

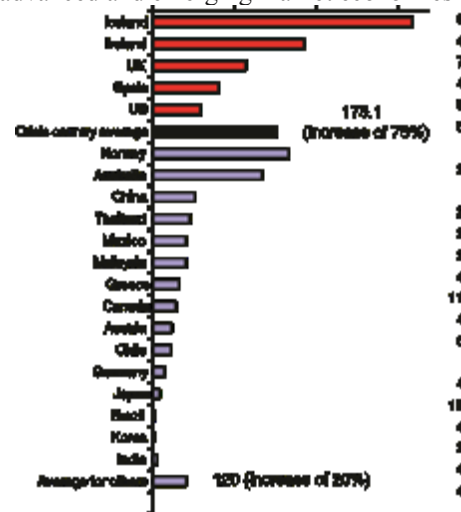
Growth in a Time of Debt

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ABSTRACT

In this paper, we exploit a new multi-country historical dataset on public (government) debt to search for a systemic relationship between high public debt level growth and inflation our main result is that whereas the link between growth and debt seems relatively weak at “normal” debt levels, median growth rates for countries with over roughly ninety percent of gdp are about one percent lower than otherwise; average (mean) growth rates are several percent lower . surprisingly, the relation between public debt and growth is remarkably similar across emerging markets and advanced economies. This is not the case for inflation. We find no systematic relationship between high debt levels and inflation for advanced economies as a group (albeit with individual country) exception including the United States . By contrast, in emerging market countries, high public debt levels coincide with higher inflation.

adoption of stimulus packages to deal with the global recession in many countries, and marked declines in government revenues that have hit advanced and emerging market economies alike.



Cumulative Increase in Real Public Debt Since 2007, Selected Countries

Debt Public in Buildup Global 2007–2009 The

Figure 1 illustrates the increase in (inflationadjusted) public debt that has occurred since 2007. For the five countries with systemic financial crises (Iceland, Ireland, Spain,) the United Kingdom, and the United States , average debt levels are up by about 75 percent, well on track to reach or surpass the three year 86 percent benchmark that Reinhart and Rogoff (2009a,b), find for earlier deep postwar financial crises. Even in countries that did not experience a major financial crisis, debt rose by an average of about 20 percent in real terms between 2007 and 2009.³ Our focus on gross central government debt owes to the fact that time series of broader measures of government This general rise in public indebtedness stands in stark contrast to the 2003–2006 period of public deleveraging in many countries and owes to direct bailout costs in some countries, the

Debt, Growth, and Inflation

The nonlinear effect of debt on growth is reminiscent of “debt intolerance” (Reinhart,) Rogoff, and Miguel A. Savastano 2003 and presumably is related to a nonlinear response of market interest rates as countries reach debt tolerance limits. Sharply rising interest rates, in turn, force painful fiscal adjustment in the form of tax hikes and spending cuts, or, in some cases, outright default. As for inflation, an obvious connection stems from the fact that unanticipated high inflation can reduce the real cost of servicing the debt. Of course, the efficacy of the inflation channel is quite sensitive to the maturity structure of the debt. In principle, the manner in which debt builds up can be important. For example, war debts are arguably less problematic for future growth and inflation than large debts that are accumulated in peacetime. Postwar growth tends to be high as wartime allocation of manpower and resources funnels to the civilian

economy. Moreover, high wartime government spending, typically the cause of the debt buildup, comes to a natural close as peace returns. In contrast, a peacetime debt explosion often reflects unstable political economy dynamics that can persist for very long periods. Here we will not attempt to determine the genesis of debt buildups but instead simply look at their connection to average and median growth and inflation outcomes. This may lead us, if anything, to understate the adverse growth implications of debt burdens arising out of the current crisis, which was clearly a peacetime event.

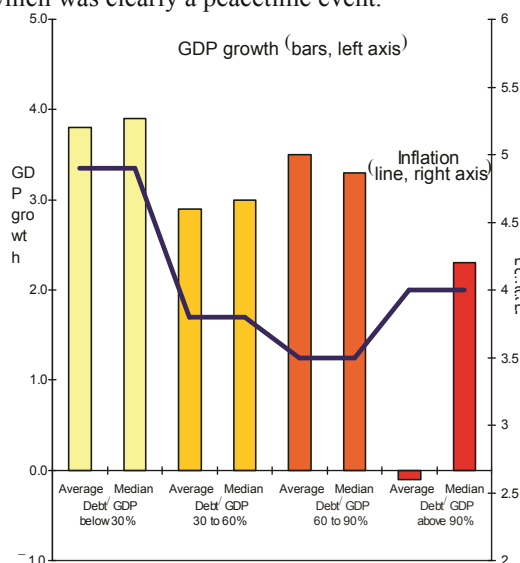


Figure 2. Government Debt, Growth, and Inflation:

