

What shadows will sovereign debt cast across the decade?

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Abstract: *A country's future sovereign debt depends on its domestic macroeconomic performance, its sustainability, its ability to attract foreign investments, and whether its economy can pay-off domestic and external debts. The global financial crisis shows that unsustainable debt is harmful to any economy regardless of size. Consequently, into the future, countries need to develop effective policy responses to compensate against possible sovereign debt and interest rate rises, otherwise their international ratings may be downgraded, and their economies weakened.*

1. Introduction

Around the globe observations demonstrate that the countries with expected near-future- inflation, unsustainable ballooning government spending and expected recession head towards a financial crisis unless significant policy transformations take place convincingly and before late. And whilst the recent sharp increase in advanced country sovereign debts has led to serious concerns about fiscal sustainability as well as their broader economic and financial market impacts, research on the relationship between sovereign or public debt and economic growth remains sparse, particularly from an empirical perspective. Most studies in this area focus on the impact of external debt and debt restructuring on growth in developing countries, with analyses of developed economies limited to a handful of recent papers.

1990 was the era of convertibility for Argentina, when any citizen could go to the bank and convert their local currency to US dollar, the primary plan of such law was to guarantee the recognition of domestic currency to combat the 5000% hyperinflation that country suffered from in 1989. The plan seemed to work effectively since dollar Foreign Exchange Reserve (FER) was kept equal to the domestic money supply by Argentina central bank, and that resulted in quick and sharp decline in inflation and motivated spending. But at the same time activities like money laundry and tax evasion hit the economy harshly, additionally IMF continued lending Argentina, and as a result Argentina's sovereign bond (debt) issued in USD increased even more. By early 2002 the amount the government owed to international market reached some US\$ 95 billion, unemployment rose to a critical point of nearly 25% (according to FocusEconomics, 2009), GDP growth declined sharply and government announced to its international creditors that "we are not going to pay" - - country defaulted that is largest sovereign default in history.

Argentina's debt default and Greece debt crisis (with many similarities between the two events) raise the critical significance of sovereign bonds. These cases reveal that if a nation cannot afford to pay the required foreign currency at bond repayment time and fails to service the debt, the risk of default increases, global distrust of financial

investors and of central bankers can lead to a financial turmoil in international market, where significant financial instability and fluctuation will become likely and perhaps another financial crisis could be well underway. To avoid another chaotic catastrophe the trends of the sovereign debt and macroeconomic performance of countries needs to be watched closely. The projection of the future patterns based on the past and current trends are imperative since it will provide adequate safety net before another financial calamity arrives. Needless to say if the extent of sovereign debt for a nation is too large to finance and service, bankruptcy is very likely to occur and by then there will be little motivation for other countries to cooperate with the system in finding an immediate solution.

Furthermore, following the Global Financial Crisis (GFC) many commentators have weighed in on the debate around regulation and the role of government and the law in minimising the risk of a repeat of similar economic events. Within this debate there has been an 'increasing focus on foreign debt and creditworthiness' (Stevens 2010). Against the instability and uncertainty created by the GFC the debate has been reignited for a 'sovereign insolvency regime' with reference to the bankruptcy law in the US (Buckley 2002, 2003, 2009). In 2002 the International Monetary Fund (IMF) itself looked at options for dealing with sovereign debt based on principles found in the bankruptcy laws of nations around the world (Richards 2002). Even countries which have remained relatively unaffected by the GFC and the domino-effect of recent international sovereign debt crises continue their domestic reform agendas to keep pace or race ahead of international developments in areas such as capital standards and crisis management (Reserve Bank of Australia 2011). As well as arguments for the need for an international 'bankruptcy' mechanism in international regulatory practices there has also been recognition by the international community that those banks with the potential to have widespread, global and systemic implications be identified and appropriately and carefully monitored to meet minimum standards (Reserve Bank of Australia 2011). Albeit a less prominent issue, the role of the law and regulation is one which may become increasingly relevant in the current economic environment.

2. Theoretical and Empirical Underpinning

The theoretical literature tends to point to a negative relationship between sovereign debt and growth. According to Elmendorf and Mankiw (1999), the conventional view is that debt stimulates aggregate demand and output in the short run, but crowds out capital and reduces output in the long run. The channels through which sovereign debt may affect economic growth are argued to be diverse. Drawing on contributions by Buchanan (1958), Meade (1958) and Musgrave (1959), Modigliani (1961) argues that government debt becomes a burden for future generations through a reduced flow of income resulting from a lower stock of private capital. Apart from a direct crowding-out effect, he also points to the impact on long term interest rates, as the resulting reduction of private capital drives up its marginal product. Diamond (1965) augments this analysis to include the effect of taxes on the capital stock and to differentiate between external and internal debt. He concludes that, through the impact of taxes needed to finance interest payments, both types of public debt have a negative impact on the capital stock by reducing both the available lifetime consumption of taxpayers as well as their savings. He also contends that internal debt tends to produce a further

reduction in the capital stock due to the substitution of public debt for physical capital in individual portfolios.

A number of studies have further investigated the interest rate effects of increased public debt. Surveying the empirical literature Gale and Orszag (2003) conclude that a projected increase in the budget deficit of 1% of GDP raises long term interest rates by 50 to 100 basis points. For a panel of 31 advanced and emerging market economies Baldacci and Kumar (2010) find that increases in public debt lead to a significant increase in long-term interest rates, with the precise magnitude dependent on initial fiscal, institutional and other structural conditions, as well as spill-overs from global financial markets. They conclude that large fiscal deficits and public debts are likely to put substantial upward pressure on sovereign bond yields in many developed economies over the medium term.

The empirical literature regarding the relationship between sovereign debt and growth is primarily focused on the role of external debt in developing countries, much of it motivated by the “debt overhang hypothesis” (Krugman, 1985, Sachs, 1984, Sachs, 1986). A debt overhang is said to occur where the debt service burden is so heavy that a large proportion of output accrues to foreign investors and creates disincentives to invest. Analysing the non-linear impact of external debt on growth across a panel of 93 developing countries between 1969 and 1998, Patillo, Poirson and Ricci (2002) find that for a country with average indebtedness, doubling the debt ratio reduces annual per capita growth by between half and a full percentage point. They further find that the average impact of debt becomes negative at 35-40% of GDP with the predominant mechanism being to lower the efficiency of investment rather than its volume. In a subsequent paper aimed at specifically investigating the channels through which debt affects growth, the same authors find that the negative impact of high debt levels on growth operates both through a strong negative effect on physical capital accumulation and on total factor productivity growth, the contributions of each being approximately one-third and two-thirds respectively.

Other studies that have similarly found a non-linear negative effect of external debt on growth include Cohen (1997), Smyth and Hsing (1995), and Clements et al. (2003). Analysing the relationship for a panel of 55 low income countries over the period 1970-1999, the latter authors find a threshold level of external debt at approximately 20-25% of GDP. By contrast Schclarek (2004) fails to find support for a concave relationship, instead concluding the existence of a negative linear relationship for a number of developing economies. Unlike Patillo, Poirson and Ricci (2004), Schclarek’s findings suggest that the relationship is mainly driven by effects on capital accumulation with limited evidence on the relationship between external debt and total factor productivity growth.

