagnosing the real problem

Unfortunately, witch-hunts are usually successful. Few lay people stuck with the debate long enough to work through the onslaught of misinformation in the weeks after HAP published their paper. Those who did follow it watched the smear campaigners modify their message as the truth trickled through. But rather than owning up to their errors, critics devised new strategies for discrediting RR's research.

Paul Krugman, for example, retreated to little more than a charge that RR overstate the causal effects of debt on growth, proclaiming that causality is from growth to debt.[19] But the public record shows that:

- Far from denying the effects of growth on debt, RR are among the most accomplished researchers on this topic.

- Krugman's charges flatly contradict the advice he offered in 2003 when the parties responsible for rising debt were ideological foes rather than friends. In these instances, he complains about the risks of 'sky-high' interest rates, 'fiscal train wrecks,' and the 'threat to the federal government's solvency.'[20]

In retrospect, the travesty here isn't an inconsequential Excel error but a strong disincentive to anyone who dares answer the question: 'How much debt is too much?' Team Krugman has shown it will do whatever it takes to discredit serious attempts to answer that question.

And yet, this may be the most important economic question we face. Historical attitudes towards budgeting and debt are one of the major dividing lines between developed countries and banana republics. We cannot afford to forget what needs to be done to stay on the right side of that line. In that spirit, I'll share my own contribution to demonstrate the usefulness of RR's data. While recent debate has centred on the relationship between debt and growth, I undertake a slightly different exercise:

- Take each historic instance of government borrowing rising above 105% of GDP (America's ratio before a major GDP redefinition in August)

- Eliminate those instances in which creditors received a lower return than originally promised, due to defaults, bond conversions, service moratoriums, and/or debt cancellations

- Of the remaining instances, consider whether and how the debt-to-GDP ratio was reduced.

In other words, let's see what history tells us about America's debt ratio and what comes next. You may find the answer surprising.

Most remarkable about this episode is how everyone became instant experts on exactly how RR described their research to policymakers all over the world. I must have been the only one who missed the nightly *Reinhart and Rogoff Hour* on national television.

What 63 high government debt episodes tell us

I start with 63 episodes of debt reaching the 105% threshold, as shown in the Table 1. These are drawn from RR's debt database, with just a few eliminations that are explained in the notes at the bottom.

In addition to screening for breaches of 105%, I need to establish the end of each episode as well. For this, I use a 90% threshold to identify periods of genuine debt ratio reduction. With each episode beginning at 105% and ending after debt falls below 90%, there's a reasonable improvement from start to finish. Recent struggles with high debt in which debt-to-GDP remains above 90% (and there are many) are excluded from the analysis.

I also record the peak debt ratio on every path from 105% to 90% and use this figure to sort the rows in the table. After narrowing the dataset (see below), I focus mostly on time periods of debt ratio reduction—from the peaks to the end of each episode.

