

What Impact Will Ballooning
Government Debt Levels
Have on Government Bond Yields?

The global economy appears to be on the road to recovery and the risk of a double dip recession is receding. Unfortunately, the cost of staving off a repeat of a 1930s-style depression was quite high. Government net debt-to-GDP ratios are expected to approach 100% in several G-7 industrialized countries over the next five years, including the United States and United Kingdom. Recent headlines have focused investor attention on this issue and its potential impact on government bond yields.

Yet, our analysis suggests that government debt is not closely correlated with interest rates in the short-term. Instead, inflation and central bank policy are the primary drivers of government yields over periods of less than three years. With inflation rates still very low across the

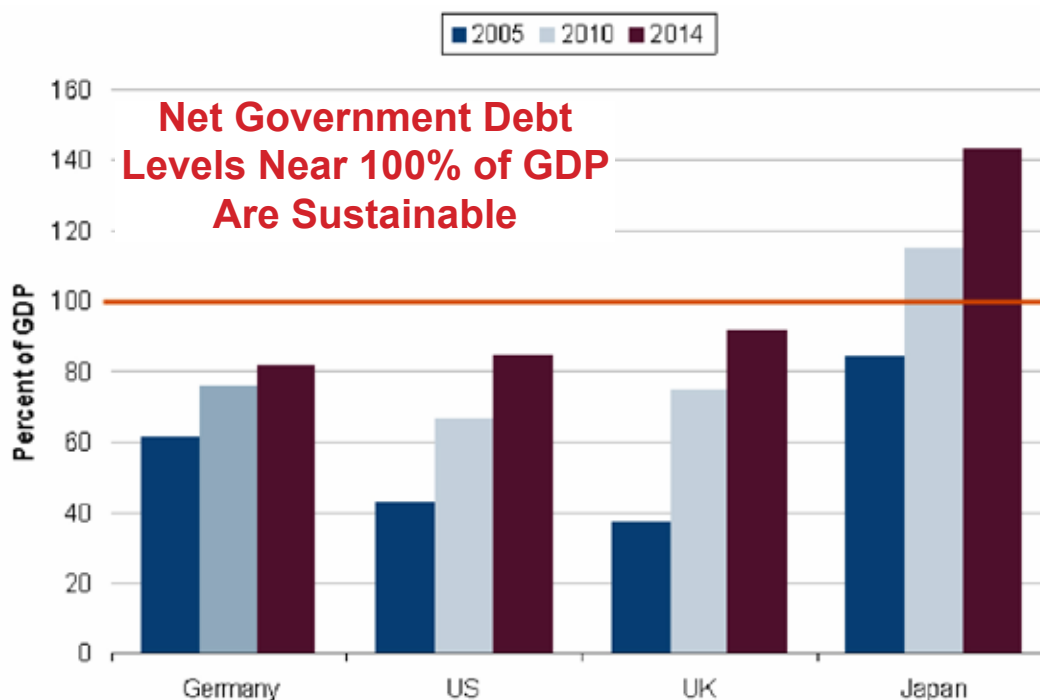
the road. However, governments that have a reputation for fiscal profligacy, such as Greece, have much less leeway.

Bond Issuance Is Not a Driver of Government Yields in the Short-Term

At their most basic level, interest rates are the price that lenders charge and borrowers pay for money. Many variables affect the direction of interest rates over time, but historically the most important have been the level of economic activity, inflation expectations, monetary policy, and the amount of government debt outstanding. Not only have these indicators historically been correlated with government bond yields, but there is also an economic rationale for the relationship.

The Cost of Bailing Out the Global Economy Has Caused Government Debt Levels to Rise

Net Debt to GDP by Country



G-7 and central banks likely sidelined for the first half of 2010, the risk of a sharp rise in government bond yields seems remote at this stage.

Looking out further, however, there is a risk of a parallel shift higher in government bond yields if policymakers fail to take action to get their fiscal houses in order. Investors will give governments that have a proven track record of fiscal responsibility the benefit of the doubt as long as they provide credible plans for restoring fiscal balance down

For example:

- **Economic Activity:** When economic activity increases, so too does borrower demand for money, and this puts upward pressure on interest rates. The opposite is true when economic activity falls.
- **Inflation:** Lenders insist on being compensated with higher interest rates for expected increases in

inflation to make sure a rise in the price level does not eat away their purchasing power. Conversely, when inflation expectations decline, lenders demand a lower inflation premium over the real return they wish to achieve.