In one of the few analyses to investigate the relationship for developed economies, Schclarek’s (2004) analysis also includes a number of industrial economies. He concludes however that no significant relationship exists between gross government debt and economic growth. In a ground breaking study into both advanced economies and emerging markets, Reinhart and Rogoff (2010) employ data on 44 countries spanning 200 years, covering a diverse range of political systems, institutions, exchange rate and monetary arrangements, and historic circumstances. Searching for a systematic relationship between high public debt levels, growth and inflation, they

find that the relationship between public debt levels and growth is remarkably similar across emerging markets and advanced economies. Their main result is that although the link between growth and debt appears relatively weak at “normal” debt levels, median growth rates for countries with sovereign debt at over 90% of GDP are about 1% lower than otherwise, with mean growth rates being several percent lower. With regard to inflation however, they find no systematic relationship between high debt levels and inflation for developed economies as a group (albeit with individual country exceptions, including the United States (see next section)), whilst high debt levels appear to coincide with higher inflation in emerging market economies.

Investigating the debt-growth relationship for twelve euro area countries over a period of 40 years from 1970, Checherita and Rother (2010) find support for a concave relationship with a threshold point of 90-100% of GDP. Confidence intervals for this threshold suggest that the negative effect of high debt may start to appear at levels of 70-80% of GDP which, they argue, calls for even more prudent sovereign debt policies. They also find evidence of a negative linear relation between the annual change in the debt ratio, the budget deficit-to-GDP ratio, and per-capita GDP growth. Analysing the channels through which public debt impacts growth, they find support for private saving, public investment, total factor productivity, and sovereign long-term nominal and real interest rates.

Kumar and Woo (2010) analyse a panel of advanced and emerging market economies over the period 1970-2007 and find that, on average, a 10 percentage point increase in the initial debt-to-GDP ratio is associated with a slowdown in per capita growth of around 0.2 percentage points per year with the impact being smaller (approximately 0.15%) in advanced economies. Similar to previous findings, they also find evidence of non-linearity with a threshold level of 90% of GDP. The effect largely reflects a decline in labour productivity growth, predominantly due to reduced investment and slower growth of capital stock per worker.

3. The Case of the U.S

In recent years United States’ public debt has seen rapid growth, climbing from 36.2% of GDP in 2007 to 53.0% in 2009, and further to 62.3% in 2010 , and above 90% in 2011 (CIA World Factbook).

Despite levels continuing to soar, an analysis of the economic impacts of US debt is virtually absent from the literature. As previously cited, papers by Reinhart and Rogoff (2010), Kumar and Woo (2010), and Schclarek (2004) have included the United States within a panel of advanced economies. Although a single country investigation of the relationship between growth and debt is absent, as an appendix to their main findings, Kumar and Woo (2010) have extended their analysis to provide an analytical perspective for the United States. Employing a simple Cobb-Douglas production framework and assuming that each dollar of debt crowds out one dollar of capital in the long run, they estimate that an increase in the ratio of net debt to DGP of 40% over the five years from 2010-2015 will lead to a growth slowdown of around 0.8%: or 0.2% per year on average for a 10% increase in government debt. Reinhart and Rogoff (2010) also note that, whilst for a panel data set of advanced economies

there appears to be no correlation between inflation and high debt levels, for the US, debt levels of over 90% are linked to significantly elevated inflation.

While the US government increases the government expenditure bizarrely to renovate the domestic economy, there increases the urgent need to raise enough cash to finance this huge spending. This has been partially funded through domestic and international borrowing, whereby government sells treasury securities and bonds of different maturity. Obviously this borrowing makes a sizeable increase in national and external debt, which has climbed above \$15 trillion in 2009 and still rising.

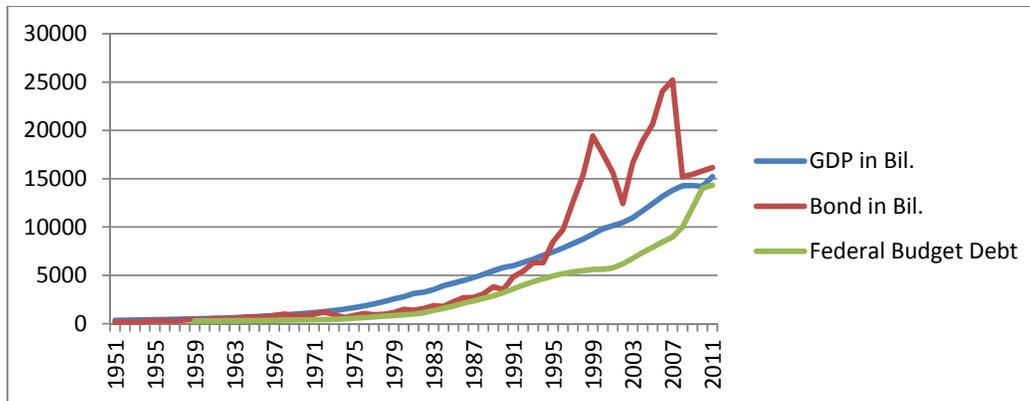


Figure 1- Source: based on data collected from U.S Census Bureau

Foreign purchase of US securities is what is called “US sovereign debt”. Sovereign debt is more worrying and important than domestic public debt, as domestic debt is normally injected back into the domestic economy through fiscal spending and different types of investments. Therefore significant part of interest payments goes to US citizens. However, the sovereign debt indicates absolute leakage out of the US economy due to the international holders of US government bonds and treasury securities. This generates a bigger economic problem as US is giving away the future income to support today’s expense.

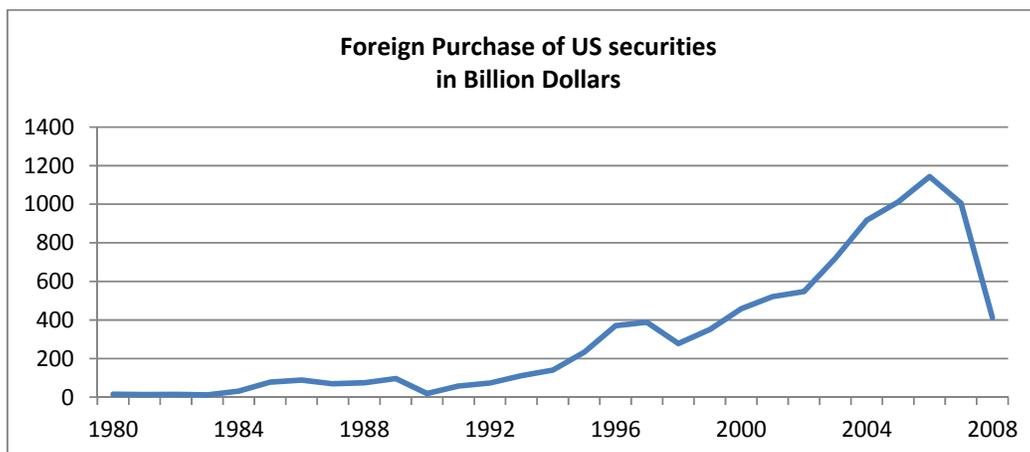


Figure 2- Source: based on data collected from U.S Census Bureau, includes net purchase of T-bonds, Corporation bonds, corporate bonds and corporate stocks.