Table 1: Episodes of debt breaching 105% of GDP and then falling below 90%

Country & Yrs. of High Debt Episode	Tot. Yrs.	Peak Debt Ratio	Peak Yr.	Country & Yrs. of High Debt Episode	Tot. Yrs.	Peak Debt Ratio	Peak Yr.
Morocco, 1990*-91	1	105	1990	Nicaragua, 1914*-18	4	143	1915
Ecuador, 1918-19	1	106	1918	Turkey, 1925-33	8	149	1930
C.A.R., 1994-95	1	106	1994	Italy, 1919-26	7	153	1921
Brazil, 1987-88	1	108	1987	Bolivia, 1986-90	4	153	1986
Sri Lanka, 1987-97	10	109	1988	Argentina, 2002-05	3	155	2002
Kenya, 1993-95	2	112	1993	Costa Rica, 1981-90	9	158	1981
Ghana, 1994-95	1	112	1994	Spain, 1869-83	14	169	1876
Ireland, 1986-90	4	112	1987	Bolivia, 1932-37	5	170	1932
Italy, 1930-37	7	113	1931	Algeria, 1987-98	11	174	88
Panama, 1988-92	4	113	1990	Iv. Coast, 1987-2004	17	174	1994
S. Africa, 1932-35	3	113	1932	Australia, 1945-51	6	190	1946
Uruguay, 2003-05	2	116	2003	Nigeria, 1990*-2000	10	191	1993
Uruguay, 1905-08	3	117	1905	Chile, 1932-34	2	208	1932
France, 1884-1906	22	117	1887	Honduras, 1983-2000	16	209	1990
Argentina, 1891-93	2	118	1891	Greece, 1888-WWI	?	223	1897
Argentina, 1989-90	1	118	1989	Honduras, 1914*-25	11	223	1914
Italy, 1888-1905	17	118	1897	Neth., 1933-1955	22	223	1946
Belgium, 1946*-48	2	118	1946	U.K., 1918-65	47	238	1947
Belgium, 1987-2006	19	118	1993	Turkey, 1871-1903	32	244	1880
Egypt, 2003-07	4	118	2005	N.Z., 1884-1950	66	249	1933
U.S., 1945-50	5	121	1946	Peru , 1883*-87	4	257	1884
Uruguay, 1887-94	7	124	1887	U.K., 1748-1864	116	261	1819
Spain, 1898-1911	13	128	1902	France, WWI-?	?	262	1922
Mexico, 1986-88	2	128	1987	Neth., 1814*-73	59	278	1834
Belgium , 1921-27	6	129	1922	Egypt, 1873-1910	37	336	1886
Italy, 1941-45	4	129	1942	Zambia, 1984-2005	21	352	1986
Ecuador, 1987-94	7	130	1989	Greece, 1848-84	36	409	1848
Egypt, 1993-98	5	130	1993	Argentina, 1827-29	2	426	1827
Nicaragua, 1932-34	2	131	1932	Zimbabwe, 2000-04	4	640	2003
Canada, 1945-51	6	136	1946	Paraguay, 1937-?	?	937	1944
Greece, 1928-37	9	139	1931	Nicaragua, 1979-2007	28	1209	1989
Ghana, 2000-05	5	139	2001				

* First year in range is also the first year following a gap in the data.

Source: Cyniconomics calculations of high debt episodes in the January 2013 Reinhart and Rogoff data.[21]

My next step is to remove the episodes that included a credit event, which could be a default, bond conversion, service moratorium, or debt cancellation. In a large majority of cases, the credit event was needed to bring debt-to-GDP under control. Once they're removed from the initial dataset, I'm left with 11 episodes, all of them showing a reduced debt ratio without any recognised creditor haircuts.

But then I add three episodes—the Netherlands from 1814 to 1873, the United Kingdom from 1918 to 1965, and Egypt from 2003 to 2007. These stand out because there was significant debt reduction well after the respective credit events, although I also considered the global importance of each of their debt battles.

With the three additional episodes, I have 14 instances of relatively successful debt reduction. Note that 12 of them occurred in economies considered today to be developed, with only one (Egypt) occurring in an emerging economy and one (South Africa) being something of a hybrid.

