The Exorbitant Burden

The Impact of the U.S. Dollar's Reserve and Global Currency Status on the U.S. Twin-Deficits

Dr. Taranza T. Ganziro | Dr. Robert G. Vambery

Emerald

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Summary

It is neither simple, nor inexpensive to be the home of a leading reserve and global currency at the epicenter of the world economic system. The US dollar is the living history of this paradox and its dual role – as both a national and a global reserve currency – has set off a plethora of competitive analyses and debates in demonstrating that a global monetary system that is dollar-centric is inherently unstable because the dollar is first and foremost a domestic currency subjected to the monetary and fiscal policies and national interests of the United States.

It has been often opined that the US policies – even if they are domestically sound – are not necessary concomitant with the global interests of the rest of the world which however remains inextricably under their influence. This is because – given the dominant status of the US dollar as an international reserve asset and global currency – the US policies naturally reverberate globally through the dominance of the US dollar over the global economy and inevitably generates significant externalities for the rest of the world; thus making the dollar-dominated global financial system vulnerable to US domestic monetary and fiscal policies.

Dismayed by the vulnerability of global financial system to US policy through the US dollar dominance, the World Bank (2011) went on to argue that the Multipolarity in the world in terms of security and economic relations should be matched by a Multipolar Reserve Currency System simply because the transformation of global patterns of economic growth necessarily drive change in the international monetary system.

To comply with such Multipolarity, the SDR (Special Drawing Rights) became in the view of many analysts, the natural alternative reserve currency because – being a basket of currencies – it is assumed that it can stabilize the global financial system preached by the World Bank and be able to impartially enforce discipline on both the deficit countries and surplus countries that respectively issue and relentlessly accumulate reserve currency-denominated assets that entertain the global financial imbalances.

Reference is often made to the historical rise and fall of British Pound – the last monarch on the international reserve currency throne – as a useful lesson of experimental decadence that the

United States should be acquainted with, if it wants to avoid the fatal end of the British Pound to befall upon the Dollar.

No one can deny that Britain did indeed reach its hegemonic pinnacle upon which the Sterling was the reigning currency. Not only Britain was the Ruler of the World with at least one in every four people on the planet under British rule or influence; but also Britain was undeniably the banker of the world with a portfolio of £3.8 billion of foreign direct investments (FDIs) back in 1914 – representing between two-fifths and a half of all known foreign assets holdings in the world (Ferguson, 2004). At the height of its apogee, Britain was truly an Empire spanning over the four corners of the Planet with a shipping power and navigation supremacy over the oceans second to none.

The United States – more than any other British colonial possessions – not only was deeply and permanently marked with British language and cultural norms – but also it became its successor as a dominant power on the world stage and inherited most of the attributes of British superpower such as a capitalist economic system, a leading global reserve currency, a vibrant financial markets, an appealing government system with parliamentary institutions – except that the rising US Republic forcefully rejected the British Monarchy model. There is therefore so much to learn from Britain and its currency.

When the United Kingdom went into rampage in its international borrowings – mainly from the United States – primarily to fight both the World Wars I and II along with the noxious socio-economic distress inflicted by the 1929 Great Depression and the loss of its geopolitical power due to its subsequent unraveling grips over its vast colonial empire – the Britain's economic preeminence tremendously declined and its military power and other international hegemonic peripherals went into the historical annals – virtually bankrupting the entire British Empire.

Armed with the above UK's decadence as a showcase, many economists and experts have been interpreting the US twin-deficits, the twin-wars in Iraq and Afghanistan, the current inconclusive embroilment in the Middle East and other hot spots on the Planet, the 2008 Great Recession – that escalated the US debt to vertiginous altitudes – as the signs of time that the dollar is now set to repeat the history of the British Pound.

In the opinion of Kemp (2009), the Grand Recession presaged a cataclysmic shift that marked the passing of an era of the US dollar as an undisputed dominant reserve and global currency for the world monetary system – just as the outbreak of the First World War heralded the Sterling's demise as a reserve currency or the suspension of gold convertibility in 1971 marked the end of Bullion's monetary role.

The view of Kemp found solace in Kennedy (1989) theorizing that there exists a strong correlation between the economic power and military power by arguing that the former is always needed to underpin the latter, which – in a complete circle – is highly required to acquire and protect wealth that the superpower status commands.

The problem arises when a disproportionate share of the national economic resources is increasingly diverted from wealth-creation to military purposes. The resulting outcome in the long run is the weakening of the economic backbone supporting the very superpower toward its eventual collapse. In other words, the greater the superpower status, the larger the proportion of resources is likely to be devoted to military apparatus to maintain that status at the detriment of economic growth – which decline – leads to the weakening the economic pillar the above superpower stands on.

In his diagnosis, Kennedy (1989) argued that the United States has shown the typical signs of a declining superpower the Great Britain displayed prior to World War I by failing to balance its act between defense expenditures and investments for economic growth as its growing military commitments to every continent and the growing cost of its military disproportionately consume the national resources – severely limiting available resources to nurture a comprehensive economic growth.

Based on the above metrics, one can seemingly conclude that the US dollar is ending its cycle as a global unit of account, store of value, and medium of exchange – roles that are expected from a global currency that serves as an international reserve asset – and its replacement should therefore be in the making.

However, with a closer analysis, one finds that the current Fiduciary Dollar System many experts complain about; doesn't seem to fit the description and the image the alarmists portray in the mass media and has indeed been performing well in the course of its enduring lifespan since 1973 and has shown incredible resilience and flexibility during the toughest financial crises such as the 1973-OPEC's oil embargo, the 1979-oil crisis in the wake of the Iranian Revolution, the 2000s-dot-com bubble crisis, the 2008 Great Recession, the twin wars in Afghanistan and Iraq (Zoffer, 2012).

Given the role the dollar has played and continues to play in the international economy and the stability and flexibility the Dollar-Centered Fiduciary Standard has provided to the global financial system across stable and upheaval financial tribulations, Zoffer went on to argue that the world should be more appreciative toward the United States for providing such great global public good.

This study strongly believes that the US dollar will continue to be the enduring leading world reserve currency and a persistent

dominant safe asset purely because the United States holistically has such cutting-edge technological landscape, such rapidly changing society, such inner strength, such trade and financial openness, such powerful and influential private sector, such engaging and inclusive political system, such technology-driven military with global presence, such free speech and liberal media to stay an appealing dominant global superpower supported by such balanced geopolitical power makeup that allows American economy to gain stronger position as its partners such as South Korea, India and China rise (Lee, 2009).

Furthermore, in spite of a tidal wave of demonization of American capitalism pointing to the brazen income inequality with 1% of the population holding 40% of the wealth (Adelman, 2014); the American capitalistic mixed economy – in which the government plays an important role along with private enterprise – has been an amazingly successful economic system in comparison with the dismal fiasco of Communism.

Indeed, the massive economic and scientific revolution and high standards of living unleashed since the Capitalistic Industrial Revolution compelled Adelman (2014) to believe that capitalism provides the strongest economic platform for a modern political superstructure and advanced society and further pointed out that – with one million of immigrants a year coupled with its world's leadership in terms of destination of FDI, its technological innovation at Silicon Valley, its world largest financial markets at Wall Street and its top-rated entertainment industry at Hollywood; the United States – in spite of being inhabited by less than 5% of the world's population – has been transformed by modern capitalism into the world's only global superpower.

On the merits of the United States capitalistic mixed economy, Beinhocker and Hanauer (2014) further emphasize that capitalism is a genius economic system simply because it has been so far an unmatched evolutionary system for finding solutions to solve the most problems for the most people in the quickest manner.

This study disagrees with the contention that – the United States took advantage of its privileged position in the global governance at the confluence of economic and geopolitical forces to become the Global System Maker and Privilege Taker (Mastanduno, 2009); thus sucking savings from the Rest of the World and squandering them into reckless consumptions just because of the dollar global reserve currency status.

The rationale behind the status that is supported by this study is the capability, commitment, and willingness of the United States to step up into the international plate and put its currency forward to serve as a global and reserve currency for the global public good and bear the costs that go with such status.

Many analysts contend that China is around the corner at a striking distance to overthrow the United States as the leading superpower and hastily conclude that the Renminbi is about to take the lead over the dollar as the global reserve currency. Subramanian (2011) has theorized that the dominance of China is imminent, larger, and broader in scope and the rise of the RMB is conditionally imminent on the path to becoming the premier reserve currency in the next 10 years or soon after and concluded that the current US open economic system may not survive the rise of China!

To verify such kind of claims, this study investigated the much-aired candidates – Euro, Yen, Renminbi, and SDR – that are supposedly destined to take the US dollar's pedestal at the center stage of the global financial landscape. It found that – not only do all these candidates have constraining and self-defeating flaws – but also their readiness to ascend to the world currency's throne, is seriously challenged by the lack of key supporting prerequisites by their issuers – especially in terms of strong global geopolitical superpower; robust and reliable financial regulator and lender-of-the last resort, open, deep, and liquid financial markets; and trade openness – thus leading to the logical conclusion that there is no viable alternative to the US dollar on the dais of global and reserve currency in the seeable future.

Furthermore, the barriers to displace the US dollar leadership on the global stage have been and continue to be complicated by the accelerated pace of financial globalization. Besides the inertia barricade built out of the depth and width of the US dollar's network of externalities, the United States has added to its primary function as (1) the World Banker that provides liquidity through its current account deficits to the world economy – especially to the Emerging economies articulated on export-led growth strategy; another important role as (2) the World Venture Capitalist that provides long-term capital to the development of the emerging markets according to Gourinchas and Rey (2005).

By borrowing short using risk-free and lower yield US Treasuries and investing long in high yield assets such as equity and FDI, the US effectively recycles the savings from the Rest of the World into more refined and investable funds. This international financial intermediation is supported by the US Treasury Markets – the largest and most liquid debt market unmatched by any other country on the Planet (Gourinchas and Rey, 2005).

Further empirical evidence doesn't suggest that the US dollar has lost either its leading role as the reserve currency in the global financial markets, or its centrality in the international trade and FX transactions, or its safety attractiveness in times of financial distress, or the United States is shrinking from its duty in the above international financial intermediation.

But this global responsibility is not an easy endeavor or cost-free – even if the cost doesn't seem to be evident. Just as it is reassuring to live in a country in which it is safe, to drive on roads that are well-designed and maintained; it is likewise fulfilling to take the US dollars on a trip abroad because the traveler has confidence that he can exchange them into any currency across the globe or the exporter is convinced that to price his exports into the dollar is the most secure channel because of the stability, cost effectiveness and exchange risk mitigation the US dollar has demonstrated over years.

However more often than not, people don't bother to think deeper about **what it takes** to establish and maintain that worries-free safety in terms of judiciary and police system costs, in terms of school systems that form good citizens, in terms of monetary and fiscal policy, in terms of financial markets liquidity, in terms of trade openness, in terms of providing liquidity to the global economy, in terms of maintaining global geopolitical leadership, etc.

If this is the case, is really the role of the dollar – as a global currency and an international reserve asset – actually rewards the United States with an exorbitant privilege as the economic orthodoxy and the epithet of System Maker and Privilege Taker suggest, or as the Russian President Vladimir Putin blatantly decried that the dollar hegemony has been allowing the United States to live like parasites off the global economy (Zoffer, 2012)?

This is a multilayered question this study is set to explore: (1) Can the United States continue to provide the necessary liquidity to the $100 trillion-world economy (in PPP prices) and $5 trillion daily Forex market and let the dollar serve as a major pricing currency in the global trade and be subject of voracious accumulation of foreign reserves by most of the emerging markets without incurring corresponding costs? (2) Can the United States extend the dollar's domestic functions of serving as a store of value, medium of exchange and unit of account to the volatile international financial arena, without sacrificing its internal monetary and fiscal agenda? (3) Did the IMF-Bretton Woods Agreements – which crowned the US dollar as the world reserve currency – rather officially tied an ever-increasing heavy burden on the back of the US economy as the United States must incur both quantitative and qualitative costs in its engulfing role to provide the liquidity that fuels the global financial system instead of conferring on the United States an exorbitant privilege?

The focus of this study is – not only in sharp contradiction with the unwarranted claims that the US has been unduly enjoying an exorbitant privilege by merely being the home of the premier reserve currency – but that also at the opposite end of exorbitant privilege spectrum: the exorbitant burden – the cost the very dollar reserve status impacts on the US economy.

This study argues indeed that – even though there are some benefits attached to a reserve and global currency status – the assumed free ride in terms of the much-publicly proclaimed exorbitant privilege – that appalled some European governments – led by France – back in 1960s; fades away before the overwhelming quantitative and qualitative costs the United States has to incur in its international role in providing the dollar-liquidity that fuels the ever-growing global economy.

The French were so convinced that the global financial system was asymmetrically skewed toward the interests of the United States and they were swayed that the US was using the system to finance its domestic and global ambitions by supplying to the world its low-yield debt instruments and that the status of the dollar was shielding the United States from ensuing macroeconomic adjustments. Armed with such conviction, the Europeans sent their navies to collect gold from the US treasury Department's Gold Window against the dollar-denominated claims they held in their central banks!

Was the above French assessment regarding the exorbitant privilege right to the point to run on US gold reserves? This study has deep doubt about it and it is therefore set to investigate the burden inflicted on the US economy by the dollar reserve status through the twin-deficits.

In their December 2009 – Discussion Paper titled "An exorbitant privilege? The implications of reserve currencies for competitiveness, McKinsey (2009) believed that nobody had investigated this fundamental question on costs of being a global reserve currency; and considered their paper to be the first attempt at an assessment of the costs and benefits of reserve currency status.

This study is part of the pioneering endeavor to decipher the burden on the back of the US economy – not because the United States sought to wear this burden in pursuit of some exorbitant privilege – but because, due to historical circumstances, no other country – up to now – could meet the hard to achieve economic and geopolitical fundamentals required to perform the above global public good by providing the vital global liquidity and have the willingness to expose its currency to the swings of global demand in search for the reserve currency for official reserve accumulation and for the financial fueling of ever-increasing international trade and the enormously-growing Forex trading transactions.

The study will be evaluating the quantitative impact of the key determinants of the US Dollar Reserve and Global Currency Status – namely US Dollar Share in the Global Foreign Reserve Holdings (dollarshare), 10-Year Treasury Constant Maturity Rate (treasrate), US Financial Openness (finopen), US Geopolitical Power (geopower), Inflation Rate (inflarate), US Global Trade Openness

(tradeopen) – and their dynamic causal chain in the context of the US External Debt (extdebt) as a proxy of the US Twin-Deficits.

The path followed by the study's quantitative model starts with an empirical evaluation of the properties of the time-series data of the variables incorporated into our model, followed by OLS Regression to check out if the model reveals potential spuriousness; followed by stationarity checking via Unit Roots Testing through Augmented Dickey Fuller (ADF) Tests; to be followed by Cointegration Tests through Johansen Maximum Likelihood.

The methodology is culminated by a Vector Error Correction Model which is aimed to capture the causality-channels among the variables in our model so as to determine if they are linked in some kind of long-run equilibrium relationship upon which we are able to choose a meaningful cointegration equation (Johansen, 1988; Johansen and Juselius, 1990) – capable to proficiently assess the impact of the determinants of the US Dollar Reserve and Global Currency Status on the US External Debt during the period under review.

Finally, the methodology – which is applied to time series data of the variables theoretically selected from the US economic statistics for the period 1971–2011 – undertakes a series of postestimation diagnoses such as – Linear Hypothesis Test, Lagrange Multiplier Test, and Jarque-Bera Test – to ascertain for normality, significance and causality using Stata Data Analysis and Statistical Software.

The results of the quantitative analysis conducted by this study rejected the Null Hypothesis that the US dollar reserve and global currency has no significant negative impact on the US economy in favor of the Alternative Hypothesis which advocates that this status indeed imposes a significant burden on the US economy via the twin deficits channel.

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CHAPTER

1 Introduction

The field of reserve currency has been not only a topic of extensive research but also an unending concern for many policy-makers. First and foremost, is it genuine a question to ask – if most countries have their national currencies – why do they have to go through a third party's currency to incur extra costs in order to settle their international transactions?

While it is conceivable for a Rwandan exporter to accept Yuans from a Chinese buyer of his coffee, but it is not expected such payment to be the global norm. You might carry Chinese Yuans – or even Euros – to Africa; but you might stay hungry as most restaurants might decline them for payment.

A Zimbabwean dollar – which broke the Guinness World Record with One Hundred Trillion Bank Note (100,000,000,000,000,000) back in 2008 when the inflation hit 500 billion (Half Trillion) percent in Zimbabwe – would have taken you not that much far beyond its borders as this gigantic face value is currently worth an infinitesimal $0.40 – that is 40 cents (Reuters, 2015).

Even with the U.S. dollar – the widely used currency in the world – you might need to exchange it into local money to buy a glass of Italian wine while in Rome or buy shares issued in Rupees by an Indian corporation. Then, if this is the case, what does justify the supremacy of the dollar over the Zimbabwean dollar or the Yuan?

The superiority of the U.S. dollar lays in the confidence the whole world places in it; which greatly contributes to its convertibility into almost all currencies – at least officially in all Exchange Bureaus anywhere in the world. Just as the English is spoken in many parts of the world and is recognized as a global business communication

language, the reserve currency is equally important in the global financial discourse as a common denominator.

By definition, a currency is a symbol of value – any form of money such as coins and paper notes – which is issued by a government body (usually the Central Bank) and circulates within an economic jurisdiction as a legal tender. Its use in an open economy provides massive savings in transactions costs as opposed to autarkic rigid transactional exchange process and unstandardized medium of exchange.

A currency within a domestic economy is often likened to a blood circulation in the human physical body. It has been equated to the cardiovascular system by Fisher (2010) who pointed out that money and credit play a vital role in maintaining a healthy economy. In his analogy, the central bank would be the heart, the currency the lifeblood, and financial markets the arteries and capillaries that provide critical sustenance to the muscles that represent the makers of goods and services and the employment creators.

A well-functioning cardiovascular system obviously nurtures a healthy body growth. However, if that system is mal-functioning, the body system might break down. Similarly, the international reserve currency can be imaged as the blood circulating in the international economic body. The reserve currency is therefore vital for the well-functioning – and even the survival – of the international economy.

Since most of the money creation is through the banking system, the banking institutions play a very important role not only in a given domestic economy but also in the international economy as well – making the health of the economy greatly dependent to the soundness of the banking system – both domestically and globally. One can argue that the sounder the global banks – as facilitators in the process of production, distribution, exchange, and consumption worldwide – the healthier the international economy and the better the role accomplished by a leading reserve currency in providing global liquidity.

Globally, international banks are the heart of the international economic structure and the capital – in terms of global and reserve currency-denominated assets – is the blood in the global system. As long as this blood – the major reserve currency – circulates properly and is distributed efficiently, the organs of the international economic body will breathe soundness and strength.

Since countries need to pay for the international goods and services required by their citizens and carry out various financial transactions in the global marketplace, they are therefore expected to hold a currency in which most international trade transactions are

invoiced and payments are settled. If there was no such reference-currency that is recognized globally and acts as an efficient and cost-effective medium of monetary communication in terms of international trade, payments, and settlements, the global economic activities and exchanges would be seriously hindered.

Even though non-internationally convertible domestic currencies are part and parcel of the national regalia and iconic expression of State pride; but they can constitute a serious impediment to international trade and financial transactions if there were no such unrestricted reference-currency within the international system that provides a monetary exchange mechanism to explicitly or implicitly regulate the key dimensions of balance of payments such as capital flows, current payments, international reserves, exchange rates.

In 2013, the IMF identified about 45 countries that maintained a total of 111 restrictions and multiple currency practices ranging from restrictive exchange measures, restrictions on payments for imports, to restrictions on payments for invisibles such as education, medical, and travel services up to transfers of wages, remittances, and even limits or freezing of foreign currency accounts (IMF, 2014). Fortunately, these countries command a small share in the global economy and international trade to the tune of 20–24% respectively – making the effects of these restrictions on global trade and integration not very significant.

The worldwide foreign exchange markets – in which the dollar is centric to the tune of 86% in all transactions – reflect this global exchange mechanism. This means that the dollar is not only at the center of the global financial system but also a unique common denominator through which the world – governments as well as private agents – can financially interconnect and settle their trade and financial transactions.

The dollar-facilitator of international economic exchanges is also the dollar which is primarily domiciled in the United States which has its own domestic agenda articulated on its national monetary and fiscal policies like any other country. If this U.S. domestic policy agenda can be fully aligned to the dollar-demands from the rest of the world, this would be the best of both worlds. But, can the United States have balanced external accounts and promote its international trade competitiveness through monetary policy and still meet the ever-increasing demand of dollars to oil the global economy?

Triffin (1960) came up with the shortest and poignant answer: No. He claimed that such balances are at odds with the dollar reserve status because for the rest of the world to accumulate the dollars, they must run persistent trade surpluses with the

United States – the issuer of the reserve currency – that has to run corresponding current account deficits and obviously capital account surpluses as the latter is the mirror of the former in the balance of payments identity.

This means that, the most sweeping channel through which the rest of the world can accumulate significant amount of dollar-reserve assets, is though the U.S. current account deficits channel by running trade surpluses with the United States and subsequently using their proceeds to buy the U.S. Treasury debt instruments which feeds the surpluses in the U.S. capital account and ultimately translate into the U.S. external debt.

This places the United States in a paradoxical position because the more current account deficits – while essential to global liquidity – the more claims are slammed to the dollar and the more doubts are stamped on the U.S. ability to honor its external obligations; thus, the more the dollar-denominated reserve accumulation increases, the more the dollar would be potentially subjected to crises of global confidence.

Is there any other means through which the rest of the world can accumulate the dollar-denominated assets for their international trade and financial transactions or for official reserve purposes other than the U.S. current account deficits? Could Fed – as the lender-of-the-last resort – provide global liquidity through swap and credit lines to foreign central banks?

During the era of the Bretton Woods Fixed Exchange System, it was economical for the currencies in the system to be pegged to the dollar because of the flexibility and return of such peg as opposed to gold to which the dollar was fixed at $35/ounce.

To maintain such parity within the allowed band, the central banks of the countries member of the International Monetary Fund that managed the Bretton Woods Fixed Exchange System, had to have liquid dollar-assets in their coffers or acquire dollar-lines of credit. In the recent Great Recession, the Fed kept afloat the international financial system by pumping in the global system trillions of dollar-liquidity through dollar-swap lines or outright bailouts – literally acting as the lender of the last resort of the global financial system.

In the above both cases, the rest of the world accumulated dollar-denominated assets – not through U.S. current account deficits – but through central banks arrangements in terms of short-term credit and swap lines; however, such short-term arrangements end up by being balanced out in short run. Thus, these arrangements don't explain how, why, and for what purposes the rest of the world – particularly Asia led by China – ended up accumulating trillions of foreign reserves.

The empirical evidence has shown that the accumulation of the dollar-denominated reserves by China for example has been growing in tandem with its trade surplus with United States, supporting the argument that it is through the U.S. sustained current account deficits that the rest of the world has been able to accumulate large amounts of both short and long term foreign reserve instruments. (Vambery, 2014, Fall)

If this is the case, the fundamental role of the U.S. dollar in its primary functions as global store of value, medium of exchange, and unit of account – requires therefore a delicate alignment of fiscal and monetary policies to diffuse the global aggregate demand pressures with their built-in volatility on the U.S. dollar in fulfilling its inherent duty embedded in its status as the world leading reserve currency.

This alignment means that the U.S. must sacrifice some of its domestic agenda that can improve its terms of trade and stimulate growth and employment by adjusting the value of its currency. But, with so many emerging economies hanging pegged on its back, the United States cannot through monetary policy – such as a judicious devaluation – promote its exports competitiveness to these countries because the pegged trade partners will automatically shift the value of their currency and offset the expected depreciation effects.

Furthermore, because of its very status as a leading global and reserve currency, the U.S. dollar is *ipso facto* subject to ever-increasing global demands by the world economy at large in its relentless need of U.S. dollars to settle global financial transaction and to accumulate dollar-reserve assets.

Unless channeled somewhere else to other major currencies, such demands necessarily breed appreciation pressures to the U.S. dollar because of their built-in capital inflows into the United States and hurt its global competitiveness as the U.S. exports become costlier to the rest of the world in spite of their lowering effect on the interest rates and the cost of borrowing in the U.S. economy.

To diffuse the demand pressures off the back of the United States was probably one of the goals of the IMF when it called for its SDR unit of account to be anointed with a reserve currency status as a viable dollar-alternative (Rooney, 2011). The IMF claimed that there is an urgent need for a supranational reserve asset that better reflects the global economy since the dollar is vulnerable to swings in the domestic economy and changes in U.S. policy.

This study is duty-bounded to walk through the above experts' opinions and empirically find out if the reign of U.S. dollar's supremacy as the world's currency of choice for trade, financial transactions, and central-banks' reserves is really coming to its end. It examines if the much-contemplated alternatives – such as the SDR, Euro, or RMB – have the prerequisite criteria and required

attributes to dethrone the dollar from the dais of reserve currency of choice in the global economy.

This study also argues that the burden the dollar's role as the global reserve currency inflicts on the U.S. economy has been a very significant factor in the U.S. buildup of dual trade and budget deficits. In this regard, this study is in a sharp contradiction with the often-unwarranted claims that the United States has been unduly enjoying an exorbitant privilege by merely being the home of the premier reserve currency.

The study simultaneously casts aside the public, governmental, and academic biases that have been trying to establish that the hegemonic supremacy of the dollar in the global economy has been not only one of the major causes of many financial crises in the world but also bestowed upon the United States a free ticket in reaping most of the benefits it has been supposedly milking from supra-governmental institutions, internationalization, and globalization – which are under its overwhelming influence. The truth is that the whole world – including the United States – continues to benefit from globalization, but – like other nations – the United States also suffers the dark side of the same globalization.

The outline of this study is articulated on five chapters. This Introductory chapter reviews the relevant concepts, the theory of the international reserve currency, the criteria defining a reserve currency. The global demands for dollar liquidity and the evolution of reserve currency take place in the Literature Review in Chapter 2.

Chapter 3 explores the Theoretical Framework of this study. The concept of a global leading superpower is discussed and qualitative factors such as geopolitical leadership, economic, and military power of the United States are investigated as key fundamentals supporting the dollar reserve status beyond quantitative variables. The paradox of the dollar in its engulfing dual role as domestic and international reserve currency and the baffling dollar's exorbitant privilege and exorbitant burden, currency wars, global imbalances, and the viability of alternatives to the dollar reserve status are explored.

The Methodology in Chapter 4 deals with hypothesis formulation, the design of the model of this study, the specification of variables, the data collection, the model testing, and analyzes the results of this research along with the post-estimation diagnoses such as Linear Hypothesis Tests, Lagrange Multiplier Tests, Jarque-Bera Tests, to assess the normality, significance, and causality using Stata Data Analysis and Statistical Software. Chapter 5 culminates into conclusions and recommendations for further studies.

The study flows as Figure 1.1 indicates.

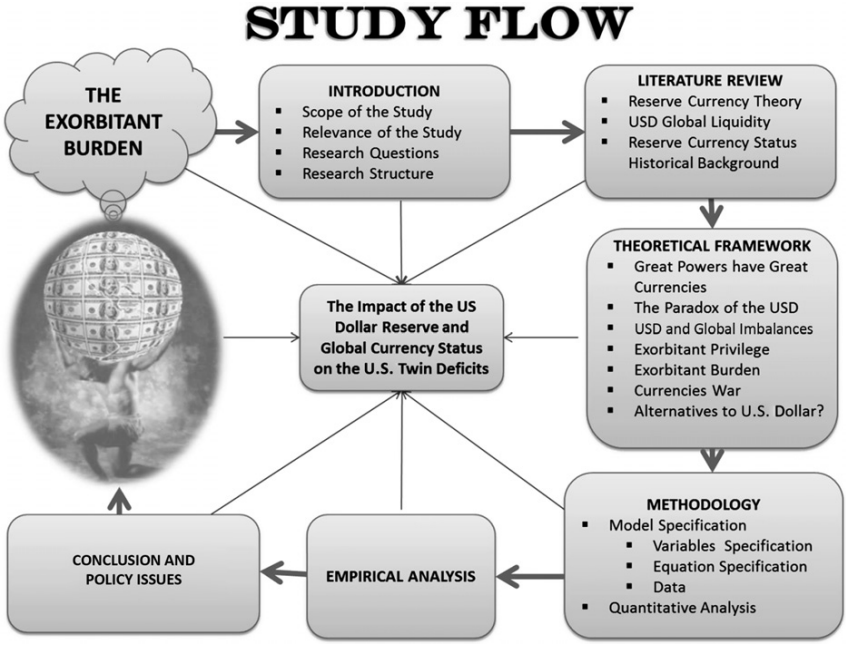

Figure 1.1: Book Flow Diagram.

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CHAPTER

2 Literature Review

2.1. Theory of Reserve Currency

2.1.1. PRINCIPLE

In principle, a leading reserve currency is a currency which is accepted worldwide and extensively circulates beyond the borders of the issuing country. Based on this metrics, the home county of the reserve currency is expected to have a significant extra territorial influence – a premise supported by Mundell (1993) in his argument that great powers have great currencies. In other words, the strongest geopolitical superpower is expected to provide the leading global reserve currency.

The extensive use of a global reserve currency in the international financial transactions, trade, and payment settlements nurtures its global liquidity and reinforces its centrality in the international economy. The more dominant its role in the world economic activities, the more credible the economic and geopolitical fundamentals of the issuing economy and ultimately the stronger the confidence and recognition the international economic players – both official and private – will have in the soundness and stability of its monetary and fiscal policies. Thus, such currency acquires a greater standing in the world and its uses in the global economic activities becomes the most cost-effective – compared to other currencies.