Figure 2 illustrates a significant shift in the amount of foreign purchase of US securities, bonds and stocks from mid 1990s onward. This in part can explain a relatively low inflation rate in the US from mid 90s as well as appreciation of USD in the global market since the demand of USD was increasing sharply.

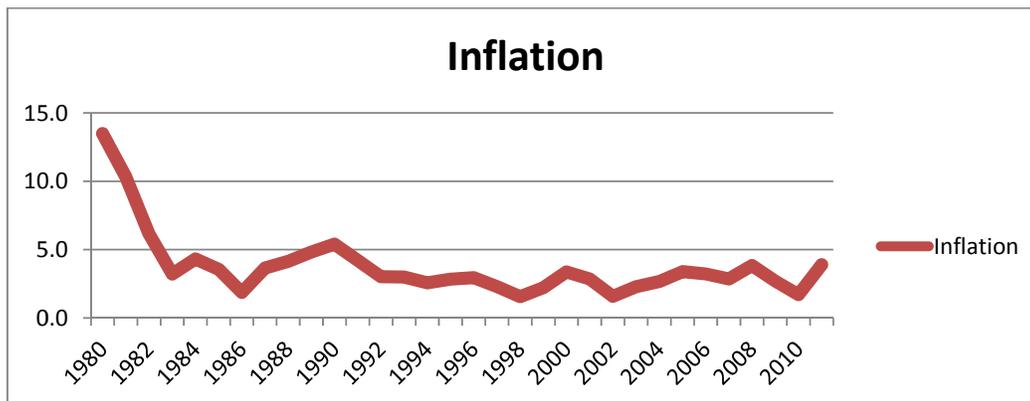


Figure 3: US inflation, Source: based on data collected from U.S Census Bureau

To show that if US needs to be concerned about the level of its sovereign debt, we apply the concept of debt-to-GDP ratio that shows the country's federal debt in relation to its gross domestic product. The united states has the debt-to-GDP ratio of nearly 95% , based on January 2010 release of the latest data on GDP and federal debt, and with an annual GDP of \$14.5 trillion .

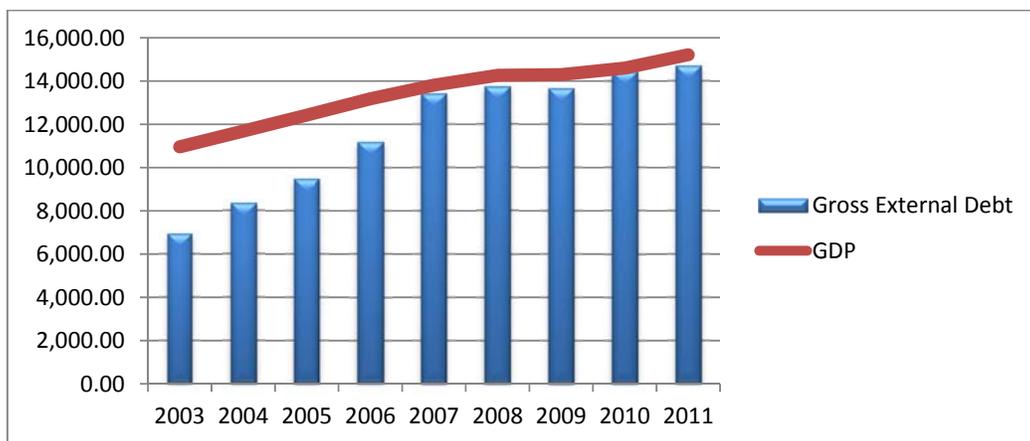


Figure 4: US Sovereign Debt and GDP , Source: based on data collected from US department of treasury and US Census Bureau

U.S. Treasury securities are the most important means of funding US federal budget debt, which totalled \$10 trillion as of 2008. US treasury securities held 70% share of government debt in 2009.

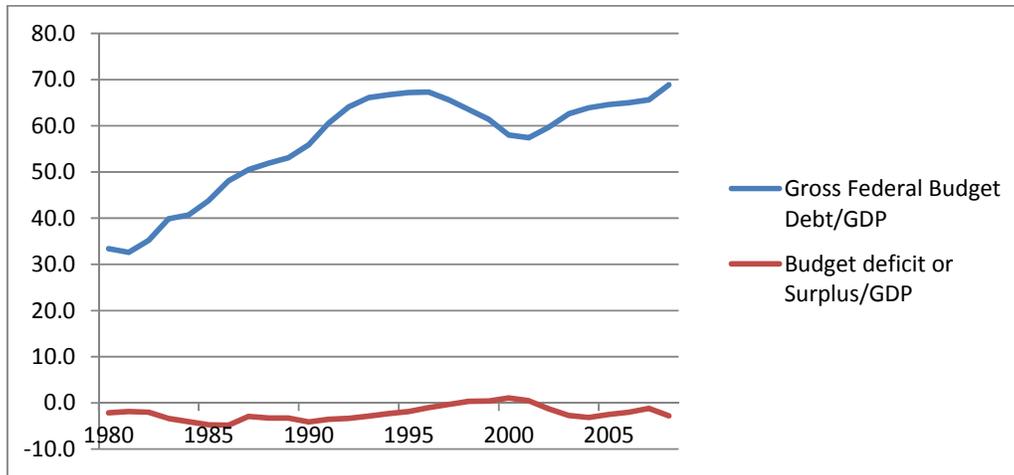


Figure 6.a : US Debt-GDP ratio and budget deficit
-Source: data are collected from US department of treasury and US Census Bureau

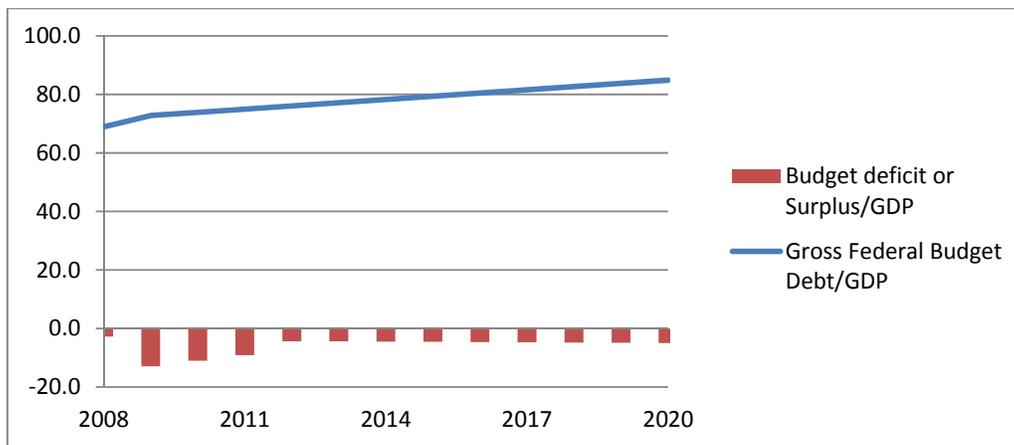


Figure 6.b : US Debt-GDP ratio and budget deficit projection, estimation starts after 2008
-Source: Based on data from US department of treasury and US Census Bureau

The existing trends aren't promising. Growth seems to be slow even though inflation is kept low as a result of low interest rate policy during the recession, GDP growth in 2009 was only 0.2%, and future estimation doesn't depict strong and sustainable growth. Specially, interest rate rise in early 2010 created a drag on the economy, nevertheless US still is obliged to pay interest on what it is borrowed, and borrowing on top of borrowing is in fact poisoning the future of the economy and jeopardizing

the long term health of financial system even if you are the largest economy in the world with nearly \$ 15 trillion worth of GDP.