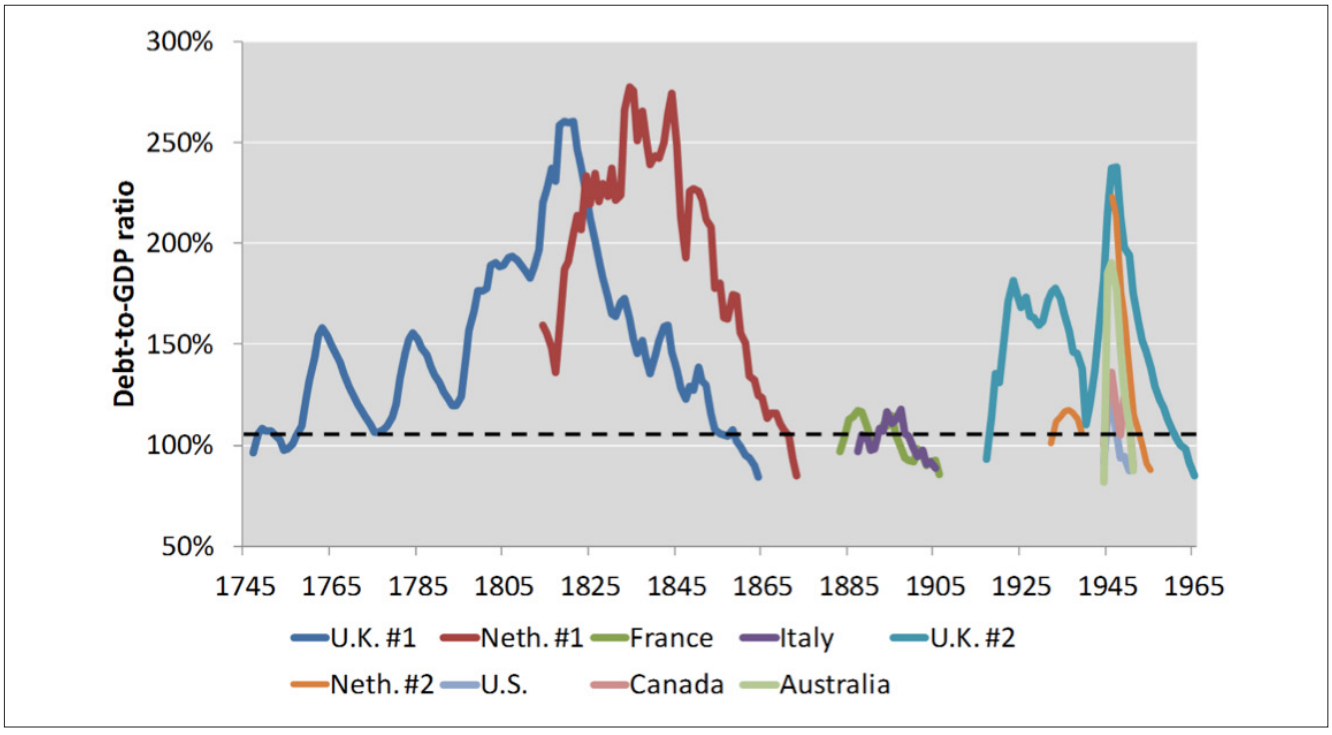
My last step is to consider how the debt ratios were reduced. I look at large and small countries separately, using a rule that's sure to anger the Walloons but is reasonable: Any country with an economy equal to or bigger than the Netherlands is large, while a small economy means that a country's output is similar to or less than Belgium's.

The large countries tell us to stop running deficits

There are nine episodes in the large country group (see Figure 3).

I discussed five of these in an article published in March, titled 'Answering the Most Important Question in Today's Economy,' where I set the debt threshold considerably higher at 150% of GDP.[22] I argued then that we should be wary of claims that massive debt ratios are not a big deal because some countries have been there before. In all the cases I considered, countries that recovered from huge debt totals enjoyed advantages that no longer exist. In the nineteenth century, circumstances included resource-rich colonies that the British and Dutch exploited to ease budget pressures. After World War II, debt proved temporary largely because the combatants ran large

Figure 3: Large countries breaching 105% debt-to-GDP



Source: Cyniconomics calculations using Reinhart and Rogoff's 'This Time is Different' database.

Table 2: Debt reduction and budget balances in nine large countries

Country	Year after peak debt-to-GDP	Year debt-to-GDP falls below 90%	# of debt reduction years	Average Budget Balance (% GDP or GNP)	Years with surplus #	Years with surplus %
U.K.	1820	1864	45	0.0%	24	53%
Netherlands	1835	1873	39	1.4%	36	92%
France	1888	1906	19	0.0%	11	58%
Italy	1898	1905	8	0.0%	6	75%
U.S.	1946	1950	4	1.3%	3	75%
Canada	1947	1951	5	2.1%	5	100%
Australia	1947	1951	5	1.7%	4	80%
Netherlands	1948	1955	8	6.1%	7	88%
U.K.	1948	1965	18	2.7%	18	100%

Source: Cyniconomics using B.R. Mitchell's data, consolidated in 2008 into three volumes on International Historical Statistics. Also Fritz Bos' data from his 2008 OECD Journal of Budgeting paper on 'The Dutch Fiscal Framework.' Also the OMB and BEA for the United States.

NO NEGATIVES!

NOTHING UNDER 50%!

non-defence surpluses and only needed to bring their soldiers home to restore budgetary discipline.

I also argued that inflation isn't the solution that many make it out to be. Without fiscal measures and financial repression, inflation only takes you so far in resolving a serious debt problem. In extreme cases, it can exacerbate the problem.