In time of crisis, such currency becomes a safe-haven and a refuge toward which the global investors will rush into at the first signs of a severe domestic financial turmoil or a worldwide economic crisis – thus, triggering more accumulation of the reserve

currency-denominated assets by the foreign central banks to shield against potential financial disruptions that may rise with the very sudden flight of the above investors to safety of the reserve currency, thus reinforcing further its centrality and the leadership in the world economy.

As discussed above, the main channel through which countries accumulate foreign currencies reserves is through international trade. For this to happen, these countries must generate trade surpluses against the home of the reserve currency. Obviously, the issuing country must have not only a strong consumption sector to absorb these trade surpluses but also its economy must be robust enough to run corresponding current account deficits while avoiding to strangle to death its manufacturing sector. It is a delicate balancing act!

Empirical evidence shows that most often than not, the surplus countries accumulating the foreign exchange reserves have inadequate domestic demand to absorb most of their domestic productions which are primarily export-oriented. These economies must therefore rely on external demand – especially in the home of the reserve currency which becomes the major engine of global growth – to keep up their factories in operation and fuel their export-led growth – which in turn fosters economic development and lifts masses from the informal into the formal sectors.

Needless to say that the exports from the trade surplus countries to the home of the reserve currency must be very competitive in terms of price – especially to offset their low quality standards – so the consumers in the issuing country can be willing to buy them. This compels those countries to strategically maintain an undervalued exchange rate against the reserve currency.

Given the continuous intensification of the economic activities in the world, the use of the global reserve currency in the global economic activities becomes equally intense and amplifies its network externalities that further lead the reserve currency to becoming a truly hegemonic currency with significant influence over the international monetary activities such as global transaction settlements, cross-border capital flows, and global foreign exchange markets.

As the reserve currency-denominated assets becomes more and more liquid with deep and sophisticated markets, the reserve currency becomes the most indicated currency to serve as a global unit of account that support economic calculations in the world economy such as trade, a medium of international exchange, and a store of value for government debt instruments like treasury bonds.

It is important to distinguish – as Kenen (2011) noted – between a Currency Internationalization, which refers to a currency's wide use outside the issuer's borders, and a reserve currency status. He argued that the currency internationalization can be easily achieved

through an increased settlement of cross-border and international trade transactions along with bilateral currency swap agreements.

However, reserve currency status is rather a longer-term and more difficult goal to achieve because other fundamentals – such as geopolitical strength, deeper financial markets, liberalization of the capital account, currency mobility or convertibility, willingness of foreign official and private players to hold the currency – are very important factors in determining the reserve currency status which goes far beyond macroeconomic balance sheet and trade networks.

Based on the above principles, only four currencies – U.S. dollar, Euro, British Pound, and Japanese Yen – that make the Special Drawing Right (SDR) currency basket and recognized by the International Monetary Fund (IMF) as freely exchanged globally and widely traded on major exchange markets worldwide and which account for 95% of allocated global international reserves, are viewed by many economists such as Maziad et al. (2011) are truly global reserve currencies.

Yap (2011) placed the U.S. dollar in the driving seat in the above family of major currencies and contended that the emerging as well as the industrialized economies greatly benefited from the dollar-based system not only through the access to the large open market of the United States which aided their export-led development strategies to blossom but also through the projection of U.S. military power that protected global market system and the flow of vital raw materials into their economies and the security umbrella that provided political stability and enabled greater resource allocation and improvement of the overall economic productivity.

2.1.2. FUNCTIONS OF THE LEADING RESERVE CURRENCY

In brief, an international reserve currency can be described as a currency that (1) fulfills the hard planetary role of serving as a store of value, medium of exchange, and unit of account on a global scale, (2) provides stable liquidity to support some $100 trillion of world GDP, (3) is globally accepted and trusted to serve as foreign exchange reserves held by world governments, (4) is the common denominator in international invoicing and settlement for commodities traded on global markets such as oil and gold.

An international reserve currency is also a (5) transaction currency centric to the Forex Market – the daily, global, worldwide-decentralized $5 trillion-financial market for trading currencies, and if it is tied to a specific country, it is a currency that (6) satisfies its obligations as required by the Domestic Monetary Policy – without interfering its global role; it also serves as (7) an Anchor currency in international exchange rate regimes to which other currencies can peg to and take refuge in time of crisis.

Cohen (2011) stratified the functions of an international currency into six separate roles. At the private level, the international currency is used in foreign-exchange trading as medium of exchange; in trade invoicing and settlement as a unit of account and medium of exchange; and in financial markets as a store of value. At the official level, it fulfills the role of an exchange-rate anchor as a unit of account; of intervention currency as a medium of exchange; or of reserve currency as a store of value.

As it is depicted in Table 2.1, the functions of the U.S. dollar as a global currency are basically the same roles it plays as a domestic currency. And that is where the challenge is! It is like playing two different melodies to two different audiences simultaneously since the domestic interests of the United States – as for any country – are seldom fully concomitant to the interests of the rest of the world, whereas the U.S. monetary and fiscal policies have a direct or indirect impact on both dollar-roles as domestic and international currency (Figure 2.1).

2.1.2.1. Store of value

In his second report on The Use and Counterfeiting of United States Currency Abroad, John Snow – the U.S. Treasury Secretary (2006) – indicated that foreigners continue to hold U.S. currency for the same reasons that many once held gold coins outside of the countries where they were originally minted.

He stressed out that dollars becomes a safer store of value when the purchasing power of the domestic currency is uncertain or when other assets lack sufficient anonymity, portability, divisibility, liquidity, or security. As a safe asset in an unpredictable world, dollars often flow into a country to displace the whole or part of the domestic currency during periods of economic and political upheaval and often remain long after the crisis has subsided (U.S. Treasury Secretary, 2006).

This was the fate of the Zimbabwean dollar – which displacement process started back in 2009 – when Zimbabwe started using the U.S dollar in lieu of its near-worthless domestic currency.

This semi-dollarization was climaxed by the official abdication of the Zimbabwean dollar when the Governor of the Reserve Bank of Zimbabwe authorized in June 2015 to exchange the colossal amount of Zimbabwean dollars still in circulation at the rate of 175 quadrillion for $5 and for amount above 175 quadrillion Zimbabwean dollars at the rate of 35 quadrillion Zimbabwean dollars for $1 (Reuters, 2015)!

This defies both the elementary and sophisticated understanding of the brightest minds in finance and monetary policy and no one on earth – including the Zimbabwean political and monetary authorities – knows what a quadrillion is and what it means – except that

Table 2.1: Domestic and International Function of the U.S. Dollar.

Function	Global Users of the U.S. Dollar		Burden in the United States	
	Governments	Private agents		
Store of value	• **Central banks'** accumulation of dollar-denominated assets	• **Dollar-substitute** circulates alongside the local currency in foreign domestic economy • **Dollarization:** the dollar is officially adopted as a domestic currency	• Meet the global expectations of a strong and stable reserve currency • Maintain deep, liquid, and open financial markets easily accessible by the rest of the world • Maintain a low and stable inflation	U.S. dollar as a domestic currency
Medium of exchange	• **Sterilization:** Open market dollar-operations to stabilize the domestic currency	• **Dollar-denominated settlements** to clear international transaction • **Transactional currency** in which trade and financial transactions are denominated	• Sustain a large share of global GDP, trade and finance • Sustain deep, liquid, and open financial markets to accommodate easy exit for reserves holders	
Unit of account	• **Anchor currency:** Dollar-Peg of the local currency	• **Dollar-denominated invoicing and value assessment** of international trade and financial transactions	• Sustain a strong and accessible consumption sector along with large share of the global economy, financial flows, and open global trade	
	U.S. dollar as reserve currency	**U.S. dollar as international currency**		
	U.S. dollar as a global currency			

Source: Table designed by Dr. Ganziro based on Subramanian (2011).

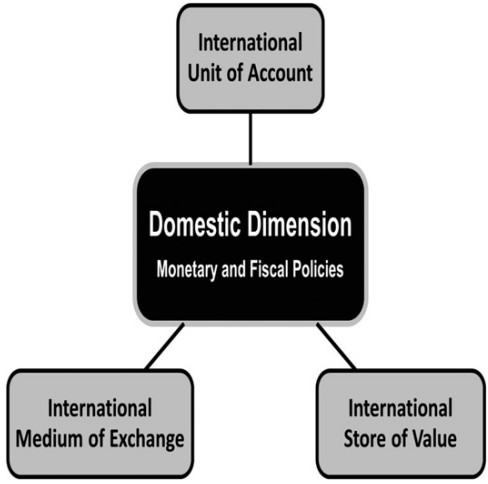


Figure 2.1: U.S. Dollar Domestic and International Dimensions. *Source*: Figure Designed by Dr. Ganziro.

Zimbabwe will go down into history as the issuer of a historical bank note with epic proportions!

Clearly, to act as a store of value, a currency must be able to uphold the value of wealth; that is to say it must be able to be saved and be withdrawn with a predictable and stable purchasing power at any time in the future.

It can be argued that governments and institutions hold reserves to partly store the value of the domestic savings. By buying the U.S. Treasuries, for example, China basically transfer part of its domestic saving to United States to be retrieved at the expiring dates of these instruments. The retrieved savings are expected to maintain at least the same purchasing power. Needless to say that not only these instruments must have deep liquid markets to allow the market exit at any time but also the exchange rate of the currency in which these instruments are denominated must be stable.

While dollar-denominated assets are the most popular assets for value storing, they present some challenges for their holders as well. For one, the reserve currency can be magnified beyond its intrinsic value because the inflation in terms of price of goods and services tends to increase more rapidly than the increase of the value of the reserve currency: one dollar-tomorrow tends to purchase less than one dollar today. This is why other stores of value such as gold which can keep pace with inflation by increasing in price are preferred during rapid inflation.

Secondly, dollar-denominated assets predominantly government treasuries tend not only to generate modest returns compared to other assets but also decrease in price over time as well.

2.1.2.2. Medium of exchange

As a medium of exchange, the reserve currency facilitates value assessment of goods and services to be exchanged internationally. The medium of exchange function is considered to be the most important function of a reserve currency as it not only irons out the costly bilateral currency exchanges and the rigidity of the barter trade in which the trade between two parties is possible if only their needs and value perceptions are matched but also serves as the common denominator that facilitates the settlement of global transactions and discharge of contractual obligations.

The global trust in the reserve currency's capacity to satisfactorily and reliably settle the debts out of international transactions and in the issuer's ability to maintain a stable purchasing power is one of the most important attributes expected from the issuer of a leading global reserve currency.

If you are a Rwandan coffee exporter and invoice your coffee exports in dollar, you need to be confident that at the time of your export's settlement, the value of the dollar will not go down the drain because it will mean that you will receive less Rwandan Francs. The payment of the coffee exports has another financial dimension linked to the global externalities of the U.S. dollar too. The Rwandan exporter can use its foreign dollar account as collateral to get an international loan in any other currency of his choice or he can use his dollar-export proceeds to buy machinery for his coffee plantation. So, the U.S. dollar has to be internationally accepted so the Rwandan exporter doesn't incur significant dollar-exchange costs.

The use of the dollar-reserve currency has added value to his coffee-export, which would be impossible by using the domestic Rwandan Franc in pricing and settling his exports. The Rwandan exporter might even decide to invest his money in risk-free assets outside his country.

In this regards, he can get a broker to buy some U.S. treasuries at one of the international exchanges. And since the U.S. Treasuries market is the deepest and most liquid on the planet, he has a strong confidence that he can exit any time he needs some liquidity without incurring high transaction costs and undue penalty. In this regards, the reserve currency in its medium of exchange function is ultimately a facilitator of global economic efficiency.

2.1.2.3. Unit of account

The reserve currency in its function as a global unit of account is very important as well as it serves as a monetary benchmark unit – a *common measure of the value* – of goods and services or assets being traded. A reserve currency must provide a worldwide-accepted and constant unit of account. Since the inflation destroys the

constancy of any unit of account, the prices in the home country of the reserve currency must be stable to allow the rest of the world to make a sound evaluation of the reserve currency-denominated assets they intend to accumulate or use in their international exchange transactions.

In its 70 year-dominance over the global financial landscape, the U.S. dollar has satisfactorily accomplished its unit of account international function. The United States – except some temporary uppicks – has not witnessed long-lasting hyperinflation which would have complicated the pricing and settlement in international trade.

The U.S. dollar movements have not been wildly erratic and the U.S. authorities have never attempted to inflate away the U.S. debt through the dollar exchange manipulation. The U.S. dollar value has been pretty predictable allowing investors to take long-term view in their investment decisions – especially in bond markets.

One can conclude that the historical global uses of the dollar as reserve currency have created enormous economies of scale and scope in terms of network externalities. This why – as empirical evidence shows – many foreign-exchange transactions – even ones not directly involving United States' residents – are denominated and undertaken in dollars.

Now, let us explore why the reserve currencies are accumulated and how they are supplied in the international financial system.

2.1.3. RESERVES CURRENCY ACCUMULATION MOTIVES

The accumulation of reserve currencies has grown very large with China leading the accumulation march. According to China Daily (2014), the State Administration of Foreign Exchange – China's foreign exchange regulator – China held around $6.13 trillion of foreign financial assets by the end of March 2014. That's 60% of its $10 trillion entire economy at market prices – out of which $4.01 trillion are invested away from the domestic economy into lower yield foreign currency reserve assets!

This means that 65% of the $6.13 trillion total foreign assets held by China are lent almost free mainly to the United States as nearly two-thirds of those reserves ($2.7 trillion) are held in U.S. dollar-denominated assets such U.S. Treasuries (China Daily, 2014).

On the liabilities side of the Chinese external financial balance sheet, 58% ($2.42 trillion) of the $4.14 trillion total overseas liabilities were foreign direct investment (FDI) into China as opposed to 10% ($621.5 billion) of the above $6.13 trillion of foreign financial assets China dedicated to direct investment into foreign economies which assumingly bring a more decent return that the U.S. Treasury instruments (China daily, 2014).

On a global scale, the above $4 Trillion reserves accumulated by China represented over 60% of the $6.1 Trillion Allocated Reserves and 30% of the $12 trillion world total reserves which includes an additional $5.5 trillion Unallocated Reserves as of 2014 Q^4 according to the IMF (2014).

According to the U.S. Treasury Department, $3.2 trillion – or 68% of the $4.7 trillion marketable Treasury securities held by foreigners – was being held as foreign official reserves through January 2011 out of $10.5 trillion – the total amount of Treasury securities which were held by the public, foreign, and domestic through January 2012. In contrast, the total official reserve assets held by the United States as of May 16, 2014 stood at $143 billion only (U.S. Treasury Department, 2014). China holds almost 28 times the U.S. reserves!

From the conventional investment rationale, this is a very wasteful use of the Chinese savings which could have been channeled into more beneficial domestic productions that could shift the Chinese standards of living into higher levels. On the face of it, it is indeed appalling to see a still developing country be – knowingly or not – lending its purchasing power to far-advanced countries in Europe and United States.

What is the adequate level of reserves beyond which the reserve accumulation will be excessive and wasteful – given the striking difference between countries in terms of tolerance toward risk and crisis? Is reserve accumulation a sign of economic strength or weakness? If excessive reserves accumulation is a waste, why did China and most South East Asian countries – in all places – decided to consistently mismanage their precious resources which can be better allocated to more beneficial domestic investments?

Let walk us through the major arguments behind the reserves accumulation and the rules of what should be an adequate level of reserves.

2.1.3.1. Mercantilist rule

The mercantilist rule which has been argued by Aizenman and Lee (2006) differentiates two types of mercantilism: the financial mercantilism and the monetary mercantilism. The financial mercantilism claims that the excessive accumulation of reserves is a byproduct of aggressive export-led development strategies which relentlessly seek to boost growth by a systematic undervaluation of exchange rates.

The desire to maintain export competitiveness leads therefore to an obsession toward undervalued currencies along with financial repression in terms of compression of domestic spending such as control of wages, imposition of high savings rates, allocation of resources to the export industry (Yap, 2011), which unavoidably induces persistent current account surpluses and an accumulation of

foreign exchange reserves. This rule seems to have been fully adopted by China which has been denounced for manipulating its currency exchange rate via fixed or semi-fixed pegs.

Through monetary mercantilist, countries may accumulate foreign exchange reserves to garnish their gold reserves such as India and China or expand the money supply for policy purposes.

The mercantilist rule's most impact is felt in the current account sphere where the reserves are meant to shield against unexpected trade disruption that may lead to a sudden stop in essential imports such as oil. The accumulation of the reserves would be therefore aimed for mitigating the risks from the current account exposures. Thirty to Fifty percent reserves/imports ratio is the conventional benchmark which states that official reserves should cover at least three months' worth of imports.

According to this rule, China's $4.01 trillion reserves as of March 2014 are more than double the $1.95 trillion total imports for the entire year of 2013 (CIA estimates). The rule of three months imports worth of foreign reserves would require only $0.5 trillion ($1.95 × 3/12) reserves holdings instead of $4.01 trillion. This means that China is holding far more reserves to the tune of $3.51 trillion beyond the benchmark of the mercantilist rule. In other words, the mercantilist motive – which lies behind the exchange rate manipulation blamed on China – is not therefore significant enough to explain why China stockpiles such large amount of reserves.

2.1.3.2. Self-insurance precautionary rule

The self-insurance rule suggests that countries stockpile currency reserves to self-ensure themselves against foreign exchange market turbulence such as the 1990s financial turmoil that spread like bushfire in many Asian countries up to Russia, Argentina, and Brazil. Capital fled to dollar-safe haven assets, setting off deep recessions in the affected countries leading the relevant governments to conclude that in an era of deepening of financial globalization safety lies in piling up huge reserves – a rationale that was reinforced in the Grand Recession, when countries with lots of reserves, such as China or Brazil, contained better the devastations of the crisis than those with thin reserves at hand (The Economist, 2010).

Compared to the mercantilist rule, the self-insurance rule's main source of risks that drive the reserves accumulation lies with the capital account, not the trade balance – even if the reserves are built out of the current account surpluses. Guidotti-Greenspan Rule recommends – as a measure of self-insurance – that reserves should be at least equal to short-term debt with a maturity of one year or less in order to withstand a massive withdrawal of short term foreign capital (Greenspan, 1999).

2.1.3.3. Collateral rule

According to collateral rule, a successful development strategy – such as the export-led growth strategy – generates and is powered by net savings flows from emerging to developed economies (Dooley, Landau, & Garber, 2004).

The basic claim of the collateral theory is that the capital inflows into the U.S. economy from the proceeds of dollar-denominated assets bought by the emerging markets serve as a collateral to be recycled into the U.S. financial markets and sent back – just as the banks collect row deposits from the public and relend them back to the public as car loans or mortgages, etc. through banking intermediation.

Likewise, the United States serves as a recycling intermediation loop where the funds from the emerging markets transit before being sent as equity or other FDIs back those markets. Without such international financial intermediation, the development strategy of the emerging markets would be simply derailed – just as without banking intermediation, there will be a misallocation of resources and impediment to an optimal economic growth.

In other words, for the Asian economies to be tiger economies, they had to amass dollar-denominated reserve assets through trade surpluses and send this huge net saving liquidity away from their inefficient domestic financial markets to be recycled into more efficient superior markets – such as U.S. markets – which then send the recycled liquidity back to the emerging markets in a more refined investment form such as FDIs.

This is in total contrast with the conventional wisdom which articulates that net capital should flow from capital-rich countries to capital-poor countries where financial resources are highly needed to build domestic capital stock and promote economic growth – not the reverse!

The collateral rule clearly explains the U.S. current account deficit as being the logical consequence of the U.S.' centrality in the global financial System as the issuer of the leading reserve currency. In this respect, the U.S. current account deficits are an essential factor in the development of the emerging markets.

Precisely, what is really exchanged under the collateral rule is the low risk – low yield Treasury securities the rest of the world buy from the United States for reserve assets accumulation purposes – against high risk – high yield equity securities the rest of the world sell to the United States as its foreign investments. Because these two types of instruments carry different risk in the above buy/sell transactions, a risk premium will be necessary to equalize the risk differential.

The end results of the collateral rule is that – with the U.S. dollar still reigning supreme over the global economy – the United States

became a hub to recycle the liquidity available in the global financial system – especially the capital from emerging economies driven by their desire to consolidate their war-chests of dollar-denominated reserve assets so as to shield their young markets against global financial shocks (Caballero, Farhi, & Gourinchas, 2008).

2.1.4. COST OF EXCESSIVE RESERVES HOLDINGS

Accumulating Reserve comes with a cost. The major cost is the opportunity cost in terms of missed opportunity to invest the accumulated reserves into national production to boost domestic economy or into higher risk – but better rewarding assets.

Constraining the domestic consumption is certainly the biggest cost opportunity in an export-led growth strategy with its correlated reserves accumulation. This doesn't mean that this export-driven strategy didn't produced clear developmental results; it has been adopted by successful emerging market countries such as Japan, Korea, Argentina, China, etc. But, could the domestic-led growth have been a macroeconomically superior path to long-term sustainable economic growth than the export-led growth?

Whatever is the cost, the accumulators of reserve currencies feel that this price is worth to pay – given the devastation of financial crises which can be mitigated by large reserves at hand as far as their damaging effects are concerned.

The export-led growth strategy has its own demons on the downside. Since the export-led growth strategy is counter free market rationale, government interventions will be needed for its sustainability because its inner workings rely heavily on external demand for exports of domestically produced goods – thus leading to floods of liquidity from the export earnings that inevitably generate pressures toward the appreciation of the real exchange rate.

Since the dictates of the export-led growth require maintaining the real exchange rate undervalued, the central bank must keep depreciating its nominal exchange rate, which necessitates further reserve accumulation in an unending process.

But how does the government prevent inflation from catching up with this unyielding reserve accumulation? The central bank must radically sterilize to counter the effects on the money supply fed by the relentless reserves accumulation through open market operations along with repressive fiscal measures such as price controls – especially over inputs for export productions like wages suppression – in order to neutralize the impact associated with liquidity from foreign exchange reserves and maintain export prices low.

The problem, however, is this sterilization – or currency manipulation to prevent the domestic currency's exchange rate from converging to its self-correction market equilibrium value – might be a

recipe for real growth killing because it can lead to a large misallocation of resources and therefore becomes increasingly costly (Wyplosz, 2007).

Given its choice along the Mundell Trilemma by managing both the value of Renminbi and the domestic money supply, China decided to forego free capital mobility and contain the international capital flows by tightly controlling its exchange rate of its pegged currency and retaining its monetary policy autonomy.

The problem of the above China's choice along the Mundell Trilemma is that the capital account is the mirror of the current account, and with the China's gigantic current account surplus, there must be a corresponding activity on the capital account.

But the problem is that it doesn't matter how tight China wishes to control the money supply, because the reserve accumulation from its current account surpluses along with the capital inflows looking for investments continuously create push-ups into the money supply; it generate asset-price inflationary pressures and currency appreciation which force the Chinese central bank to frequently sterilize this huge influx of vast liquidity.

However, the effectiveness of Chinese sterilization on such systematic basis is also questionable; simply because the short term bills (the main instruments normally issued by the central bank to sterilize additional money creation) are not only highly liquid but also, the more extensively they are used, the more liquid and money-like they become; thus, the more rapid the growth of money supply (Pettis, 2013).

So why China's excessive monetary expansion didn't result in significant wage and consumer price inflation? It is because the Chinese financial system is so severely repressed that money growth – unlike in a market-based financial system – is bifurcated and affects producers and consumers in very different ways according to Pettis (2013) who specifically argued that the rate of monetary growth for producers exceeded the rate of monetary growth for consumers.

Clearly, the financial repression creates a two-speed economy that leads to a sharp unbalanced growth in which the production side is subsidized through credit creation while the consumption side is literally penalized – thus, making the role of domestic demand as a driver of growth to shrink as wealth is effectively transferred from the depositor (consumers) to the borrower (producers) and significantly constraining the purchasing power of the consumers while tremendously increased the power of the producers.

The more the interest rates are repressed, the harder it is for consumption growth to keep up with investment and production growth because monetary policy driving consumption is effectively much tighter than monetary policy driving production (Pettis, 2013).

As growth in production systematically exceeds growth in consumption – a growing trade surplus is logical and a necessary channel to resolve their growing imbalance. And since a growing trade surplus implies a growing ability to absorb that surplus by the rest of the world; if the international demand collapses, the only way to prevent a collapse in domestic economic growth and avoid a hard landing of the economy is to engineer further investment.

But, more and more investment give rise to diminishing returns and ultimately to capital misallocation – making the bifurcation to further exacerbate rapid monetary expansion in self-reinforcing cycle in which debt – especially at local and municipal levels – surge with more investments; rendering the debt quickly unsustainable. And as debt continued to rise along with slowing growth, China's trade surplus consequently eroded, capital flight began to surge, while inflows into the Renminbi began drying up – turning China's position from running net capital inflows to running net capital outflows.

In summary, to fight against the inflationary pressures, the domestic demand is compressed by imposing a high saving rate. And because of the diminishing marginal return to capital, the growth of investment cannot catch up with the high persistent growth of savings, so the current account surplus has to increase (Yao, 2011).

This link between savings and export-led growth strategy has been described by Bernanke (2005) as saving glut whereby the savings in the periphery end up parked in developed financial markets in the form of safe, low-return paying assets, so as to avoid creating inflationary troubles in the periphery's domestic markets.

Bernanke (2005, 2007) argued that the major cause of the global foreign exchange reserves explosion was due to a global savings glut whereby current account surplus countries such as China and a number of oil exporters had savings well-beyond their investment capacity. In other words, this large savings-investment mismatch justifies the charge that the surplus countries such as China saves too much and invests too little and therefore, more sophisticated financial markets of deficit countries such as the United States provided investment opportunities for these surplus funds.

Along the way, the global liquidity boom depressed real long-term interest rates, which in turn discouraged domestic saving and increased asset values in the recipient economies – such as housing assets where homeownership became prized beyond its utilitarian economic benefits and the home prices greatly exceeded their intrinsic values while the inflow of foreign excess savings encouraged the U.S. financial sector to create new liquid financial assets – such as asset backed securities linked to housing loans – to satisfy this foreign thirst for financial claims on the United States (Bernanke, Bertaut, DeMarco, & Kamin, 2011).

A number of experts such as Obstfeld and Rogoff (2009) countered the Bernanke's savings glut hypothesis by arguing that savings glut is rather a consequence of the global liquidity boom than being its cause. In their U.S. monetary superpower hypothesis, they opined that U.S. monetary policy was being exported throughout the world – especially transmitted to the dollar-pegged economies via their acquisition of foreign exchange reserves to maintain their dollar-pegs for competitiveness purposes. What did appear as a savings glut finding its way to the advanced economies was instead a recycling of U.S. monetary policy.

2.1.5. INTERNATIONAL RESERVE CURRENCY STATUS CRITERIA

No single factor seems to determine the reserve currency status. Many experts attribute the status of a leading reserve currency to the economic weight, macroeconomic stability, trade centrality and openness, and financial depth, creditworthiness, and policy soundness. Most economists agree that the U.S. dollar followed far-behind by the Euro seems to have all the above metrics to be called a truly global leading reserve currency.

2.1.5.1. Economic and geopolitical weight

Simply put, the largest economy and strongest geopolitical power is expected to provide the global currency. It was the vast British Empire that was the bedrock of the British Pound's world dominance and it has been the economical and geopolitical superpower of the United States that has been evidently supporting the U.S. dollar preeminence. Empirical evidence suggests that the more deep and liquid the financial markets and larger the economic scale of the currency issuer, the more likely the currency to play a significant role in the global reserve currency system.

2.1.5.2. Macroeconomic stability

Macroeconomic stability is all-encompassing and engulfs factors such as low-stable inflation, economic growth, sound political framework, sound regulatory and policies framework that make a currency to be attractive and to deserve the global confidence.

2.1.5.3. Trade openness

The issuer of a reserve currency should not have restrictions on use of its currency in trade transactions and payment settlements. The fact that the United States is the largest, mostly open economy, most broad-based exporter and importer in the world suggests that not only a lot of dollars are naturally changing hands but also many traders are able to efficiently finance a large portion of their business,

maintain their accounts, seek loans, and undertake a myriad of other financial arrangements in U.S. dollars.

2.1.5.4. Financial depth dynamics

The hallmark of a leading reserve and global currency is liquidity and stability. These features require deep financial markets and an open capital account. The strength of the United States into these prerequisites is second to none. Not only the U.S. financial markets are the world's largest and most liquid markets but also United States has outstanding tradition of open financial policies that support a strong financial regulatory system.

This is not to say that the U.S. legal system is infallible. The United States woke up in the 2008 Great Recession to find out that the above regulatory system was deregulated beyond the prudently acceptable limits and many firms at Wall Street had endangered the very fabric of its efficient financial system through regulatory leverage, reckless lobbying, and wild financial bets. Paradoxically, at the first signs of the Great Recession, the strong flight to dollar-safety reinvigorated the testimony that the U.S. dollar is indeed the Currency of world currencies!

The importance of deep and liquid financial markets cannot be stressed enough in supporting the international use of a currency and as long as the United States' financial markets continue to deepen and to dominate the global financial landscape, the dollar is more than likely to maintain its leading reserve currency status.

Empirical evidence also shows that the leading international currencies of the last three centuries – such as Sterling and U.S. dollar – were issued by superpower countries.

Additionally, the U.S. Treasury Bond Market being the single most liquid government bond market in the world as reflected in its high turnover is extremely attractive to foreign investors because of its liquidity – which exhibit a self-reinforcing feature – the more the foreign investors carry out their transactions and concentrate their holdings in U.S. financial assets, the more liquid the U.S. financial markets become and as more investors are attracted to these markets, the deeper the U.S. markets become in an self-reinforcing spiral.

The above criteria are extremely burdening prerequisites for a country – especially for an emerging economy still leaning on export-led growth. Some of the requirements – such as total unrestricting global capital flows – have built-in macroeconomic instability – that would require from the issuer of a leading global reserve currency to have its financial markets – far more than its economic size – very strong to be able to contain the global financial shocks.