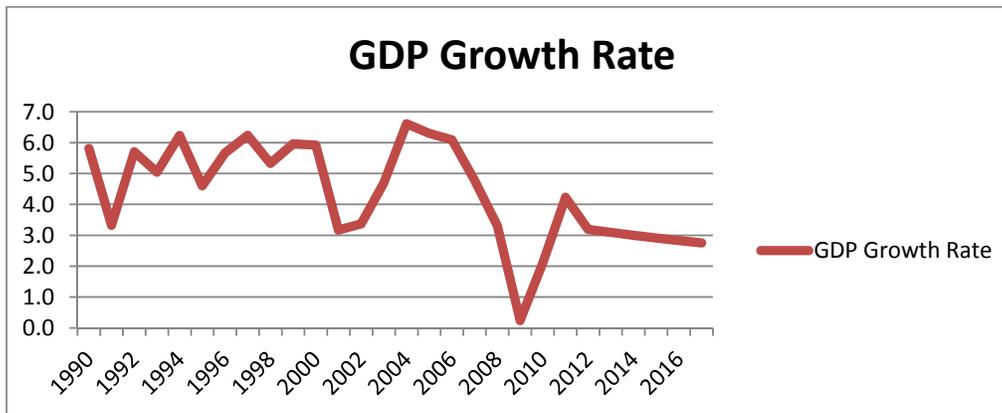


Figure 7: US GDP Growth rate , estimation starts after 2011
Source: based on data collected from US Census Bureau

In addition the 2010 US budget assigns major debt increase, and in February 2010 President Obama signed debt ceiling of \$ 14.3 Trillion. 2010 budget also projects debt will rise to \$20 trillion by 2020, with a Deb-to-GDP ratio of nearly 1 and remain in that level thereafter.

4. Who are the foreign holders of US debt?

Throughout the recent financial crisis, US has looked to foreign lenders / security buyers such as China, Japan , OPEC and other countries for financial support, this translates to increased spending , higher federal government debt, and growing national debt. China after Japan is the biggest international holder of American debt

China's exchange rate policy that aims to tone down the revaluing of Yuan against dollar enabled China's central banks to be a major purchaser of US sovereign bonds and treasury securities. Chinese government has transformed part of its foreign exchange assets into financial securities, and since Foreign Exchange Reserve (FER) facilitates terms of trade and avoid speculation against China's currency; China's central bank decided to hold financial securities from other countries in particular from US. China' main holdings of US securities are in long term treasury securities.

This simply indicates that a significant share of China's holdings of the U.S. securities is directed and controlled by China. And since the U.S. treasury securities yield are relatively low in comparison with other types of interests and returns, therefore they are considered to have moderately low risk.

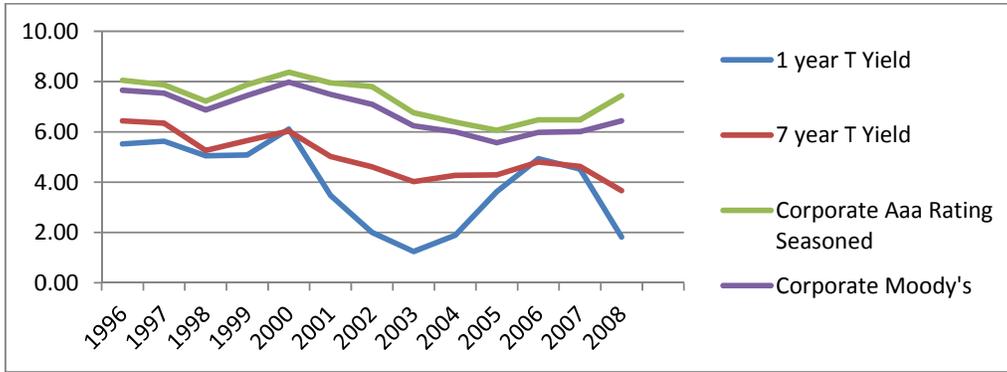
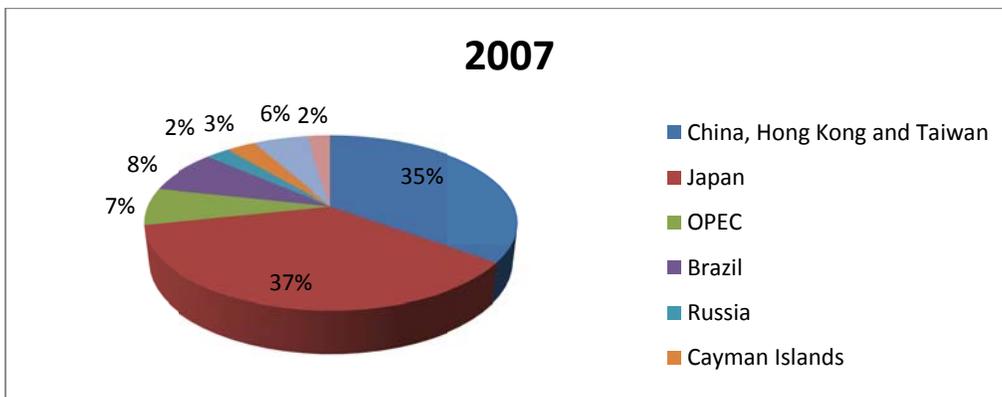
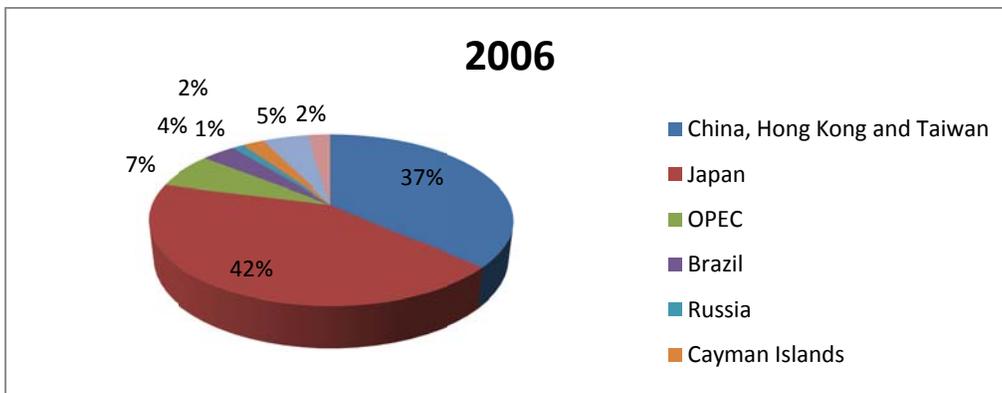


Figure 8: US Bond Yields
Source: based on data collected from US department of Treasury

This feature in particular was and still is very attractive to China Central bank and purchasing US treasury securities are considered safe investment for China's FER. China's holding of these securities as of 2006 is 37% of total US treasury securities, and 35% and 40% for 2007 and 2008 accordingly.



