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Deciphering Debt

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Over the past year we have received many questions about Europe's debt woes and their implications for the global outlook. As the year progressed it became clear that there is a fair bit of confusion regarding national debt levels and determining which countries are most vulnerable and why. Many wonder why Ireland is facing a crisis when its public sector debt stands at less than 100% of GDP, whereas Japan garners no headlines even as its debt level approaches 200% of GDP. Headline writers tend to focus on the ratio of gross public sector debt to GDP but other metrics, while not as media-friendly, are important and necessary to understand the nuances and ramifications of indebtedness. Unfortunately, 2011 is likely to raise more issues about debt, with periodic market panics about debt sustainability and bailouts. We therefore decided to take a step back and offer this primer on the issue of debt – specifically the various measures and the roles they play in determining a country's risk of facing some form of debt-related crisis. Metrics to assess indebtedness of nations are classified as solvency and liquidity measures, which will each be discussed in depth. We will also touch on the special topic of the banking sector and its relation to public debt, followed with comments about how market perceptions play into this situation. The final section lists our view of global public-debt-related challenges in 2011.

Solvency

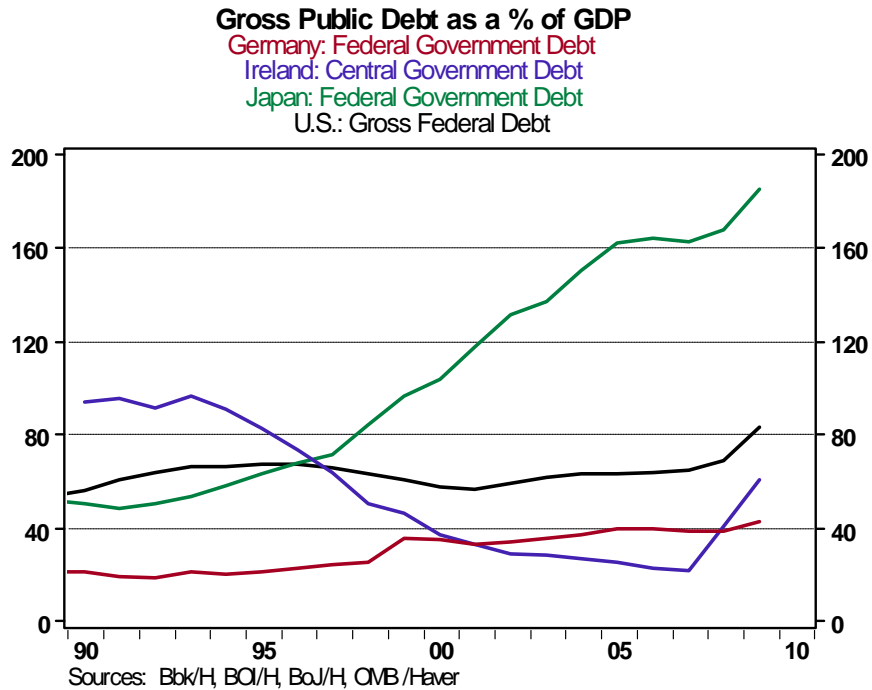
“A national debt, if it is not excessive, will be to us a national blessing.”
– Alexander Hamilton: *Letter to Robert Morris*, April 30, 1781

The defining element in determining the risk of debt is the issuer's solvency – its ability to pay what it owes. The most commonly cited measures of a country's long-term solvency focus on the health of public finances and have gained in prominence recently thanks to the ongoing European crisis, but they are only part of the picture. Special care must be taken when comparing various countries' solvency ratios (i.e. “Look! The US and Portugal have similar debt-to-GDP ratios! We're doomed!”), as they are often calculated differently and may even unwittingly compare dissimilar measures altogether. This often occurs when the term “debt-to-GDP” does not specify between gross and net – a vast difference in some cases. Developed economies' ratios are popularly expressed in net terms, while developing countries use gross terms, but this heuristic often falls victim to expedience.