- **Monetary Policy:** Central banks adjust the level of short-term interest rates with the goal of controlling inflation expectations, which influence lenders' decisions on what interest rate to charge borrowers.
- **Government Debt:** Higher government debt levels imply rising government bond issuance and potentially higher default risk if debt servicing costs become unmanageable. An increasing supply of bonds for a given level of investor demand implies bond prices must fall and interest rates must rise.

The influence these factors exert on interest rates varies by the maturity of the bond as well as with the time frame one is examining. For instance, we built a regression model to analyze the impact that changes in the federal funds rate, consumer price inflation, industrial production, and US Treasury issuance have on US 2-year and 10-year Treasury yields. The results indicate that the short-end of the US Treasury curve (2 years and in) is very responsive to changes in monetary policy, with inflation and economic

growth playing a secondary role. At the longer-end of the curve (10-30yr space), fluctuations in inflation tend to be more important in determining government bond yields.

However, in neither instance is bond issuance a significant driver of US Treasury yields over periods of less than three years. In fact, for the short-end of the curve, Treasury note issuance is actually inversely correlated with 2-year government bond yields. One reason for this is that government spending increases in recessions when interest rates are falling. Our analysis has shown similar results for other G-7 economies. Indeed, debt issuance and interest rates are inversely correlated for most countries in the short-term.

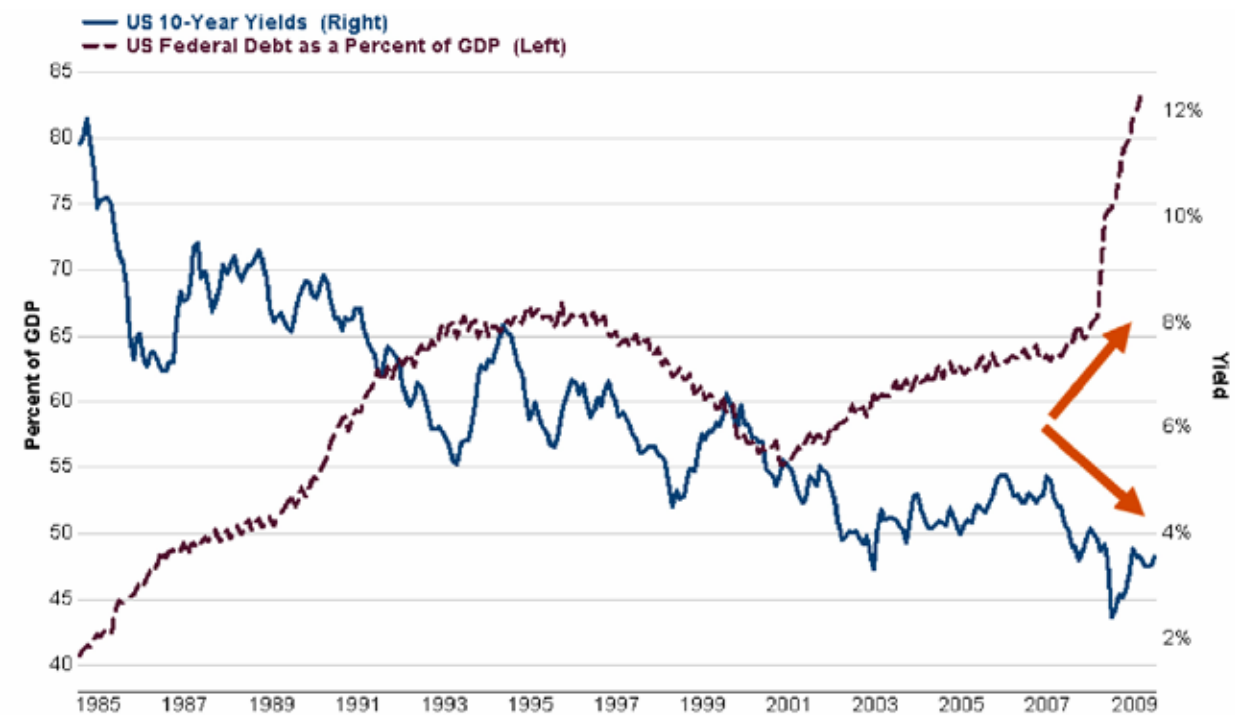
However, Government Debt Poses Long-Term Risks to Interest Rates

This analysis does not imply that there are not long-term consequences for countries that increase the supply of debt. Obviously, countries that have a track record for running large fiscal deficits during both good and bad economic times are forced to compensate investors with higher government bond yields.