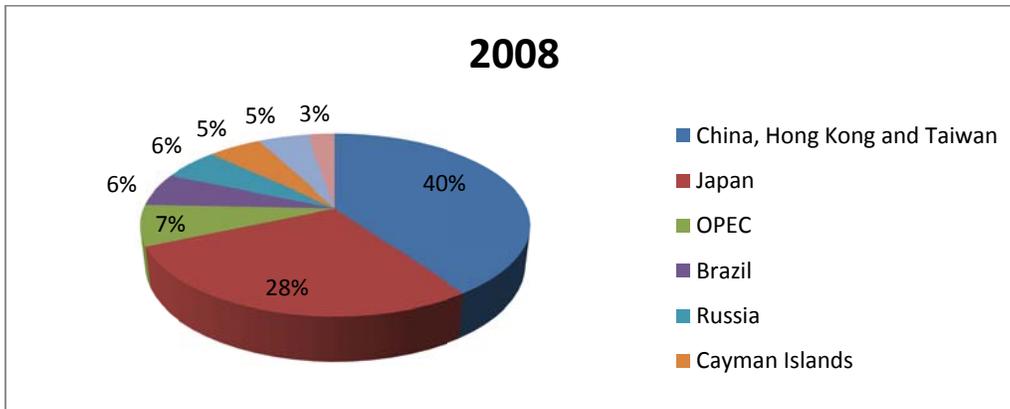


Figure 9 a,b,c: Share of Foreign Hodlers of US debt
Source: data are collected from US department of Treasury

The US treasury statistics indicates in 2006 Japan and China held 78% of the U.S. foreign owned debt, this figure was 72% and 68% for 2007 and 2008 accordingly. In 2008, China (excluding Hong Kong and Taiwan) held \$807 billion worth of US treasury securities whereas this number has dropped to \$772 in 2009. which is mainly due to instability and collapse of US financial market and that countries in general and China in particular were exposed to the financial risks and realised that they will face huge loses measured in U.S. dollars, by holding U.S. sovereign bond of any type, however a sudden exit was not possible in the short term for US long term sovereign bond holders. In 2008 and 2009 China remains (even after reducing its holdings of the U.S. treasury securities) the largest holder with Japan in second place with the holdings of \$765.7 billion in December 2009.

The U.S. reliance on foreign governments to sustain its citizens' standard of life and servicing its foreign debts comes with definite risks and cost. Hillary Clinton told CNBC in 2007 that she sees "a slow erosion of our economic sovereignty," and she singled out China's big holdings of Treasury debt as an example. When she was asked why US doesn't impose tougher policies with china on issues like trade, she responded: "How do you get tough on your banker?"