Gross Public Debt

Public sector debt is a part of modern financial systems, and in moderation can be a boon for national development. **The widest definition of government liabilities – gross public debt – captures all principal and interest payments due.** As is true of all metrics, the gross public debt ratio (debt to GDP) provides only a partial indicator of sovereign solvency – a crude indicator of long-term national solvency. However, it does not consider debt relative to actual government revenues (the capacity to repay), or the amount and quality of public assets (the capacity to offset debt). This anomaly makes countries with low levels of government revenues appear more solvent than reality might suggest.

Chart 1



Net public debt is gross public debt minus the assets held by the government (calculations differ slightly from government to government). The assets can include debt securities (national, regional or provincial) held by the government, other agency bonds, and cash, but do not account for non-financial assets

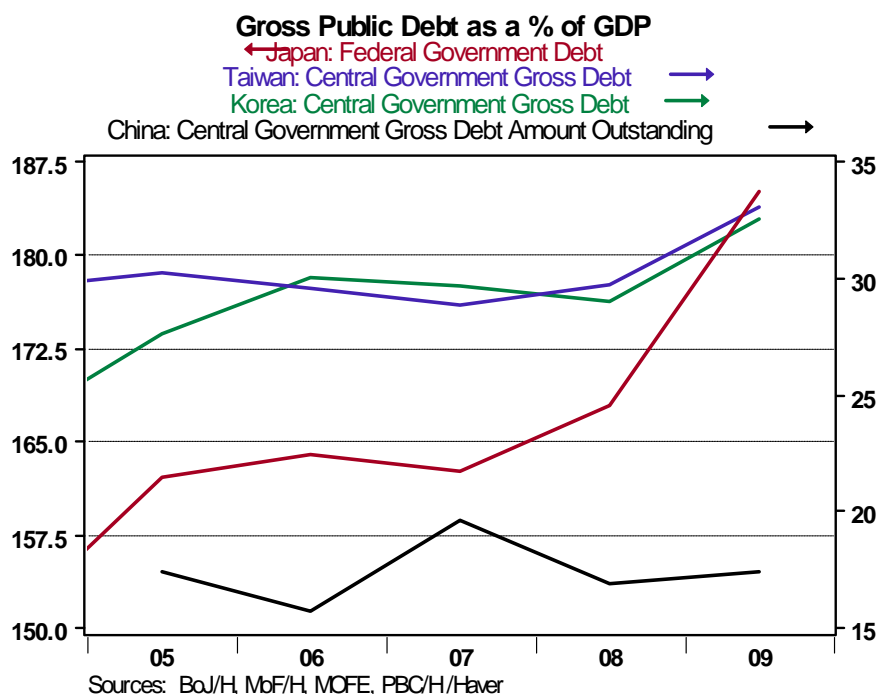
Comparing the net debt level to GDP suffers from the same shortcomings as the previous measure. While in many ways net debt is a superior measure of indebtedness, it is also subject to misinterpretation. For example, while the US is forecast to end 2010 with gross public debt of 91.4% of GDP and net debt of 62.3% of GDP, a difference of \$4.3 trillion, there is no guarantee that those assets can indeed offset debts. When countries experience a financial crisis, their publicly-held assets may not be able to be liquidated or may only sell at a significant discount, thus diminishing any capacity to balance the ledgers at a time when it is needed most. In this regard, gross debt is the most consistent indicator of a sovereign's obligations, though its shortcomings are noteworthy.

The flip-side of the public debt/GDP ratio is that a lower figure suggests a country has more room to maneuver in countering or offsetting major economic shocks. When the global economic crisis came to a boil in late-2008 and governments compiled massive stimulus packages and incurred large budget deficits, the markets viewed favorably the less-indebted countries with plenty of wiggle-room while punishing financially burdened countries falling deeper into the red. South Korea and China, large export economies with debt/GDP ratios below 30% at the time, received

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praise for the deficits they ran and the additional debt they issued to fight off recession. Talk of more debt in neighboring Japan, however, with a debt/GDP ratio at a staggering 168% of GDP in 2008, only increased fears that the country would push itself into a debt trap and financial ruin.