It turns out that these findings are only slightly weaker when I lower the threshold to 105%. But the particular results that stand out this time are from the last three columns of Table 2. The third-to-last column shows the average budget balance from the year after debt-to-GDP peaked to the year it was reduced below 90%. The last two columns show the number and percentage of years in which there was a surplus. Together, the figures show that every one of the large countries that reduced debt without a credit event did so by balancing its budget. Put differently, the large country history suggests that the only reliable way to solve a debt problem is to stop running deficits.

Long ago, policymakers would have regarded this finding as common sense. But current perspectives are distorted by years of bad ideas in economics. Keynesian economists, in particular, often preach that deficits are nothing to be concerned about. The United States has run deficits in all but two years since Keynesians began to dominate policymaking in the 1960s. And not surprisingly, every one of the episodes listed above predates our 63-years-and-counting of chronic budget shortfalls.

Needless to say, history doesn't reflect kindly on present attitudes about budgeting. It shows that the pre-1960s belief in fiscal discipline may have had some value after all. Without it, we may have never witnessed a large country recovering from today's debt levels without first slamming its creditors.

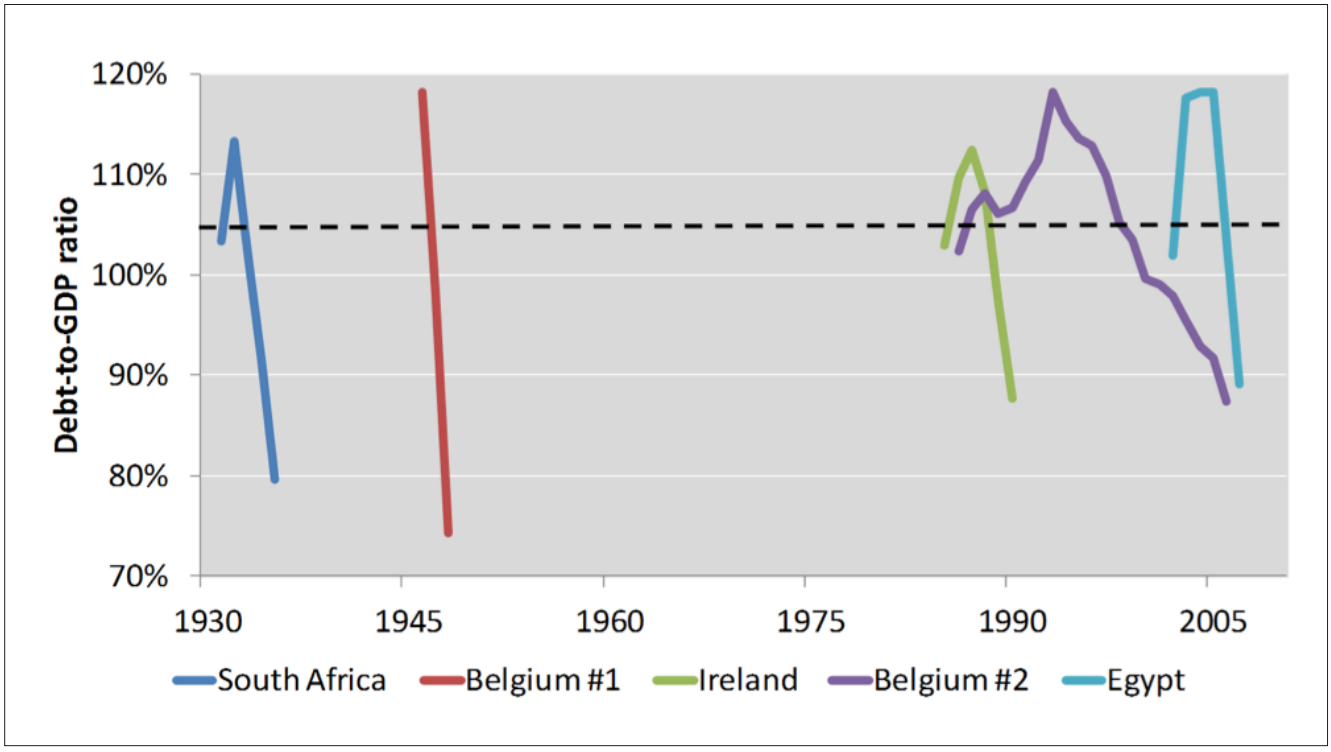
The small countries reduced debt in a variety of ways

But what about the small country history? Do the little guys offer a different solution? There are five episodes in this group (see Figure 4). I'll address them in chronological order.