This is perhaps best illustrated by government bond

There Is No Correlation Between Government Bond Yields And Government Debt Issuance in the Short-Term

10-Year US Treasury Yields and US Debt to GDP



Sources: US Treasury and The Federal Reserve

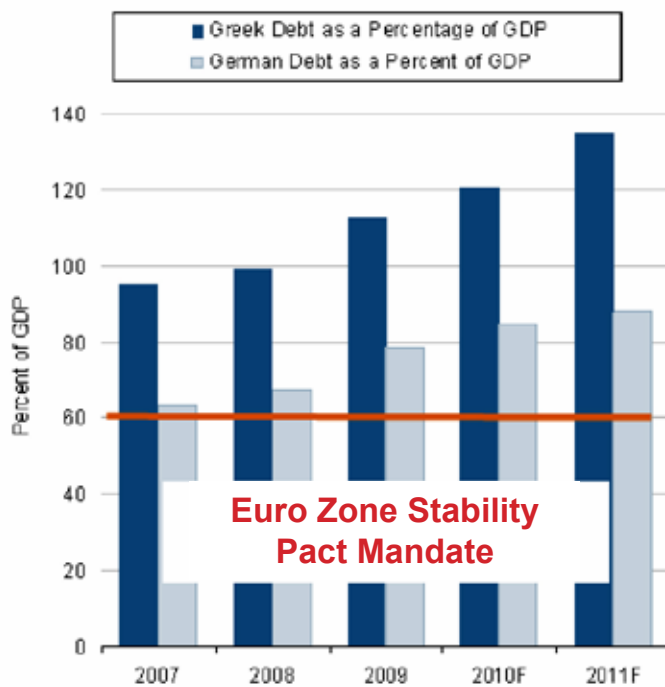
markets in the euro zone. In 2007, before the global financial crisis struck, Greek and German 10-year government bonds traded at comparable levels of between 4% and 4.5%. Now, in early 2010, Greek government bonds are trading at 6.1%, while German government bonds are trading at 3.3%. The reason that the Greek government is being asked to compensate their investors with higher government yields is because the country is increasing debt issuance at a time when its debt-to-GDP ratio is already unsustainably high. This has prompted two of the three major credit rating agencies to downgrade Greece. By contrast, Germany has a much better track record on the fiscal front and investors view their plans for reducing debt as more credible than those of Greece.

bond yields in 2010, but rather a gradual move higher as the global economy improves.

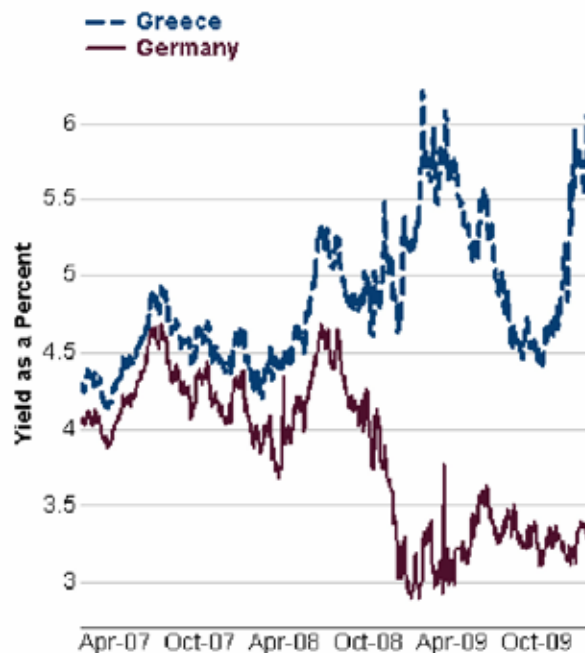
However, if policymakers in these countries fail to take the measures necessary to restore fiscal balance in the long-term, then the pressure for higher interest rates will increase over the next five years. Indeed, research from the Federal Reserve indicates that each percentage point increase in the projected US debt-to-GDP ratio adds 4 to 5 basis points to 10-year Treasury yields over the ensuing five year period. The non-partisan Congressional Budget Office is currently forecasting that the debt-to-GDP ratio will rise 30 percentage points to nearly 100% of GDP by 2012 compared to 70% of GDP prior to the financial crisis. Under this scenario, interest rates on 10-