Chart 2



Gross external debt/GDP

This solvency indicator is often confused with the public debt ratio, but **gross external debt/GDP** is distinct on two key criteria. First, it includes both private and public debt – individuals and private firms as well as the public sector, with the private debt stock often being the larger category in more developed economies. Second, it only considers all liabilities, principal and interest owed to nonresidents (private foreign banks, other governments and multilateral institutions) by residents of a country. This ratio is useful in revealing how much of a country's debt is exposed to cross-border risk and particularly currency fluctuation. The currency issue is not as important for US entities that nearly exclusively issue debt in US dollars. However, the majority of countries issue at least some debt in US dollars, yen, or euros, particularly emerging and developing economies. This adds a layer of currency risk to their profiles, which can be a particularly volatile category during times of crisis.

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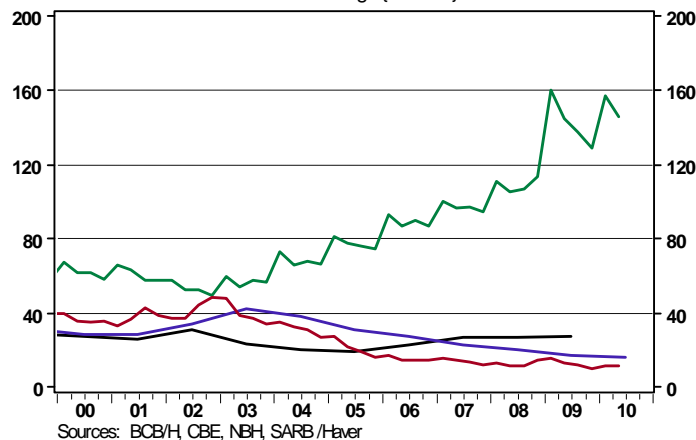
Table 1
Gross External Debt (% of GDP)

	2006	2007	2008	2009	2010 (Q2)
Australia	81.5	82.4	91.6	91.2	89.0
Germany	134.9	141.3	151.1	147.0	154.0
Greece	117.3	134.0	153.3	175.6	188.7
Italy	104.7	108.8	111.1	116.4	117.0
Japan	35.1	39.1	41.0	40.7	41.6

While euro-denominated Euro-zone debts were once assumed to be free of currency risk within the ‘zone, it is dawning on investors that risks vary significantly across the Euro-zone. German debt and Greek debt, while issued in the same currency and from the same economic bloc, each possess distinct risk factors. Complicating the Euro-zone situation is very significant levels of cross-border holding of sovereign and banking debt by Euro-zone and wider-EU banks. According to the Institute of International Finance (IIF), for most of the sixteen Euro-zone sovereigns, non-domestic investors hold more than 50% of the outstanding government debt. Some 65% of Greek government debt is held by non-residents in the rest of the Euro-zone and, according to Bureau of International Statistics data, the largest creditors to Irish public- and private-sector debt are banks based in the UK and Germany.

External debt is particularly important when assessing the debt stocks in Latin America, Africa and other emerging economies where a history of poor credibility precluded countries from issuing international debt in their home currency. As countries develop their capital markets they are dependent on borrowing from outside sources, and currency risk becomes one of the most important factors weighing on overall external debt ratios.