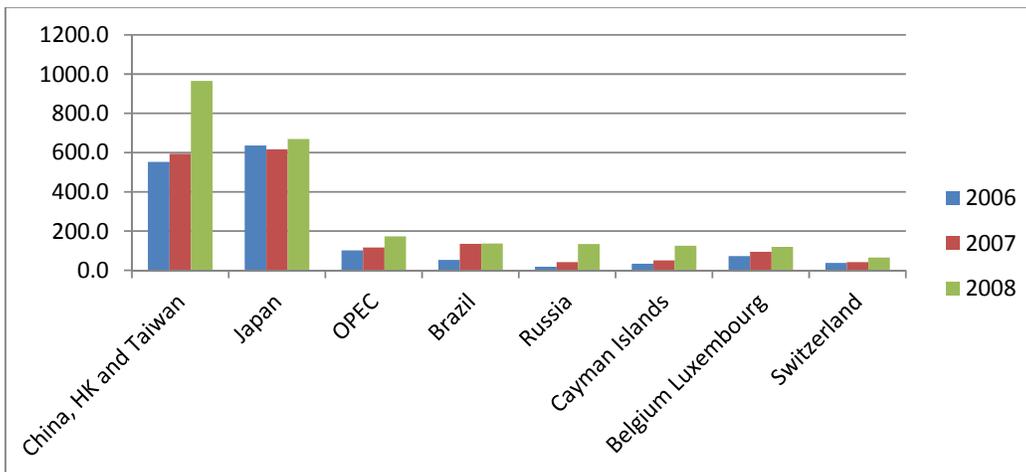


Figure 10: Foreign Holders of US Treasury Securities

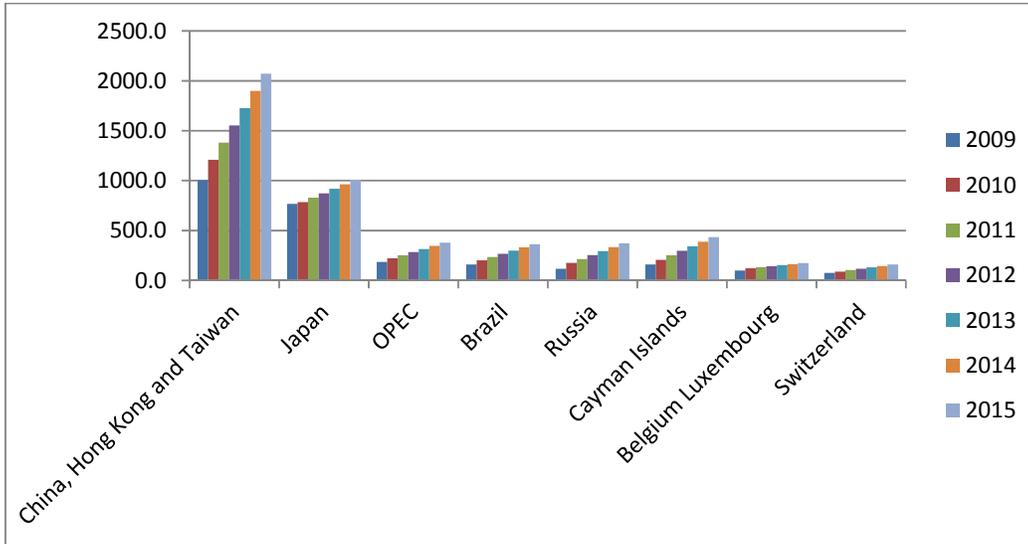
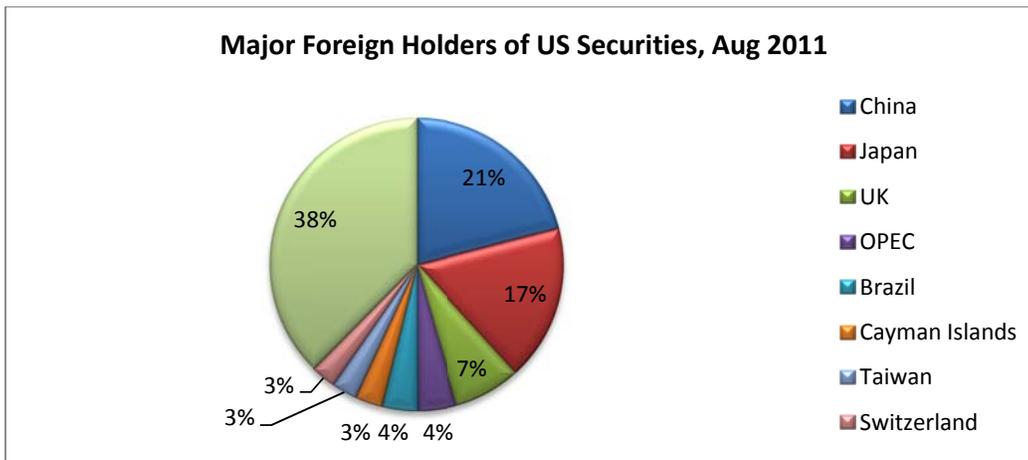
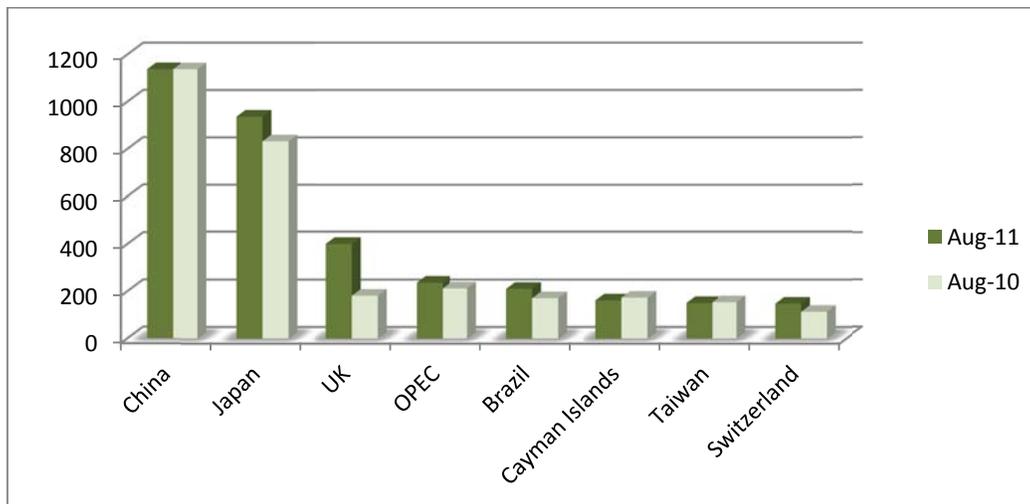


Figure 11: Projections of foreign holdings of US Treasury bonds
Source: data are collected from US department of Treasury

The projection in Figure 11 indicates that China will become a major purchaser of Treasury securities for years to come. As a result of successful years of fast economic growth and the official debt-to-GDP ratio of nearly 18% by the end of 2008 that is much lower than almost any other major economy.





5. How China could manage to be one of the biggest creditors of US?

Over the past decade China has amassed an enormous level of foreign exchange reserves, totalling US\$ 3.2 trillion as of June 2011. Of this amount \$1.17 trillion is held as US Treasury securities, accounting for 25.9% of total foreign holdings of US Treasury securities. This places China as the largest single foreign holder of US securities, in front of Japan at 20.2% and the United Kingdom at 7.8% (Department of Treasury, August 15 2011).

Morrison and Labonte (2011) point out however that these figures are likely to underestimate China's true position as monthly data only registers the initial sale of a US security to a foreign investor, not onward sales. As China is thought to purchase US debt through countries such as the UK and Hong Kong, monthly data consequently understates China's true purchases. Over recent years the Treasury's annual survey of foreign portfolio investment has indicated a far larger rise in China's holding of Treasury securities than implied by summing monthly data, as the survey attempts to account for third party purchases. Setser and Pandey (2009) also contend that China's central bank additionally holds a substantial quantity of foreign assets not reported as part of its reserves. Rather, these assets appear as a line item in the balance sheet as "other foreign assets". In June 2008 this line totalled \$219 billion. They argue that this amount corresponds with the mandatory reserves that China's banks are holding in dollars.

China's far-reaching impact on global capital flows is a relatively recent phenomenon and is tied directly to its policy of managing its exchange rate against the dollar. Setser and Pandey (2009) point out that during the 1990s China did not need to intervene in the currency market on any significant scale in order to maintain its peg to the dollar. From 1995 the dollar, and therefore the renminbi, was generally appreciating with China's overall trade surplus remaining modest. They argue however that the dollar's post-2002 depreciation, combined with tight fiscal policy and limits on domestic lending by state banks to offset the inflationary impact of China's depreciated currency, resulted in a significant increase in China's trade and

current account surplus. As the current account surplus reached 11% of GDP in 2007, its expansion drove most of the growth in China's reserves. At the same time, the authors argue, significant speculative inflows began to emerge as the depreciating dollar created expectations that China would not retain its dollar peg.

Morrison and Labonte (2011) argue that China has favoured US assets for its investment needs for a number of reasons. Firstly, as previously discussed, in order to continue to manage its exchange rate against the dollar, reserves must be invested in dollar-denominated securities. Secondly, the US debt securities market is the only global market with both enough depth and enough liquidity to effectively absorb a significant portion of China's large and growing foreign exchange holdings. Finally, historically US debt securities have been seen as a secure "safe haven". According to China's State Administration of Foreign Exchange (SAFE), its guiding principles in administering China's foreign exchange reserves are "security, liquidity, and increases in value, among which security is the primary principle" (State Administration of Foreign Exchange (SAFE) China, 2010).

Chinese government has interfered a great deal in currency markets to slow down the Yuan's appreciation for multi macroeconomic purposes (e.g. attracting foreign trade, internal price stability, etc). This has promoted China's position to the largest holder of foreign exchange reserves (FER) in the world, which totalled \$2.3 trillion of December 2009 (Compared to US FER totalled \$83 Billion as of July 2009) as, and a large share of China's FER has been invested in US treasury securities, US corporate bonds and US equities. Since China's relative size of debt to GDP is small, and its FER is much higher than total foreign debt outstanding, therefore its risk exposures are very low.