A. Evidence from Advanced Countries

Figure 2 presents a summary of inflation and GDP growth across varying levels of debt for 20 advanced countries over the period 1946–2009. This group includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States. The annual observations are grouped into four categories, according to the ratio of debt to GDP during that particular year as follows: years when debt to GDP levels were below 30 percent (low debt); years where debt GDP was 30 to 60 percent (medium debt); 60 to 90 percent (high); and above 90 percent (very high). The bars in Figure 2 show average and median GDP growth for each of the four debt categories. Note that of the 1,186 annual observations, there are a

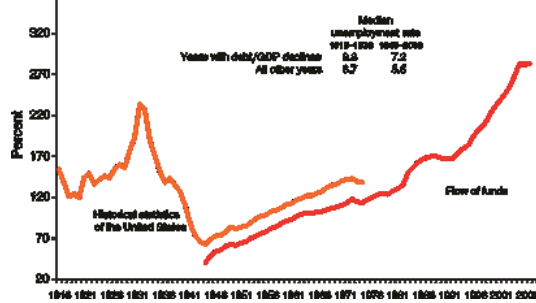
significant number in each category, including 96 above 90 percent. (Recent observations in that top bracket) come from Belgium, Greece, Italy, and Japan. From the figure, it is evident that there is no obvious link between debt and growth until public debt reaches a threshold of 90 percent. The observations with debt to GDP over 90 percent have median growth roughly 1 percent lower than the lower debt burden groups and mean levels of growth almost 4 percent lower. (Using lagged) debt does not dramatically change the picture. The line in Figure 2 plots the median inflation for the different debt groupings—which makes plain that there is no apparent pattern of simultaneous rising inflation and debt.

Table 1 provides detail on the growth experience for individual countries, but over a much longer period, typically one to two centuries. Interestingly, introducing the longer time-series yields remarkably similar conclusions. Over the past two centuries, debt in excess of 90 percent has typically been associated with mean growth of 1.7 percent versus 3.7 percent when debt is low (under 30 percent of GDP), and compared with growth rates of over 3 percent for the two middle categories (debt between 30 and 90 percent of GDP). Of course, there is considerable variation across the countries, with some countries such as Australia and New Zealand experiencing no growth deterioration at very high debt levels. It is noteworthy, however, that those high-growth high-debt observations are clustered in the years following World War II.

CONCLUSION

The sharp run-up in public sector debt will likely prove one of the most enduring legacies of the 2007–2009 financial crises in the United States and elsewhere. We examine the experience of 44 countries spanning up to two centuries of data on central government debt, inflation and growth. Our main finding is that across both advanced countries and emerging market high debt. Much lower levels of external debt (60 percent) are associated with adverse outcomes for emerging market growth. Seldom do countries “grow” their way out of debts. The non-linear response of growth to debt as debt grows towards historical boundaries is reminiscent of the “debt intolerance” phenomenon developed in Reinhart, Rogoff, and Savastano (2003). As countries hit debt tolerance ceilings, market interest rates can begin to rise quite suddenly, forcing painful adjustment. Of course, there are

other vulnerabilities associated with debt buildups, particularly if



governments try to mitigate servicing costs by shortening the maturing structure of debt. As Reinhart and Rogoff (2009b) emphasize and numerous models suggest, countries that choose to rely excessively on short-term borrowing to fund growing debt levels are particularly vulnerable to crises in confidence that can provoke very sudden and “unexpected” financial crises. At the very minimum, this would suggest that traditional debt management issues should be at the forefront of public policy concerns.

REFERENCES

Rogoff, S. Kenneth and M., Carmen

Reinhart,2009a. “The Aftermath of Financial Crises.” *American Economic Review*, 99(2): 466–72.

S. Kenneth and M., Carmen Reinhart, Rogoff.2009b. *this time Is Different: Eight Centuries of financial folly*. Princeton, NJ: Princeton University Press

Carmen Reinhart, Rogoff. S. Kenneth and M.,

2008. “The Forgotten History of Domestic Debt.” National Bureau of Economic Research

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