Chart 3
Gross External Debt as a % of GDP
Brazil: Gross External Debt
Egypt: External Debt
Hungary: Gross External Debt
South Africa: Gross Foreign (External) Debt



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Japan is an example of a developed economy with a high public sector debt ratio but low external debt relative to GDP – i.e., most of its public sector debt is domestically held. With the bulk of the nation’s public and private debt denominated in yen, repayment is not held hostage to the exchange rate, but rather to the Bank of Japan. This minimizes the risk of a public debt default as the central bank could always print more yen as a last resort. And as the debt is mainly domestically held, the country would not experience a massive outflow of funds that could destabilize the external balances. These factors offer Japan some protection from a debt crisis, setting it apart from countries with severe cross-border risk.

Liquidity

*“Words pay no debts.”
– Shakespeare: Troilus and Cressida, Act II*

While solvency addressed the broader concept of a country’s ability to service its debts, liquidity targets the more immediate cost of funds to retire or roll-over its obligations. The European debt issues over the past year have brought increased scrutiny to the near-term liquidity of sovereigns. The markets had always assumed that developed economies would have ready short-term access to capital and thus that roll-over risk was minimal. As Greece showed (and Portugal may, too, in Q1 2011) this is far from the case. A country with a huge gross public debt/GDP burden may have a more manageable near-term outlook than a neighbor with a smaller burden if its debt has long maturities or low effective interest rates. Additionally, as the case of Ireland has clearly shown (see Chart 1), a country with seemingly-sound solvency indicators can be driven to crisis by perceptions of near-term liquidity problems.

Short-term debt

Short-term external debt (maturities of less than one year) is vulnerable to deteriorating market conditions, and a high proportion of short-term debt poses a liquidity risk that can quickly become unsustainable. Usually, short-term external debt is issued by the private sector and used frequently in matters of trade finance. However, this form of financing is often used for speculative advantage, with foreign purchasers holding such debt and acting on exchange-rate movements to churn significant returns. In the case of Thailand in 1997, a sharp accumulation of domestically-issued short-term debt and rising speculative purchasing from overseas spiraled beyond sustainable levels. When the currency fell, foreign interests pulled out of the market and the economy came crashing down along with most of southeast Asia.

This was also the key problem for Greece earlier this year. Not only did the public sector debt burden turn out to be far higher than government data had revealed, and with much of that debt held by nonresidents, but an astonishingly-high proportion was short-term debt. As concerns about Greece’s fiscal situation mounted earlier this year, so did the sovereign’s funding costs, making it prohibitively expensive to roll-over the short-term debt coming due in the spring. Hence the IMF/EU bailout plan announced in early May.

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Interest rates

Rising interest rates are particularly problematic when a country has an uncomfortably large ratio of short-dated debt, as those rates represent additional costs in rolling over debt. As the country builds up further debt, the market begins charging higher rates to cover the additional risk. This can create a vicious circle of rising debts and servicing costs, and if left unchecked can trigger a debt crisis.

As it became increasingly evident in the spring that Greece's debt problems were far greater than had been previously assumed, Greek interest rates broke with their German counterparts and rose to represent a significant risk premium. Despite the two countries sharing the same currency and monetary policy system, one-year debt in Greece carried a 350-basis point mark-up above Germany and the major Euro-zone economies.

Publicly held U.S. debt exploded to \$9 trillion in 2010 (62% debt-GDP ratio) from \$5.8 trillion in 2008 (40% debt-GDP ratio). The surge in debt was a result of lower tax revenues and higher federal spending related to the severe recession and financial crisis. The low interest rate environment held down interest costs to \$147 billion or 1.4% of GDP, one of the lowest as a share of GDP in the entire decade. However, according to the Congressional Budget Office's estimate, interest costs are projected to climb to \$800 billion or 3.4% of GDP by 2020 due to the combination of rising debt and higher interest rates.

Looking into 2011, one of the key issues facing many of the European sovereigns is that rolling over previously-sustainable debts may become prohibitively expensive as market anxiety causes interest rates to climb. This interest rate burden would weigh on both sovereign and bank debt needing to be refinanced.