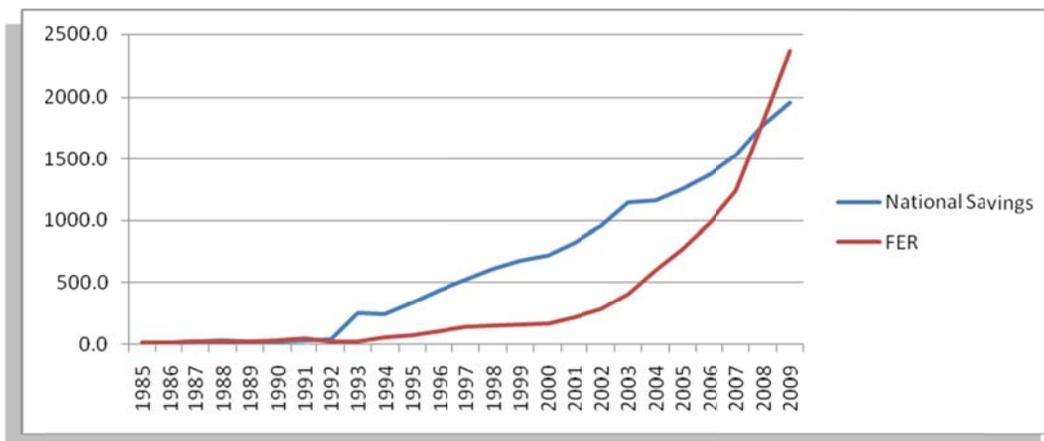


Figure 12: China 's FER and naional saving
Source: data are collected from National Bureau of Statistics of China

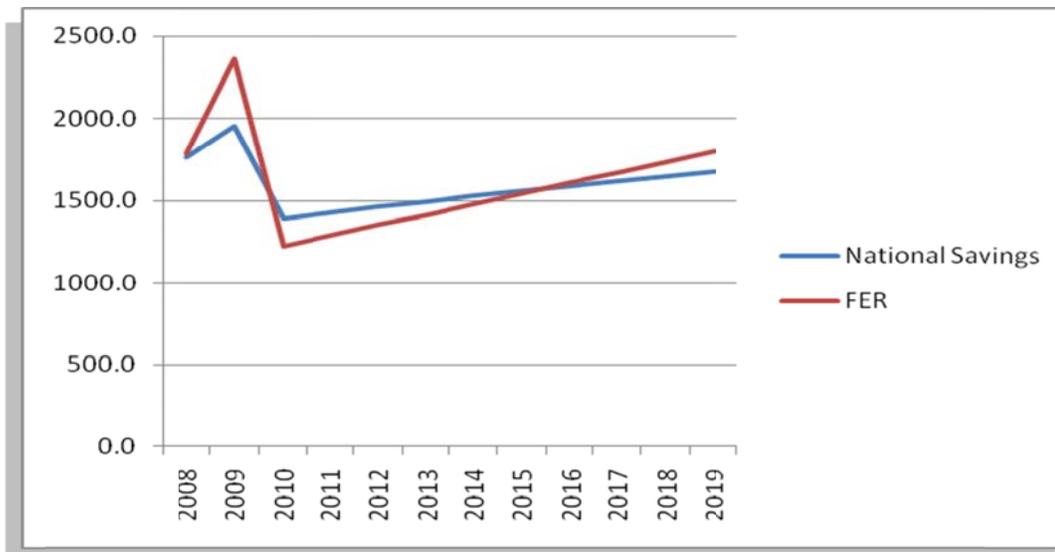


Figure 13: China 's FER and naional saving projection , estimation starts after 2009
Source: based on data collected from National Bureau of Statistics of China

China is the world's largest FER holder and as the graph below demonstrates; China's foreign exchange reserves have increased sharply since 2000, both in absolute terms and as a percent of GDP. China's FER rose from \$165 billion in 2000 to \$2.3 trillion in 2009. China's FER as a percent of GDP grew from 15% in 2000 to 40% in 2008 and 36% in 2009.

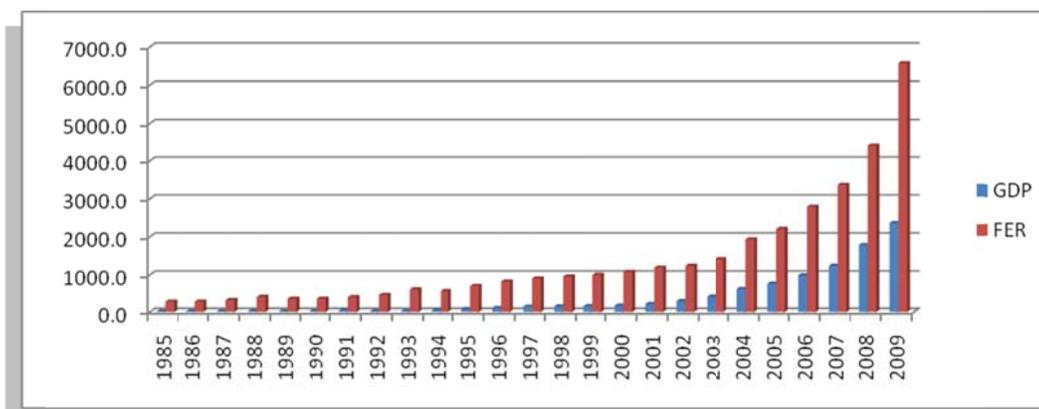


Figure 14: China 's FER and GDP comparison
Source: based on data collected from National Bureau of Statistics of China

In comparison with the US, some strong and macro economically sound countries have very low debt-to-GDP ratios, such as China (18%), Luxembourg (14.5%), Australia (14.3%) , based on 2008 and 2009 data. The case of China in particular is very interesting since China managed to achieve high and strong economic growth during the last decade without relying significantly on the bond market given that few characteristics of bond market are essential for financing economic growth.

6. Future of US dollar!

Rapidly rising international indebtedness has seen the global hegemony of the US dollar increasingly called into question, raising the prospect of the collapse of the dollar as a global reserve currency. A significant strand of analysis evident within the literature is concerned with the existence of a viable alternative to the dollar in the event of a crisis of confidence.

Cooper (2009) analyses several alternatives to the dollar and concludes that it is unlikely to be replaced in the next decade at least. He argues that whilst the euro has increased markedly in use since its circulation in 2002, the euro capital market remains fragmented, with varying degrees of liquidity, dependent on the type of security. Given that holders of international reserves are unable to hold euros but must hold euro-denominated securities instead, such an environment poses a significant barrier to the euro overtaking the dollar as a reserve currency. He contends that a deliberate international decision to create a synthetic currency unit, possibly through augmenting the special drawing right (SDR), a synthetic currency unit of the International Monetary Fund, is the most likely candidate. However he argues that the task would confront formidable practical difficulties, such that the prospective gains would have to be sufficiently large to induce governments to willingly overcome the practical difficulties and adopt the necessary exchange rate policies to give a new international currency a compelling advantage over the dollar.

Many arguments within the economics literature point to the role of economy size, among other factors, as a determinant of international currencies (Helleiner, 2008). The re-emergence of China as an economic power therefore raises the prospect of the yuan as a viable alternative to the dollar. Bowles and Wang (2008) however argue that firstly, the yuan currently plays only a very limited role as a medium of exchange, store of value or unit of account for official uses. Secondly they argue, history shows that in the case of Britain, the pound sterling continued to play a significant role in the international monetary system for a considerable period after the country's economic pre-eminence was lost. They therefore surmise that should China overtake the US as the world's largest economy by mid-century, as Goldman Sachs (2003) predict, the dollar would likely remain the dominant currency for a significant time thereafter. Rajan and Kiran (2006) further argue that the significant weaknesses of China's financial system, a lack of depth of its financial markets, non-convertibility of the yuan, and persistent restraints on its capital account, make the possibility of the yuan usurping the dollar very remote.