Greece Has Been In The News, But Its Situation Is Unique

Greek Debt as a Percentage of GDP*
Government 10-Year Benchmark Yields



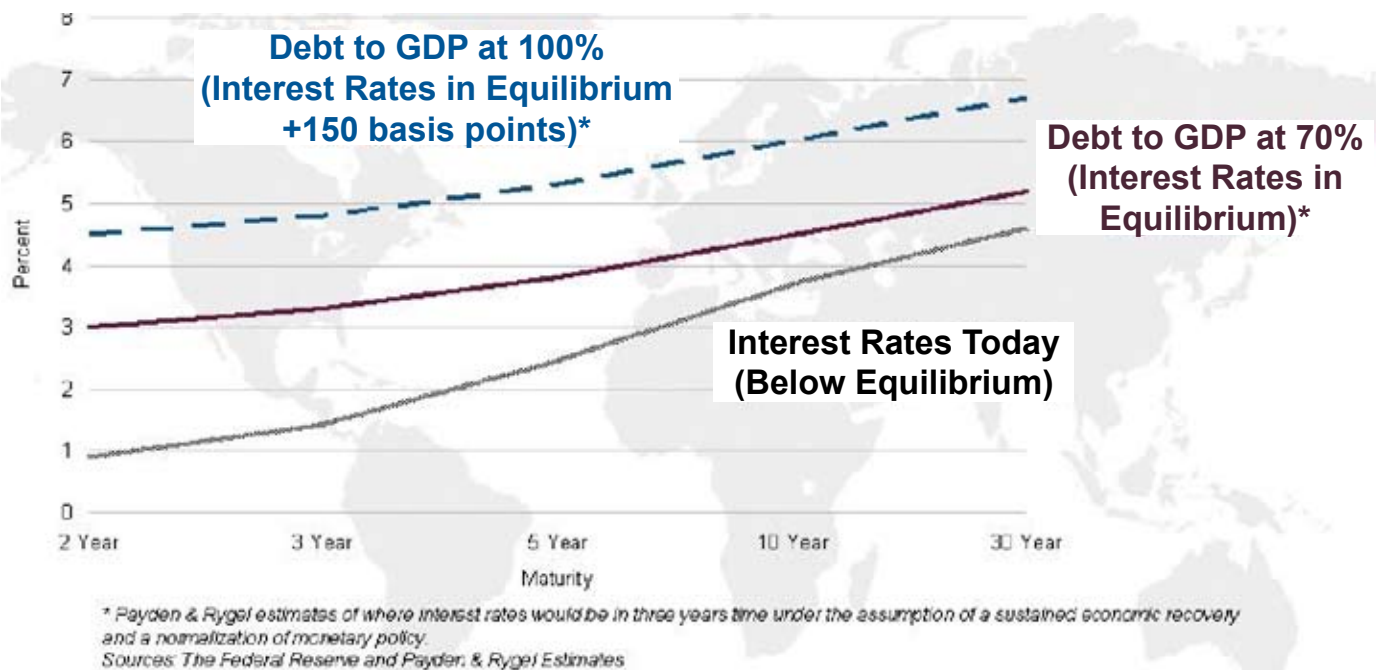
Sources: The European Commission and Thompson Reuters



The same is true for most of the other G-7 economies. In fact, the International Monetary Fund is forecasting that budget deficits will come down over the next few years in the United States, the United Kingdom, Germany, and to a lesser extent in Japan, as the need for fiscal stimulus fades and revenues pick up with the improving global economy. Therefore, we do not expect a sharp spike in government

year Treasuries could rise by 120 to 150 basis points in long-term equilibrium. This rise in interest rates would come on top of the increase we are already expecting as a result of an improving economy and a normalization of monetary policy.

Treasury Yield Curve



Which G-7 Countries Are Most At Risk for Higher Government Bond Yields Due to Rising Government Debt Levels in the Long-Term?

None of the G-7 economies has debt dynamics that are particularly favorable, but some are clearly in worse shape than others. Specifically, Japan, and to a much lesser extent, the United Kingdom and United States, are perhaps most at risk for higher government bond yields due to increasing government debt issuance. However, in all three instances, there are mitigating factors that will dampen the impact.