Average Maturity

Similar to the effective interest rate, monitoring trends in the maturity profile of public debt is essential. This is a measure that can provide particular color to the solvency measures as a nation could carry a heavy gross debt burden, but have a very beneficial maturity structure, which is something you won't see in most comparisons of countries by public debt. Again, this is a particularly important trend for emerging economies as being able to extend the maturity of debt is a sign of both increased financial development as well as increasingly strong credibility. For example, Brazil's average debt maturity in 2006 was 3.5 years and is expected to come in around 5.4 years in 2010.

In the early part of the financial crisis there was a decline in average public debt maturity in the advanced economies to cater to risk preferences of investors. As market conditions have stabilized and risk appetite has changed, governments are able to extend maturities of debt.

Market Perceptions

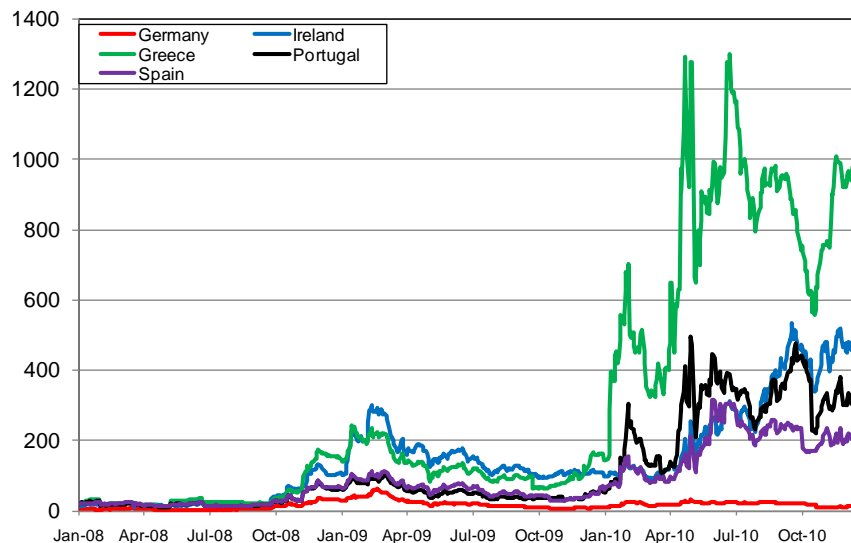
The sovereign credit default swaps (CDS) market reveals whether market sentiment toward a nation's debt situation is bullish or bearish. In general, a CDS is a derivative which transfers the

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risk of a bond default. The buyer of a credit swap receives credit protection and the seller of the swap guarantees the credit worthiness of the product. The buyer of the CDS is compensated in the event of a bond default or restructuring. The buyer of a CDS contract pays a premium for protection. In sum, a CDS is an insurance policy. The terminology used in this market runs as follows: A 0.01 percentage point rise in a five-year contract indicates a \$1,000 increase in the annual cost of insuring \$10 million of debt for five years. A rising sovereign CDS quote implies that the cost of insurance has risen and the market places a higher risk of default for the nation in question. The chart below indicates recent movements in the cost of buying insurance for sovereign debt, and clearly illustrates the extent to which market perceptions have shifted regarding the “peripheral” Euro-zone members compared with Germany. At the beginning of 2008 CDS rates for some of the riskiest Euro-zone countries were only 15 basis points above the German CDS rate (when risks in the ‘zone were not differentiated), but that gap has since widened to over 220 basis points for Spain and 1,025 points for Greece. The US, however, has remained virtually unmoved at a level bordering on insignificant.

Chart 4

CDS Spreads in Select Euro-zone Countries



The Economy and the Banks

*“If you would know the value of money, go and try to borrow some.”
– Benjamin Franklin, Poor Richard's Almanack (1758)*

The final set of metrics to consider is whether an economy can cope with a higher debt burden and with a period of fiscal austerity to get debts under control. Does the government have room to raise taxes if needed? Does the economy have the ability to generate domestic savings at a time of rising government debt levels? Getting sovereign debt under control can also be more difficult if

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the debt increase was sudden and recent, implying the need to impose harsh fiscal austerity measures (e.g., Ireland).