This study argues that it is not desirable for any country – including the United States – to have its currency as the dominant reserve currency precisely because of the inherent exposure to the

pressures of global demand and the vagaries of the international capital movements.

To achieve the above prerequisites – as hard as it might be – is not even enough to achieve the status of global reserve currency. There is a final – but though – battle that must be won: the duel fight between the newcomer and the incumbent currency on the inertia battlefield.

2.1.5.5. Winning the inertial duel

The compliance to the above criteria doesn't guarantee that the promoted currency will automatically have a seat on the dais of reserve currencies. There is a tough final sprint to the reserve currency crown to be run, and the trouble is that somebody is still occupying that throne and unless there is a power change – the crowning of the newcomer as the king of currencies will never happen.

As the French adage goes, the power is never given, it is acquired. The promoted currency has to fight for it, and being a newcomer, it would be very hard to surmount the occupant's first mover advantage in order to gain significant market share, so it can be respected by all the boys operating in the global marketplace. The newcomer has to convince the markets that not only its supporting fundamentals are right and sustainable but also why they should switch from the incumbent currency and embrace the untested newcomer.

The dollar has been around for almost 70 years polishing its reputational capital, building complex and sophisticated network externalities and achieving such economies of scale that make it the most efficient and cost-effective currency in most world economic activities. So, even in the unlikely event that the United States falls from its favors as the current economic and geopolitical position of power, the inertial bias will continue to favor the dollar as the world reserve currency as long as the costs of holding dollars in terms of lost purchasing power do not exceed the network and convenience benefits of transacting in dollars.

As it has been revealed above, the dollar share in the key global transactions is an evident proof that it has gained a time-tested confidence not only of the central banks in their accumulation of international currency reserves and their interventions in foreign exchange markets but also of other institutions in their international trade dealings and global investment portfolios due to relative stability and predictability of its value.

The Euro – born on December 16, 1995 and officially introduced to the world financial markets on January 1, 1999, with more than $15 trillion-GDP (CIA's PPP-2011 estimates) backing it – was supposed to supplant the dollar soon after its birth. But with 16 years of existence, the Euro is far from usurping the dominance of

the dollar-reserve status. And since the ongoing Eurozone debt crisis is becoming an existential threat to the survival of the Euro experiment, the Chinese Renminbi is increasingly becoming the most indicated currency to overtake the dollar at the center of the global financial markets.

And yet, as it will be extensively analyzed in Chapter 3 (Section 3.8.2.3), the reality points out to the contrary because fundamentals such as stability of the Renminbi, sophistication and openness of China's financial markets and the development of its legal and institutional framework along with the qualitative variables such as the confidence in the Chinese communist political system, the respect of human and property rights, the geopolitical and leadership power will need to be in place before the Renminbi achieves contemplated reserve currency status.

It took between 30 and 70 years – depending on the aspects of economic and international currency status considered – from when the United States overtook Britain as the leading economic and commercial power and when the dollar effectively overtook Sterling as the dominant international currency. The Sterling still lingered as the dominant international currency through 1918–1940 long after the U.S. dollar started to ride its road to supremacy with the advent of the Fed back in 1913 and when the dollar's presence and weight started to be felt in the global markets as a rising competing reserve currency to the British pound.

The changeover between the rising U.S. dollar and declining British pound as the leading reserve currency has never been neatly established. Subramanian (2011) brought notable refinements to this determination through his analysis on economic dominance by arguing that there are two transitions to the reserve currency supremacy: (1) the rise of a currency from anonymity to a dominant reserve currency status and (2) the fall from that status.

He opined that in the rising phase, a newcomer becomes the reserve currency well after the rise to predominant economic ascendancy of its issuer and in the falling phase, a dominance-losing currency preserves its reserve currency status well after its issuer has lost its economic predominance – clearly demonstrating that there is a long lag – he labeled as **persistence** – at every transition which delays the ascent or the descent of a currency to or from the reserve and global currency throne. Based on these analytical metrics, he concluded that the economic clock to clear the dominance of the dollar started ticking around the end of World War I, when the United States became economically dominant in the broader sense.

In the same line of thinking, Krugman (1984) pointed out that it was the inertia and the advantages of incumbency which enabled the Sterling to remain first-ranked currency for half a century after Britain lost its number one rank as the world economic power.

In all accounts, the U.S. dollar was the dominant currency after the Bretton Woods agreements formalized its reserve currency status in 1944. This status came face to face with the Triffin (1960) dilemma and in 1970 – fearing a shortage of international dollar liquidity – the IMF issued the SDR as a new, neutral, supranational reserve currency to mitigate that shortage.

The United States was facing a global confidence crisis by early 1970s because of its rising current account deficits born out of too much supply of dollar-liquidity in the world. There was no easy way out of this dilemma: if the United States responded by reducing its deficits, there would be not enough dollars for the rest of the world to oil their global trade and financial transactions.

The solution – that was imagined within the International Monetary Fund – was to create SDR – a synthetic reserve asset – to supplement the supply of the dollar-reserve assets and gold (Williamson, 2009). The problem is that the SDR was only a workable unit of account within the IMF universe. The promoted SDR did nothing therefore to solve the problem; it rather allowed some hedging of exchange-rate risk without being a real source of global liquidity which would have required the IMF to be a global central bank. This is why for much of the post-1973 period, the dollar accounted for a vast bulk of the share of official foreign exchange reserves held by the world.

The road of reserve currencies from now into the unknown future has been fashioned by Subramanian (2011) based on his index of economic dominance that projected the theoretical timeline of the probability for the Renminbi – the perceived contender currency in the race to overtake the dollar. The 2020 is the approximate date that the Renminbi could be in a position to rival the dollar according to Subramanian.

However not only he admitted that this date is engulfed into a fog of uncertainty but he also questioned whether a nondemocratic communist country – even if such political system is able to achieve very deep financial markets – can inspire the basic trust in rule of law that is necessary to be the home of a leading reserve currency within an exceedingly sensitive and volatile global financial world (Figure 2.2).

2.1.6. THE IMPLICATIONS OF ACHIEVING RESERVE CURRENCY STATUS

Achieving a reserve currency status is not an end in itself. Once a currency achieves the reserve and global currency status, it naturally becomes the center of global attention. The implications of that status start to fall out all over the map. The first huddle is embedded in the Triffin Dilemma who theorized that the issuer of the reserve

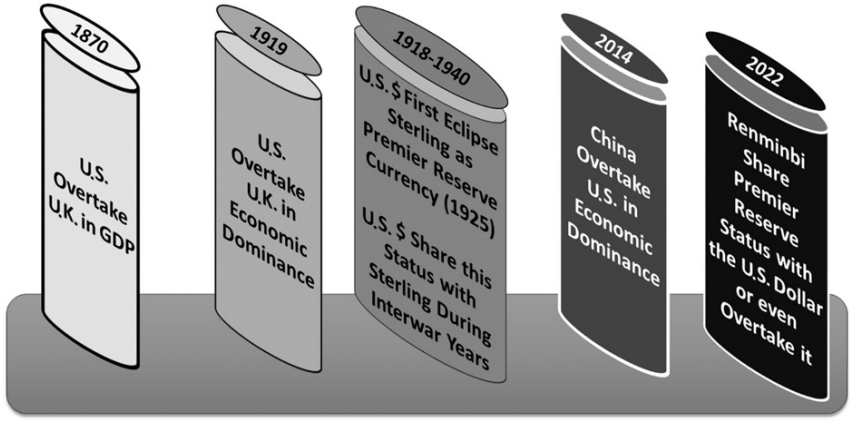


Figure 2.2: History and Possible Timeline of Future Reserve Currency Transition: 1870–2022. *Source*: Figure designed by Dr. Ganziro based on Subramanian (2011).

currency must run trade deficits to meet the world demand for foreign exchange reserves.

Subsequently, the issuer position becomes paradoxical because the more current deficits – while essential to global liquidity – the more claims are slammed to its currency and the more doubts are stamped on its ability to honor them and therefore the more difficult to keep the anchor currency as a stable global store of value; thus, the more reserve currency-denominated assets, the more the reserve currency becomes subjected to crises of global confidence.

This paradox creates deep tension and intense conflicts of interest between not only national and global monetary policy but also domestic and international economic goals. Needless to say that the harder the United States strives to balance its current accounts to have its finances in order, the faster the dollar-global liquidity will dry out. Reversely, the more eager to meet the ever-increasing global demand of dollar liquidity, the deeper current deficits the Unites States has to bear and the more liabilities imprinted on the dollar value.

From dilemma, the issuer of the global reserve currency must also face the Trilemma or Impossible Trinity which postulates that a country can simultaneously achieve only two out of three macroeconomic objectives of full capital mobility, exchange rate stability, and monetary autonomy. Only two out of the three options can be chosen – not all the three at the same time. In other words, a selection of any two objectives means that the third one must be abandoned.

If an economy wishes to achieve reserve currency status, then financial openness would be primarily required as the cardinal prerequisite. To the financial openness, either exchange rate stability or

monetary autonomy can be added, but not both. China – in order to replace the United States as the issuer of the global reserve currency – doesn't seem to have made the right draconian Trilemma trade-off. It has placed more emphasis on retaining monetary autonomy and exchange rate stability than on the highly required financial openness to achieve reserve currency status.

Opening its financial markets and liberalizing capital movements would mean not only removing all controls on capital flows which would unmistakably lead to some extent of macroeconomic instability but also relinquishing its monetary autonomy. The problem is how willing the Chinese authorities are ready to abandon that autonomy and fully open China's financial markets to the global hedgers, speculators, and currency predatory sharks.

Is there any safe landing that could smoothly sequence the Renminbi's transitional path from nontraded currency on international Forex to a full-fledged reserve currency status? The Renminbi will have to journey the road similar to the path rode by the British pound and the U.S. dollar to supremacy.

China must first achieve the status of the leading economic powerhouse and a global geopolitical superpower and replace the United States in such capacity; and the Renminbi must built far better network of externalities than the U.S. dollar and break its global use inertia and cost-effectiveness before being crowned as the leading global and reserve currency.

China has been very cautiously liberalizing its financial system by (1) expanding the role of Renminbi in foreign trade settlement and it has already overtaken the Euro to become the second to the dollar, (2) deregulating the service sector, (3) simplifying customs clearance and interest rate liberalization, (4) encourage two-way portfolio investment and allowing foreign companies to issue Renminbi bonds and access the domestic equity market according to Hongbin (2014).

However, Hongbin concluded that – while China has been scoring well on the above reforms – it doesn't mean the Renminbi will replace the dollar as the world's dominant reserve currency, but it will be – along the Euro, British Pound, Yen – part of a multiple reserve currency system led by the U.S. dollar, just as during the British Pound Standard hegemonic era, the French franc, and the German mark played a supporting role in the world reserve currency system.

In nutshell, there are some undeniable benefits in achieving a reserve currency status to both the issuer of the currency and to global markets – such as opportunity to reduce transaction costs and exchange rate risk, improvement of institutional performance and innovation due to larger volume of transactions and increased competition, lower cost of funding for both government and private sector.

However, to supply adequate reserve currency in sufficient liquidity to the world economy is a delicate and costly process that both the monetary authorities and fiscal regulator must tread with caution because every policy affects both the domestic and global economy – and most of the time in different ways – even in opposite direction – given the differential in terms of economic structure and effectiveness, economic growth targets, export competitiveness strategy, financial markets development, monetary policy goals, fiscal objectives, and trade openness between the United States and the rest of the world.

In summary, just achieving the prerequisites for reserve currency status is in itself a daunting task. To achieve a full financial openness – especially for an emerging economy – without encountering disastrous financial and macroeconomic instability can be economically very difficult and politically very risky. This is why countries such as Germany back in 1960s and 1970s and Japan in 1970s are believed to have strongly resisted the mark and the yen to be elevated to such status – given the costs and loss of export competitiveness involved.

On this issue, Nomura Global FX Outlook (2011) opined that observers had confused a fall in the foreign exchange value of the dollar, with a fall in its international role. In reality, the Japanese and German economies in their golden times and their respective currencies remained far behind the United States and the demand for dollar was stronger in other respects of global currency such as a transactional currency especially in Latin America. By that time, the specter of communism was also looming large over West Europe and Japan and the United States was perceived as the security guarantor through its military protection umbrella.

Currency internationalization and reserve currency status are not therefore triumphs to be patriotically conquered. Even for the United States – except some conspiracy theories – there are no substantiated indications that the United States actively sought to promote or preserve the dollar reserve and global currency status even after President Nixon collapsed the Bretton Woods System and the Fiduciary Dollar Standard kicked off in 1970s – in hunt for some diffuse economic benefits of the so-called exorbitant privilege.

Fiduciary Dollar Standard came in not as U.S. Statecraft but as a circumstantial reaction from the rest of the world to the effects of new policies enacted by the United States (Zimmermann, 2010) to improve their domestic conditions within a global financial order in which the dollar continued to play its central role under brand new terms.

This is why – even though the Bretton Woods System was unilaterally shut down by President Nixon – no shift out of the dollar was observed; on the contrary, its centrality was reinforced as the global financial world couldn't find solace in any other comforting currency.

2.1.7. EMPIRICAL EVIDENCE OF THE U.S. DOLLAR RESERVE CURRENCY STATUS

2.1.7.1. The U.S. dollar is the global leading anchor currency

The U.S. dollar was officially placed at the center the Bretton Woods pegged-rate system since 1944. After the breakdown of this pegged-rate system in the early 1970s, governments also broke free from the bondages of gold-peg! No more IMF to remind them that their domestic currency has jumped out of the ±1% parity band prison. With their recovered freedom, the governments were free to choose whatever exchange-rate regime dimed suitable to their economic conditions from a variety of exchange regimes ranging from hard and soft peg to free float and a cohort of regimes in-between including dollarization, currency boards, crawling peg, etc.

After the dissipation of the noise around the breaking of the Bretton Woods – as a matter of financial wisdom – almost the entire financial system was paradoxically regrouped around the U.S. dollar – which is now dominating the anchoring currencies with about 43 nations aligning their exchange-rate policy to the dollar including 8 countries being dollarized, 8 having Currency Boards that use the dollar, 15 conventional dollar-peg, 7 countries having stabilized arrangement with the dollar, and 9 countries maintaining managed floats with the dollar as of 2014 (IMF, 2014).

The Euro comes next to serve as the anchor for the 26 currencies regionally concentrated in the European Union, Mediterranean rim, and few African countries – especially the French-dominated CFA (Communauté Française d'Afrique) Franc zone.

According to its 2014 Annual Report on Exchange Arrangements and Exchange Restrictions (IMF, 2014), out of 188 IMF-Member Countries, 25 countries practice hard pegs, 81 countries practice soft pegs, 65 countries practice float, and a residual of 17 countries practicing other managed currency arrangements (Table 2.2).

Only 34% of the IMF Member Countries have chosen to float their currency out of which 15% opted a free float. However, this floating currency minority includes all the advanced economies and several of the large developing countries, such as Brazil, Mexico, India, and South Africa, that account for not only over 70% of world trade and over 80% of world GDP but also almost the totality of currencies traded on global FX markets – making the currency float the predominant exchange rate system in the world.

There are some merits in currency pegging: the more stable a peg, the lesser the cost of doing business with aligned countries in the peg – as compared with economies with more flexible or freely floating rates. The more extensive use of a currency as an anchor, the greater its centrality in the regional or global financial system (Cohen, 2011) and the more economic integration, trade intensification, and capital movements between the pegged and the anchor economies.

Table 2.2: Exchange Rate Arrangements in 2014.

Exchange Rate Arrangement	Number of Countries	Percent of IMF Members
Hard peg	**25**	**13**
• With no separate legal tender	13	7
• Currency board	12	6
Soft peg	**81**	**44**
• Conventional peg	43	23
• Stabilized arrangement	21	11
• crawling peg	2	1
• Crawl-like arrangement	15	8
• Pegged exchange rate within horizontal bands	1	1
Floating (market determined rates)	**65**	**34**
• Floating	35	19
• Free floating	29	15
Residual		
• Other managed arrangement	**17**	**9**
Total	**188**	**100**

Source: IMF (2014). *Annual Report on Exchange Arrangements and Exchange Restrictions*, International Monetary Fund, Washington, October 2014 (http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf).

The Optimal Currency Area (OCA) theory developed by Mundell (1961) has been often advanced as the primary motive in currency peg decisions by emphasizing the direction of trade and the relative synchronization of shocks. However, the OCA framework miserably fails to explain what is keeping the export-oriented emerging markets from switching their pegs to the Euro, for example – especially since they have closer proximity to, and trade volumes with, the Eurozone than with the United States.

Posen (2008) explained that since the primary motive of a currency peg is monetary stabilization and price stability, there is an extreme reluctance to alter a peg arrangement with the U.S. dollar in the name of geographical proximity for fear of inducing instability.

2.1.7.2. The U.S. dollar is the major form of cash currency worldwide

Although the estimates of the total share of U.S. currency held outside the United States are inherently an inexact science because dollars can move undetected across borders; but, according to the data back as far as 1960, the share of U.S. banknotes held outside the United States has been growing up steadily. According to U.S.

Treasury Department (2006)'s Report, around 60% of all U.S. bank notes in circulation – or about $450 billion of the $760 billionin circulation as of December 2005 – were held outside the U.S. borders.

At the end of 2001, 25% of U.S. dollars was held in Latin America, 20% in Africa and the Middle East, and about 15% in Asia and the remaining 40% was likely held in Europe and the countries of the former Soviet Union and their neighboring trading partners, such as Turkey according to U.S. Treasury Department's estimates (U.S. Treasury Secretary, 2006).

2.1.7.3. The U.S. dollar is a transaction – Centric to Global Forex markets

The Global Forex Market is made of the vast agglomeration of banks and other financial institutions around the world where some 150 distinct national currencies are actively traded for one another through a gigantic web of interactions which determine the exchange rate between each pair of currencies (Cohen, 2011) with astonishing speed whereby some quoted price changes can reach 20 times a minute while the most active FX rates can change 18,000 times a day. The FX markets are mostly unregulated with no international oversight or rules-setting or regulatory enforcement (Table 2.3).

As the costs of direct purchases between pairs are sometimes very high or prohibitive – especially for currencies not quoted on international Forex markets – a vehicle currency with vast network externalities and a position of centrality in the global currency system is often used as a connecting link between pairs in order to minimize transactional costs (Cohen, 2011).

The Global Forex markets averages almost $5.3 trillion in daily average turnover – this is more than triple its 1995-level of

Table 2.3: Foreign Exchange Market Structure in 2014.

Spot Exchange Market	**188**
Operated by the central bank	**119**
• Foreign exchange standing facility	75
• Allocation	27
• Auction	32
• Fixing	6
Interbank market	**161**
• Over the counter	127
• Brokerage	50
• Market making	75
Forward Exchange Market	**127**

Source: IMF (2014). *Annual Report on Exchange Arrangements and Exchange Restrictions*, International Monetary Fund, Washington, October 2014 (http://www.imf.org/external/pubs/nft/2014/areaers/ar2014.pdf).

$1.2 trillion a day according to Bank for International Settlements (BIS) Report. This is a huge market that can potentially reach $1,040 trillion a year – that is, one Quadrillion of U.S. Dollar a year of 24/5!

The FX markets never sleep and run around the clock – 24 hours a day, 5 days a week! An opening bell always overlaps the closing bell across the planet. These markets simply follow the sun from Wellington in New Zealand through Sydney, Tokyo, Hong Kong, Singapore, Bahrain, London up to New York, and U.S. West Coast which closes when Wellington is up for the next day.

Out of the above Quadrillion, the U.S. dollar roughly accounts for an astonishing 86% turnover, trailed far behind by the Euro for 37%, Yen for 16.5%, and a small handful of other currencies (note that percentages add up to 200 because every transaction involves two currencies). The U.S. dominance translates into $0.860 Quadrillion or $860 trillion in global currency pair transactions per year (86% out of 200).

This dominance – which has been consistent since 1995 with the exception of the 2001-spike of 90.3% – has tremendous implications of the U.S. dollar reserve and global status. First and foremost, the sheer dollar-Forex trading volumes mean that bid-ask spreads in dollar transactions are lower than in any other currency involved in the Forex markets (Tables 2.4 and 2.5).

Table 2.4: Daily Global FX Turnover (Net-Net Basis[a] Percentage Shares of Average Daily Turnover in April[b]).

Instrument	1998	2001	2004	2007	2010	2013
Foreign exchange instruments	1,527	1,239	1,934	3,324	3,971	5,345
Spot transactions	568	386	631	1,005	1,488	2,046
Outright forward	128	130	209	362	475	680
Foreign exchange swaps	734	656	954	1,714	1,759	2,228
Currency swaps	10	7	21	31	43	54
Options and other products[b]	87	60	119	212	207	337
Memo						
Turnover at April 2013 exchange rates[c]	1,718	1,500	2,036	3,376	3,969	5,345
Exchange-traded derivatives[d]	11	12	26	80	155	160

Source: BIS (2013).

[a]Adjusted for local and cross-border inter-dealer double – counting (i.e., "net-net" basis).

[b]The category "other FX products" covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible.

[c]Non-U.S. dollar legs of foreign currency transactions were converted into original currency amounts at average exchange rates for April of each survey year and then reconverted into U.S. dollar amounts at average April 2013 exchange rates.

[d]*Sources*: FOW TRADE data; Futures Industry Association; various futures and options exchanges. Foreign exchange futures and options traded worldwide.

Table 2.5: Currency Distribution of FX Turnover of the Top Ten Currencies in the World (Net-net basis[a] percentage shares of average daily turnover in April[b]).

Currency	1998		2001		2004		2007		2010		2013	
	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank
USD	**86.8**	**1**	**89.9**	**1**	**88.0**	**1**	**85.6**	**1**	**84.9**	**1**	**87.0**	**1**
EUR	…	32	37.9	2	37.4	2	37.0	2	39.1	2	33.4	2
JPY	21.7	2	23.5	3	20.8	3	17.2	3	19.0	3	23.0	3
GBP	11.0	3	13.0	4	16.5	4	14.9	4	12.9	4	11.8	4
AUD	3.0	6	4.3	7	6.0	6	6.6	6	7.6	5	8.6	5
CHF	7.1	4	6.0	5	6.0	5	6.8	5	6.3	6	5.2	6
CAD	3.5	5	4.5	6	4.2	7	4.3	7	5.3	7	4.6	7
MXN[c]	0.5	9	0.8	14	1.1	12	1.3	12	1.3	14	2.5	8
CNY[c]	0.0	30	0.0	35	0.1	29	0.5	20	0.9	17	2.2	9

Source: BIS (2013).

[a]Adjusted for local and cross-border inter-dealer double-counting (i.e., "net-net" basis).

[b]Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%.

[c]Turnover for years prior to 2013 may be underestimated owing to incomplete reporting of offshore trading in previous surveys. Methodological changes in the 2013 survey ensured more complete coverage of activity in emerging market and other currencies.

With such market depth, the dollar-driven Forex transactions have the unsurpassable cost-effectiveness that reinforces the self-strengthening centrality of the dollar in those markets and in related markets such as international trade.

2.1.7.4. The U.S. dollar is the currency of choice in the international trade invoicing and settlement

Both domestic and international trade runs on sound monetary system. However, in international trade, the parties to most transactions must have a monetary reference for pricing, contract denomination, and payment settlement. Roughly half of all world exports today are invoiced and settled in U.S. dollars.

Experts attribute this dominance to the U.S. large domestic market size and predominant place in global trade along with the dollar's central role in the markets for virtually all reference-priced and organized exchange-traded commodities – including, most notably, the global market for oil, the world's most widely traded product (Cohen, 2011). And since most international trade transactions end into a financial settlement that involves an international currency conversion, the use of the dollar in international trade reinforces the dominance of the dollar in foreign exchange market as well.

The commercial and diplomatic relationships along with exchange rate arrangements expand the dollar's economies of scale – thus reinforcing its centrality in trade invoicing even for transactions executed beyond the United States borders. In terms of risk mitigation, the U.S. dollar offers the best hedge strategies – given the world reliance on the dollar as a global trade denomination.

The much-chanted extensive use of the Euro in international trade invoicing and payments settlement is rather concentrated in Euroland – but not as globally far-reaching as the use of the dollar in the international trade.

2.1.7.5. The U.S. dollar is a prominent currency in international debt market

The dollar continues to be a significant currency for debt when borrowers turn to external markets and foreign currency financing worldwide. In 2009, the dollar accounted for almost half of these debt securities. While the Euro dominates issuances of international debt securities in Euroland, along with the United Kingdom and some parts of Africa, the dollar remains the primary financing currency for issuers in the Middle East, Latin America, Asia, and the Pacific area (Goldberg, 2011).

Outstanding international bonds and notes issued in Euros accounted for $13.4 trillion – or 45% of the global total – while the U.S. dollar market stood at $11.3 trillion – or 38.1% of the total – as of end-June 2011.

It is important to note that the 45% share of the Euro in the global issues of the outstanding international bonds and notes can be misleading because the Euroland is made of an amalgamation of countries without coherent fiscal policies. There is no such thing as Euroland Treasury Bond; the sovereign debt in European Union is yet to be unionized; it remains individualized by member country. When these numbers are broken down to individual countries, no single issuer is nearly as large as the U.S. Treasuries market, and this enlarges the gap between the Euro and dollar in their global reserve currency status.

2.1.7.6. The U.S. dollar is a key currency in banking cross-border lending and investment portfolio

Investment portfolio in any currency is tied to the critical qualities of exchange convenience and capital certainty which entails a high degree of transactional liquidity and reasonable predictability of asset value. The key to both exchange convenience and capital certainty is a well-developed, deep and open financial market (Cohen, 2011). These qualities are evidenced in the cross-border foreign currency liabilities of banks that have substantially grown over the past decade in which the dollar remains the king of the cross-border lending markets to both bank and nonbank customers remains at a substantial share of around 60% (Goldberg, 2011).

2.1.7.7. The U.S. dollar dominates foreign reserves holdings

Reserve assets – including gold, SDRs, and a small handful of currencies, but heavily dominated by dollar-denominated assets – serve mainly as a medium of intervention by central banks against global financial shocks that can derail the value of their domestic markets. The overall global foreign reserves have been trending up and sextupled to nearing $12 trillion (around 15% of world GDP) in 2014 from $1.6 trillion (5% of world GDP) in 1999.

For obvious motives we discussed above – especially self-insurance and the strategy to limit the appreciation pushups of their currency exchange rates – the emerging markets are expected to hold much more reserves at greater accumulation rate than the developed countries. According to the IMF-COFER data, they hold two-thirds of the total world reserves.

The above numbers are staggering and denote how the global financial instability never leaves the minds of the monetary authorities. All exchange rate regimes involve some degree of government intervention in the exchange market, whether modest or substantial – except in rare cases of absolute free float (Cohen, 2011). The question is which reserve assets are the most indicated to be not only the best medium of intervention but also the best assets to hold the value.

Although with a diminished relative importance, the U.S. dollar still dominates the official foreign exchange reserves in nominal terms and accounts for 62.5% in second quarter of 2008 down from 71% in 1999 but well up from a low of around 45% in 1990 according to the IMF's public database on the Currency Composition of Official Foreign Exchange Reserves (COFER).

However, in real terms, Table 2.6 shows that if exchange rates had remained constant in terms of the exchange rates of the first quarter of 2002, the second quarter of 2008 would have posted 73% (instead of the nominal 62.5%) of reserves held in dollars and only 17% (instead of the nominal 27%) in terms of the Euro. The dollar has therefore consistently outpaced the Euro – which popularity is confined in the Euroland and some parts of Africa – in terms of reserves accumulation over the above period.

Clearly, these data – from the U.S. Treasury Department – indicate that there has been no shift in preferences away from holding dollar-denominated reserves. The dollar continues indeed to be the most efficient currency to manage an exchange rate as it offers the best exchange convenience with quick and cost-effective conversion into an intervention medium and capital certainty with the deepest transactional liquidity and stable predictability of asset value that ensures that the effects of central banks' intervention are quickly and smoothly generalized (Cohen, 2011).

The data from the U.S. Treasury corroborate the findings of Goldberg (2011) who concluded that within foreign exchange reserve portfolios, the dollar-denominated assets continue to account

Table 2.6: Currency Composition of Reserves under Constant Exchange Rates.

Reserve Currency	2002-Q1		2008-Q2	
	$Millions	Percentage of global reserves holdings	$Millions at 2002-Q1 exchange rates	Percentage of global reserves holdings
U.S. Dollar	**1,129,099**	**71.6**	**2,729,230**	**72.8**
Euro	310,064	19.7	652,319	17.4
Pound Sterling	42,133	2.7	147,916	3.9
Yen	69,125	4.4	119,145	3.2
Swiss Franc	5,362	0.3	4,097	0.1
Other	20,781	1.3	96,622	1.2
Total allocated	**1,576,564**	**100.0**	**3,749,329**	**100.0**

Source: U.S. Treasury Department (2008).

for the majority of reserves held by both industrialized and developing countries for more than 70% from 1999 to 2011.

She argues that in overall – despite recent years of market turbulence, substantial movements in the value of the dollar over the past decade, various crises, movements toward greater internationalization of the Chinese currency, and some diversification away from dollars by developing countries – the dollar has not declined in prominence either as a central currency for exchange rate arrangements or as an international reserve currency.

Even though the available data on global reserves are still clouded by the unallocated reserves, the U.S. dollar is beyond doubt the clear dominant reserve currency in the world. The dollar is therefore the lifeblood that circulates in the international economic system without which the system might be potentially paralyzed and the international trade and finance grind to a halt.

Fearing this plausible paralysis and trying to establish an international monetary infrastructure, the Bretton Woods created the Gold Exchange Standard – also known as gold-dollar standard – an international monetary system that officially pegged the dollar to gold at $35/ounce. The architects of this system promoted the dollar as reliable as gold in terms of store of value and reserve currency. The United States was – *ipso facto* – given an implicit global responsibility to supply sufficient dollar-liquidity for a smooth functioning of the international financial system. As the Bretton Woods System entered into practical implementation, the U.S. dollar turned out to be even superior than gold in terms of liquidity, mobility, and return.