South Africa, 1932–35 (peaking in 1932)

Debt ratios in 1930s South Africa were reduced not by balancing the budget but through rampant

Figure 4: Small countries breaching 105% debt-to-GDP



Source: Cyniconomics calculations using Reinhart and Rogoff's 'This Time is Different' database.

growth. Nominal GDP jumped over 13% annually between 1932 and 1936, while inflation was close to zero. The trigger for the boom was the United Kingdom's September 1931 decision to abandon the gold standard and devalue its currency. The South African pound devalued at the same time because it was legally tied to the British currency.

Why was the GDP boost so large at a time of depression in most of the world, including other countries that severed their links to gold?

The answer is that the devaluation provided not just a gain in global competitiveness but a revaluation in South Africa's most valuable assets—its wealth of underground resources and particularly gold. As a small country producing half of the world's gold, there was nothing more important to its economy than the price of its gold reserves. And once those reserves were revalued upwards, it was off to races. Multiplier effects from the gold mining boom rippled through the economy, pushing GDP higher and debt-to-GDP lower.

Belgium, 1946–48 (peaking in 1946)

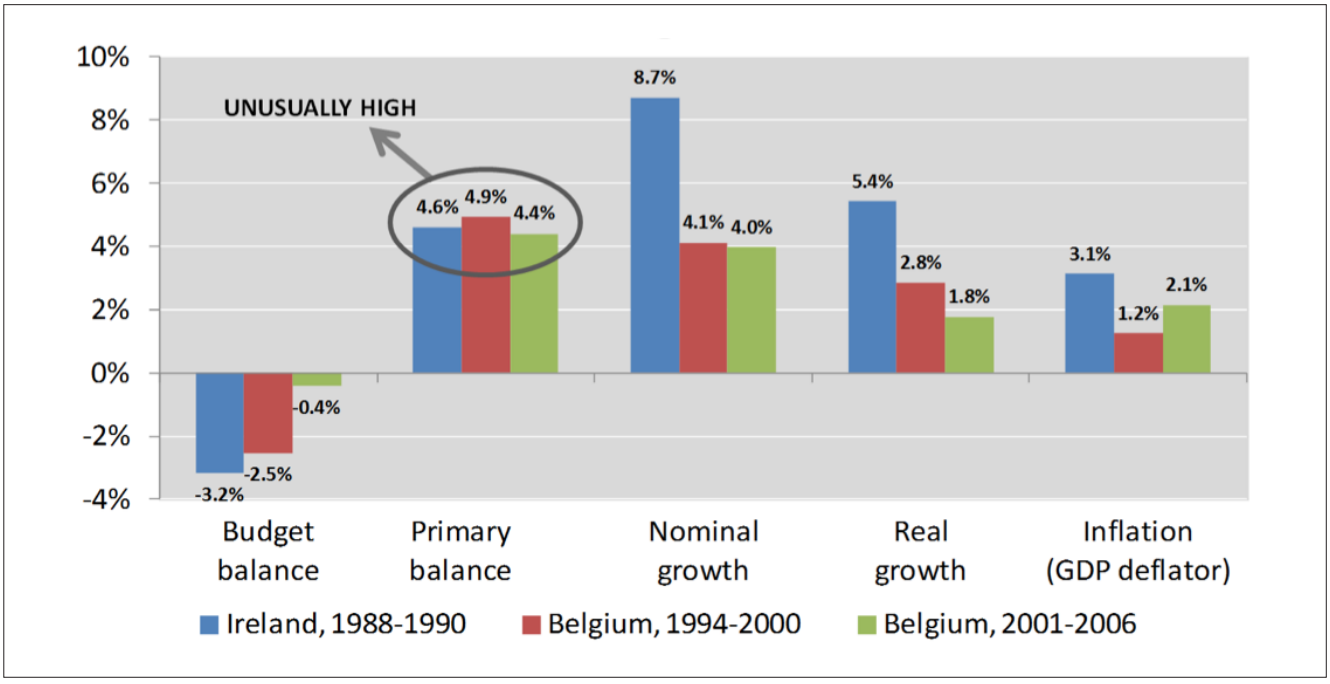
Like 1930s South Africa, Belgium didn't attempt to balance its budget after World War II. Rather, the Belgian debt ratio was reduced by reconstructing the economy after it was left in tatters by the German occupation, and with help from friends.

