



C A M B R I D G E A S S O C I A T E S L L C

# INVESTMENT PUBLICATIONS HIGHLIGHTS

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# Investment Publications Highlights

Summarized by Published Research Team

## “Debt and Deleveraging: The Global Credit Bubble and its Economic Consequences” by Charles Roxburgh and Susan Lind, McKinsey Global Institute, January 2010

Deleveraging has been the norm after nearly all major financial crises. Historically, the most common of these periods has lasted an average of six to seven years and has witnessed a median reduction in debt-to-GDP of 25%. Government debt, however, may more than offset any near-term debt reduction in the private sector and thus temporarily postpone deleveraging. Highly leveraged economies (e.g., Spain, the United Kingdom, and the United States) may therefore remain vulnerable to economic shocks for some time.

The bursting of the credit bubble that led to the first worldwide recession since the 1930s has left an enormous debt burden. History tells us that the process of deleveraging will be painful and will weigh on economic growth for years to come. Understanding how this excess leverage was created is important and has several implications for policymakers as they try to ease the deleveraging process and enhance future market stability.

After more than a decade of global expansion in the world economy’s debt levels and leverage, the global financial crisis appears to have triggered a period of deleveraging. The aggregate level of leverage in an economy, however, is not a reliable guide to the likely speed or extent of deleveraging. Instead, one should examine individual sectors to assess the sustainability of leverage according to the following framework: (1) level of leverage, (2) growth of leverage, (3) debt service capacity,

(4) vulnerability to income shocks, and (5) vulnerability to funding and interest rate shocks.

McKinsey examined ten mature and four emerging economies, breaking down the data by each country’s financial, household, nonfinancial business, and government sectors. The data revealed that ten sectors (all of which can be found in the mature economies) have a high likelihood of deleveraging in the next few years. Of these, five are the household sectors of Spain, the United Kingdom, the United States, and to a lesser extent Canada and South Korea; three are the commercial real estate sectors of Spain, the United Kingdom, and the United States; one comprises parts of Spain’s financial sector; and one comprises the construction and real estate–related parts of Spain’s corporate sector excluding commercial real estate. No sector in the emerging markets, on the other hand, appears likely to deleverage. Indeed, leverage in most sectors is far below that of developed economies.

While it is not certain that the current most highly leveraged sectors will necessarily reduce their debt, as many factors are at play (e.g., economic, political), deleveraging has been the norm after most financial crises. More specifically, there have been 45 deleveraging episodes since 1950 (and additionally, the United States during the Great Depression). These are defined as periods in which the ratio of total debt-to-GDP declines for at least three consecutive years and falls by 10% or more. Further, 32 of these deleveraging episodes followed a financial crisis, as defined by Carmen Reinhart and Kenneth Rogoff in their book *This Time Is Different: Eight Centuries of Financial Folly*, and with the exception of Japan, every *major* financial crisis has been followed by a

period of deleveraging. Thus, it is very likely that some of the sectors in the aforementioned mature economies will undergo a period of deleveraging.

Deleveraging episodes have historically followed four different paths, three of which are relatively rare and took place in conditions that are not present in today's mature economies. The most common type of deleveraging, however, fitting 16 of the 32 episodes, is a prolonged period of austerity. Historically, these episodes have lasted an average of six to seven years and have witnessed median reduction in debt-to-GDP of 25%. Credit growth, meanwhile, slows from an annual rate of 17% in the ten years prior to the crisis to just 4% during the deleveraging period. More precisely, the sharp reduction of credit growth has been associated with declining real GDP in the first two to three years of deleveraging. Interestingly, deleveraging typically begins two years after the start of the financial crisis and economic recession, which is roughly where the United States and Europe currently find themselves. In nearly every episode, GDP growth declined in the early years of the process then rebounded in the next four to five years while deleveraging continued. Credit growth resumed in the later years, albeit slower than GDP, allowing for further deleveraging.

While the historic record is helpful, several aspects of today's crisis can make deleveraging more difficult than in the past. Most of the past episodes involved one economy or a few relatively small economies. Today, however, the crisis is global in scale, with many of the world's biggest economies still in recession or experiencing very tepid growth. In previous episodes, countries have increased exports to help support GDP growth during periods of deleveraging. It is unlikely today that all highly leveraged countries could simultaneously increase exports. Moreover, rising government debt may more than offset any deleveraging in the private

sector, and thus delay the point at which the economy's entire debt-to-GDP ratio declines. Should these economies start deleveraging sooner through more severe reductions in debt in the private sector, the economic recovery may be derailed.