2.2. Reserve Currency Historical Background

2.2.1. OVERVIEW

As an invention, a currency is certainly one of the greatest discoveries of humankind. Just like social media, money has an immense social yield and connectedness and allows a smooth global financial discourse and exchange. Empirical evidence shows that the history of the reserve currency status coincides with the rise and flow of the dominant superpower. It is commonsense that no one expects that an obscure country, remotely located in some deep jungle, without a respectable standing in the world is going to issue a currency which is going to be embraced by the whole world as its anchor and a benchmark currency for its global trade and international payment settlements and operations.

The road to global and reserve currency status is a stepwise road – not an abrupt sprint. Always the rise and the fall of a backing economic and financial power to world hegemony precedes the rise and the fall from reserve currency status. The Pound reserve status was consequential to Britain's rise to world power with London rising to global financial leadership.

Before supplanting the Pound from this status, it was the rising of the United States to superpower which – by lifting New York to premier financial center of the world – fostered U.S. dollar to the global and reserve currency premiership. The whole process is almost naturally done. There is no such thing as a currency status statecraft! No country has ever planned to be the issuer of a global reserve currency. The status always comes to them when the all criteria of global superpower are ripe – without fail.

According to Williams, Cribb, and Errington (1997), coinage was the first form of reserve currency and it was first developed in China in the late 7th century BC, and in Lydia in Asia Minor, from where its use spread to Greek cities and later to the neighboring world. The Greek Drachma is believed to be the first currency to significantly circulate widely outside its issuing State's borders for 10 centuries, from the Greek Archaic period (800 BC–480 BC) up to the advent of the Roman period.

At the peak of Hellenization (historical spread of ancient Greek culture), as the Greek merchants dominated the trade throughout the Mediterranean Sea, the drachma spread through trade to the entire Mediterranean region (Figure 2.3).

The Greek Silver Drachma gave a way to Gold Aureus coins issued by Rome which were supplanted by the Byzantine Gold Solidus followed by the Fiorino issued by Florence, then by the Portuguese Real, Spanish Real, Dutch Guild, British Pound, and

Figure 2.3: Historical Approximate Timeline of Dominant International Currencies. *Source*: Figure Designed by Dr. Ganziro.

finally the U.S. dollar successively. These currencies climbed to the reserve currency status with the domination of their issuers over the regional or international trade – especially in their colonial conquests.

As the world evolved in peaceful interdependence, nations tried to smooth trade transactions and payment settlements between them and agreed on formal and informal rules governing their trade and other financial and economic relationships – especially in terms of cross border investment and international capital flows.

Out of these supranational interactions, international monetary systems emerged – which can be divided into four historical standards: the Gold Standard era (1819–1914), the British Pound Standard (1914–1945), the Bretton Woods Exchange System (1946–1973), and the Fiduciary Dollar Standard (1973–present).

Except the Bretton Woods Exchange System which was more or less formalized, the other three international monetary standards were rather fluid and informal mechanisms through which orderly foreign exchange systems and cross-border capital flows took place (Table 2.7).

2.2.2. GOLD STANDARD: 1819–1914

According to Lin, Fardoust, and Rosenblatt (2011), the Gold Standard was established in 1819 by Britain and by 1880, most countries were on some form of the Gold Standard except China and India which maintained a silver standard.

Three main factors characterized the Classical Gold Standard which predominated in the 19th and early 20th centuries where gold played a key role in international monetary transactions: (1) domestic currencies were fix-pegged to a specified amount of gold – usually one ounce, (2) free cross-border gold flows, and (3) inter-currency exchange adjustments with gold as benchmark.

The standard served as both domestic standard – that regulated the domestic money supply – and as international standard – to which the exchange rate of a currency was determined in terms of

Table 2.7: Evolution of World's Exchange Standards.

Exchange Systems	Period	Peg to	Exchange Standard
Gold Standard	1879–1913	Gold	Fixed
British Pound Standard	1914–1945	Gold/Pound	Fixed
Bretton Woods Dollar Standard	1945–1973	Gold/Dollar	Fixed
Fiduciary Dollar Standard	1973–present	Dollar/Euro/ Pound/Yen	Hard and soft pegs/ floating

Source: Table designed by Dr. Ganziro.

other currencies. If a currency **A** was fixed at $40 per ounce and the currency **B** at $80/ounce, then the exchange rate was: **B = 2A**. More concretely, the Gold-British Sterling was £4.247 per ounce while the dollar-gold peg was $20.67/ounce. Thus, the Sterling and the dollar were freely exchanged at £4.247 = $20.67 or £1 = $4.86.

The strength of the gold standard lied in its mercantilist discipline – an economic doctrine that was prevalent in Western European policy during the 16th to late-18th centuries – which advocated that a nation's existence depended on power which itself was dependent on wealth.

The building and accumulation of wealth could be achieved by all means possible and the most popular ways were (1) military-related through wars, colonial expansion, and strong merchant marines to control the oceans so as to secure flow of raw materials from the colonies and manufactured goods to colonies – or (2) policy-related through control of foreign trade – restraining imports and encouraging exports – to make sure that its trade balance is positive.

A trade surplus was simply a debt claim over the trade deficit countries. Since gold – and silver in lesser degree – was the currency of choice, a trade surplus was cleared by gold shipped from the trade deficit to trade surplus countries. Reversely, a negative balance of payments led to international shipments of gold from the net-debtor to net-creditor nations.

This gold-balancing function of international trade made the gold the pinnacle of wealth: the more gold reserves – the more wealth – the bigger base for the domestic currency and ultimately the more valuable the currency. As long as the gold supply was in adequate amount to meet the growing trade and countries stayed bound to the gold standard discipline, the gold was clearly a stabilizing – although draconian – standard of the world trade and payment system.

Imbalances in international trade were theoretically rectified automatically by the Gold Standard. A country in deficit would have its gold reserves depleted, reducing its money supply which necessarily leads to a deflation – a generalized lower price level – which supposedly increases international demand for domestic products, thus leading to increased exports. The increased exports lead to the increase of gold inflow that would correct the initial deficit.

Inversely, a trade surplus country would experience inflation with the increase if money supply triggered by increased gold shipped from the trade deficit countries. The ensuing inflation boosts imports and depresses exports – creating a trade deficit which leads to gold outflows, thus, decreasing the money supply – or the amount of money available to spend. The scarcity of money leads to a decreased price level, therefore correcting the initial inflationary

pressures. The net result was an automatic balanced price among trade partners.

The demise of the gold standard came out of its conflicts with mainly the financing needs for World War I. It became very difficult for warring nations to finance their belligerent ambitions while on the gold standard because the domestic macroeconomic adjustments needed to deflate any imbalance of payments were counter-war effort. Redeeming the war-inflated domestic currency with gold became an impossible balancing act. After consistently violating the gold standard, the warring European nations resorted to the easy money of printing fiat currencies which can theoretically lead to an unlimited credit creation.

What started as an easing monetary mechanism – the fiat money printing became an addiction and quickly led to an over-supply of the domestic debased fiat currencies which created inflation that damaged the domestic currency. With the general rise in prices during and after the war, in conjunction with the drop in the gold world output and gold-mining high costs, the gold supply declined and became unstable to perform its international functions of value keeper, exchange benchmark, and account standard.

Furthermore, because of its fixed exchange nature, the gold standard was prone to cross-border instability: shock in one country affected the domestic money supply, expenditure, price level, and real income in another country. All these adverse effects led the gold standard to its collapse after World War I.

2.2.3. THE BRITISH POUND STANDARD: 1914–1945

The emergence of the British Pound on the world scene was gradual: (1) as a supplement to gold when Great Britain was rising to the status of superpower its Empire stretching to the four corners of the planet, and (2) as the leading reserve currency in its own right toward the end of the 19th century when London became a global focal point for gold bullion and a fully fledged leading international financial center serving as a platform for British capital flows and the substratum of the British Empire's trading global power.

During the decades of 1870–1913, British Pound-denominated bills and short-term credits financed around 60% of world trade; and by 1913, Britain's net overseas assets accounted for 32% of its net national wealth up from 7% in 1850 according to Edelstein (1994) who opined that it was the first time in history that the world witnessed a nation committing so much of its national income and savings to foreign investments.

Because of its commitment to exchange the Sterling liabilities into gold at a fixed rate, Britain set up discount rate that served as a benchmark rate for the foreign central banks; thus not only granting

itself an upper hand in international capital flows but also insulating itself against the run on its gold reserves and from other financial shocks from its trading partners.

With the British domination over the world trade, the pound became the most-indicated currency for international trade invoicing and payment settlement and the safest and most trusted currency to hold the value of international savings and to conduct international lending and borrowing activities and investment. London emerged as the world financial center described by Keynes (1930) as so predominant that the Bank of England could almost have claimed to be the conductor of the international orchestra.

The devastating winds of the WWI, the increasing global trade competition, declining domestic investment, the Great Depression, and the growing decentralization of the international monetary system with the rise of New York and Paris as respectable competing financial centers inflicted a painful blow to the British economic dominance.

Crippled by macroeconomic imbalances, international debts, external deficits, and other social drains on its economy, the fundamentals that supported the Sterling standard were seriously injured. With the above compounding problems, Britain abandoned the Sterling-peg to gold in 1931 followed by United States in 1933 and other industrial countries followed suit.

The beggar thy neighbor competitive devaluations erupted that led to a vicious circle of currency depreciations between trading countries – everyone trying to get a competitive edge by cheapening its currency which resulted in mass unemployment, and an overall decline in world trade (Rickards, 2012). The WWII – which was in the making – didn't take long to erupt and smashed the British economic supremacy to the ground.

The British Empire started to gradually disintegrating crushing international debts which transformed Britain from the world's lender-of-the-last-resort into the world's leading debtor country. With the falling economic and military fundamentals, the world trust started to shift away from the pound to the U.S. dollar (Newton, 1984).

2.2.4. BRETTON WOODS SYSTEM 1946–1973

2.2.4.1. Overview

This is a topic that has been analyzed and reanalyzed by so many experts and which information is largely public that this study shall only focus on what is relevant to the U.S. dollar in its role as the leading reserve currency. The Bretton Woods System was born out of the famous 1944 Conference – held in Bretton Woods in New Hampshire (United States) – which was packed with 730 delegates from 44 Allied Nations.

At the outset, the Bretton Woods Conference conveyed the impression of a rush undertaking to quickly fix of the economic pieces shattered by the WWII. But a closer look reveals that the Bretton Woods Conference was in the making as back as 1941 after Hitler had conquered or subdued much of continental Europe through his 1939–early 1941 war campaigns.

The United States didn't waste its time and wait until the end of the war in 1945 in order to preshape the postwar economic world in its own image. The United States had grown up to be the world industrial power and naturally needed a worldwide market for its exports. However, back in 1930s, the colonial powers had literally ganged to block the penetration of U.S. exports into their colonial turfs by building walls around their zones of influence such as Sterling area or the CFA (Communauté Française d'Afrique – French Community of Africa) under the French yoke. To open up these markets – particularly the vast British Empire – to American trade was amongst the United States' utmost priorities.

The United States promoted therefore a well-calculated world order articulated on an enabling platform designed to expand the U.S. trade and capital worldwide. Rebuilding strong European markets for U.S. exports, breaking down the currency trading zones to accommodate U.S. capital flows, reopening and controlling the world economy for an unhindered access to world markets and strategic raw materials – were the chief objectives within the world order contemplated by the United States in early 1940s.

President Roosevelt went immediately to work and met British Prime Minister Winston Churchill in August 1941 on a ship somewhere in the North Atlantic; and an Atlantic Charter emerged out of this meeting. The Atlantic Charter culminated into the Bretton Woods Conference after two and a half years of refinement by both U.S. and the U.K. Treasuries.

In essence, the Atlantic Charter featured the vision of the world through the U.S. lenses. The right for all nations to have equal access to trade; free international maritime navigation to counter the British oceanic supremacy; wider and permanent system of general security – provided by the United States over Europe, Japan, and other strategic parts of the world such as Middle East; a stable exchange rate regime that supports a smooth global monetary system; elimination or reduction of trade barriers; free movement of international capital flows, etc. All these proposals were indeed very much needed globally, but strategically skewed to the U.S. interests.

However, to say that the above proposals were skewed to the U.S. interests is quite misleading because the Western Europe was so drained and weak – and some governments represented in the Bretton Woods Conference were still operating in exile hiding from

Hitler's Gestapo – to propose a support any kind of Europe-driven forth-looking international plan.

By the time of the conference, the war was not yet over and fear was still widespread among the delegates. The primary concern of the European nations was therefore the daily bread to just survive another day. The priority was therefore to rebuild their devastated domestic production and finance their international trade; and for this to happen, they needed the U.S. assistance big time.

In nutshell – leveraging its position as the largest economic and military power – the United States easily drove the Western Allies to sign the Bretton Woods accords – thus, dragging them to commit to the formation of the International Monetary Fund and World Bank to assist funding for the expected post-War reconstruction (Stratfor, 2013).

However, the devastation inflicted to the European Allies by the World War II was so immense that they were unable to make any meaningful contributions to IMF and World Bank. In other words, Allies' reconstruction self-funding was out of question and it obviously fell on the shoulders of the United States to finance almost the entire reconstruction – thus, making the U.S. dollar as the obvious and only choice to serve as the global currency (Stratfor, 2013).

In such negotiating climate, it didn't take that much effort for United States to stamp on the Bretton Woods Agreements its self-interested vision of a universal multilateralism which idealized an economic interdependence within a world liberal economy. A robust world order was born under the geopolitical dominance of the United States – controlling all the sea lanes worldwide and a global economic system that benefited the interest of all major economies with the exception of the Soviet Union.

Left in the cold, the Soviet Union, engaged the West into a cold war which greatly hampered the ideal of the universal multilateralism – downsizing the universal multilateralism from the global vision to more regional shapes and selectively targeted hot spots – to counter the spread of communism in strategic spots of the world.

2.2.4.2. The dollar-gold exchange standard

The Bretton Woods System of fixed exchange rates also called dollar-gold exchange standard or simply the Dollar Exchange Standard was the progeny of the Bretton Woods Conference. It was a bipolar system that embraced advantages of both fixed exchange rates of the gold standard and freely floating exchange rates of the interwar era while discarding their respective disadvantages.

In its vision of centralized international monetary system that would counter the monetary chaos of the 1930s, the United States used its iron arm to formally set the dollar at the center of the Bretton Woods System of pegged currencies – the dollar became the

sun in the global monetary sky and all the Delegates at the Bretton Woods Conference agreed to peg their currencies to the U.S. dollar – the only currency backed by strong economic and geopolitical fundamentals to meet the rising demands for international currency transactions.

Each country in the Bretton Woods Monetary System was required to (1) establish a parity – peg – of its domestic currency in terms of gold and (2) adopt a monetary policy that maintained an exchange rate of its currency within a band of plus or minus 1% of the claimed parity.

To sweeten its leadership over the international monetary system, the United States pegged the dollar to gold at $35 per ounce and committed to redeem its foreign dollar liabilities into gold at that fixed parity any time – a commitment the United States lived to regret.

The dollar was *ipso facto* made as good as gold. Even better, with such fixed gold-peg and commitment, the dollar became an operative international reserve vehicle more attractive than gold not only because it had a greater liquid and flexible market as a fiat currency and an interest that could be earned on the holdings of dollar-denominated assets but also because it was backed by the strongest economy on earth, had the highest purchasing power, and was the only currency backed by sufficient stocks of gold – a standard to which every other currency was pegged to.

It was therefore more cost-effective, efficient, and profitable for countries to peg their currencies to the U.S. dollar and once convertibility was established, countries had just to intervene in the foreign exchange markets to buy or sell the necessary amount of dollars to fix any departure of their currencies from the allowed band of plus or minus 1% parity.

The Europeans countries rushed their gold to United States to take advantage of the unique dollar-reserve status and to acquire the much-needed dollar for their needs of international liquidity, reinforcing the supremacy of the United States along with the desirability and centrality of the dollar in the international financial system.

To safeguard the Dollar Exchange Standard, the IMF was forged out of the act of creation of the Bretton Woods Conference and it was given the mandate of guardianship over global financial stability – including broad powers over the deficits of its members' balance of payments.' It was the overseer of the pegged system of international currency exchange rates and only the IMF could determine if a balance of payments of a struggling member was in a fundamental disequilibrium for a member to make any change on its currency parity.

The beginning of an era dominated by the preeminence of the U.S. dollar over global financial markets was officially kicked off. In retrospective with the preceding chaotic period, the earlier years of

the Dollar-Exchange System was really a golden age (Garber, 1993) as it was accompanied with a steady global economic growth in terms of production and trade as the European countries and Japan were recovering and rousing from the slumber of the WWII devastation.

It is important to note that the U.S. dollar didn't become the world leading reserve currency by the official stamp of the Bretton Woods. The U.S. dollar – embedded within the United States' ascendency on the world stage – didn't become the world reserve currency by choice or through a cost-effective comprehensive study either. It was a confluent of circumstances of historical proportion that made the U.S. dollar the natural heir to the pinnacle of the world reserve currency.

Exhausted by the World War I, hammered by the Great Depression, humiliated and devastated by World War II, the Europe – soon to be faced by the forces of decolonization required in the Atlantic Charter – was on its knees and totally hopeless to provide any kind of reserve currency capability that could provide the liquidity necessary to pull the world out of the looming poverty!

To be the issuer of a leading global reserve currency and ensure the world that such currency will be stable enough, cost-effective enough, safe enough to serve as a store of value, medium of exchange and unit of account and more importantly provide sufficient and nontoxic liquidity to support some $100 trillion of world GDP and to remain centric to global trade and economic transactions is indeed a very hard endeavor.

The United States found itself the only anointed leader in the post-WWII geopolitical landscape with the right fundamentals (the largest economic scale in terms of GDP and international trade, the best and reliable macroeconomic stability, the deepest liquid financial markets, and the strongest geopolitical power, etc.) upon which the incontestable dominance of the U.S. dollar continues to be ascertained.

Now the dollar crowned as the king of world currencies, it was anticipated to rule its kingdom – the world financial system – with fairness, harmony, and authority as every king is expected to do.

As discussed above, the Bretton Woods System worked perfectly as planned in the youth years of its existence. The reconstruction of Europe and Japan was very fast and their economies became buoyant and the rest of the world was developing and much eager to acquire dollars to spend on American exports such as machinery, steel, and cars.

The foreign central banks were confident to invest their dollar-reserves into interest-bearing dollar-assets rather than in gold – of which the United States held around 574 million ounces – equivalent of $26 billion, that was over 60% of an estimated total

$40 billion of the world's official reserves – enough gold cushion to meet its commitment of dollar convertibility.

Concurrently, the Bretton Woods System allowed the United States to finance around 70% of its cumulative balance of payments deficits via dual processes of gold demonetization and liability financing which enabled the United States to undertake heavy overseas military expeditions and foreign commitments while retaining substantial flexibility in domestic economic policy (Gowa, 1983). However, as the ghosts of the WWII were losing their grips on the world economy, the Dollar Exchange Standard was also hailed with other dilemmas that challenged its reign.

2.2.4.3. The Bretton Woods System dilemma

From the start, as it is predicated for every created living entity, the Bretton Woods System was pregnant with the germs of its own destruction. Triffin (1960) was the first prophet to accurately predict the contradictions of the system. Compared to the longevity of its successors, the Bretton Woods System was short lived and only lasted up to 1971.

To be the leading reserve currency in the world, dollars had to leave the United States and become available for international use in sufficient and growing quantities. The dollar outflows initially took various forms such as U.S. aid programs like Marshall Plan, financial assistance to pro-U.S. regimes, and assistance to contain the expansion of the Soviet influence in the world. The initial capital flows were obviously focused on rebuilding Europe.

In fact, the first loan extended by the World Bank in its early days of existence was approved on May 9, 1947 to France for $250 million reconstruction credit, followed by similar reconstruction loans to the Netherlands on August 7, 1947 for $195 million, Denmark on August 22, 1947 for $40 million, and Luxembourg on August 22, 1947 for $12 million. The first loan granted to a developing country came March 25, 1948 to Chile for $16 million in support of financing a hydroelectric plant and production of agricultural machinery (World Bank, Archives).

However, all these programs were drops in the bucket in face of the huge dollar shortage suffered by the postwar world economy. The dollar outflows through U.S. persistent external deficits were the only way to meet the increasing global demand for dollar-liquidity. But, there was a serious glitch: the more dollar-liquidity the United States pumped into the world financial system, the more its current accounts spun out of balance in the negative territory as the war recovery and subsequent world economic growth were literally fed and sustained on the U.S. current account deficits.

Here comes the paradox: On one hand, to correct these negative imbalances meant starving the world economy of the necessary

liquidity for world recovery and growth. On the other hand, to keep up with the dollar-reserves demanded by the fast-paced international trade, Forex markets and official reserve holdings by running current account deficits meant increasing foreign dollar liabilities which were likely to drag the value of dollar into the mud – and spin it off the $35/ounce peg – thus eroding the critical international confidence in the dollar – portrayed as good as gold by the architects of the Bretton Woods System.

The more the global economy expanded, the shakier the relationship between the dollar and gold became as the very expansion of the international economy tended to increase the need for international liquidity in the form of U.S. dollars without a corresponding increase in gold stocks.

The nervousness about the Dollar Exchange Standard started building up as earlier as 1959. The increasing supply of dollar-liquidity to the growing world economy led to a steady growth of foreign official and private liquid dollar claims over the U.S. gold reserves which started plummeting because – under the Bretton Woods System – overseas central banks could turn in their excess dollars for gold at any time at the U.S. Treasury Gold Window as per the promise made by the United States to convert into gold any amount of its own currency, on demand, at a fixed rate of $35/ounce (Costabile, 2007). The flaws of Dollar-Exchange Regime became increasingly daunting as the U.S. gold stocks were rapidly depleting.

The ensuing erosion of confidence in the dollar led most of central banks to convert their dollar reserves into gold – simply because their dollar-holdings were losing value as the dollar increasingly devalued against the gold – thereby drawing down the U.S. gold stock enormously.

It didn't take long for the market dollar-gold price to divorce the official dollar-gold peg which led to an intensifying run on the U.S. gold reserves by foreign central banks and international speculators – ignited by French gold-purchasing program that began with the first quarter of 1962. In this dollar-confidence crisis, the dollar-gold standard collapsed into a gold standard whereby the United States as a trade deficit country had to send gold to the European surplus countries since the foreign reserves accumulated by the rest of the world were built out of the U.S. current deficits.

To contain the draining outflow of gold from the United States, the London Gold Pool was instituted back in November 1961 by eight nations committed to regulate the price of gold and defend the $35/ounce benchmark. The London Gold Pool effort was paralyzed by the inability of the United States to redeem foreign-held dollars into gold due to excessive dollar liabilities triggered by dollar outflows through the Marshall Plan and other U.S. foreign aid,

U.S. current account deficits, and U.S. military budget deficits to finance the war ambitions in Vietnam (Douglas, 2008).

With the collapse of the London Gold Pool on March 17, 1968, the run on U.S. gold intensified and forced the United States to shut down the U.S. Treasury Gold Window which terminated the convertibility of gold into dollars, thereby ending the role of a dollar as liquid as gold claim along with the Bretton Woods' unified fixed exchange rate regime (Garber, 1993).

2.2.4.4. Nixon shock

The recovery of Europe and Japan indented the U.S. share of the world's economic output – which fell decisively from 35% in 1950 to 27% in 1969. During this period, the United States spending on Vietnam war which ended with a $500 billion-price tag along with the war on poverty declared by President Lyndon Johnson – accompanied with expansive domestic programs of the Great Society such as head-start, job corps, food stamps, Medicaid, funded education, job training, direct food assistance, direct medical assistance (more than four million new recipients signed up for welfare) not only topped the inflation at 6% but also flooded the world with dollar liabilities to uncomfortable levels for foreign holders as the deficit of the U.S. balance of payments had reached an unprecedented $7 billion mark in 1969.

By the time Nixon took office on January 20, 1969, his team knew that they were sitting on a powder keg (Lowenstein, 2011) – but his administration went even further and performed major expansions of the Great Society programs such as the requirement for the States to provide food stamps; Supplemental Security Income (SSI) that consolidated aid for aged, blind, and disabled persons; Earned Income Credit that provided the working poor with direct cash assistance in the form of tax credits and welfare. As the government refused to adequately raise taxes, all these programs were met by more fiat-money printing and the dollar-liabilities created in the mix dangerously divorced the gold reserves level necessary to keep the dollar-gold peg at $35/ounce.

The year of 1970 has been viewed by many economists as the crucial turning point in international monetary system because the dollar debasement reached a point of nonreturn whereby the gold coverage of the dollar-fiat reached its lowest level of 22% – making the convertibility of dollar into gold as promised by the United States at Bretton Woods, which meant to ship gold to Europe and Japan to offset their trade surplus with the United States – a bygone history.

The U.S. government's budget and trade deficits – consequential to the supply liquidity to the world – became a burden too much to bear. However trade benefits and security umbrella offered by the

United States took precedence over the burden of hold dollars – which Europe and Japan decided to shoulder.

With the above loss of dollar purchasing power to gold, there were only two options to keep the Bretton Woods System alive: the $35 per ounce official price had to be – either (1) adjusted to gold market price – or (2) to be maintained by adjusting the market price through gold market interventions. Otherwise, not only it became uneconomical to hold the dollars while the gap between gold free market price and its official price was widening but also, it was very tempting for U.S. partners to deal with their macroeconomic imbalances by buying gold at the Bretton Woods price and selling it on the open market.

John Bowden Connally, Jr. – former Texas governor – was called in by Nixon as Treasury Secretary in early 1971. He came up with one of the most radical plans in the U.S. economic history. First, he suggested closing the U.S. gold window to stop the dollar convertibility into gold, thus stopping the hemorrhage of gold outflows. Second, he proposed to freeze wages and prices for 90 days to combat the potential inflationary effects. And finally, he recommended an import surcharge of 10% which he intended to use as a cudgel to pressure other countries to renegotiate their exchange rates (Lowenstein, 2011).

Amazingly, instead of a backlash that should be expected from the rest of the world, Connally's plan – delivered to the nation and to the world by President Nixon on August 15, 1971 – from Camp David Retreat – was brilliantly packaged and intelligently conveyed the impression that the United States was not walking away from its Bretton Woods international obligations, but rather as a bold movement by the United States to take the troubled world economic affairs in charge. As Lowenstein (2011) pointed out, the U.S. inability to repair its fiscal problems and to solve the dollar's convertibility was turned into a moment of hubris.

The markets saluted Nixon bravely with a 33-point rise in the Dow – the biggest rise ever to reach that point. A subsequent broad revaluation of exchange rates was successfully negotiated and by 1973, most currencies either float freely or stayed pegged to the U.S. dollar; this wholesale revamp of the world exchange rate system marked the last nail on the coffin of the Bretton Woods Fixed Exchange System.

With gold finally demonetized – which instantly removed gold's chains of fiscal discipline – the Federal Reserve along with other world's central banks were now free from having to defend their gold reserves and a fixed dollar price of gold. The Fed's Great Experiment had begun – the brand new objective being a leveling out of the business cycle by keeping the economy in a state of permanent boom in order to achieve its mandate of full employment with stable prices by employing targeted levels of inflation (Mills, 2013).

But how the U.S. dollar could possibly remain the world's reserve currency after its gold's backing was removed and was being printed into oblivion questioned Mills (2013)? An economic miracle occurred: the Bretton Woods Fixed Exchange System didn't take the U.S. dollar in its grave as one should expect. The system died and the dollar at its center survived. In fact, the dollar got stronger and kept its centrality on the world economic stage in a symbiotic relationship whereby the dollar preeminence provided cheap financing to the United States from the rest of the world – through their persistent current account surpluses – against the dollar-liquidity needed to lubricate the world economic activity in the new normal of the Fiduciary Dollar Standard.

2.2.5. FIDUCIARY DOLLAR STANDARD (1973 – PRESENT)

The Fiduciary Dollar Standard – also known as Bretton Woods II – emerged after the breakdown of the Bretton Woods dollar-gold exchange standard (Ocampo, 2009) whereby the dollar remained as the dominant international currency largely by default (Padoa-Schioppa, 2010) – mainly because there was no other currency that could match the dollar in global functions of an international reserve currency such as global payment settlements, trade, reserve accumulation and more importantly – and on top of the unavailability of the alternative, the U.S. trade partners still held large dollar-denominated assets. Despite the fact that the dollar was delinked to gold, the rest of the world's confidence in the dollar remained strong because of the unrivaled U.S. economic power and its deep capital markets (Teunissen & Akkerman, 2006).

Compared to the defunct Dollar-Centralized Bretton Woods System under IMF oversight – the Fiduciary Dollar Standard has been described as a nonsystem precisely because of its lack of formal standardized rules over the global currency exchange system and cross-border capital flows and the new drive of the countries toward individual exchange rate preferences without a formal metal-based global benchmark and a multilateral surveillance (Visco, 2010).

The supporters of the Fiduciary Dollar Standard claim that the regime is stable and will last at least until China's agricultural labor surplus is transferred to the tradable sector and as long as it is entertained by the official sector. To the critics that the downward pressure on the U.S. dollar triggered by the Asian currencies strategic peg will necessary be channeled toward the Europe – which cannot allow its tradable sector to be crowed out by Asian competition – the proponents of the Bretton Woods II contend that the above pressure will be diffused by expanding the current Asian dollar peg fixed exchange rate regime to include Europe and Latin America than by the collapse of the regime.

So many hot debates and ideas have been floating around, but – except for occasional joint interventions by *ad hoc* groupings of major powers – the Fiduciary Dollar Standard has been largely uncoordinated with countries attempting to keep their own monetary policy houses clean, in order to limit the domestic currency appreciation for competitive advantage purposes.