GDP Growth and Fiscal deficits

The budget deficit of a nation is the amount by which the government's expenditures exceed its outlays during a specified period of time, usually one year. National debt is a government's total indebtedness at a moment in time and is the result of previous deficits. As an example, Italy's gross public debt/GDP ratio is far higher than Spain's, but the latter country's debt increase has been recent whereas Italy's debt level has been over 100% of GDP for many years. Italy does not need a major fiscal consolidation effort to stabilize its debt ratio. In addition, privately held debt levels in Italy are among the lowest in the Euro-zone, there is less concern about the state of its banking system, and the economy is not struggling to recover from the collapse of a credit or housing market bubble.

Table 2
Global Fiscal Picture - Selected Markets

	Govt. Budget, %GDP					Govt. Debt, %GDP				
	2007	2008	2009	2010e	2011f	2007	2008	2009	2010e	2011f
Australia	1.9	1.1	-3.9	-3.5	-2.9	14.6	16.6	22.1	22.3	22.7
Brazil	-2.8	-2.0	-3.4	-2.3	-2.3	56.4	58.6	59.5	60.8	58.6
Canada	0.9	0.2	-2.1	-3.7	-2.4	35.5	38.2	30.7	33.5	32.8
China	0.6	-0.4	-2.1	-3.3	-2.9	15.2	14.7	18.6	20.6	20.4
Czech Republic	-0.7	-2.7	-5.8	-5.2	-4.6	29.0	30.0	35.3	40.0	43.1
Euro-zone	-0.6	-2.0	-6.3	-6.3	-4.6	66.0	69.7	79.1	84.1	86.5
France	-2.7	-3.3	-7.5	-7.7	-6.3	63.8	67.5	78.1	83.0	86.8
Germany	0.3	0.1	-3.0	-3.7	-2.7	64.9	66.3	73.4	75.7	75.9
Greece	-6.4	-9.4	-15.4	-9.6	-7.4	105.0	110.3	126.8	140.2	150.2
Hungary	-5.0	-3.7	-4.4	-3.8	-4.7	66.1	72.3	78.4	78.5	80.1
Ireland	0.0	-7.3	-14.4	-32.3	-10.3	25.0	44.3	65.5	97.4	107.0
Italy	-1.5	-2.7	-5.3	-5.0	-4.3	103.6	106.3	116.0	118.9	120.2
Japan	-0.2	-3.2	-6.9	-7.7	-7.1	162.6	167.9	185.1	203.1	221.8
Mexico	-1.1	-2.1	-3.2	-3.6	-3.5	31.4	35.7	39.1	41.6	42.2
Poland	-1.9	-3.7	-7.2	-7.9	-6.6	45.0	47.1	50.9	55.5	57.2
Portugal	-2.8	-2.9	-9.3	-7.3	-4.9	62.7	65.3	76.1	82.8	88.8
Romania	-2.6	-5.7	-8.6	-7.3	-4.9	12.6	13.4	23.9	30.4	33.4
Spain	1.9	-4.2	-11.1	-9.3	-6.4	36.1	39.8	53.2	64.4	69.7
United Kingdom	-2.7	-5.0	-11.4	-10.5	-8.6	44.5	52.1	68.2	77.8	83.5
United States*	-1.2	-3.2	-9.3	-9.7	-7.0	36.2	40.2	53.0	62.3	66.1

* - Publicly-held debt

Those sovereigns that have suffered a sharp increase in the public debt burden over the past two years will need to generate significant annual public sector surpluses over an extended number of years in order to first stabilize and then reduce that debt burden relative to GDP. Aside from the political difficulties of doing this, the very fiscal austerity measures needed to cut the annual

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deficit (and to boost private savings) are also likely to shrink nominal GDP – so making a reduction in the debt ratio even harder.