The most likely path forward today—especially in Spain, the United Kingdom, and the United States—is one in which deleveraging is postponed until after the crisis passes and government debt growth is reined in. Then, these economies' debt burdens will most likely decline more slowly and over a longer period than the historical average due to not only the private sector's need to deleverage, but also to the public sectors' large debt burden. These highly leveraged economies may therefore remain vulnerable to economic shocks for some time.

What are the lessons for policymakers from this crisis? First, they must work harder to develop frameworks to help identify the buildup of excessive leverage in the system. An international body such as the International Monetary Fund could also help aggregate data on an international level. Second, policymakers should reduce incentives for households and corporations to borrow; for example, by reassessing income tax deductions for mortgages. Finally, bank regulation should be changed to require more capital when leverage is increasing in the real economy.

### **"Growth in a Time of Debt"**

**by Carmen M. Reinhart and Kenneth S. Rogoff,  
January 2010**

**As the sharp run-up in public sector debt will likely prove one of the most enduring legacies of the 2007–09 financial crisis in the United States and elsewhere, this paper brings to light the relationship that debt levels have with both inflation**

## and economic growth in advanced and emerging economies.

The recent financial meltdown has brought about an increase in public debt levels, making it important to understand the link between government debt and rates of economic growth and inflation. An analysis of data from a wide range of countries spanning two centuries reveals several clear relationships. First, it is apparent that the link between government debt-to-GDP and real GDP growth is weak below the 90% debt threshold. However, past this point median growth rates fall by 1% and average growth rates fall even more. Second, emerging markets face a lower threshold for external (both public and private) debt; beyond 60% debt-to-GDP, annual growth quickly decelerates. Finally, there is no obvious link between debt-to-GDP levels and inflation in advanced countries, though in emerging markets high levels of debt typically lead to sharply higher inflation.

A previous study demonstrated that on average central government debt experiences an 86% rise in the three years following a financial crisis. Looking at the five countries that endured a severe crisis—Iceland, Ireland, Spain, the United Kingdom, and the United States—average debt levels are already up 75% since 2007 and are all expected to surpass the 86% average within the three-year period. Moreover, for countries not enduring a financial crisis, debt has risen in real terms by an average of 20% over this period. This run-up in debt is due to stimulus packages, industry bailouts, and reduced government revenues in both developed and emerging economies.

History has shown that the cause of the debt buildup is important. Wartime debt buildup has proven to be far less problematic than a peacetime debt explosion. High war-time government spending comes to a natural close as

peace returns, while peacetime debt increases create unstable political economy dynamics that can last for a long time.

Looking at the impact of debt on growth, advanced economies with debt-to-GDP levels above 90% have median growth rates 1% lower, and average growth rates 4% lower, than less indebted countries. In advanced economies no clear relationship emerges between debt-to-GDP and inflation. Inflation turns out to be highest when debt is low (under 30% of GDP) and lowest when debt is between 60% and 90%. However, data vary considerably and are highly country specific. In the United States, for example, debt levels above 90% are linked to significantly elevated inflation.

Emerging markets countries demonstrate similar patterns. Median and average GDP growth hover around 4.5% for countries with less debt, but fall to 2.9% and 1.0%, respectively, above a 90% debt-to-GDP threshold. Emerging economies also demonstrate a stronger link between debt and inflation. When debt-to-GDP exceeds 90%, median inflation more than doubles from less than 7% (when debt is under 30%) to around 16%.

Because emerging markets rely heavily on external debt, it is also worth looking at the relationship between external debt and GDP growth. Beyond external debt-to-GDP levels of 60%, growth rates fall by about 2%, and beyond the 90% threshold, growth rates turn negative. High external debt levels also are linked to inflation in emerging markets. As gross external debt passes 90%, inflation rises to over 16%, on average. Data for advanced economies is lacking, but it is likely that the threshold for advanced economies is higher as most external debt is issued in their currencies.

Unlike public sector debt, private sector debt tends to shrink during recessions, and a legacy of

sharp deleveraging may be left behind following the recent crisis. Just as an expansion in private credit growth helped fuel the boom, private deleveraging has intensified the downturn. Using the United States as a case study, 2008 and 2009 saw private debt-to-GDP decline by at least 10%, and since 1916, private debt/GDP declines in excess of 10% have been linked to both low growth and high unemployment.

The sharp increase in public sector debt is likely to reduce economic growth in the future. Looking at the empirical data, it is not clear why a 90% debt-to-GDP ratio has become an important threshold. One theory is that as government debts rise toward this historical limit, risk premia (including sovereign debt costs) begin to rise, forcing governments to make difficult trade-offs in order to reverse the course. Given that debt levels are increasing in many advanced economies, governments will need to tighten fiscal policies. Traditional debt management issues should be at the forefront of public policy decisions.