At the time President Nixon shocked the world by smashing the Bretton Woods Dollar-Gold Exchange System to the ground, the dollar was already deeply entrenched into the world economy and the Nixon shock did little to alter its centrality. More importantly, as it has been stressed out above, there was no real alternative anchor for the global reserve currency.

Most currencies were left floating in the wildness of the foreign currency marketplace without any standard rules governing currencies and monetary regimes and procedures to manage international economic crises. There was no built-in mechanism to assist countries with current account deficits in their adjustment – a role that was fulfilled by IMF during the Bretton Woods regime era.

On a more musical note, the Economist (2015) described the Fiduciary Dollar Standard as "an anarchic transnational collective" wherein America is the "dominant rapper" at the center of the "global monetary disorder" as opposed to Britain at the apogee of its empire in 19th Century during which the Bank of England was imaged as the world's orchestra conductor by Keynes (1930) in his effort to describe the London's influence over the global financial system.

However, in spite of the apparent unruliness of the Fiduciary Dollar Standard, the basic rules of engagement of the dollar-centered Bretton Woods system have essentially stayed the same, but with different players and the gold out of the equation. The financing poles for the U.S. current account deficits have shifted from Europe to the Asian tiger economies.

It has been passionately argued that under the Fiduciary Dollar Standard, resources are transferred from developing economies accumulating foreign exchange reserves to advanced issuers of reserve currencies – dominated by the dollar – the leading global reserve currency.

Dadush et al. (2011) have stood at the defense of the Fiduciary Dollar Standard by contending that it has shown greater flexibility than its predecessors by empowering countries to tailor their exchange rate regimes to their needs, thus rendering independent monetary policy accessible to many countries while diversifying reserves holdings and enabling current account convertibility. Nearly all the advanced countries and most large developing countries float their currencies and have open capital accounts they argued.

The preceding standards were directly or indirectly pegged to gold. This means that obligations of governments were payable in gold and

the whole outstanding debt of each government was subject to redemption through the gold-medium, the quantity of which could not be altered at the will of government like in a fiat system (Greenspan, 1997).

Since debt issuance and budget deficits were delimited by the potential market response to an inflated economy, governments could become easily insolvent. This is what happened to the United States which barely escaped the fury of bankruptcy in 1895 when its gold stock shrank ominously and was bailed out by a last-minute gold loan, underwritten by a Wall Street Syndicate – led by JP Morgan (Greenspan, 1997).

As the restrictive peg to gold was abandoned, the monetary authorities found themselves vested with more power and flexibility to create claims in their own currency under a laisser-faire Fiduciary Dollar Standard. Since then, the world has not witnessed an economic debacle of epic proportion like the Great Depression.

2.3. U.S. Dollar Global Liquidity

2.3.1. OVERVIEW

The global liquidity is of major importance for international financial stability as its fluctuations can lead to distortions in asset prices and cross-border capital flows which can contribute to the emergence of bubbles and their subsequent financial crises when they bust (Landau, 2011). Without an adequate liquidity, there is no international monetary system that can be expected to be stable.

As Lin et al. (2011) have opined – under a currency unipolar system – the issuer of the hegemon currency should have the incentive to preserve the system by providing monetary stability, but, critics contend that the U.S. macroeconomic policies over the last 40 years divorced from this hegemon stability it was entrusted to deliver – by giving precedence to domestic economic stability over international stability preservation.

Global liquidity is a central driver of capital flows, global asset price dynamics, inflation, and ultimately a determinant of financial stability given the contention that the availability of ample and low-cost funding in global financial system undermines the market and fiscal discipline and can lead to the build-up of vulnerabilities in the financial system as it induces leverage and large mismatches across currencies, maturities, and countries (Domanski, Fender, & McGuire, 2011).

The dollar-global liquidity embraces the whole spectrum of dollar forms – from cash and deposits to money-substitutes like credit instruments such as mortgage-backed securities as well as derivatives – that circulate and support the global financial system. Obviously, if the liquidity is excessively abundant in the system, prices of assets such as stocks, bonds, houses, cars can skyrocket.

Adversely, when liquidity crunch strikes, the asset prices deflate and might even collapse.

It is an enduring challenge to maintain an adequate liquidity supply in the global system: for one, once the Fed create physical or credit dollars, their substitutes get reproduced in multiples and quickly trickle down into the global banking system, and for two, the derivatives – one of the largest global markets in the world and which have a lion share in the global liquidity – are mostly unregulated and engulfed within such opacity that the assessment of their systemic risk remains in the domain of guesswork.

The global liquidity structure is pyramidal with hard cash at the apex, the derivatives at the bottom of the pyramid, and in-between a whole range of financial assets spawned and multiplied from hard cash through the fractional reserve banking system according to Faber (2007) who further argued that the values of financial assets at the lower part of the pyramid are derived from and backed up by the financial assets above it.

This means that any contraction or expansion of financial assets at any level will affect the other financial assets within the pyramid. If such contraction or expansion occurs at higher levels of the pyramid, it will have a multiplicative effect to financial assets below them and can lead to a severe liquidity crisis through a domino-like effect across all assets.

For Matsumoto (2011), global liquidity is the assets-convertibility easiness and obviously ease of financing. It is created through private and government channels in normal situation and in crisis, the government becomes the main provider of that liquidity through bailouts and stimuli. It is because private dollar global liquidity – due to its extreme sensitivity to the domestic economic conditions and conditions that prevail in the global financial system – can quickly evaporate in times of financial distress.

Visco (2010) contends that the excessive increase in United States and global liquidity was largely the consequence of U.S. monetary conditions in response to the ever-increasing global demand of U.S. dollar-denominated assets – particularly from Asia in order to self-insure against the financial shocks that were rampant in 1990s during the Asian crisis – and a dramatic ease of monetary and fiscal expansionary policies along with lax regulatory posture over the financial markets as it has been discussed above.

2.3.2. PRIVATE DOLLAR GLOBAL LIQUIDITY

In normal times, the private component of the dollar-global liquidity dominates its official counterpart; but in times of economic distress, the supply of global liquidity depends crucially on the private sector's access to official liquidity according to Landau (2011) who

further argued that the creation and destruction of private dollar global liquidity is closely related to leveraging and deleveraging by private institutions and to the increasing global financial integration and innovation that continuously amplify the impact of international capital flows and the dynamics of credit, financial assets and asset prices, monetary policies and risk appetite of global players on domestic economic conditions.

When markets start their corrections by busting the bubbles, the high risk-taking exuberance inherent to their building up phase adjust to normalcy and the liquidity starts to dry out, asset prices start to deflate, bankruptcies start to spread, unemployment starts to rise, and deficits start to kick-in and the economy begins to sink into lethargy. The most ferocious volatility of the dollar-global liquidity has been bred by the instability in the Eurodollar, Derivatives, and REPO Markets.

2.3.2.1. Eurodollar liquidity

Definition

Eurocurrency is a time-deposit denominated in currency outside its issuing jurisdiction and therefore not subjected to the banking regulations of its home monetary authorities. The Eurodollars are thus, time-deposits denominated in U.S. dollars at banks outside the United States. While the Eurodollars are beyond the jurisdiction of the Federal Reserve, it is important to note that the Eurodollars have no connection with Euro-currency or the Eurozone.

Although the Eurodollars are the most popular – given the status of the dollar as the leading reserve currency on the planet – but the Eurodollar markets, also known as Euromarkets, came to denote any location – commonly known as Offshore Financial Centers – trading in nonresident hard currencies such as the British Sterling, the Yen, the Swiss Franc, the Deutsche Mark, and the Euro (Palan, 2012).

Background

Even though the date of birth of the Euromarkets can be situated around mid-1950s, its parenthood is uncertain. Some experts believe that the Eurodollar market is one of the offspring of the cold war. Goodman (1982) contended that the first Eurodollars were the $800,000 Soviet Union moved on February 28, 1957 to a Soviet-owned, but British-chartered bank – Moscow Narodny Bank that operated in London.

The Moscow Narodny Bank conveyed to the Soviets a high comfort level that their dollar deposits couldn't be confiscated by the United States in retaliation of its Hungary invasion in 1956

because of Narodny Bank's British banking charter. Since then, London became the center of the Eurodollar market.

Since the rising of the Eurodollar markets coincide with the implementation of the Bretton Woods agreements, some experts believe that the lightening growth of the Eurodollar markets was triggered by the mounting U.S. dollar's liabilities the Western European countries and Japan continuously accumulated as reserves for their economic recovery and financing their international trade.

For Palan (2012), it was the regulatory leverage which was the primary driving force of the Euromarkets which was initially developed by the British banks as a way of coping with the new regulatory restrictions imposed by the British Treasury on the use of the British Sterling in trade credits between nonresidents during the Suez Canal crisis in 1957.

During the Suez Canal crisis, the British and other international banks operating in London clustered around the U.S. dollar in their international dealings as the best alternative to escape the British regulatory restrictions, thus creating a Eurodollar market, which – by mid 1970s – evolved into Offshore Financial Centers – the international financial markets in which financial operators are permitted to raise funds from nonresidents and invest the proceedings – free from most regulations and taxes – to other nonresidents.

The Bank of England – by treating the transactions between nonresidents dealing in a foreign currency executed by British or foreign banks operating in London as offshore transactions (meaning as if they took place abroad and therefore beyond the British regulation and supervision) – added oil to the already feverish Eurodollar market.

On the other side of the Atlantic, the U.S. multinational corporations were growing tall beyond the boundaries of the U.S. banking market under heavier U.S. regulations rendering the U.S. banks inept to meet their new global funding requirements. The U.S. multinational corporations simply bypassed the U.S. banks and jumped into the London offshore finance space to tap into the cheaper and regulation-free Eurodollar market.

The U.S. banks couldn't miss the opportunity and expediently developed a large and diverse banking branch network in London in order to not only circumvent the draconian U.S. banking and financial regulations such as (1) the 1927-McFadden Act which prohibited inter-state banking outside of the confines of the banking chattering State; (2) the 1933 Glass-Steagall Act that mandated a separation of commercial and investment banking but also to be able to globally compete in every aspect of finance with the British, German, and Japanese banks (Palan, 2012).

Due to its secrecy and light regulation such as formal reserve requirements, the Eurodollar market transformed London into one of the largest sources of global capital. Naturally, most of the

overseas territories still under the British Crown – such as Hong Kong, the Channel Islands, the Cayman Islands, and other British Caribbean Islands – adopted the London regulation-free Euromarket business model upon which they added the tax haven feature for banks and corporations escaping the regulatory distress and tax burden in their home countries.

Palan (2012) cited a 2010-BIS Report claiming that the British Imperial Pole – London along with the British Crown dependencies of Jersey, Guernsey and the Isle of Man, and British Overseas Territories including the Cayman Islands, Bermuda, British Virgin Islands, Turks and Caicos and Gibraltar, and recently independent British colonies such as Hong Kong, Singapore, the Bahamas, Cyprus, Bahrain, and Dubai – accounted for a combined average of 38.3% of all outstanding international loans and deposits by March 2010.

The U.S. response to London overshadowing New York as the center of the global capital – especially as the Euromarket Center – came in 1981 by establishing International Banking Facilities (IBFs) aimed at internalizing the Euromarkets into the U.S. banking system. The IBFs enabled the U.S. depository institutions to offer deposit and loan services to foreign residents and institutions free from reserve requirements imposed by Federal Reserve System, as well as some state and local taxes on income (Palan, 2012).

Eurodollar market features

The Eurodollar markets feature three main types of transactions: (1) Pure Eurodollar Offshore Transactions in which the parties, the market of execution, and the jurisdictions – thus not recorded in the U.S. current or capital accounts; (2) Pure Eurodollar Round-Trip Transactions in which the parties, the market of execution, and the jurisdictions are all U.S.-based – the offshore market serves only as a balance sheet through which funds loop from the U.S. domestic economy back to it; (3) Net International Lending Through Offshore Markets in which the residence of the source and use of funds differ (He & McCauley, 2012).

Many European banks were heavily involved in Pure Eurodollar Round-Trip Transactions during the inflating phase of the housing bubble – because of the regulatory differential advantage they had over their U.S. brethren as they had more latitude to expand their balance sheets because they weren't subjected to minimum capital/asset ratios and capital/risk-weighted asset ratios. These European banks jumped into high leverage that reached up 30–40 times their equity by borrowing dollars in the U.S. money markets which they invested back in United States in mainly private mortgage-backed securities. These paid a heavy price for their greed when the liquidity in the U.S. money markets dried out during the Great Recession (He & McCauley, 2012).

Eurodollar market size

Being beyond the central banks' regulation, the Eurodollar banking market is amongst the cheapest and the largest sources of global funding because they are free from reserve requirements and deposit insurance assessments and other regulatory constraints.

However, the Eurodollar Offshore Markets grew into a black hole in terms of international regulatory map and became a dangerous source of volatility in dollar global liquidity. Eurodollar Offshore Markets – commonly known as tax havens – are masters of opacity engulfed into secrecy which made them the privileged nadir for money laundering by global drug dealer barons and global crime organizers that mask the honest economic benefits these financial centers provide.

It is near to the impossible to disentangle the legal and genuine transactions from the intricate web of banking branch networks, subsidiaries, shadow banking, shell corporations, special purpose vehicles, hedge funds, and other entities that are blended into the explosive mix of money laundering along with tax and regulatory avoidance.

In such a kind of laissez-faire legal environment, the malfeasance within the global financial system – particularly by the big financial institutions went rampant and big banks facilitated money laundering and capital flight to epic proportion.

Nearly $1 trillion in illicit capital is the money estimated by a Global Financial Integrity report to have left Mexico from 1970 to 2010, averaging about $50 billion a year during the 2000–2010 decade. The United States was not spared by the drug cartels who laundered between $8 billion and $25 billion annually from the United States according to the U.S. State Department (Flannery, 2012).

Even more perplexing beyond the above fines, the offshore centers were the home not only for the special purpose vehicles that were at the core of some historic bankruptcies such as Enron but also for the financial entities such as hedge funds that engineered toxic assets at the heart of the Great Recession.

It is in the offshore centers where the shadow banking perfected its sinister off-balance sheet techniques using conduits such as structured investment vehicles (SIVs) or Special Purpose Entities (SPE) – which were in many cases ghost corporations without office, employees, or assets – or funded by asset-backed commercial paper (ABCP) in order to reduce or avoid regulatory requirements such as capital reserves, capital adequacy that tremendously increased effective leverage and exposure to aggregate global financial risk (Palan, 2012).

All major banks and nonbank financial institutions have thousands of such entities wrapped in the secrecy in the offshore world.

And since these entities could be taken off-balance sheet, no bank was in position to know which is which belonging to who when the bubble burst. According to GAO (2008), 83 of 100 largest publicly traded U.S. corporations in terms of 2007 revenue reported having subsidiaries in jurisdictions listed as tax havens or financial privacy jurisdictions.

Citigroup led the pack with 427 subsidiaries, Morgan Stanley with 273 subsidiaries, and Bank of America with 115 subsidiaries. The popular offshore havens that shelter the lion share of the above subsidies are Cayman Islands, British Virgin Islands, Luxembourg, and Switzerland. The more complicated this web of banking subsidiaries, the more complex their inner workings – leaving the regulators lagging in dire darkness!

When the crisis hit, each bank looked at the other with fear, wondering how much risk each bank might be pregnant within its subsidiaries belly – ending the love affair of lending each other and therefore freezing the global credit system in the mix. The mountains of securitized products hidden in the off-balance sheet-invisible world started showing their ugly heads in the visible world and as the liquidity dried out in the system, they became worthless.

The confidence in all published accounts, the AAA-ratings, solemn declarations of corporate health turned into financial nausea and the whole financial system became insolvent to be saved only by governments' bailouts by assuming the wholesale responsibility to the entire onshore and offshore debt mountains upon which the banks collected gigantic profits during the sunshiny bubbling days.

It is in these tax havens where the manipulative alchemy of the U.S. dollar-liquidity has been performed and was literally sucked from the real economy into the shadow banking economy, forcing the central banks worldwide to bailout the too big to die zombie-banks.

As Reinhart and Rogoff (2008) pointed out – in their seminal book This Time is Different: Eight Centuries of Financial Folly – the causality along the umbilical link between the State and the banking system has been inversed since the government is no longer the mother of major risks for the banking system; but on the contrary – given the leaning of the banks on governments' bailouts in their wild risky financial bets – the State has increasingly become the financier of last-resort and conservator of the banking system.

2.3.2.2. Dollar-derivatives global liquidity

Defining a derivative

At its simplistic meaning, a derivative is a bet. As such, it doesn't have an intrinsic value, but rather derives its value – as the name implies – from the value of another product. In this regards,

derivatives can offer exposure to almost any underlying asset across all markets and asset classes (Deutsche Börse Group). From the definition standpoint, a derivative is indeed a very simple financial instrument. However, the simplicity stops there. From simplicity, the derivatives have grown to become essential in the global financial system. In fact, no other financial market has seen such explosive innovation, such impressive growth and such globalized market than the derivatives markets!

Evolution

Until 1970s, the derivatives formed a rather small market. But since then, derivatives have become very important instruments at the center of the financial and trade markets. Factors such as market volatility and deregulation, spectacular growth in international trade and finance, massive assets securitization, sweeping internationalization of trading of currencies, bonds and equities, Repo Markets, and worldwide explosion of budgetary deficits increased the demand for financial products to manage risk (Kaufman, 1993).

The development of the Black and Scholes (1973) formula in the early 1970s triggered the development of sophisticated new instruments in derivatives pricing, risk evaluation, hedge methods that changed their trading forever and laid down the foundation for the spectacular growth in global derivatives markets.

The Theory of Rational Option Pricing developed by Merton (1973) along with the Doctrine of Market Efficiency – through the wisdom of the crowd – propagated by Universities became the catalyst in fostering the principle of risk management as a necessity in the more and more complex world of derivatives and in building fine-tuned modern portfolio theories (Kaufman, 1993).

The radical technological advancement widely opened the door for financial engineer wizards who – armed with the growing speed and power of their computers along with intricate calculations and state-of-the-art analytical systems – started to comb the world markets searching for inefficiencies, financial exposure, and investors' dilemmas to be resolved (Kaufman, 1993).

From their basic building blocks of forwards and futures that carry settlement obligation and options that provide settlement choice, derivatives were transformed into a rich assortment of complex synthetic financial instruments ranging from simple futures contracts to complex structured debt obligations and deposits, swaps and swaptions, strips and straps, caps and floors, collars and various combinations thereof were engineered (Kaufman, 1993).

The On-Exchange and Over-the-Counter (OTC) are two competing segments in the derivatives market accounting for 16% and 84% respectively of the outstanding notional value of the market (Deutsche Börse Group).

The OTC market – being noncentralized market made of a myriad of tailor-made contracts that are traded privately and directly between banks and their large corporate and institutional customers – is by far the largest, the most expensive, the most complex, the riskiest due to its extreme leverage nature and therefore the most disruptive than not only the on-exchange trading but also any other market on the planet – as it can drag the underlying securities on the stock and bond markets, Forex, lending and other markets into a systemic breakdown. Most of the volatility of the dollar global liquidity is driven by the derivatives markets.

The derivatives' explosive growth attests of their usefulness in global financial markets and yielded substantial benefits to the U.S. economy by facilitating the access of U.S. corporations to international capital markets, enabling them to lower their funding cost, diversify their financing sources, and improve their competitive position in the global economy.

Used wisely, honestly, and skillfully, the derivatives can act as the best risk protection instruments and innovative tools in creative finance. With derivatives, risk can be unbundled into simpler and manageable risks or simply transferred to the players who have more stomach to digest it. As the world markets for trade and finance have become increasingly integrated, derivatives have strengthened important linkages between markets and increased market liquidity and efficiency (Culp & Macka, 1994).

Size and leverage of the derivatives market

In terms of notional value, the derivatives markets are simply the wildest markets in the world, meaning that it is difficult to know exactly their size and their leverage. Estimates run from simple to double in gigantic numbers. According to the conservative data published by BIS as of December 2014, the notional size of the OTC derivatives markets was $630 trillion – this was more than eight times the world economy at market price (BIS, 2015).

OTC derivatives markets are dominated by interest rates contracts standing at 80% ($505.5 trillion), foreign exchange contracts for 12% ($76 trillion), credit default swap for 3% ($16.4 trillion), equity-linked contracts for 1% ($7.9 trillion), 0.3% and unallocated contracts accounting for 4% at $22.6 trillion (BIS, 2015).

According to the OCC (2011), the notional amount of derivatives contracts held by insured U.S. commercial banks in the fourth quarter of 2011 stood at $230.8 trillion with the top five banks holding 96% of all derivatives activity, while the largest 25 banks account for nearly 100% of all contracts. This is a heavily concentrated market!

Since the OTC derivatives are not traded on exchanges, measuring the positions of their issuers is shrouded into darkness which

creates uncertainty in the financial system. Furthermore, OTC derivatives market is heavily one-sided when it comes to transparency, giving the dealers a profitable upper hand over their customers.

This upper hand has been abused by the dealers time and again by advising their customers to buy the financial products they were offloading from their proprietary books; it is believed that this behavior greatly contributed to the failures of Bear Stearns and Lehman Brothers.

As Morgenson (2012) pointed out, the opacity of the complex OTC derivatives market substantially hurts end-users because they can't see and understand clearly the inner workings, pricing, and risk of derivative products offered by the dealers at the other end of the trading equation because there is no public prices discovery, no public information on the details of the derivatives deals, no transparency on participants or underlying assets.

More troubling is the fact that investors and bank depositors are unaware of the mounting tidal wave of risk hovering upon their investments – in stocks, bonds, mutual funds, real estate and savings in banks, financial institutions and corporations – that are actively and heavily pledged as underlying assets in the speculative derivatives markets according to Morgenson (2012) who quoted the Swaps and Derivatives Market Association stating that the transaction costs in the swap markets – around $50 billion per year – would have declined by $15 billion a year if the swaps pricing were transparent.

Big Banks' sweeping influence over the derivative markets and derivatives clearinghouses has costly implications over the overall economy as it adds higher costs for consumers because the secrecy – the key safeguard enabling them to make such large bet-driven profits – absolve them to be concerned with their cost implications on the overall economy. This is why the big banks – the major derivatives dealers – have lobbied and fought tooth and nail to deregulate – or water down – any regulatory efforts to tackle the troubling systemic risk perceived in the derivatives markets.

The magic of netting

There is a school of thought that claims that the notional value of derivatives is not very significant because the netting deflates the notional amounts to very modest and manageable numbers. According to the OCC (2011), the notional amount of a derivative contract is a reference amount from which contractual payments will be derived, but it is generally not the amount at risk. The deflation can shrink the notional values up to over 95%, making the netting a huge compression mechanism for notional claims and this is one of the reasons that the notional values are off-balance sheet.

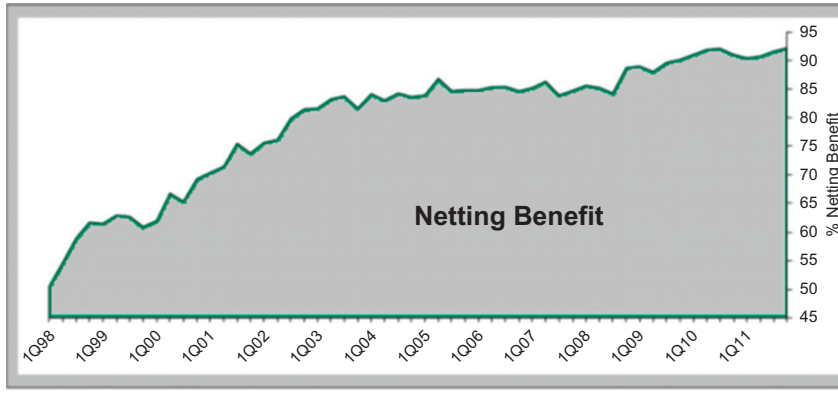
However, even if we embrace this netting notion, the remaining 5% after 95% deflation will put the BIS' estimates at $35 trillion and Paul Wilmott's estimates at $60 trillion as the netted amount at risk! These numbers are still very high enough to trigger a systemic collapse (Graph 2.1).

Netting means offsetting. When trading partners hold mutual obligations, they can net out offsetting positions, thus reducing their transaction costs, credit risk, settlement risk, liquidity risk, and eventually systemic risk.

It is however important to note that the credit risk – the major risk in derivatives market – is unique because the credit exposure, especially in the swaps contacts which make up the bulk of bank derivatives, is not only bilateral but also a function of movements in market factors – such as volatility in the underlying assets, counterparty's creditworthiness, and market liquidity for the contracts. For these reasons, the banks do not know, and can only estimate, how much the value of the derivative contract might be at various points of time in the future (OCC, 2011).

As defined above, it appears that the netting is very important especially in case of a bankruptcy of one of the trading partners because the defaulter's portfolio's netted balance becomes a small fraction of gross positions.

The netting premise has been refuted by a number of experts as the eliminator of risk. The netting is fundamentally based on bilateral offsetting mutual obligations and in chase a bankruptcy, the collapse will be orderly. The problem is that collapses are seldom neat and there are few mutually offsetting obligation for netting. And once the collapse strikes, most of the agreements – hedged or not – of the bankrupt partner fail and as the panic spreads, the run for



Graph 2.1: Derivatives Netting between Insured U.S. Commercial Banks: 1Q98 – 4Q11. *Source*: OCC (2011).

exit intensifies and worsens the collapse – leaving nothing or very little for netting.

Without netting, cascading failures of the above derivative instruments in a tightly compressed and overleveraged system becomes catastrophic (Jesse, 2012). This was an echo from Steinherr (2000) who qualified derivatives as the wild beasts of finance by explaining that there is a danger that someone would lose so much money that he would be unable to pay for his losses. This might cause chain reactions which could create a major economic cataclysm.

The netting certainly missed its theoretical target when Lehman Brothers went bankrupt in September 2008; there were such intricate interlacing bets of such magnitude that the financial world became literally paralyzed as no one could be sure of the financial position of anyone else – or even of one's own position (Stiglitz, 2009). In such climate, uncertainty gripped the markets and the credit froze.

The same disorder was observed in the American Insurance Group's (AIG) liberation from its gripping death. Had AIG not been bailed out by the government, it would have gone bust and the $440 billion bets insured by its Credit Default Swaps (CDSs) would have been irrecoverable and if this bailout was not cycled to protect its CDS holders, Goldman Sachs, Morgan Stanley and the likes would have severely suffered from the fallouts of their wild bets in a domino-like style.

The netting might look great in theory, but when a sudden severe financial shocks befalls, the netting capacity might disappear for bankrupt players, leaving the whole risk morphing in the notional sphere.

In spite of this high risk, the income from derivatives activity is still a sizable component in the total revenues of the major players enticed by the high leverage, low cash investment and low trading costs prevailing on the derivatives markets – where with just the reputational capital, a sizable portfolio can be built without tangible collateral or upfront payment.

However, there is hardly free lunch in Finance; this leverage can lead to a dreadful downside: the potential of high returns in derivatives trading due to their highly leveraged nature often shadow their huge intrinsic risk – as high leverage magnifies the impact of price movements on the value of derivatives contracts. One bad move or unexpected crisis could blow these banks' delicately balanced derivatives portfolios off their axes and spin the world markets into crisis (Chart 2.1).

The trading in derivatives have changed the traditional way of making money at Wall Street and completely changed its culture in the mix. The trading revenues at Goldman Sachs reached almost 60% of its 2011 Gross Revenue Cash and Derivative Positions.

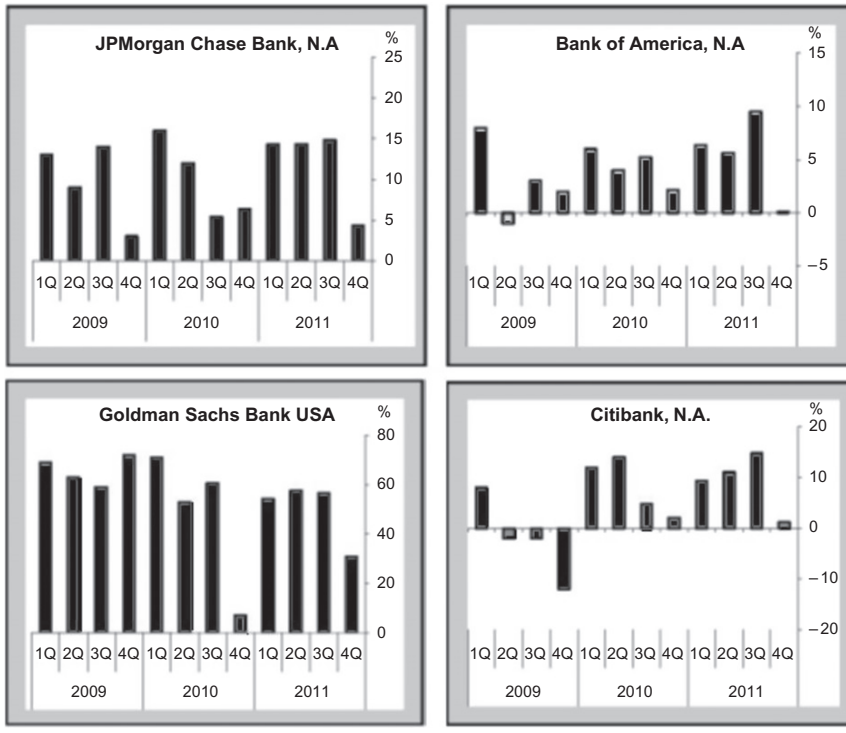


Chart 2.1: Trading Revenue as a Percentage of Gross Revenue, Cash and Derivative Positions for Top Four Insured U.S. Commercial Banks by Derivative Holdings 1Q09 –4Q11. *Source*: OCC (2011).

Since 1970, the asset markets start to gradually dwarf the goods markets and with this rising of assets markets, instability steadily creped-in the markets simply because in goods markets the law of supply and demand functions better than in the asset markets: when a price of a car rises, people don't rush to buy it and therefore its demand declines; whereas when the price of a stock rises, demand rises as accordingly, when housing prices go up, people scramble for refinancing and collect the built-in equity.