Helleiner (2008) argues for an increase in the scope of debate concerning the future of the dollar to include the political determinants. He proposes a framework that identifies two distinct channels through which politics may influence the international standing of the dollar. Firstly, he argues that politics is important in an indirect sense through its impact on three key economic features of international currencies: confidence, liquidity, and transactional networks. Secondly, he contends that politics also plays a direct role in the sense that a state may choose to back a currency not because of its inherent economic attractiveness but due to other political factors. In this vein Bowles and Wang (2008) argue that the future of the dollar is largely dependent on the ability of China and the US to effectively manage the tensions

arising from both a large bilateral trade imbalance and accumulation of foreign exchange reserves by China. They contend that the complexity of managing inconsistent and often competing interests gives rise to the possibility of policy errors and market reactions that may result in the collapse of the dollar.

Ivanova (2010) views the threat to the US dollar not as emanating from external sources, such as the emergence of viable alternative currencies or contenders to US hegemony, but rather “as ultimately determined by the deepening conflict between the US financial system, which is based on money as a medium of circulation, and its monetary base, which is based on money as embodiment of the value of social labour.” She argues that the chosen strategy for managing the financial crisis risks sacrificing the monetary base, thereby ultimately eroding the status of the dollar as an international currency. She proposes two possible scenarios as a result of the intervention: deflation with a weak dollar, or high inflation. She argues that both scenarios are bound to undermine the international status of the dollar.

Figure 15 indicates that there still is a strong demand for US investment that confirms US is still one of the promising destinations in the world to invest.

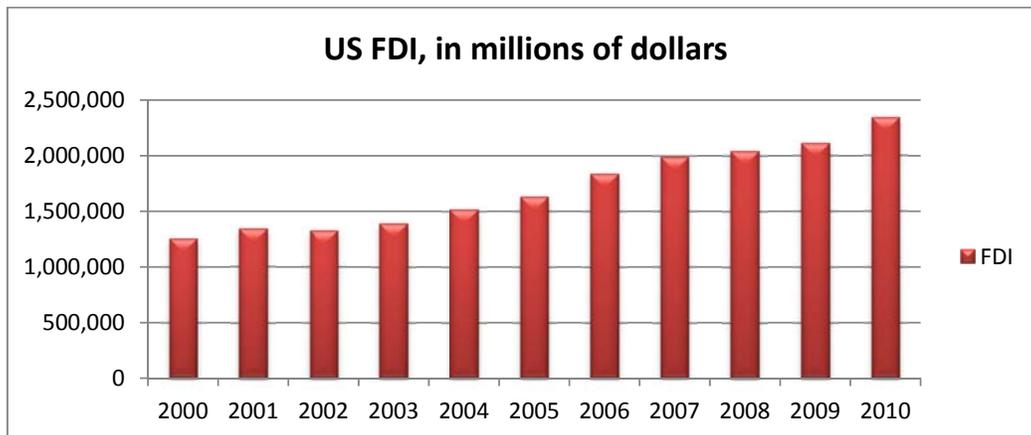


Figure 15: US Foreign Direct Investment, Units in millions
Source: based on data Collected from US Bureau of Economics database

What seems to matter most is the continuing potency of the U.S. economy should be preserved and the federal government’s financial health must be insured. To the extent that legislative bodies can control spending, reduce the federal budget deficit and maintain the growth of economy.

By February 2010, US banks excess reserve held at the Federal Reserve Bank reached \$ 1 trillion dollar, and interest rate on reserves consequently increased. Mr Bernanke announced that “By increasing the interest rate on reserves, the Federal Reserve will be able to put significant upward pressure on all short-term interest rates,” hoping that in the future federal reserve will be able to restrain the economy that is agitated

and running the risk of high inflation and dollar devaluation, which serves to lower the living standard of US residents. However, the problem starts when the borrowing has been repaid and banks start to expand their loans or purchase even more of government bonds, as a results money supply increases sharply and dollar devaluates to new low.

The possibility that US defaults on its sovereign debt is seems low at least in the next decade, since entire US government debt is in US dollar, and they always can issue and print more bills. This doesn't mean that the USD remains appreciated; it indicates that US can always repay to its creditors, and if worse come to worst, the Federal Reserve could monetise the debt, nevertheless lift up in inflation rate , devaluation of USD and lower demand for US dollar would be other expected outcomes.

However, the picture changes for those countries, particularly developing countries, that need to issue their debt in another currency (say USD) rather their own. They do not have the reassurance of borrow from their own reserve banks to maintain and pay off the debt. The economic turmoil has made international investors around the world more concerned about these countries getting closer to bankruptcy, and as a result the insurance of sovereign debt is more expensive and has affect countries ratings by credit rating agencies. .

7. Will sovereign debt cause another financial crisis?

Obviously the debt will become a problem if it is excessively large. High debt will have serious real and financial consequences. US treasury have to refinance \$ 3.5 trillion in short term debt in 2010 that is about 27% of US GDP. How US is going to finance that?

Total domestic savings in the U.S. is estimated to be around 12% of US GDP in 2010 (according to Economy Watch data base), that is \$1.5 trillion, and if we assume the entire national saving dollars are put into US treasury debt, US is still going to be \$2 trillion short. That's a yearly funding obligation equal to approximately 16% of GDP. Also, it is very unlikely that several central banks around the world continue purchasing US securities including Russia and India, which by the way have already started buying gigantic amounts of gold instead.

What about higher taxation? Will that be a part of solution to refinance the debt? Not likely, since higher taxation during recession and economic turmoil would only drags the country deeper into an economic and financial disaster and creates distortions.

Blowing up of irresponsible fiscal deficits, gigantic purchase of US treasury bonds by foreigners can naturally postpone the next financial crisis, but today most countries have their own deficit to finance. It is thoughtless to expect the world to continue financing US deficit in the new decade. US current and estimated deficits are too huge compare to current and future world saving to expect that outcome.

8. Conclusion

Although the outlook of debt-to-GDP can be an informative way to recognise a country's debt position, the future of a country's sovereign debt depends on domestic macroeconomic performance and its sustainability as well as the ability to attract foreign investments. The question is whether the economy is capable of paying off domestic and external debts. But an implicit lesson learned from recent global financial crisis is that sustaining excessive debt is extremely harmful to economies, regardless of the size of debtor country.

It is clear that the U.S. economy relies heavily on the foreign capital to fund its federal budget deficit. Also it is obvious that US dollar has had the privilege of financing the government budget deficit by issuing more dollars since the financial health of other currencies is profoundly depended on US dollar, and it is very unlikely that countries around the globe tend to abandon US dollar since everybody is afraid that this sets off a sequence of reactions and would backfire and affect them negatively, and central banks around the globe are trying to avoid any unpopular consequence, therefore the dollar global downfall might take longer than some may suggest.

Next decade is probably going to be turbulent years due to fast increasing sovereign risk. The interest rates already began to rise since February 2010 in the US and other developed and developing countries around the globe that reveals the actual costs of the recent financial crisis. Countries like US and UK with large amount of sovereign debt need to come up with effective and realistic plan. According to Moody's credit rating agencies "If there is not a policy response, then the rating will be under threat in the next two or three years."

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