From post-war lows in 1946, GDP bounced back in the next two years at an annual rate of 13% in real terms and 24% in nominal terms. Fiscal challenges were also mitigated by Marshall Plan assistance from the United States, beginning in 1948, and some war debt forgiveness before that. And with debt growing much more slowly than the economy, debt-to-GDP was cut from 118% to 75% in just two years.

Ireland, 1986–90 (peaking in 1987) and Belgium, 1987–2006 (peaking in 1993)

Here are a few data points describing each of these European debt battles, dividing the Belgian experience into two sub-periods with slightly different characteristics.

Figure 5: Debt reduction in Ireland and Belgium (budget balances, growth and inflation)



Source: Cyniconomics calculations using data from the IMF World Economic Outlook database (October 2012).

And here are my observations:

- Strong growth explained the speed of Ireland's debt ratio reduction, while steady Belgian growth also contributed to falling debt ratios, especially in the 1990s.

- Belgium achieved the second leg of its debt reduction, from 2001 to 2006, by reducing its budget deficit to 0.4% of GDP.

- Strong primary balances were a critical ingredient in each instance.

The Ireland and Belgium experiences seem to validate the idea that it's okay to run a deficit as long as the primary balance shows a large surplus. We know this approach to be valid mathematically and it worked in these instances. The challenge is that it's extremely difficult to maintain such a delicate balance through cycles of business, politics and war.

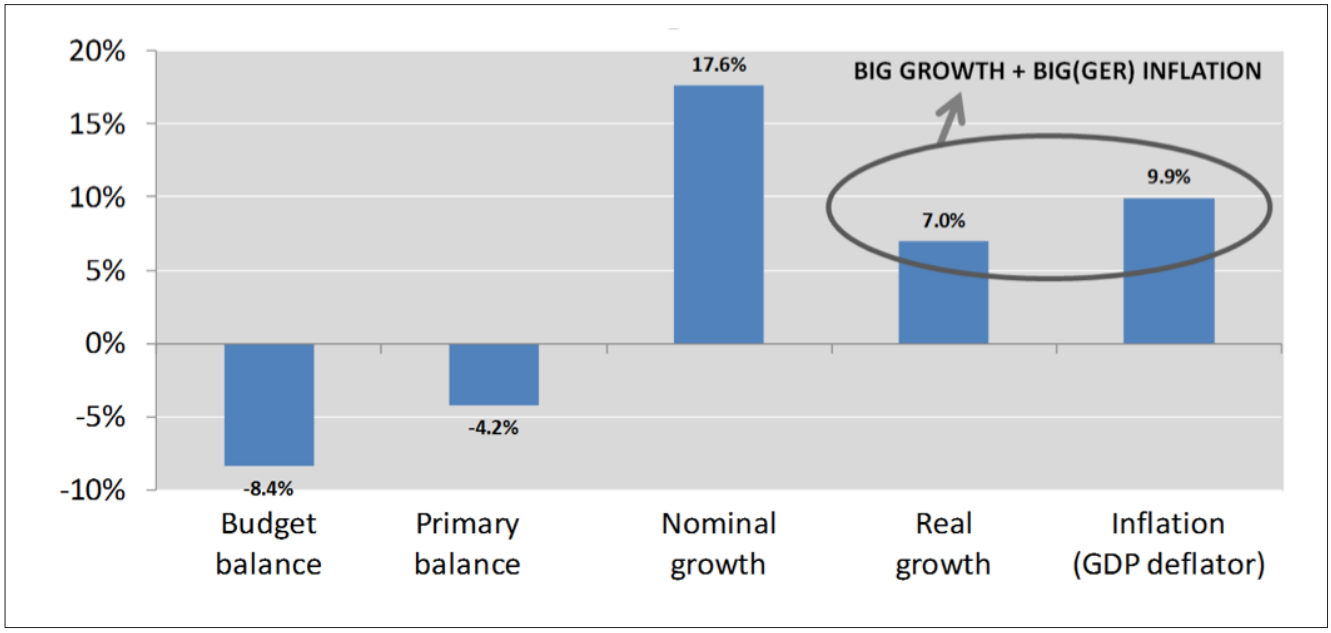
Moreover, both Ireland and Belgium exploited unique advantages: Ireland's generous support from the European Union via structural funds, which averaged nearly 2% of Irish GDP in the latter half of the 1980s, and Belgium's status as Europe's Washington D.C., with much of the Brussels economy driven by the European Union, and to a lesser extent, NATO. Before extrapolating their debt battles to the United States, there are three points to consider.