In nutshell, unlike in real assets, the bubbling of financial asset prices – instead of deterring their demand – it fosters income generation upon their rise. This is why the trading in derivatives has been pushed to the zenith of rule-breaking and even immorality. The manipulation of Libor (London Interbank Offered Rate) – the worldwide benchmark interest rate – an average rate that a panel of banks agree to borrow unsecured funds – is probably one of the most telling, the most costly, the most morally bankrupt, the most far-reaching scandals in the history of the financial world where some $550 trillion in financial products from student loans,

mortgages to financial derivatives, and other financial products mostly rely upon as a reference rate.

What is shocking in that scandals are not only the colossal sums of money involved but also the initial complete denial of its existence by the entities vested with authoritative oversight. Although, the Libor manipulation was reported by Wall Street Journal back in 2006 and Financial Times in 2007, the British Banking Association (BBA) – that controls the Libor – along with the BIS and the IMF continued to support the claim that Libor was an accurate and reliable benchmark.

This was not the position of the FDIC (Federal Deposit Insurance Corporation) which claimed – based on facts – that the major financial institutions were involved into the Libor scandal that caused substantial losses to 38 banks, the FDIC took into receivership since 2008 such as Washington Mutual Bank, IndyMac Bank, and the alike (Raymond & Viswanatha, 2014).

The FDIC has alleged that the above banks broke certain swaps contracts they had entered into with the defunct banks while separately colluding to rig the Libor rate to which the above contracts were tied to, thus interfering with the competitive process and artificially increasing the prices they charged in terms of higher underwriting fees and the margins they earned in terms of higher offering prices on the financial products in those markets to the detriment of the closed banks and other consumers (Raymond & Viswanatha, 2014).

The FDIC won the case as per the Report of the U.S. Justice Department on May 20, 2015 in which five (5) major banks – Citicorp, JPMorgan Chase & Co., Barclays PLC, The Royal Bank of Scotland plc, and UBS AG – agreed, not only to plead guilty to felony charges and conspiracy in manipulating the price of U.S. dollars and Euros exchanged in the foreign currency exchange (FX) spot market but also agreed to pay criminal fines totaling more than $2.5 billion (Department of Justice, 2015).

These fines took the Libor-related penalties imposed to the cartel of the big banks to a new breathtaking height of almost $10 billion! By deceitfully fixing the exchange rates of major currencies, they undermined the competitiveness on the global trade platform and damaged the integrity of foreign currency exchange markets the U.S. Department of Justice (2015) complained.

The above fine punishments are overdue to dissipate the climate of tacit support for recklessness and impunity whereby it is not surprising to find Goldman Sachs and their companions in crime at the opposite side of their clients' trading equation where they hugely profit at the expense of their customers – especially by shorting – or simply wiping out of their books – the financial products they were outrageously recommending to their clients to buy. In other words, they were knowingly advising their clients who trusted them

with their money to lose that money. Not only it is immoral, but it is deeply cruel!

Since the repercussions of such behavior are potentially bailed out, there is no incentive to change such a profitable behavior – even though it hurts the economy. One can argue that the instability of the U.S. dollar-derivatives liquidity swelled from the crisis of this kind of behavior rather than from the derivative-driven financial crisis.

This reckless behavior has been reinforced by the nature of management compensation – especially whenever stock options are an important component of managerial compensation – because option-based incentives become more valuable with increases in risk; thus, managers who hold stock options benefit from increases in volatility as their options will be worth more if the stock price rises (Rogers, 2002) – while these options will never be worth less than zero if the stock price falls because the holders will not exercise them.

From the executive compensation standpoint, stock options are indeed unbelievable instruments for risk-taking since they don't inflict any penalty to personal wealth if the bets go wrong. After collapsing their companies, the top-five executive teams at Bear Stearns and Lehman Brothers cashed out close to $2 billion – about $1.1 billion at Bear and $850 million respectively from 2000 to 2008 (Bebchuk, Cohen, & Spamann, 2009).

Merrill Lynch paid its CEOs $257 million – Stanley O'Neal collected $172 million between 2003 and 2007 and John Thain took home $85 million – before it was collapsed into the Bank of America. It is quite unbelievable to see the architects of the 2008 Great Recession being rewarded – instead of being punished – for the calamity they caused – complained Senator Chris Dodd (CEO Watch, 2008).

Now that the United States and the European Regulators have hammered the big banks with substantial fine punishments the taxpayers have been asking since the Great Recession, should they feel that the justice is done and culprits have learned their lessons?

Not really. No signs that the cartel of the big banks has been very concerned and even deterred by the huge penalties stamp on them by the regulators. None of the fines have been appealed in spite of the fact that by 2014, this cartel had already been pounded by the regulators with a massive $180 billion-plus fines since the Great Recession with more than 170 cases still to be prosecuted according to a Global Banking Study by the Boston Consulting Group as reported in the street by Freed (2014).

$180 billion is certainly a big number, but how much of that amount the taxpayers really get. When announced in the media, these gigantic fines and settlements bring cheerfulness in some

government circles – certainly in the Department of Justice as these fines garnish – for at least 3% – its Working Capital Fund managed by the Justice Management Division. This means that while rendering justice as it should, it self-serves in the mix and very handsomely for a nice $5.4 billion in the event the above settlements paid the 3%! So, the bigger the fines, the richer the Department of Justice becomes, the bigger the fines, the better.

One might think that in hiking the fines and settlements, the cartel of the big banks is the only loser as it should be and no one should shed tears for them as they brought these fines to themselves. One needs to slow down such conclusion! Most of these settlements are civil – far from being punitively criminal; thus for most of them – because of the loophole in the Federal Tax Rules in which noncriminal fines and settlements are tax-deductible – don't appear on the tax plate of the Internal Revenue Services (IRS) – adding to the too-big to fail another dimension of too-big to tax!

The above might explain why there have been few criminal cases related to the above settlements and why the big banks find it convenient to pay big fines without lifting a finger rather than being prosecuted criminally. Furthermore, the overall outcome is very positive for the cartel of the big banks and doesn't contain punishments compelling enough to discourage or dislodge them from their financial misbehavior trajectory.

Let say hypothetically, that the cartel goes out there and make a derivative wild bet and collect $100 on the upside of the bet. Remember, it doesn't have to be concerned with the bet downside because it is insured by the taxpayer's bailouts. Suppose that the Justice Department discover that $100-net profit was made fraudulently through Libor rigging or shorting the securities advised to their clients to buy.

The Justice Department imposes 30% ($30) settlements and gets 3% of the $30 ($0.30) into its Working Capital Fund and the wrongdoing-bank settles for $30. Out of this $30, the bank recovers 35% ($11) on its tax return since this fine is with immunity to tax and therefore tax-deductible. Overall, the bank – out of the $100 windfall profit, nets $81 ($100 – $30 + $11)! By putting this hypothetical example into the real context of billions of U.S. dollars, it becomes so hard for the cartel of big banks to walk away from this path to riches toward the path of financial righteousness!

What the cartel might lose its reputational capital before the eyes of the public. But, does reputational capital from the public really matters anymore for the big banks? Except maybe a faint sigh of justice, the public mind is occupied somewhere else in figuring out how both the ends of the month can meet. For ordinary people, Wall Street lives and operates on another plane of existence where it doesn't have to be worried about its reputation!

No company in the real economy can be rotten to its core like the too-big to fail and to tax banks and survive. Enron tried to play smart like the big boys at Wall Street and paid a death sentence! However, the Great Recession – the most devastating global economic crisis since the Great Depression – attributed overwhelmingly to the too-big to fail banks' reckless behavior – destroyed between $6 trillion to $14 trillion in 2012 dollars – 40–90% of 2007 output – of U.S. household wealth as per by Dallas Fed's estimates (Atkinson, Luttrell, & Harvey, 2013), but the Wall Street was barely scratched and its ways of doing business hardly changed.

Dollar toxic liquidity

The Financial Engineering has tremendously increased the dollar-global liquidity. During the housing bubble which busted into the Great Recession, the financial institutions – led by the Shadow Banking – engineered financial instruments with excessive complexity such as Collateralized Debt Obligations (CDOs). The CDOs were structured on multiple tranches – with widely differing risk features from a pool of debt instruments – to meet the varying degree of investors' appetite for risk and return. These instruments have been marketed and perceived to be very liquid and safe – especially since they had the blessing of Credit Rating Agencies (CRAs).

The CDOs toxicity has been well-illustrated by BIS (2008) by highlighting the fundamental illusion propagated by the Wall Street wizards that they have fully mastered the risk in the trading equation and subdued the financial volatility, and therefore had reached such level of dexterity through their financial engineering that was unfailing in making the investors immune against market risks. A host of elaborate statistical models and complex securitization products created a delusion of control over credit and liquidity risk in the banking system and this illusion led to risk misperceptions and misguided actions.

Investors were literally hypnotized and trapped into the voluptuous toxicity entertained by CRAs' noxious ratings and wrapped into the idealistic vision of financial markets efficiency in which financial innovation and deregulation conveyed the sense of Wall Street invincibility that they altogether overlooked or ignored their own prudent risk yardsticks.

In this state of exuberance as Greenspan put it, the Monolites (largest insurance companies – led by AIG – specialized in writing credit protection on asset-backed securities) crept in with their CDS products which made the CDOs even much safer than traditional AAA instruments by adding an insurance protection which guaranteed to the issuers that if the underlying securities did not perform well-enough to make the promised payments to the Note Holders, they would step in and make those payments.

Every issuer rushed to the CDS – goldmine because of this added insurance protection and more importantly because the fees for the above financial insurance coverage were quite small – relative to the yields of the CDOs. The CDSs became a center of attraction overnight and provided compelling strong incentives to increase leverage in the system, as investors rushed to these new higher-yielding and illusionary low-risk rated instruments. This was like a magic transformation of lead into gold from the sphere of alchemy, concluded in BIS (2008).

Aspirations for homeownership and its seated culture fostered by the U.S. Congress, financial innovation, lax government oversight, erroneous credit ratings, euphoric dispense of credit default swaps – you add to this already dangerous blend, the Keynes' (1936) argument that generalized sentiment of unrealistic optimism or pessimism leads to boom and bust, and the Minsky's (1986) argument that financial innovation can create economic euphoria for a while before destabilizing the economy and hurling it into crises – and you have enough ammunitions for the global economy to implode.

As the history will tell, the above alchemical transmutations were not given the elixir of longevity. At the first signs of the 2008 Great Recession, market participants uncovered the truth and their wholesome confidence gave way to distrust. With uncertainty and fear in high gear, a full-blown market seizure erupted; counterparties viewed each other with suspicion and no business appeared worthy of financing (Fisher, 2010).

The whole superstructure simply collapsed leading to a systemic trauma as the highly graded instruments were subject to exceptionally large unexpected losses precipitated by the CRA's rush in demolishing the AAA-ratings they had slammed on them during their bubbling phase. The economy starved from the dollar-liquidity lifeblood and literally stood still (Box 2.1).

Do derivatives pose an existential threat to us dollar reserve currency status?

Although derivatives are very good financial instruments, but, when used for high-risk speculation, they can easily induce companies into complex and even fraudulent schemes by creating fictitious assets and reporting fake earnings.

Derivatives have been at the core of almost every major economic disaster since 1987 and most of the time the dollar-global liquidity was part of the equation as billions of dollars of market value were erased, thousands of jobs lost, savings wiped out – contended the International Swaps and Derivatives Association (ISDA, 2002) in reference with the Enron debacle. It is therefore possible that a failure of a large derivatives dealer might pose a systemic risk

Box 2.1: Shadow Banking.

Shadow banking, as the name indicates, operates in the shadows beyond the radars of the State and Federal Banking Authorities' supervision. However – as Bernanke (2012) indicated – "the shadow banking bears strong functional similarities" to the traditional regulated banking sector such as financing long-term illiquid assets with short-term liquid liabilities.

While the shadow banking is not insured by the FDIC (Federal Deposit Insurance Corporation) and is not constrained by the central banks' rules and regulations such as reserve requirements and the cumbersome periodic reports; but, it doesn't have access to the central bank's discount window to finance the short-term liquidity in time of need.

However, this industry has grown very creative and operates Fed-like window through repo markets, commercial paper markets, and other derivative inventions such as the liabilities collateralization to meet its liquidity needs and shortages. The problem with these markets is that they are very volatile and the liquidity can evaporate at the first signs of a financial turbulence – making these markets prone to liquidity crunches.

With the repeal of the Glass-Steagall Act by the Congress in November 1999, the wall erected back in 1933 between the commercial banking and the shadow banking was knocked down and opened a floodgate of connections between commercial banks and securities firms – leading to a mushrooming and expansion of financial entities such as hedge funds, money market funds and structured investment vehicles which were quickly embraced by the traditional commercial banking.

With such regulatory leverage, the shadow banking – with the blessing of the Commercial Banks and Credit Rating Agencies – extended and intensified its activities into the opacity of the offshore heavens far away from the scrutiny of the domestic regulatory authorities.

Under the cover of off-balance sheet operations, the shadow banking leveraged itself in the regulatory darkness of the safe heavens to unprecedented heights, until the Great Recession revealed the unsustainable asset-liability mismatch and sent the whole industry into panic and cascading bankruptcies. However, the major shadow bankers that survived the slaughter of the Great Recession emerged stronger and more mingled into the traditional banking and became member of the close knight of the too-big to fail brotherhood.

The restrictive provisions of Dodd-Frank Wall Street Reform and Consumer Protection Act which were geared to bring discipline and sanity to the shadow banking just scratched the influence of the too-big to fail at Wall Street; while making harder for the rest of the economy to access the credit in the mix. In a nutshell, the shadow banking became more concentrated and more powerful than ever before.

that could be broadcasted throughout the financial system and impede the dollar in its global role as a leading reserve currency.

The increasing concentration of derivatives activities in just few products and few institutions add substantial risks to the already-risky bets abundant in the derivatives markets. According to OCC (2011), more than 80% of the dealers' total derivatives holdings are interest rate contracts, followed by 11% in Forex and 6.4% in credit derivatives. The 25 largest banks account for almost 100% of the total notional amount of derivatives while the top largest five banks accounting for over 96% of the total notional amount of derivatives in 2010 in United States.

Such concentration undeniably exposes the financial system as a whole to a financial or operational disruption born from a single institution. When a market participant becomes excessively large relative to particular derivatives markets, it can not only be devastating for the derivatives markets but also create systemic risks for other markets such as securities markets that provide the underlying assets to the derivatives if that market player collapses.

The huge derivatives markets are indeed closely intertwined with other financial markets and many key sectors of the real economy. They are an integral part of the markets for stocks, bonds, foreign exchange, energy, home mortgages and farm products, student loans, credit cards, car loans, etc. Derivatives' trading is a key element of the market for oil, gasoline, home heating oil and electricity. The derivatives failures will naturally reverberate and have a tremendous impact on the assets that support them in other markets (Shiller, 2003).

The consequences of an operational breakdown or an erosion of confidence or even a rating downgrade in one of the major derivatives dealers could result not only in being spirally dampen by the markets or into a rapid change of its risk profile but also in market disruptions and liquidity stress and potentially lead to a systemic ripple effect in a perilous chain reaction. If this systemic ripple effect falls in the bottom of a business cycle and a general weakness in the macroeconomic fundamentals, the combination can be very toxic and degenerate into a derivatives-driven global crisis with a severe dollar-liquidity drought.

Because of the ramification and complexities of the globalized financial system, the contagion can spread like a bushfire. The effects of such collapse can be very difficult to contain and alleviate since there is no global authority capable to initiate an orderly recovery, especially in the largest OTC derivatives markets whereby all contracts are not even regulated or reported. Even if a bailout becomes available – which might be difficult given the astronomical figures of derivatives positions – the event would certainly send shock waves throughout the financial world.

Even if the big players take insurance to protect their positions, but the derivative markets are dominated by too few risk-taker players – making it vulnerable to a severe domino crisis if the risk materializes and one of them fails to pay due-contracts upon which the creditors insured themselves against the default.

This was going to be the domino effect that AIG would have triggered if it was not bailed out by the U.S. government. AIG reaped fortunes that boosted the perks of its Executives in the run-up of the Great Recession by providing insurance cover to the shadow banking in its barren risky bets such as subprime mortgage-backed securities. It was obvious that when the bubble busted and the value of bags of the insured instruments – held by financial institutions such as Goldman Sachs and JP Morgan – plummeted, these institutions run to AIG to cash the CDS.

The CDSs rapidly turned into instruments of self-destruction for AIG and potential weapons of mass-destruction for its counterparties – some of whom outmaneuvered AIG in getting the credit insurance cover for the instruments from which they gained fortunes by giving birth to them, forcing them into the throats of mainly institutional investors, and pushing them into the financial system worldwide.

As the bad omens about the very housing market instruments they have cloned rose in the horizon, more complex financial products were engineered to bet against their imminent annihilation in order to collect not only shorting fortunes by speeding up their demise but also their life insurance (CDS) written by AIG. The shadow banking remained in control across the value chain of the derivatives continuum life cycle: from birth to their systemic death or shorting assassination.

2.3.2.3. The Repo Markets and the dollar-liquidity

Definition

The Repo Market is a market where securities are exchanged for cash with an agreement to repurchase them at a future date. In other words, a repo is a sale-repurchase agreement whereby the sale of securities is contingent to an agreement for the seller to buy back the securities at a later date.

It is equivalent to a spot sale combined with a forward contract or even simpler as a secured loan agreement in which the collateral is the securities which are provided to the bank – which literally buys them against the cash to the borrower – the seller of the collateral in this case. The seller of the securities is bound to redeem his securities by paying off the loan principal plus interest to the bank which releases the lean on the collateral. Similarly to a loan agreement, the repurchase price is expected to be greater than the original

sale price, the difference effectively representing interest – called repo rate or haircut in financial jargon.

Although any security may be collateralized in a repo, however, highly liquid securities – such as Treasuries – dominate the Repo Market. But, Repo-to-Maturity (RTM) – repos which are structured to mature at the same time as its underlying security – have a significant market share.

Importance

The Repo Market is one of the largest and the most active money markets where participants provide collateralized loans to one another.

As of December 9, 2014, the Tri-Party Repo Market – made up of three types of participants: securities dealers, cash investors, and clearing banks that function as intermediaries between dealers and investors – was worth $1.64 trillion, according to data from the Federal Reserve Bank of New York (2015) (Table 2.8).

The Repo Market is the main source of liquidity and financing for a variety of securitization activities of shadow banking – especially for the systemically important broker-dealers that make markets in U.S. government and corporate obligations. It is the equivalent of the Fed's discount lending window for securities dealers.

It plays an essential role in the efficient functioning of the financial system because of low credit risk and flexibility, thus enhance price discovery and market liquidity and therefore stability in terms of financing costs. It is central to the trading of fixed income securities and equities and the principal tool used by central banks in their open market operations to control short-term interest rates and to swiftly act as lenders of last resort in time of crisis.

Dangers

According to the Federal Reserve Bank of New York (2015), the Tri-Party repo may contribute to the systemic risk because of its dependence on intraday credit provided by the clearing banks, risk management practices that may increase stress in bad times, and the lack of effective and transparent plans to support orderly liquidation of a defaulted dealer's collateral.

The Repo Market is accused of playing a central role in the Great Recession. Gorton and Metrick (2010) argue that the panic of the 2008 Great Recession was a run on the Repo Market. They claim that the combination of securitization and repo finance was the major pathway and nexus of that recession. This corroborates with the findings of the Federal Reserve Bank of New York's (2015) findings which claim that the Tri-Party Repo Market took on

Table 2.8: Tri-Party Repo Statistics as of June 9, 2015[a].

Asset Group	Collateral Value (billions)	Share of Total	Concentration of Top Three Dealers
Fedwire-eligible[b]			
Agency CMOs	$74.12	4.7%	33.2%
Agency Debentures & Strips	$56.86	3.6%	25.5%
Agency MBS	$444.59	28.1%	26.8%
U.S. Treasuries Strips	$31.05	2.0%	41.6%
U.S. Treasuries excluding Strips	$603.56	38.1%	28.7%
Subtotal	$1,210.18	76.4%	
Non-Fedwire-eligible			
ABS Investment Grade	$19.83	1.3%	38.4%
ABS Non-Investment Grade	$34.26	2.2%	59.8%
CDOs	$1.05	0.1%	
CMO Private Label Investment Grade	$9.84	0.6%	45.3%
CMO Private Label Noninvestment Grade	$34.54	2.2%	59.5%
Corporates Investment Grade	$52.83	3.3%	29.2%
Corporates Non-Investment Grade	$24.93	1.6%	32.8%
Equities	$164.38	10.4%	48.6%
International Securities	$3.58	0.2%	
Money Market	$13.57	0.9%	60.4%
Municipality Debt	$13.46	0.8%	54.5%
Whole Loans	$0.97	0.1%	
Other	$0.22	0.0%	
Subtotal	$373.45	23.6%	
Total	**$1,583.63**		
Total number of individual repo deals			**7,840**
Total number of collateral allocations			**13,323**

Source: Federal Reserve Bank of New York (2015) (http://www.newyorkfed.org/banking/tpr_infr_reform_data.html).

[a]The Tri-Party repo data charts have been revised to (1) categorize asset groups by securities that can be settled on the Fedwire® Securities Service and securities that are Non-Fedwire-eligible and (2) eliminate the materiality threshold rule whereby asset groups representing less than 1% of the total market value were either aggregated with similar asset groups or incorporated in the "other" category. The elimination of the materiality threshold rule will result in ongoing reporting across a consistent set of asset groups. In addition, we expect to introduce enhanced functionality and a restatement of the historical data consistent with the revision described above in the near future.

[b]Fedwire-eligible securities are securities that can be settled on the Fedwire® Securities Service.

particular importance in relation to the failures and near-failures of Countrywide Securities, Bear Stearns, and Lehman Brothers.

As the location and size of subprime risks held by counterparties in the Repo Market were unknown mainly due to the opacity of the market, fear that dollar-liquidity would dry up ferociously gripped the Repo Market leading Gorton and Metrick (2010) to suggest that the weakening of subprime *per se* was not the shock that caused systemic problems, but rather the Repo Market that was the key transmitter that carried the subprime shock wave from the defaulting homeowner through the canyons of Wall Street to the American taxpayer and transformed manageable defaults in the housing market into a full blown credit panic (Repo Watch, 2013).

Gorton and Metrick (2010) opined that the major cause of the Great Recession was the ability of the giant financial institutions to hide their risk exposure in off-balance sheet activities and their subsequent reckless borrowing on Repo Market. They concluded that the Great Recession was mainly driven by broker-dealers in the Repo Markets – not by banks and their subprime borrowers.

The Great Recession was therefore not a traditional-banking run driven by precipitous withdrawal of deposits but a securitized-banking run or run on repo – driven by unprecedented high repo haircuts and the collapse of massive repo agreements that were largely performed in an opaque unregulated environment which allowed excessive leverage to build and permeate the entire financial system. The financial institutions start to run on each other behind the opacity of the deep and dark Repo Market (Gorton & Metrick, 2010).

The securities dealers are the epicenter of the Repo Market. Their activities overwhelmingly dominate the U.S. Repo Market and they have even the ability to reuse the securities they had received as collateral as a fresh collateral for their own borrowing. In other words, the collateral is recollateralized!

According to Repo Watch (2013), Repo Market was a neat, self-sustaining cycle of profitability and a serious growth machine whereby with one repo loan, the dealers could (1) make or buy more home loans, (2) pool and produce more securitized instruments, (3) use it as collateral for more repo loans that created a risk multiplier.

The Great Recession is perhaps the most telling example of (1) how the private players create dollar-global liquidity during the making of the bubble; (2) how this liquidity can quickly evaporate once the bubble bursts; and (3) how the liquidity replenishment depends on the access of the private players to the official liquidity – or simply to the bailout by the government.

When Lehman collapsed because of lack of dollar-liquidity, a panicked leadership of the country was able to stop it, but at the

cost of many trillions of dollars, and obviously with a huge distortion in the real economy.

While derivatives pose a systemic threat to the world financial system and need rigorous regulations and oversight, regulating the derivatives markets can be a difficult balancing act between their benefits to the markets and the economy at large and the danger – direct or embedded – of their risks. It is not easy to come up with a well-balanced regulation – not too strict and not fully deregulated laisser-faire type – that would lean fairly along the spectrum of derivatives markets.

2.3.3. OFFICIAL DOLLAR-GLOBAL LIQUIDITY

The official component of the global dollar-liquidity is the liquidity available within the Central Banking System. The dollar official liquidity can be created by the U.S. Fed through its regular foreign exchange operations. It can also provide dollar official liquidity through swap lines between other central banks. The swap lines between the U.S. and European monetary authorities were critically important during the recent Great Recession.

The Fed can also provide dollar-liquidity through multilateral financing arrangements such as IMF's SDRs. However, they are not tools for creation of private market liquidity. They are instruments for official liquidity creation through access to the liquidity provided by the four currencies that make up the SDR basket – which is dominated by the U.S. dollar.

2.3.3.1. The Fed and the dollar global liquidity

The 2008 Great Recession has been labeled as the young brother of the 1929 Great Depression – which few people still living today have experienced. Caught by surprise, the Fed's forceful response to the crisis through the expansive use of its world lender-of-last-resort and monetary policy powers set the tone for other central banks to initiate similar responses within the confines of their operational scope aiming at recovering the financial and macroeconomic stability.

The crisis was a real-life test for the extensive academic research of Ben Bernanke – the Fed Chairman – on the 1929 Great Depression – who blamed the Fed of that time – for the wrong response to that worldwide crisis. With the 2008 Great Recession at hand, Bernanke had to prove to the world that he was right and committed not to repeat the same mistakes he highlighted in his researches in which he argued that – instead of increasing the money supply and pumping money into the economy – the Fed of the Great Depression dried out the liquidity in the system by letting a crushing 30% fall in money supply (Table 2.9).

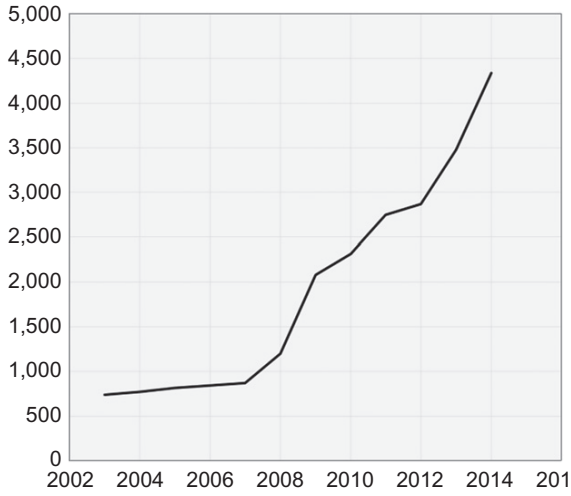
Table 2.9: The Fed and Bernanke's Theory and Actions.

Fed mistakes during the 1929 Great Depression according to Bernanke	What Fed did under Bernanke Chairmanship during the 2008 Great Recession
The Fed began raising the Fed Funds rate in the spring of 1928, and kept raising it through the depression that began in August 1929. This led to the stock market crash in October 1929	In response to the 2007-gathering financial storm, the Fed acted quickly and aggressively by slashing the federal funds rate from a high of 5.25% in August 2007 to near-zero percent by December 2008
The Fed raised interest rates again to preserve the value of the dollar. This further restricted the availability of money for businesses, causing more bankruptcies	The Fed decreased the spread between its primary lending rate at the discount window and the federal funds rate to 50 basis points on August 17, 2007, as well as extending the term from overnight lending to up to 30 days. On March 16, 2008, the Fed further reduced the spread to 25 basis points and extended terms up to 90 days
The Fed did not increase the supply of money to combat deflation	In an attempt to halt growing financial instability, the Fed ballooned its balance sheet and the SOMA (Fed's System Open Market Account) portfolio more than tripled from 2008 to more than $2.6 trillion as of June 2012 – that is, nearly $1.5 trillion above the current value of currency and capital of Fed (Carpenter, Ihrig, Klee, Boote, and Quinn, 2012)
As investors withdrew all their dollars from banks, the banks failed, causing more panic. The Fed ignored the banks' plight, thus destroying any remaining consumers' confidence in banks. Most people withdrew their cash and put it under their mattresses, which further decreased the money supply	Central banks worldwide – led by the Fed – acted in unison to save the existing international financial order by helping the largest and most powerful financial institutions to survive and eventually be liquid again by pumping dollar-liquidity into the global financial system

Source: Table designed by Dr. Ganziro.

Landau (2011) maintains that central banks' ability to elastically supply very sizeable amounts of foreign currency liquidity at short notice can successfully assure credibility among financial market participants and that the swap arrangements between central banks have played a crucial role in absorbing the global liquidity shocks via direct interventions in amounts large enough to break downward liquidity drought spirals. He added that this official liquidity supply has to be balanced by the necessity of avoiding moral hazard, preserving monetary policy autonomy and controlling financial risks for the liquidity-providing central bank.

Convinced that the major cause of the 1929 Great Depression was a lack of liquidity in the financial system, Bernanke pumped over $24 trillion as emergency assistance to foreign and domestic



Graph 2.2: All Federal Reserve Banks – Total Assets (in Billion dollars). *Source*: Graph Designed by Dr. Ganziro based on Data from Fed St Louis.

international banks, shadow banks, central banks, and some nonfinancial institutions during the Great Recession (U. S. Treasury Department, 2012).

As the Great Recession eroded most unsecured funding sources, a global shortage of dollars became so severe especially within the European banks which had relentlessly increased their U.S. dollar asset positions from about $2 trillion in 1999 to more than $8 trillion by mid-2007 (Baba, McCauley, & Ramaswamy, 2009).

With the bankruptcy of Lehman Brothers, the U.S. money market funds abruptly stopped purchasing bank-issued commercial papers and the European banks could no longer meet their funding requirements by borrowing from the unsecured cash and commercial paper markets or by using Forex swaps (Baba et al., 2009) (Graph 2.2).