Banks and Contingent liabilities

As we have seen recently in Ireland, contingent liabilities can greatly affect total debt ratios should an unforeseen event occur. The IMF describes these liabilities as ones that “may affect the financial performance or position of the general government sector depending on the occurrence or nonoccurrence of one or more future events.” These exposures are often not included with the traditional reporting of debt, despite the fact that the sovereign could be the ultimate guarantor of the liability.

In September 2008, the Federal National Mortgage Association (Fannie Mae) and Federal Home loan Mortgage Corporation (Freddie Mac) were nationalized and the U.S. Treasury took ownership of these entities. The associated outlays of these entities are part of the federal budget now and are a contributory factor for a widening of the budget deficit and consequently raising the level of public debt. This is an example of unexpected contingent liabilities that modify the prevailing structure of public debt.

As we head into 2011, investors are focused on one particular source of contingent liability for many EU sovereigns, namely that they may have to follow Ireland in taking the obligations of troubled banks onto the public books. EU banking sector liabilities are much larger than government debt levels. According to the IIF, Ireland is in a league of its own, with total bank liabilities at roughly 9.5 times annual GDP, but the EU average is still high at about 4 times GDP. Obviously, not all of these liabilities are likely to turn non-performing but the potential for a sharp increase in contingent liabilities emanating from the banking sector is particularly high for a country such as Spain, which suffered the double-whammy of a construction and housing market collapse along with the Europe-wide recession. Under “normal” circumstances, the contingent liabilities posed by Spain’s small, regional lending institutions – the *cajas* – would not be a huge burden on the sovereign, and the two large, systemically important international banks do not appear to carry elevated insolvency risks. Nevertheless, market tensions are boosting funding costs, adding to the problems of those banks that are stressed. According to analysis carried out recently by Royal Bank of Scotland, it is “difficult to come up with a scenario where the Spanish bailout of its banking system costs more than 10% of GDP.” Even a 10% increase in Spain’s public debt burden next year would not break its back given that the starting point of the sovereign’s debt ratios were not particularly burdensome. The risk for Spain is that a short-term liquidity problem for the banking sector – perhaps triggered by prohibitively high market rates or by lack of access to counterparties – could turn into a contingent liability problem for the sovereign.

In assessing the risk from banking sector liabilities, it is also important to take into account the size of the banking sector relative to the size of economy. The highest risks stem from smaller economies with fewer resources to call upon when their banking sectors get into trouble. Remember the extreme example of Iceland, whose sovereign was overwhelmed by bank debt burdens and couldn’t guarantee them. This is why Portugal ranks higher on investors’ list of

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troubled countries than the aforementioned Spain, with an economy that's only about 15% the size of its much larger neighbor. Portugal's banks rely on external and official sources to finance up to 40% of their assets (IIF data), leaving them at greater risk of liquidity problems.

The level of domestic private sector debt also has an impact on potential contingent liability risk. High levels of household debt, for example, exacerbate the impact of a housing market collapse and add pressure on domestic banks, boosting their non-performing loan levels. Also, paying down high levels of debt during a recession is an added constraint on the economic growth outlook, further complicating the picture for a government trying to reduce its deficit/GDP ratio.