### **“Greece: What if?”**

**by Bank of America Merrill Lynch,  
January 27, 2010**

**Concerns about the sustainability of Greek finances have riveted the markets and caused widespread sell-offs in bond and equity markets across the globe. Default is an extremely unlikely outcome, but investors should understand the risks for the bond, equity, and currency markets.**

No European issue has had a greater impact on the financial markets during the past two months than the health of Greek finances. In more normal times trouble in this small economy would not have an impact on global markets, but concerns about Greece are having an outsized effect as a default could send shockwaves across

global capital markets that are still recovering from the post-Lehman Brothers turbulence. The Greek government will most likely be able to handle this crisis on its own, but its European Union partners would intervene in an extreme scenario to limit the contagion risks.

A few statistics about Greece are important to put the crisis in perspective. Greece is a small economy, representing just 2.7% of the Eurozone’s GDP and 3.5% of its debt. Prior to recent events Greece was perceived to have fared relatively well during the recession, with its GDP expected to have dropped 1.2% in 2009 versus a Eurozone average decline of 3.9%. Greece also has a relatively stable banking sector, with banks having relatively low loan-to-deposit ratios. Greece does have a serious debt problem, however, with a fiscal deficit of 12.7% expected for 2009 and large deficits expected in the near term. The European Union expects that Greek debt-to-GDP will increase to 135% by 2011, the highest of any member country.

A confluence of factors involving rating agency downgrades, a poorly executed bond deal, and credibility issues have triggered the recent crisis. Greece was downgraded by all three major rating agencies by at least one notch during the past eight weeks due to concerns about weakening finances. With Greece now rated just BBB+ by S&P and Fitch, its debt is on the verge of becoming ineligible for use as repo collateral with the European Central Bank. In addition, at the end of January the government raised €8 billion through a new debt issue. While initially deemed a success, even before the deal had closed, rumors leaked of a new transaction coming to market in February, sparking concerns among investors about Greece’s liquidity position. Finally, a recent Eurostat report raised concerns about the reliability of government debt statistics. Government credibility with respect to debt reporting had already been undermined when the

new government in October revised upward the 2009 deficit number from 4% of GDP to 12.7%.

Despite the current situation, there are a number of reasons why a Greek sovereign default is unlikely. The first of these is local politics, as the new socialist government has the ability to blame some of the problems on its predecessors and push through necessary tax and fiscal reforms. The second reason concerns the nature of the economy and the fact that its battered shipping and tourism sectors are likely to recover in 2010 along with the global economy, helping its external position (transport is one-third of Greek export revenue). Finally, and perhaps most importantly, are external politics and Greece's position as a member of the Eurozone. Greece is not the only heavily levered member, and none of the other peripheral Eurozone members has an interest in seeing the bond markets force a Greek default. Put another way, Portugal, Spain, and others have no interest in seeing the bond vigilantes succeed, as they would then set their sights on the next victim. In addition, too much has been invested by stronger members of the Eurozone both politically and financially to see the European Economic and Monetary Union (EMU) fall apart over a matter this small. While hesitant to create moral hazard, other members are likely to extend a helping hand if push comes to shove.

For these reasons, the authors believe Greece is likely to muddle through this crisis. It will need to tighten its fiscal policies, improve the reliability of its statistics, and perhaps subject itself to external monitoring, but it should in the end be able to fund itself without foreign assistance. In this scenario the euro is still likely to suffer, as the current weakness undermines its value as a reserve currency. Equities are likely to stage a gradual recovery, as the markets wait a few months to see if Greek finances are indeed turning the corner. Credit spreads may drift wider for a while, while the market waits to see if demand exists for the sovereign's entire financing need, before starting to come back in. In the event that Greece can turn around its finances, other peripheral countries should also see funding spreads contract.

Less likely scenarios include a bailout or some type of default. A bailout is unlikely, but in this instance credit spreads and the euro will weaken significantly before dramatically improving after a successful rescue. Interest rates might rise in this situation, as the stronger core EMU countries are deemed to be weakened by the rescue and peripheral countries would be affected more. In the event of some type of default, which is very unlikely, the impacts on the euro, credit spreads, and equities would be extreme and unambiguously negative. There are also contagion risks, as sectors such as emerging markets come under fire and as industries across Europe, such as financials, see a huge sell-off in their equity and debt.

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