Over the last 8 years, the U.S. Federal Reserve's balance sheet – which was the third largest in the world back in 2014, grew exponentially to $4.4 trillion from less than $0.80 trillion in 2003. Concurrently, the Fed hammered the nominal interest rates to near-zero levels in hope of curbing business bankruptcies, halt home foreclosures, and ultimately boost employment and asset prices such as shares, bonds, and properties.

Foreign exchange reserves are the traditional means for accessing official liquidity in foreign currency and are typically viewed as a core component of official liquidity. The bulk of the foreign exchange reserves are invested in securities, mostly U.S. Treasuries and sovereign bonds in the Euroland and only a small fraction is

held in the form of deposits with central banks or as deposits with private banks (about 5% in each case).

2.3.3.2. The anatomy of banking bailout

As the U.S. dollar as an international currency is mostly created by private agents globally, it is imperative to analyze how U.S. dollar has been siphoned from the real economy and manipulated into financial products that busted into U.S. dollar global liquidity crunch, which led to the 2008 Great Recession and the subsequent massive banking bailouts throughout the financial world. The recent massive banking bailout – or what has become to be known as Wall Street bailout – was driven by the rationale of too big to fail.

How big is too big to fail

The too big to fail concept is now a familiar term in financial and political arena and it is defined as a very big financial institution – with such size, such complexity, and such global interconnection – that its collapse would greatly disrupt the international financial system. Given the devastation this demise can inflict to the economy, the government – as the guardian of the public good – must come to its rescue whenever such financial institution faces imminent breakdown. The question is how big a financial institution has to be for its demise to tear down the global financial infrastructure so as to trigger the government rescue.

Two opposing theories debate the relationship between the market concentration and financial system stability. The concentration-stability hypothesis claims that more concentrated markets allow banks to earn higher profits, which serve as a buffer against unexpected shocks and therefore enhances the stability of the financial system, whereas the concentration-fragility hypothesis suggests that higher market concentration is associated with financial instability as the market power of the too-big-to-fail hypothesis might induce big banks to take excessive risk which will destabilize the financial system (Doll, 2010).

The question is how concentrated the U.S. banking system is and if this concentration – if any – is a source of financial stability or instability? The U.S. banking system has been concentrating as the number of U.S. banks shrank from more than 15,000 to about 8,000 between 1990 and 2008, and the share of total U.S. deposits held by the 10 largest commercial banks has been rising from 10% to 50%.

However, in spite of this explicit concentration, the U.S. banking system is not that highly concentrated relative to other countries such as Switzerland, Britain, France, Germany, Italy, Japan, and many other countries according the U.S. Treasury Department (2012) which argues that – even with the consolidation of some of

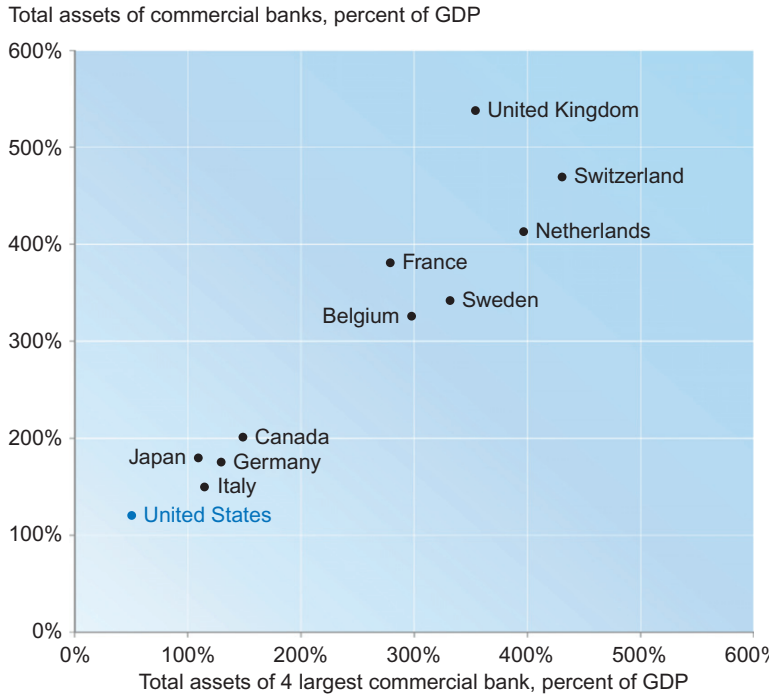


Chart 2.2: Banking Concentration of Selected Countries in the World. *Source*: U.S. Treasury Department (2012) – http://www.treasury.gov/resource-center/data-chart-center/Documents/20120413_FinancialCrisisResponse.pdf

the weakest banking institutions during the Great Recession – the United States has the least concentrated banking system of any major economy and the smallest banking system relative to the size of its economy (Chart 2.2).

Rattner (2012) has observed that none of the institutions that tumbled during the crisis – such as Bear Stearns and Lehman Brothers, Fannie Mae, Freddie Mac, AIG, WAMU and the alike – were commercial banks and most commercial banks in trouble were immediately bought such as Chevy Chase bank swallowed by Capital One Bank or First Union bank gobbled by Wells Fargo – thus, making the impact of the chartered banks to the Great Recession very minimal.

One can also argue that what brought the financial system to its knees was not really the banking concentration, but the lax or non-existent government regulation and oversight and banking poor management that aggressively expanded the shadow banking's activities too far combined with the generous AAA grades slammed by the CRA on the assets in the banks' portfolios that freed them from essential risk controls.

A counter-argument has been often advanced claiming that leading to the 2008 financial crisis, commercial and shadow banking were highly intertwined and dominated by few firms that a shock in either industry was to reverberate in the other.

By the end of 2007, 15 financial institutions totaled a leverage ratio of 23 to 1 with $857 billion equity supporting $13.6 trillion-assets and $5.8 trillion off-balance-sheet commitments (Ferguson, 2009). The five U.S. banks deemed too big to fail – JPMorgan Chase & Co, Bank of America Corp, Citigroup Inc., Wells Fargo & Co, and Goldman Sachs Group Inc. – held $8.5 trillion in assets at the end of 2011, equal to 56% of the U.S. economy, according to the Federal Reserve up from 43% before the Great Recession (Bloomberg, April 16, 2012).

This is a huge concentration of bank power that can turn into a financial systemic nightmare if the above giant banks continue to addictively intoxicate themselves into the toxic derivatives cocktail. At the same time, it is very hard to warn these banks to change strategy which increases their speed on the road to riches– even if that road might lead to their death.

This is why the Fed's response to the Great Response was pointedly focused on the Too Big to Fail.

If the $16.41 trillion – CBLS (Central Bank Liquidity Swap) – was excluded, all Fed assistance would have been provided to only 14 institutions with the six largest foreign-based institutions receiving 36% ($10.66 trillion) of the total bailout. Behind this massive bailout, one can sense the anxiety of Fed to prevent the collapse of any international too big to fail financial institution for fear of post-collapse total market disruption.

By all accounts, the too big to fail was a heavenly manna for the big financial institutions and their army of lobbyists who quickly adopted this new concept and went on to campaigning and convincing especially the regulators the overall importance of their big size – which they explained to be consequential to their scale of economies acquired not only in their endeavor to bring value to the economy by creating innovative instruments and new approaches but also in their earnest need to compete globally with universal banks from other nations; so the credo was the bigger, the better.

This narrative was entertained by a mind-set which proclaimed that what's good for Wall Street is good for Main Street and was facilitated by the revolving door between government and Wall Street (Reich, 2010). Any regulatory suggestion to break the too big to fail into independent parts less dangerous for the economy was quickly dismissed as radically populist, unrealistic, antibusiness, advancing ulterior motives or damaging to U.S. competitiveness while stifling innovation, competitiveness, and economic growth (Harper, 2011).

Wall Street became stronger indeed and in spite of the increasing public outcry – such as Occupy Wall Street – its adamant power was able to dismantle the Glass-Steagall Act under Clinton Administration and mitigate adverse provisions within the Dodd–Frank Wall Street Reform and Consumer Protection Act – which many experts believe to have left the financial system basically unchanged except that the crisis survivors became much bigger to fail, to prosecute and to tax with the Wall Street becoming as entangled and impenetrable as ever.

How dangerous is too big to fail

The banking power concentration has been a subject of hot debate from the banking, economic and political circles. Some Fed's current and former Chairmen and Presidents have condemned the too big to fail hypothesis and voiced worries about the risk of another crisis if the too big to fail continues to get even bigger.

Fisher (2010) categorically disagrees with the notion that the United States would not be able to keep its competitive edge on the global stage if it abdicates its banks' bigness to other nations. He specifically pointed out to the experience of Japan which came to regret its search for glory and distinction by having the world's biggest financial institutions.

The too big to fail hypothesis conveys the assumption that the big banks can act recklessly without fear of paying the ultimate penalty because the Fed and other government agencies will have no other alternative than cushioning their fall and assuming the damages – even if their troubles stem from carelessness or dishonesty – with such assumption, the big banks became so sprawling, so vast, and so complex that their risk exposures became too great (Fisher, 2010).

Given the danger the too big to fail banks pose in spreading debilitating viruses and sending tidal waves of troubles throughout the financial world leading to a downward spiral financial crises that destroys many jobs and many businesses, Fisher (2010) suggested that the big banks should be dismantled over time into institutions that can be prudently managed and regulated across borders while Hoenig ardently argued to stop them in holding the U.S. economy hostage (Reuters, 2011).

For Greenspan, breaking the too big to fail would stop the implicit subsidy that allows the big banks to borrow at lower cost because lenders believe the government will always step in to guarantee their obligations. Greenspan acknowledges that failure is an integral and necessary part of a free market system. Preventing the shrinking or the demise of moribund banks is not only tantamount to undermining the natural market correction but also it undermines the growth of standards of living (McKee & Lanman, 2009).

Volker has been very vocal and specific in breaking up the giant banks by suggesting that JPMorgan Chase should give up the trading operations acquired from Bear Stearns; Bank of America and Merrill Lynch should end their convenience marriage and go back to being separate companies; Goldman Sachs and Morgan Stanley should be deprived from their recent bank holding company charter; and a modern-day version of the 1933 Glass-Steagall Act – which was revoked in 1999 – should be reenacted (Uchitelle, 2009).

The voices of the above Fed authorities were echoed by many other experts from various walks of economics and political inclinations who strongly believe that the only way to save the economy is to break up the giant insolvent banks. Johnson (2012) believes that the giant banks are incredibly destructive for the economy and contended that without them, the U.S. banking system would be much cleaner and safer – and therefore more contributing to the economic recovery and growth.

Reich (2010) opined that the bigger the banks, the bigger their political leverage and the bigger the bailout from the taxpayers. Greider (2010) pointed out that the U.S. government's $182 billion bailout of AIG was a symbol of a gigantic spigot for circuitously distributing public money to private banking interests: as the New York Fed pumped more money into AIG, the insurance giant pumped it right out the door to satisfy the demands from counterparties like Goldman Sachs which collected $13 billion – a full value on assets Goldman Sachs claimed it was fully hedged, thus, avoiding any loss on those assets that were selling for less than 50 cents a dollar in financial markets.

The Congressional Oversight Panel, chaired by Harvard Professor Elizabeth Warren, warned that the rescue of AIG distorted the marketplace by transforming highly risky derivative bets into fully guaranteed payment obligations, thus, dragging the government into backing up the entire derivatives market, as if the derivatives contracts deserved the same taxpayer backstop as savings, deposits, and checking accounts (COP, 2010).

In his seminal book *A Demon of Our Own Design: Markets, Hedge Funds, and the Perils of Financial Innovation*, Bookstaber (2007) reminded us that the financial markets have become so complex and the speed of transactions so fast that an apparently isolated action and even a minor event can have catastrophic consequences.

The above summarizes how the dollar global liquidity created by private participants on financial markets – both in United States and foreign – can be very harmful on the U.S. financial system and how the access to official liquidity can save that system.

The banking bailout

The Great Recession couldn't strike at such bad time when the U.S. Presidential elections were raging. The Bush administration was so downgraded and winding up its activities and the Obama administration – in spite of a huge political capital – was too young into the job with such belligerent Republican Congress that any wholesome transformational reform was too tall to tackle.

To add panic to fear, with $613 billion in debt spread into so many intricate deals with so many companies and so many special purpose vehicles, the Lehman bankruptcy – which set off a chain reaction that caught an unprepared government and Wall Street as a whole – literally froze the global financial infrastructure. Nobody knew the risk web of Lehman counterparties, nobody had the idea of the impact of its collapse, and nobody had a clue of what it would take to save Lehman Brothers; most ideas and proposals to calm the financial turmoil were shooting in the dark (Bookstaber, 2007).

With such recipe for disaster and the continued financial hemorrhage, the out-going Treasury Secretary – Paul Hankson – instead of letting the moribund Fannie Mae and Freddie Mac to die their market death – he literally nationalized them – setting a tone for too big to fail. The in-coming Treasury Secretary – Timothy Geithner – followed suit and engineered a $700 billion stimulus along the same lines.

The rationale of the stimulus bargain was supposed to be simple: bail out the banks, and in turn, they bail out the economy and concurrently save whatever large U.S. corporations were still savable – such as the famous Rescue of the Auto Industry – which turned out to be one of the biggest successes of the Obama Administration. It is estimated that the Rescue of the Auto Industry saved around 1 million jobs and add more than 230,000 new jobs.

It didn't take long for the above Obama strategy to come under the spotlights. Johnson (2012) – while recognizing that the President's fix mitigated some risks – but he refuted it as fatally flawed because his fix failed to force the largest banks to change their behavior. The crisis – he noted – was not a liquidity crisis, but rather more of a behavioral crisis, and as long as constraints weren't legislated, complexity was bound to multiply and take on new forms that would defeat the regulators.

In terms of free market postulates, a bailout is counter-market because it prevents or delays the necessary market corrections to take place in addition of being counterproductive in many ways. (1) It extends government life-support to zombie-banks and moribund corporation that should die out for sake of weeding unhealthy institutions that are rotting to the core and draining life-force out of

the economy out healthy markets, (2) it can lead to moral hazard big time whereby the bailed out institutions take riskier bets at government expense such as the bonuses the banks at Wall Street distributed soon after being bailed out during the Great Recession, (3) it can set the stage or the next crisis which could be much more severe.

In spite of the U.S. Department stance which believes that the bank investment program helped stabilize the financial system by providing capital to more than 700 banks and the whole stimulus exercise even produced decent returns to the taxpayers, some analysts still criticize that there is a structural flaw in the United States' monetary system and point out to a built-in weakness and moral confusion between public purpose and private returns in the Fed banking system as a hybrid government agency that melds public and private interests whereby regulated bankers participate side by side with their regulators in the policy-making of Fed according to Greider (2010).

All being said, the fundamental question that still persists is why the banking industry continues to be as dysfunctional as they have been since the Great Recession began in 2008 after gobbling trillions in various government programs and Fed's credit facilities and its swallowing of the banks' troubled assets that soared its balance sheet. Wasn't bailing out the economy after being made liquid by the taxpayers, their part of Wall Street in the bailout bargain?

Williams (2012) asked a similar question in different terms by wondering why the tripling of monetary base defined as M2 – the sum of U.S. currency in circulation and bank reserves held at the Federal Reserve – engineered by the Fed since 2008, didn't trigger substantial rises in terms of lending and spending and decrease in unemployment as expected.

Instead, aberrant investment behavior was observed across the U.S. banking system. Simply put, the banks didn't lend; instead they peculiarly increase their reserves at the Fed to a staggering $1.5 trillion and preferred to incur a high opportunity cost of holding such reserves in near zero-yields offered by Fed and ran away from risks in lending in a volatile environment that continue to prevail since the crisis – which was further clouded by an economic horizon darkened by continuing Europe debt anarchy and the fiscal uncertainty the U.S. Congress has been inflicting to the economy.

In other words, in spite of the interest rates at historically low levels, the conventional money multiplier didn't get any traction or was broken down and didn't respond to the massive M2 which was supposed to trickle down into the economic system (Williams, 2012).

As the economy stayed sluggish, the Fed printed more money, but it only boosted the financial markets and benefited their major

players who simply hoard the newly printed money in vaults at the Fed or poured it into financial markets driving up security prices instead of investing productively in order to invigorate the real economy as expected.

This led many analysts to argue that the easy monetary policies have led to moral hazard on a grand scale and it was therefore a bad idea. However, this condemnation has been met by a stand counterargument stating that the expansive monetary policies of Fed and other central banks around the globe helped to avert a looming economic disaster and, in effect, bought time to pursue other policies that would bring more desirable outcomes (White, 2012).

Since the storm of the Great Recession faded away and dissipated the major concern to prevent a global financial market cataclysm by bailing out the global intermingled big to fail banks in line with Bernanke's theory regarding the Great Depression, the question still persisted why did the Fed continue to pump up liquidity into the system that didn't boost the economy?

In the opinion of Williams (2012), the Fed broke down the historical relationships between the amount of reserves, the money supply, and the economy championed by Milton Friedman. As the financial system seemed to stabilize and the economic recovery seemed to strengthen through 2010 and early 2011, the quantitative easing became the only game in town and took another dimension from its traditional objective of stabilizing the financial system and firmly embarked on a Keynesian orthodoxy of restoring aggregate demand in order to avoid the repeat of the 1930s Great Depression which was blamed on Fed for not easing enough dollar-liquidity into the global financial system.

One can opine that the failure of Fed to boost the economy through its expansive monetary policy and its soaring balance sheet is due to some kind of multifaceted financial repression existing in U.S. financial system whereby (1) the rate of monetary growth in the finance economy exceeds the rate of monetary growth in the real economy; (2) the rate of monetary growth in large U.S. corporations exceeds the rate of monetary growth in small U.S. companies; (3) and the rate of monetary growth in rich high class exceeds the rate of monetary growth in middle and poor class.

The U.S. financial repression – while more subtle and less ruthless than the Chinese financial repression – creates a multi two-speed economy as well – leading to a sharp unbalanced growth in which the finance economy, big corporations, and the wealthy class are literally subsidized through easy access to liquidity which soars cash at hand in big corporations such as Apple, low-risk investments such as real estate and financial assets like stock market securities they monopolize; while the real economy, small companies, and middle and poor class are left with a sluggish-to-declining growth –

thus, diminishing their role as the drivers of growth – especially since in various instances wealth is effectively transferred from the latter to the former – mainly through debt servicing of student loans, car loans, housing loans, credit cards, and the likes.

The finance economy is the symbol of the big-to-fail banks which opulent prosperity continue to run on bubbles and government bailouts when they burst. It is the ivory tower of the derivatives and it looks more like an isolated island in the sea of the real economy than an integral part of the overall U.S. economy whereby, more money is made through the wild bets on financial instruments than financing the very real economy – which serves as its substratum.

The real economy has 2-speed-economy within itself. On one pole of the real economy spectrum, there are Traditional Economy and Creative Economy according to Shaughnessy (2015) who argued that the traditional economy is made of big, strong and powerful lumbering giants such as General Electric and Walmart with plentiful resources, but which have difficulties to adjust to the ever-wired marketplace of the 21st century.

This why the above traditional corporations are trending downwards; while the companies – such as Google, Amazon, Apple, Intel, IBM in the creative innovative economy – are constantly innovating new technologies that bring about new techniques and improve existing ways of life. These companies are becoming wealthierand it seemsthey are setting the tone for the future corporation.

On the other pole of the real economy lie the Medium-to-Small companies which have hard time to access capital due to the risk perceived by the banks – which have plenty opportunities of alternative speculative investments in the finance economy – toward them. Most often than not, these firms don't have the means and the prerequisites to raise capital on the stock or bond markets like their big brothers – which actually are awash with cash such as Apple. Hence, as the rivers flows into the oceans, funding from the banks and securities markets tend to speed up cheaply toward big corporations – which often don't need it, while slow-moving and expensive money flow to the Medium-to-Small companies which badly need it.

As discussed above, the rationale to give almost free liquidity to finance economy, big corporations, and the wealthy was the famous trickle-down economics whereby once these rich entities get the money, they will then invest it into productive activities that create jobs. Was this wish realized as expected? This is a matter of economics or political opinion – depending where you stand over the two-speed economy!

While the financial repressor in China is the government that constrains the production inputs such as wages in favor of the

production sector for export at the detriment of the consumer sector, in the United States, it is hard to determine the financial repressor. Is it the U.S. government? Is it Fed and the banking system?

Since Fed enjoys some autonomy, it can be easily incriminated as the financial repressor because it is the enabler of the two-speed monetary growth in finance and real economy. But the government cannot be exonerated because – while genuinely trying to curb the abuses that led to the Great Recession – its policies made credit environment stricter and more constrained – thus making funding more expensive and out of reach for the poor and small companies. Furthermore, since the United States is a market-driven economy, the financial repression cannot be direct over production inputs such as wages, but it is more indirect in terms of financial access and tax incentives and loopholes.

2.3.4. THE INTERACTION BETWEEN PRIVATE AND OFFICIAL LIQUIDITY

As it has been discussed above, the private dollar global liquidity quantitatively dominate the official dollar global liquidity. In domestic monetary economics, the official liquidity is the basis for private liquidity creation via money multiplier through the fractional-reserve banking system. With one unit of official reserve, the banks are able to create corresponding private liquidity (credit expansion) in multiple. When a financial crisis strikes, the credit system freezes and the money multiplier falls flat to zero. Thus, the official liquidity and the access to it becomes very critical to maintain adequate global liquidity.

The international interactions between private and public liquidity are more complex as they involve foreign exchange reserves accumulated officially. However, since they are mostly invested in safe dollar-denominated assets, they contribute to the global dollar liquidity expansion. In other words, foreign reserves end up into the central banks where they pick up – even increase – the speed of the money-multiplier prevailing in the domestic banking system.

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CHAPTER

3 Theoretical Framework

3.1. Overview

The U.S. dollar acquired all the attributes of a world reserve and global currency status because the U.S. dollar had achieved the capability to provide stable and reliable liquidity necessary to overhaul the world economy in the post-WWII geopolitical landscape. As discussed above, the United States found itself the only anointed leader with the most robust fundamentals: the largest economic scale in terms of GDP and international trade, the best and trustworthy macroeconomic stability, the deepest liquid markets, the most extensive network externalities and the strongest geopolitical power.

Contrary to the common wisdom, the U.S. dollar was not a Bretton Woods-made world reserve and global currency. Bretton Woods just formalized what was the evident reality. Backed by the healthiest economic and geopolitical fundamentals, the U.S. dollar was the unchallenged dominant world currency by 1945 and the most indicated anchor currency to help pull the exhausted countries out the economic devastation caused by the war trauma.

The Bretton Woods System added to its dominance the good as gold reliability by establishing a $35/ounce-fixed peg and allowing the rest of the currencies the latitude to peg to the dollar or to gold. The resulting outcome was that all the currencies under the Bretton Woods System peg indirectly to gold through the dollar-peg because of its superiority in terms of liquidity, mobility, return and the commitment guaranteed by the U.S. government to redeem the dollar liabilities into gold through the U.S. Treasury Gold Window.

This superiority – which further reinforce the preeminence of the U.S. dollar in the world economic activities and fostered the sheer scale of markets in dollar-denominated assets – not only tre-

mendously reduced the dollar-transactional costs – but also with the advent of the derivative instruments – it became extremely easier to hedge dollar exchange-rate risk – making the U.S. dollar the unsurpassed currency in the global economy.

Adversely, the more countries relentlessly accumulate the dollar-denominated assets – especially as a medium of intervention to defend their domestic currencies or to implement their export-led growth strategies – the more they become locked into their dollar-liquidity holdings and the greater the incentive to support the value of the U.S. dollar given the potential losses they might incur on their dollar-denominated assets stockpiles and the gloomier the impact the financial shocks the U.S. dollar's demise can inflict on their domestic economies.

3.2. Great Powers Have Great Currencies

3.2.1. LEADING COUNTRY THEORETICAL OUTLINE

The old adage suggests that power flows from the barrel of a gun. In other words, military force is the key to superpower through conquest and subjugation. This is the world of the fittest! As if the military power was not hard enough, Hobbes (1651) included economic forces – such as trade embargos – can be added to the arsenal available to powerful nations as coercive instruments over other nations' behavior.

Because of its coercive and mostly its brutal feature, the military power has had a hard time in being legitimatized over long haul. In this globalized world where every bout of information is democratically spread the world over at the speed of light, the hard power – especially its military hard core – can quickly lose its appeal and end up destroying the international image of the imposing power – which in turn tarnish its credibility and reputation within the international community such as the hopeless Russian entanglement into Ukraine simply because military adventures – especially if they are considered per the international community as baseless military attacks – lead to the bankruptcy of the invader's moral acumen – an attribute required from the Superpower as a stabilizing force of the global system.

Hubbard (2010) quantitatively investigated both British and American hegemonic global governance for the periods from 1815 to 1939 and 1945 to 1999 respectfully; and found that the hegemonic superpower is a better stabilizing force of the international system through the use of its economic power than its military might.

Based on these findings, the United States' imbroglio in the Middle East would have resulted into a healthier peaceful and stabilizing outcome if the United States would have used its economic strength instead of its military supremacy – especially since the more the Hegemon Superpower engage militarily in the world, the higher the levels of conflicts observed in the international system according the findings of Hubbard (2010).

Given the above inherent limitations of the hard power, Nye (2004) refined the superpower by theorizing that the hard power – in spite of its historical intensive usage – is only at one end of the superpower spectrum. At the other end lies the soft power which Nye (2004) defines as a nation's ability to attract and co-opt rather than coerce by projecting in the world – not only its military and economic force – but also its values, culture, policies, and institutions.

However, the demons are in the exercise of the soft power because it is not as straightforward as military invasions. It covers such fluid areas requiring special skills – such as persuasion, seduction, and creation of conducive environment for other countries to admire the superpower's values, emulate its way of life, aspire to reach its affluence and openness, acclaim its political, educational, mass media and sport system, business acumen and innovation; to be acquiescent by its appealing ideology and rule of law, to adopt its national language, accept it as their role model in defending democracy, human rights, and liberty and in readily lending its helping hand in its emergency-endeavors during catastrophes and calamities across the globe.

In-between the two poles, there is a whole range of smart power – which is a variety of blended hard and soft power. Given the interconnection of the hard and soft power, Miller (2005) suggested that the basic components of superpower stature should be measured along four axes of power: military, economic, political, and cultural. Zakaria (2011) echoed the same attributes by arguing that a superpower is a country that achieves dominance in ideas or ideology, economic system, and military power.

While debate around the scope of superpower is an ongoing issue, empirical evidence is adamant about the high correlation between poverty and dependence. Economically small or militarily weak nations cannot be expected to dominate others; they are naturally dominated by greater powers. Only superpowers – by displaying their deterring military and economic dominance and projecting both their soft and hard power into the world – can indeed orchestrate and command a worldwide influence and strive to make their ideology universal.

A country that has the right blend of the above determining factors of superpower becomes a key leading country in the world.

Having power and be able to project and stamp its own inspiration and influence on economic and security issues regionally and globally are two different things. Countries like Brazil, China, India, Russia, and European Union are all great powers in their own right due to their military might, large economic size, real, or potential influence in the world – but they are far from being planetary superpowers.

The great powers are integral part of the contemporary world power pyramid with the key leading superpower sitting at the top of the pyramid of the global political system defined by Huntington (1999) as a unimultipolar system characterized by one superpower and a couple of great powers.

3.2.2. UNITED STATES' GEOPOLITICAL LEADERSHIP

Huntington (1999) has argued that the United States is the sole State with preeminence in every domain of power – economic, military, diplomatic, ideological, technological, and cultural – with the reach and capabilities; depth and breath, to promote its interests in virtually every part of the world. This view has been echoed by Pei (2009) who claimed that the United States is the only country that has truly acquired all the capabilities of a superpower (Figure 3.1).

Long before the United States became a recognized world power, the American Exceptionalism – the nation's devotion to freedom, rule of law, practice of republican government, openness to immigrants of all races and religions, opposition to traditional power politics and imperialism, commitment to religious toleration – has had a great deal with the rise of the United States' global appeal and to its currently dominant international role (Lord, 2008).

The aspirational exceptionalism and the self-ordained mission to spread and impose the self-decreed civilization and superior way

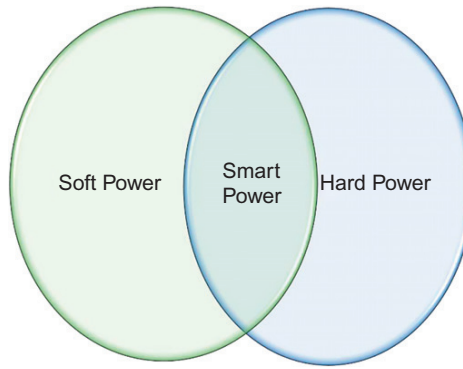


Figure 3.1: Components of a Superpower. *Source*: Ganziro (2012) depiction.

of life and even bring divinity over to other human races – often perceived as uncivilized and barbarian – has been claimed across time and space by many civilizations, empires, and nations in their golden age such as Athens, Rome, Babylon, the Moguls, the Ottoman, the Chinese Ming Dynasty, the Francophonie along with the European colonial axis.

However, the staunch believers and defenders of the U.S. exceptionalism – as a beacon of the world – are adamant in cherishing the notion that the United States is different, unique, endowed with the most strategic geography and privileged in many aspects in the world and has therefore a specially anointed responsibility to manage international affairs and occasionally the right to intervene in the internal matters of other nations and even punish outlaw-States for the sake of the fairness and stability of the world order that requires the United states – as the dominant superpower and assertive hegemon – to stabilize the international system (Hubbard, 2010).

Their exceptionalist ideology took firm roots in the American anti-colonialist sentiment in 19th century directed to the European foreign entanglements and colonial adventurism according to Farley (2011) who argued that this ideology became one of the driving forces of the U.S. foreign policy since the end of World War II.