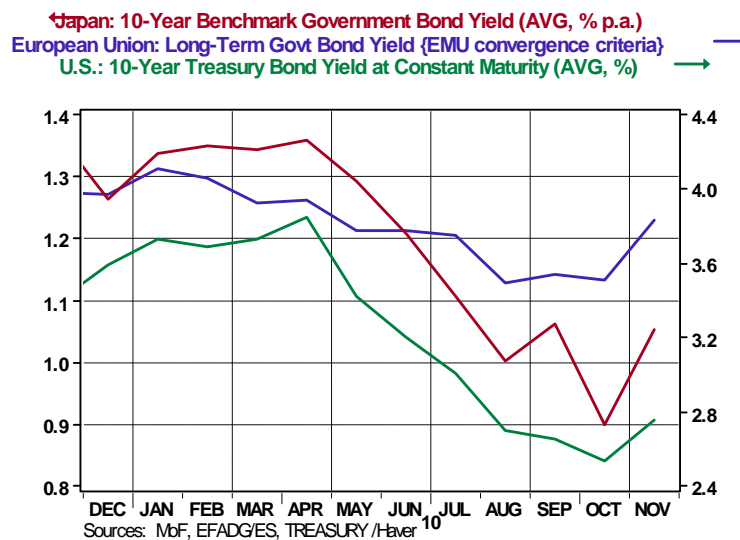
Issues for 2011

By and large, 2010 was the year of consolidation of a lopsided global economic recovery. 2011 is likely to be the year of sovereign debt challenges. At the worst there is a risk that an OECD sovereign – most likely Greece – ends up with some form of debt restructuring. The very fact that this is a serious risk calls into question the basic assumption that OECD sovereign interest rates are a benchmark against which to price other risks. The realization that things have changed has caused even German rates to edge upward in recent weeks. Although it is the weaker European credits, both sovereign and private sector, that are most at risk from much wider spreads on their borrowings, there is the potential for this shift in assumptions to affect the structure of the market pricing of all debts in 2011. And if default by a sovereign is no longer inconceivable, markets will begin to re-think what is considered a sustainable level of government debt – for emerging markets as well as major ones.

The fiscal barometer of the global economy in 2010 indicates that fiscal deficits have dropped in the emerging economies of Asia, Latin America and Europe. At the same, although fiscal deficits in the advanced economies show a declining trend, a few appear to have posted wider fiscal deficits in 2010, which will further boost their public debt ratios heading into 2011. Table 2 indicates that public debt has risen to prohibitive levels among the advanced nations and will remain at these elevated levels in the near term. In light of this expectation, we have compiled a list of likely trends for 2011 which are related to public debt issues.

- Declining yields of government bonds of advanced nations was the predominant theme of 2010, which was partly reversed in the closing weeks of the year. The higher bond yields seen in December are mostly likely to prevail in 2011 for disparate reasons.

Chart 5



- Higher U.S. government bond yields in recent weeks have been driven by a combination of forces: the bullish nature of economic reports, passage of the Obama-McConnell tax compromise, the second round of quantitative easing underway, and the likely increased supply of government securities arising from the tax-cut plan. Large swings in bond yields should not be surprising in 2011.
- Recent movements of credit default swaps suggest that market participants have given the United States more wiggle room to sort out public debt issues. Markets will be sensitive to deficit reduction plans of the United States to assess the long-term debt sustainability.
- Europe will remain under a cloud, with doubts about the pace of economic growth and the wide reach of contingent liabilities influencing market sentiment about the Euro-zone.
- There is a perennial risk that an event in Europe such as an election, a particularly-expensive government bond issue, or headlines about problems at a bank, could trigger a liquidity crisis that turns into something worse if not checked in time. The most likely scenario is that the EU will continue to do what it has always done – a messy muddling-through that counters any near-term liquidity woes but sidesteps tackling longer-term solvency issues.
- Concerns about the costs of keeping the Euro-zone intact are likely to drive Germany’s borrowing rates higher in 2011 vis-à-vis 2010. Markets will test the Euro-zone’s willingness and actions to prevent the collapse of the euro.
- Ongoing moves to create a “permanent” bailout mechanism for the EU carry the seeds of a more profound re-thinking of fiscal policy and sovereign relations, particularly among the 16 members (soon to be 17) of the Euro-zone.
- Emerging markets are being seen in a very positive light. An upset of this apple cart could occur if China commits policy mistakes that could derail economic growth.

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