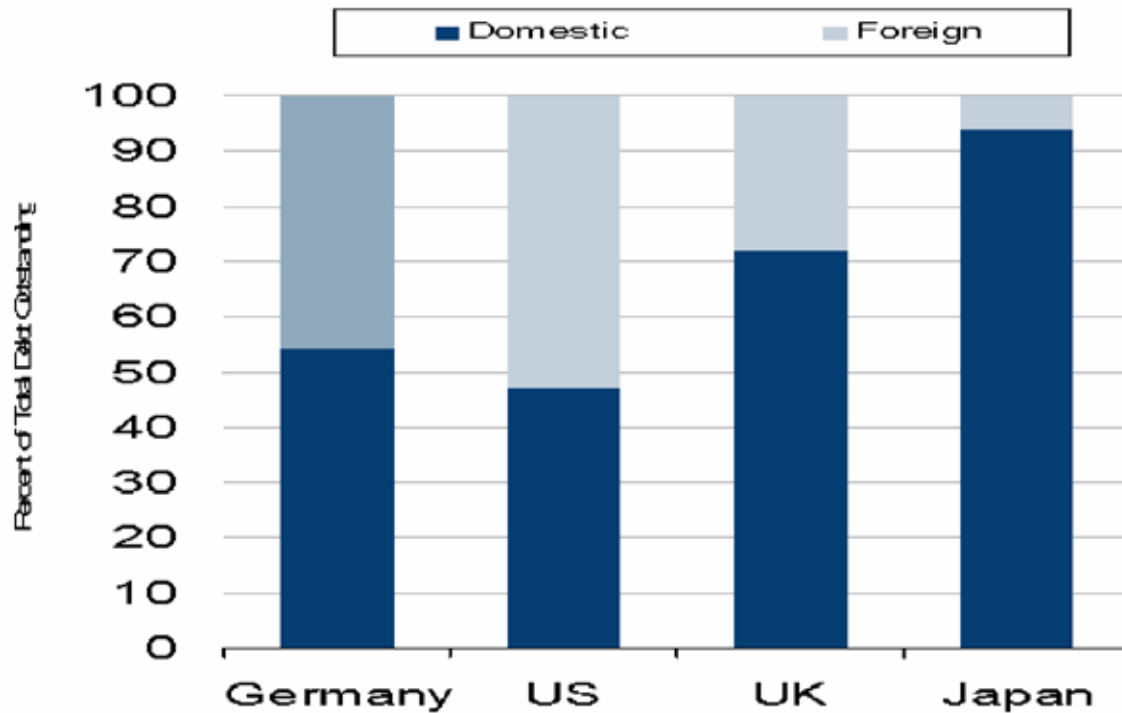
- ✦ Japanese Households Are the Biggest Holders of Japanese Debt: Demand from Japanese investors for government bonds has mitigated the impact of rising debt levels on interest rates. But this can only go on for so long given that the aging population is slowly using up its existing savings. The household savings rate has fallen from 10% in 1999 to 3% today. Though politically dangerous, the Japanese government could tax the domestic population's bond holdings at a very high level to lower the debt-servicing ratio.
- ✦ UK Pension Fund Demand Has Kept a Lid on UK Government Bond Yields: The UK pension system is underfunded (liabilities exceed assets) to the tune of £100 billion and the 2004 Pensions Act

in the UK requires trustees and sponsors to make “prudent” choices to meet plan funding obligations. Over the past 10-years, pension funds have shifted assets away from equities and toward government bonds. The average pension fund's holdings of fixed income securities, including long-dated government bonds, has almost doubled over that period from 15% in 1998 to 29% in 2008. This has provided a natural buyer for the long-end of the UK gilt curve and thereby anchored long-term interest rates.

- ✦ The US Dollar Remains the World's Primary Reserve Currency, Which Increases International Demand for US Assets: The US dollar's role as the main global reserve currency has its benefits, including the fact that it increases demand for dollar-denominated fixed income assets as international holders of dollars seek higher returns than they can earn on holding their dollars in the form of cash. While the recent financial crisis has certainly damaged the United States' reputation in the global economy, it has not changed the role of the dollar as the primary global reserve currency at this stage. If the US dollar were to become less stable, or the US economy less dominant, bankers may gradually abandon it as a reserve currency. Historically, however, this process has taken a long time.

The Japanese Situation is Mitigated by the Willingness of Japanese to Hold Government Debt

Breakdown of Foreign and Domestic Holdings of Debt



Source: Eurostat Debt Structure Survey 2008

2010 Rate Forecast

		2009 Year-End	2010 Forecast
US	Fed funds	0.00-0.25	0.50 - 0.75
	2-Year	1.14	1.60 - 1.90
	10-Year	3.84	4.00 - 4.35
UK	Base rate	0.50	0.75 - 1.00
	2-Year	1.32	2.25 - 2.50
	10-Year	4.02	4.25 - 4.50
Germany	REFI rate	1.00	1.00 - 1.25
	2-Year	1.33	2.00 - 2.25
	10-Year	3.39	3.50 - 3.75
Japan	Policy rate	0.10	0.10
	2-Year	0.15	0.20 - 0.30
	10-Year	1.30	1.60 - 1.80

1. Net debt refers to gross debt of the government minus its financial assets in the form of debt instruments.
2. Thomas Laubach, "New Evidence on the Interest Rate Effects of Budget Deficits and Debt." Board of Governors of the Federal Reserve System. May 2003.