First, America's highest decade-average primary surplus in the six decades since World War II is 0.9% in the 1950s.[23] That's nearly 4% lower than the Ireland and Belgium figures above. Second, at current interest rates, the United States would need to run an overall budget surplus of over 2% of GDP to match the Irish and Belgian primary surpluses. This has only happened once every 100 years or so (two times in US history—1816 and 1948). Third, over a more complete credit cycle, Irish and Belgian debt reduction appears to have been temporary. As of early 2013, IMF estimates placed general government debt at 117% of GDP for Ireland and 100% for Belgium.

Egypt, 2003–07 (peaking in 2005)

Egypt's high debt episode in the period just before the global financial crisis was mitigated by three IMF programs in the 1990s and a 1991

Figure 6: Debt reduction in Egypt (budget balances, growth and inflation), 2006–07



Source: Cyniconomics calculations using data from the IMF World Economic Outlook database (October 2012).

restructuring, which eased repayment terms while creating 'blocked accounts' earmarked for lenders. I'll set these advantages aside, though, and share figures for budget balances, growth and inflation.

The good news is that Egypt offers another example of debt ratio improvement without balanced budgets or even a primary surplus. What's more, the path from 105% to 90% didn't require the double-digit real growth rates of 1930s South Africa or 1940s Belgium. Growth was certainly strong, but inflation was even higher and outpaced interest rates on government debt (not shown). Therefore, Egypt reduced its debt ratio largely through a combination of high real growth and low real interest rates. The bad news is that the high inflation that eroded the debt also led to higher food prices and political instability.

Conclusions

Going back to the question of whether the small country group tells us anything we didn't learn from the large countries, here are the four approaches that succeeded without a credit event:

- **Strike gold and devalue.** (But for an economy as large as the United States, we'd need to discover hundreds of Fort Knoxes.)
- **Be conquered by an evil, genocidal dictator.** (And then grow strongly with the help of some friends after your liberation.)
- **Run a huge primary surplus.** (Nearly 4% higher than the United States has averaged in any post-World War II decade.)
- **Be like modern Egypt.** (Do I really need a qualifier for this one?)

So maybe the smaller countries don't really show us the way?

Which brings us back to the approach followed by the large countries in the database: *Balance the budget*.

These countries weren't satisfied with marginal improvements that still leave gaping deficits. (Think about the celebratory 'all clears' that were declared in the United States in May 2013 after the Congressional Budget Office dropped its deficit forecast to 'only' 4.2% of GDP.) They didn't claim victory after reaching the standard EU target of a 3% deficit. More importantly, their debt battles predate the use of Keynesian economics as an excuse for profligacy.

I'll say it once more: Balancing the budget is the only way that a large country has ever wound down a 105% debt-to-GDP without haircutting its creditors. Not for the first time, the common sense solution is the only approach that's worked.

Note: For details on the credit events that accompanied 52 of the 63 high debt episodes in Table 1, see 'Technical notes for 63 high government debt episodes' on Cyniconomics: www.cyniconomics.com/2013/09/18/technical-notes-for-63-high-debt-episodes/.

Endnotes

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19 Paul Krugman, 'Reinhart and Rogoff are not happy,' *The New York Times* (26 May 2013); Paul Krugman, 'How the case for austerity has crumbled,' as above.

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21 I limited the analysis to sovereign nations by excluding two episodes in South Africa between the Boer Wars and one in Sri Lanka from the same period. I also left out large debt-to-GDP swings in Ghana following its 1957 independence, after failing to find corroborating accounts in narrative histories. All other episodes meeting the 105%/90% criteria (above) are included and based on central government debt where available, general government debt otherwise.

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