The visionaries of the exceptionalist ideology held the understanding that the United States has a historic – and possibly divinely inspired – mission to bring peace, freedom, and democracy to the world, and that American military power plays a central role in this noble mission to die for (Farley, 2011). The American soldiers who lost their lives in foreign land in the European World War I and II and subsequent wars in Vietnam, Korea, and elsewhere died for the above principled cause.

It has been often indicated that the American Exceptionalism is empirically evidenced by the behavior of the United States at the end of the WWII. Even though there had been some self-interested economic calculus like the one leading to the Bretton Woods Conference, but the United States morally departed from the powers of the past by not pursuing a policy of oppression toward the exhausted Europe and defeated Japan albeit it had the absolute power to subdue them as did the European powers in their colonies, the Russia in the Soviet Union satellites and many others in the past such as Napoleon, Alexander the Great, the Roman Emperors, the Egyptian Pharaohs, etc.

Instead of trampling on them, the United States took on the most demanding commitment to maintain a $35 – fixed dollar peg to gold and agreed to redeem the dollar liabilities held in other central banks in exchange for gold at that fixed rate. By upholding a pledge that the dollar was good as gold, the United States provided the confidence that public and private actors needed to embrace the

special reserve and liquidity functions of the dollar in the world economy – especially for allied governments in Western Europe and Japan completely devastated by the war – and transformed them into real winners and competitors.

Furthermore – not only the United States committed to guarantee their security, including the stationing of U.S. troops on their territories which is regarded as the most tangible manifestation of that commitment according to Yap (2011) who further argued that the United states also availed sufficient dollar liquidity which their central banks accumulated in order to prevent their local currencies from appreciating beyond the acceptable range of their fixed exchange rates so as to maintain a competitive export position into the large U.S. consumer market – literally allowing a competitive advantage edge against its own exports!

Europe and Japan along with the emerging economies greatly benefited – not only from the dollar-financial umbrella through the access to the large open market of the United States which aided their export-led development strategies to blossom – but also through the projection of U.S. military power that protected the flow of vital raw materials into their economies and the security aegis that insure a stable and conducive investment climate and the rise of the overall economic productivity.

The eagerness to help and devise the financial means to uplift the nations shattered by the war – even under the dictates of U.S. market expansion – bestowed upon the United States a great deal of superior leadership by orderly governing the global structure – not by a coercing force – but by using its foremost position of power to foster liberalism, democratic ideals, and free market system worldwide. It is obvious – and even politically compelling – to promote the U.S. interests in this global endeavor whenever it is possible – after all, the whole undertaking was supported and financed by the American taxpayers!

Pei (2009) qualified the Pax Americana – which is concomitant with American Exceptionalism – by postulating that the United States is a special nation in terms of its inalienable principles, sound economic and socio-political fundamentals, innovation, advanced education, geographical uniqueness and even spiritual drive and – in spite of some deplorable racial violence and discrimination episodes – it is a country that has better achieved an overall symbiotic racial evolution than any other country on the planet. He concluded that the United States is "an accident of history that cannot be copied by another country".

In the opinion of Ratner and Wright (2013), this explains why "elites around the world remain eager to send their fortunes, and often their families, to the United States", simply because it has "the people, ideas and security to thrive at home and on the world stage".

3.2.2.1. Military power

Behind great economies, there are great militaries

An economy cannot be a world economic powerhouse without being backed by a corresponding military power. Regardless of differing views, no other nation on earth comes near to the commanding U.S. military superiority in terms of smart bombs, military IT, or in sheer military force capabilities (Engdahl, 2006) and many analysts have argued that prosperity in Europe, Japan has sprouted under the umbrella of this U.S. military might.

It is beyond doubt that the U.S. remains the strongest hi-tech military power with the world's largest navy surpassing the next 13 largest navies combined – with a fleet of more than 10 supercarriers, 9 largest state-of-the-art Amphibious assault ships and a taskforce of the largest and most advanced submarines in the world – along with unrivaled army and the largest air force flying the most sophisticated and advanced fighters and bombers in the world coupled with the most advanced drone (UAV: Unmanned Aerial Vehicles) capabilities.

The above overwhelming firing power is supported by the largest nuclear arsenal in the world, the largest armament production, an unmatched global military deployment, satellite and intelligence network (CIA) that collect pertinent information globally almost in real-time the world over – and an impressive leadership in civilian and military aircraft manufacturing.

The United States has cultivated across time and space the far-reaching network of powerful reliable military allies – such as NATO – with their own nuclear capabilities and military greatness – giving the United States expansive striking capabilities on any soil anywhere in the world at short notice – while the U.S. Missile Defense Agency manages the world's most advanced Ballistic Missile Defense System – all backed by a $700 billion-U.S. military expenditures – the highest in the world and larger that the next top 10 military spenders combined.

Even though critics claim that in most of the wars the United Stated has been involved into since the WWII – such as Vietnam and Middle East – have been inconclusive in terms of clear victory, the U.S. global firepower in terms of conventional warfare across land, air, and sea is second to none and constitute a formidable global deterrence! No one has the logistics to project such superior power as quickly and as far across space as the United States.

Link between the U.S. dollar supremacy to the United States

Global security umbrella Right at the end of the WWII – especially with the rise of communist block – many countries, particularly in Europe and Japan – needed and sought for the security and stability provided by United States' military strength. With the nuclear proliferation, this imperative still stands today.

In 1960s when France was in full swing in criticizing the U.S. dollar exorbitant privilege, West Germany – because of security reasons – made the necessary economic adjustments to accommodate the U.S. deficit (Mastanduno, 2009) and most Europeans saw the defense and maintenance of the dollar as preeminent reserve currency as a way of financing their joint defense (Teunissen, 2009) provided by the U.S. military apparatus.

This explicit linkage between the security commitment to maintain U.S. troops on its soil and the absorption – by the West Germany – of the external shocks transmitted from the U.S. monetary and fiscal policy supports the premises that foreign policy and national security are critical factors in exchange rate relationships according who clearly explained that up to now – as Japan is still sensitive to external threats from China and other potentially hostile regional powers – it has never altered its model in terms of large holdings of dollar-denominated official assets as a price to pay for its perceived need for U.S. troop's presence on its territory.

The 1986 Baker-Miyazawa deal – through which the United States engineered its strong economic recovery and a soft landing of the dollar by persuading Japan to cut interest rates and stimulate demand through fiscal packages that resulted in a sharp appreciation of the Yen vis-à-vis the Dollar – has been described as an example of the ability of the United States – not only to shift the burden of economic adjustment onto other countries (Norrlof, 2010) – but also to monetized its military security supply.

Norrlof (2010) has contended that the above indicated Japan's accommodation can be traced to America's security card and argued that the United States' formal defense commitments to Japan were the source of Japan's incentive to support the U.S. dollar. Whatever motive and rationale behind the U.S. military security supply, the history has recorded some beneficiaries – willingly or not – paying the security bill in financial terms that effectively defended the value of the dollar. In this context, the imbalance in global governance can become be an indirect primary source of the global macroeconomic imbalances.

The Baker-Miyazawa deal was indeed at the origin of stagnation of the Japanese economy for nearly two decades due to the subsequent sharp appreciation of the Yen which sent the Japan's domestic industry into a bubble economy that busted toward the end of the 1980-decade (Corbett & Ito, 2010). This led Gilpin (1987) to qualify the U.S. security over Japan as a conversion of the American military into a mercenary force defending Japan in return for Japanese capital. Military power can therefore have far-reaching economic implications.

The security relationship between the United States and Japan has indeed contributed to the displayed conservatism of Japan's exchange rate policy. The security concerns overcame the Nixon Shock when Japan – perhaps the hardest-hit country in macroeconomic terms by

the 1971-Nixon decision to shatter the Bretton Woods' Fixed Exchange System by closing the U.S. Treasury Department's gold window – paradoxically did nothing to diversify away from dollar-holdings or to target other currencies to improve its exchange rate (Posen, 2008).

The U.S. security umbrella has also been viewed as the main inertial blockage preventing many countries in the Euroland's nearness to switch from the Dollar to Euro – in accordance of the Mundell's Optimal Currency Area Theory which defines a geographical region in which a single currency would maximize economic efficiency for the entire region.

According to Posen (2008), this switch cannot happen as long as the Eurozone members have a limited ability to project and impressed their security relationships beyond their immediate neighborhood; thus, countries around the world don't find enough compelling incentive to shift away from their dollar-peg to euro-peg and jeopardized their security and diplomatic ties with the United States for some basis points gains in the switching mix.

It is similarly inconceivable – in the current global context of ongoing military deployment and nuclear threat – to think that South Korea or Saudi Arabia would switch from their dollar-peg and move to a Yuan-peg or Euro-peg.

Strategic geography

The United States is no doubt blessed with an impressive and the best strategic geography in the world with the Greater Mississippi Basin together with the Intracoastal Waterway having more kilometers of navigable internal waterways than the rest of the world combined and its Atlantic Coast alone possessing more major ports than the rest of the Western Hemisphere combined (Stratfor, 2013).

The U.S. territory is further unique as it contains all range of climates from fully Arctic in its northern Alaskan stretches to fully tropical at its southern reaches while it's Midwest encompassing the most productive and the largest contiguous piece of arable land on the planet.

Farley (2011) contended that the United States can be viewed as a virtual island with the two interconnected massive Pacific and Atlantic Oceans – shielding it from the East and the West Coasts along with reliable neighboring allies on its North and South borders supporting the idea that any threat to the United States would have to come from beyond American Continent. Empirical evidence shows indeed that – except the Revolution and Civil Wars – no other economically devastating war has been fought on U.S. soil.

This territorial security along with its size, the third largest country in the world after Canada and Russia – which are disadvantaged by vast area of frozen soil – bestows upon the United States a vast geopolitical advantage and an enormous ability to

project power on global scale (Stratfor, 2013) while being perceived as a remarkably safe place to live and invest in the world.

This is in contrast with other sizable continental powers such as Russia, Germany, China, or India whose ability to devote resources to noncontiguous regions are severely hampered according to Grygiel (2006) who further contended that before any superpower projection is attempted; that power has to have a base in the geopolitics which is traditionally defined as the links and causal relationships between political power, geographic space and land power, and the ability to convert that land power into political power.

This capacity to convert the land power into political power is very important because the lack of it leads to the paradox of unrealized power whereby, a country – like many countries in Africa such as Congo, Nigeria, Angola, Sudan – can be identified as the home of the world strategic resources and yet, be catalogued as the weakest and underdeveloped countries (Grygiel, 2006).

Such countries have the resources but have not sufficient knowledge and means to convert them into power. In such case, more often than not, the domestic wealth is appropriated externally and lead to a misdistribution and flight of wealth outside the country (Grygiel, 2006). On this front, the United States combined both ends of that power spectrum with large natural endowments and the knowledge – not only to transform them into power – but also to control, protect, and appropriate endowments from other countries and convert them into U.S. geopolitical power – making the United States a truly global dominant power in the world.

According Stratfor (2013), as of 2014 – there is in the international system – neither a State whose power is continental in scope – nor a power whose rise is imminent to dislodge the United States from the its leading geopolitical power on the global stage – especially as almost all the major regions of the world are simply too geographically hostile to regional integration to pose significant threats to its superpower (Table 3.1).

In addition to the above tyranny of the regional geography and political consolidation for the emerging of a power challenging the U.S. supremacy, the United States – through military and economic assistance and direct military expeditions – has been working zealously to prevent as many States as possible from joining any system or alliance structure hostile to U.S. power or siding against the United States or simply keeping regional blocks divided according to Stratfor (2013).

Armed with a truly geopolitical superpower and a military dominance over the seas, the United States has such intervention capabilities to intervene and prevent or eliminate the possibility of any regional hegemon to emerge anywhere on the planet.

Table 3.1: Unchallengeable U.S. Geopolitical Supremacy.

Region	Potential Challenges to U.S. Geopolitical Supremacy
Africa	• Extremely fragmented in terms of geography, tribes, languages, nationalism, political leadership, cultures that Africa to unite into a truly United States of Africa as a challenger to the U.S. supremacy – not even remotely.
Australia	• Most of it is not habitable – except coastal cities loosely connected spread around the edges of a largely arid and hollow landmass – thus, it is hard to fathom how Australia can be a functional mega-state capable to challenge the U.S. supremacy.
South America	• Too much competition between South American countries. In the remote likeliness for the South American consolidation to take place, it will has to be articulated on Brazil – the largest state in the region – but it has a fundamentally different culture and language from the rest that the unification of the region into a sub-continental geopolitical challenger to the United States is not the seeable future.
Asia	• Unfriendly geography characterized by non-navigable waterways and huge mountain boundaries. The habitable areas are crushingly overpopulated and still poor. From the Middle East to Japan via China, India, Pakistan, it is inconceivable how such amalgamation of countries some of which are longtime rivals will form a unified Asian block to challenge the United States superpower.
Europe	• The geography is also inauspicious without navigable waterways connecting the European countries. The experiment of the European Union has yet to be out of the woods of disintegration. It is not by adding Russia which will naturally will bring such differing political, economic, and cultural system and even rivalry that the United States of Europe in the image of the United States of America will emerge to challenge the United States' geopolitical superpower.

Source: Table designed by Dr. Ganziro based on Stratfor (2013).

3.2.2.2. Economic Power

Most technologically advanced free-market economy

The United States has the world's most technologically advanced and the most powerful free enterprise economic system which is articulated on private ownership. The United States enjoys the best mixed economy in which both government and privately owned businesses play important roles whereby private individuals and business firms are vested with greater flexibility.

The United States is a consumption-driven economy with total consumption having a lion share of the GDP in terms of end-use at 86.8% (with household consumption standing at 68.7% and government consumption at 18.1%) followed far behind by the total investments at 16.3% (accounting for investment in fixed capital at 15.9% and inventories investment at 0.4%); while the imports of goods and services counting for −16.4% (CIA World Factbook, 2014). In terms of GDP per sector, the U.S. Economy is service-driven with Services

accounting for 77.7%, followed by Industry at 20.7% and Agriculture at 1.6% of the $17.46 trillion GDP estimated by the CIA in 2014 (CIA World Factbook, 2014).

Even though consumption is the engine of the United States and global economy, the United States has also an enormous industrial base making it the world's largest manufacturer and the most competitive, with a 2014-industrial output of US$3.61 trillion representing a fifth of the global manufacturing output. And even though there are some factories and some types of jobs that have disappeared on the face of the United States manufacturing landscape, but overall, the U.S. manufacturing output has been expanding simply because of the U.S. high productivity which achieves far greater production without a proportionate labor inputs or requiring a new set of knowledge and skills.

According to Perry (2012), the U.S. manufacturing sector is at the forefront of the economic expansion based on all relevant measures of economic performance: profits, output, and employment – with greater growth in after-tax profits, greater growth in after-profits per employee and it has maintained a stable overall GDP growth rate, a moderate unemployment rate in non-recessionary years, and high levels of research and capital investment. It is highly diversified industrial sector leading in high-tech innovations worldwide leading.

On the same resonance, Naim (2014) also believes that the technological innovations such as robotics, scientific discoveries such as nanotech and oil and gas fracking advanced technics, 3-D printing are likely to trigger a manufacturing revolution in the United States.

Although agriculture accounts less than 2% of the economy, the United States has the largest modernized farming industry spanned on vast tracts of temperate arable land that earned the United States the label of the bread basket of the world as net exporter of food – producing around 55 kg of corn for every human being on the planet.

The United States has the deepest financial markets

The country is the home of the largest and most influential financial markets. Measured by value of its listed companies' securities, the New York Stock Exchange is more than three times larger than any other stock exchange in the world; while NASDAQ – the world's third largest exchange after the New York and Japan's Tokyo Stock Exchanges – is the largest electronic screen-based equity securities trading market and has more trading volume per hour than any other stock exchange in the world.

Abundant natural resources

The United States has also abundant natural resources such vast amounts of fresh water, minerals, timber, and every resource needed

for energy independence such as petroleum, natural gas, coal, wind, solar power, etc. The combination of new and improved technologies in oil drilling, natural gas extraction, nuclear power, solar conversion, energy efficiency, combustion engines, hybrid cars, fuel cells, etc., have put the United States on an unstoppable path to being free of importing oil for consumption.

Currently, the United States is the world's largest producer of oil and world-leading natural gas producer of natural gas and by 2030, North America will become a net exporter of oil and, by 2035, the United States will become almost self-sufficient in energy (IER, 2012).

More importantly, this domestic energy boom will bring the United States to a very strong economic footing that will allow it to completely eliminate the threat from the geopolitical leverage posed by large petro-exporting countries for decades.

Trading power

Excellent competitiveness The United States is one of the top-performing business economies and highly ranked in global studies and indexes such as Ease of Doing Business Index, Global Competitiveness Report, IT industry competitiveness Index, etc. The U.S. exports are increasingly skewing toward more sophisticated and high-value-added products – very hard to cut and paste.

The U.S. competitiveness has plaint room for improvements as the United States gains from cheaper and the regulatory apparatus surrounding the business processes becomes much more accommodating such as policies on taxation, energy, education, infrastructure, trade, investment, and innovation. Deloitte has estimated that U.S. manufacturers spend 18% more than their foreign competitors on nonproduction costs like tax, energy, and other expenses.

Sophisticated network of small, medium-sized and multinational businesses The United States has – not only the most sophisticated network of small and medium-sized businesses – but also is the home to 133 of Fortune world's 500 largest companies and charitable foundations with tremendous global influence (Table 3.2).

These U.S. multinationals have very deep global penetration and increasingly strong market presence in China – offsetting the antagonizing notion that the rise of China will mean the eclipse of United States as leading world power – but rather supporting the argument that the cooperation and interdependence between China and United States will be intensified and very beneficial to the growth of China and U.S. companies and U.S. at large according to US-China Business Council Report (2013).

Contrary to the rhetoric that the U.S. multinationals have abandoned the United States and move their productions to China and

Table 3.2: US-Based Multinational Companies in 2007 ($millions).

	U.S. Multinational Companies		U.S. Affiliates of Foreign Firms
	Parent companies	Affiliates	
Number of firms	2,270	26,342	10,941
Employment (thousands)	22,003	11,738	6,016
Employee compensation	$1,392,180	$475,595	$433,065
Gross product	$2,588,811	$1,117,585	$657,558
Total assets	$19,964,935	$14,201,291	$12,732,967
Sales	$8,614,733	$5,517,143	$3,553,593
Taxes	$257,292	$179,922	$57,731
R&D expenditures	NA	$35,019	$44,158

Source: U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Their Foreign Affiliates, Preliminary 2007 Estimates; and Foreign Direct Investment in the United States: Operations of U.S. Affiliates of Foreign Companies, Preliminary 2007 Estimates.

other low-cost environment and then flood the U.S. markets with cheap, low-quality products in the U.S. malls, Slaughter (2010) proved them untrue and found that up to a striking 92% of U.S. affiliate sales are absorbed by the host-country market or other foreign markets, and only 8% of affiliate sales are imported back into the United States – meaning that the overwhelming majority of what affiliates sell abroad stays abroad, rather than being imported back to the United States to displace U.S. activity – while an astounding 89.1% of $5.76 trillion of purchase in intermediate inputs worldwide by U.S. multinationals was bought from other companies in the United States.

The notion that entire factories are being uprooted from the United States and shipped to China is therefore very misleading. According to US-China Business Council (2011), aggregate capital expenditures spent by American multinationals in their US-based manufacturing facilities between 2000 and 2008 totaled $1.5 trillion – that is 84 times of the $18 billion they spent on their China facilities over this period. The unwarranted claim that United States' manufacturing has been offshoring to China is grossly overstated.

Furthermore, the activity of U.S. foreign affiliates is concentrated in high-income countries that in many ways have economic structures similar to the United States – such as United Kingdom with 15.4% of U.S. foreign affiliates, Canada with 10.4%, and Germany with 7.8% – not in low-income countries such as China which is in the lower end of the list of the Top 10 recipients of U.S. manufacturing expenditures accounting for just 2% of U.S. foreign affiliates and India accounting for a meager 0.7% in the total affiliate output in 2007 (Slaughter, 2010).

This doesn't mean that the U.S. manufacturing is not interested in establishing a firm presence in China; on the contrary, U.S. multinationals – like other multinationals – are very eager to position in this huge and fast growing market – which some experts estimate to grow at as much as $10 trillion annually (US-China Business Council, 2011).

The U.S. foreign affiliates are very competitive and surpassed the profitability of their parents –accounting for 52.2% ($765.2 billion) versus $701.3 billion at the parent level of the worldwide net income of U.S. multinationals. In terms of U.S. domestic contribution, the performance of the U.S. Parent companies is also staggering according to Slaughter (2010) (Table 3.3).

The U.S. geopolitical powerfulness is greatly re-enforced by its strong politico-economic ties with Western Europe, Latin America, Africa, and several East Asian countries. It is the custodian of the dominant reserve currency at the center of the world economy and which serves as a global safe-haven asset in which the rest of the world takes refuge in time of crisis.

The United States is the second largest trading nation on earth after the 27-member European Union in terms of the total volume of international trade – immediately followed by China.

The United States has a vast, well-developed, and most advanced infrastructure in the world with a constellation of airports and ports, sophisticated interstate highways, state roads, bridges, and railroads systems. The 45,000-mile Interstate System connects

Table 3.3: U.S. Multinationals Activity.

Percent	U.S. Dollars	Reference to
24.9	Or over $2.5 trillion	Of all U.S. private-sector output measured in terms of GDP
31.3	Or $442.6 billion	Of all U.S. private-sector capital investment
48.0	Or $495.1 billion	Of the U.S. total exports
75.8	Or $187.8 billion	Of the total R&D performed by all U.S. companies
19.1	Or 21.7 million U.S. workers	Of total U.S. private-sector payroll employment
89.1	Of $5.76 trillion	Of purchase in intermediate inputs worldwide were bought from other companies in the United States
74.3	Or $442.6 billion	Of worldwide capital investment by U.S. multinationals is done in the United States versus just $153.2 billion at their affiliate level – meaning that for every $1 in affiliate capital expenditures, $2.89 is invested in the United States
69.6	Or 21.7 million	Of worldwide employment of U.S. multinationals are parent workers – versus 9.5 million at affiliates – this means that for every one affiliate employee, there are 2.3 U.S. employees

Source: Table designed by Dr. Ganziro based on US-China Business Council (2011), Slaughter (2010).

about nine-tenths of all cities of at least 50,000-population and the highway system carries about one-fifth of the country's motor traffic. Nearly nine-tenths of all households own at least one automobile or truck (Encyclopedia Britannica).

However, some of the above infrastructure need serious repair, rehabilitation, or upgrade. The 2013 – Report by the American Society of Civil Engineers (ASCE, 2013) pointedly detailed the economic opportunity associated with infrastructure investment and the cost of failing to fill the investment gap. The Report found that with an additional investment of $157 billion a year between 2013 and 2020, the United States can eliminate this drag on economic growth and achieve the following:

- $3.1 trillion in GDP, almost the equivalent of Germany's entire GDP
- $1.1 trillion in U.S. trade value, equivalent to Mexico's GDP
- 3.5 million jobs, more than the jobs created in the United States over the previous 22 months
- $2.4 trillion in consumer spending, comparable to Brazil's GDP
- $3,100 in annual personal disposable income.

The most energetic private sector Right from the time John D. Rockefeller, Cornelius Vanderbilt, Andrew Carnegie, Henry Ford, and J.P. Morgan and other great men rose from obscurity and built the oil, rail, steel, shipping, automobile, and finance industries, they pushed the American Dream to the zenith and became – not only the engine of capitalism – but also part of the fabric of U.S. history (History Channel, 2012).

They became so influential to the extent of electing presidents, setting economic policies and driving major events the United States has ever known – from the Civil War to the Great Depression and World Wars (History Channel, 2012).

While they have been and always will be some pockets of abuses of their overwhelming socio-political and economic power; but their resilience, business savvy, innovative spirit, and wild guts have and will defeat recessions and depressions and lead the way to growth more rapidly than any other major nation on earth.

The most vibrant urban economic growth Almost one in seven of the City 600, the group of cities that is expected to contribute 60% of global GDP growth by 2025, is located in the United States and the major U.S. cities are expected to generate more than 10% of global GDP growth in the next 15 years – this is a contribution larger than all of the large cities of other developed countries combined according to McKinsey (2012) who reported that 259 large U.S. cities generated almost 85% of U.S. GDP.

New York is expected to remain the second-largest city by GDP in the world in 2025, and Los Angeles will rise from sixth place

today to become the fourth largest city on earth. It is America's cities that explain why the United States continues to enjoy higher per capita GDP than Europe – mainly because large U.S. cities are home to 80% of the population compared with less than 60% in Western Europe and have a higher per capita GDP premium (Table 3.4).

The United States is wealthiest countries on earth Although most economists usually settle on GDP as a measure of economic strength, but it remains a measure of income, not a measure of wealth. The GDP only values a flow of goods and services, not a stock of assets according to a UNU-IHDP (United Nations University – International Human Dimensions Program) and UNEP (United Nations Environment Program) Report (2012) which clarified that gauging an economy by its GDP is like judging a company by its quarterly profits, without ever peeking at its balance-sheet. Other recognized measures such as Human Development Index (HDI) also fail to capture the full wealth and changes in human well-being (UNU-IHDP and UNEP, 2012).

Described as the social worth of an economy's assets, the wealth index is inclusive of three types of asset – namely (1) reproducible or manufactured capital (machinery, buildings, infrastructure, etc.); (2) human capital (the population's education and skills, knowledge, institutions); (3) natural capital (land, forests, fossil fuels, and minerals). A true wealth translates into a sound sustainable development that focuses on human well-being of a nation and also entails the wellbeing of future generations.

The United States is top ranked at the UNU-IHDP and UNEP (2012)'s Wealth World Tables followed by Japan. Its $118 trillion-U.S. wealth is twice the wealth of Japan and over 5 times the wealth of China in 2008. Its per capita wealth is almost $400,000 and it is the second after Japan at around $420,000 (Table 3.5). However in Japan – contrary to the United States – the rate of increase in human capital and produced capital continue to show signs of

Table 3.4: Urban Economic Growth.

	2007	2025
Population	• 1.5 billion people • 22 % of global population	• 2.0 billion people • 25% of the global population
Income	• $30 trillion of U.S. GDP in 2007 • 50% plus of global GDP	• $64 trillion of U.S. GDP • 60% of global GDP
Household support	• 485 million households	• 735 million households with 235 million households in developing cities
Average per capita GDP	• $20,000 plus	• $32,000 with $20,000 average in developing cities

Source: Table designed by Dr. Ganziro based on McKinsey (2012).

Table 3.5: Balance Sheet of Nations' Inclusive Wealth in 2008 (in 2000-Constant Prices).

Per Nation – Inclusive Wealth (in $Trillion)			
Rank	Countries	Inclusive wealth	1990–2008 growth (%)
1	USA	117.8	0.7
2	Japan	55.1	0.9
3	China	20.0	2.1
4	Germany	19.5	1.8
5	Britain	13.4	0.9
6	France	13.0	1.4
7	Canada	11.1	0.4
8	Brazil	7.4	0.9
9	India	6.9	0.9
10	Australia	6.1	0.1

Per Capita – Inclusive Wealth (in $Thousand)		
Countries	Per capita	Rank
Japan	430	1
United States	390	2
Canada	330	3
Norway	320	4
Australia	290	5
Germany	240	6
Britain	220	7
France	200	8
Saudi Arabia	190	9
Venezuela	120	10

Source: UNU-IHDP and UNEP (2012).

slowing down, highlighting diminishing returns of transformation and clearly demonstrating that Japan's continued drawdown on natural capital cannot be sustained at the current rate (UNU-IHDP and UNEP, 2012).

3.2.2.3. Political Power

The United States has a very stable government and political system and its global political ideology is very appealing with a strong capitalist, federated, constitutional, and democratic republic that guarantees freedom of speech and freedom of press. Although it is a

Federation, the United States is a fully integrated nation and has a high level of domestic cohesion, a clear sense of national identity and a stable administration based on strong and deep legal and institutional arrangements whereby the political power is shared between the Federal and States governments – that is between a Central Federal Authority and the Authority of the Constituent States. United States is truly One Nation under God as the slogan goes.

The national government consists of Executive, Legislative, and Judicial Branches that are designed to ensure, through separation of powers and checks and balances, that no one branch of government is able to subordinate the other two branches. Contrary to many other States in the world, the respect of its political institutions has allowed the peaceful change of political power without resorting to coup d'état and costly guerilla wars since its foundation.

3.2.2.4. Global Cultural Influence

A nation committed to the global public good and knowledge generation

Another major source of America's power – which is beyond the barrel of its gun or in its economic strength – resides in its inalienable stand for the fundamental principle of individual liberty. The United States is well-known for its willingness and capability to provide global public good – which includes the prevention of nuclear proliferation, the suppression of killer pandemics, climate change mitigation, and fundamental scientific knowledge. The advent of the Internet and linked digital technologies – spearheaded by the United States – have played a crucial role in the emergence of a global knowledge society, in which the deployment and use of knowledge and information is a constitutive feature of global social order.

According to the 2011–2012 World University Rankings, the United States holds 4 out of 5, 7 out of 10, and 14 out 20 top ranked universities in the world. The foreign students might be the increasing beneficiaries of this impressive knowledge generation – which is good in itself – but the United States political machine will be forced to correct this imbalance and implement the right incentives to increase its born- students.

As Moyo (2011) rightly argued, we become heavily too wed to what we think we know and become hamstrung to what the problems really are and what the solutions might be. For her, the world is heading to an inflexion point by 2050 as the world population will be crossing the 9 billion-people mark and essentials like water, arable land for food, access to energy, and other strategic natural resources are issues that should preoccupied the economist minds right now rather than who is the strongest on the planet, especially as most of the countries will run into some kind of unsustainability.

Despite significant advances in the past 25 years, humanity has failed to wisely conserve resources, safeguard natural ecosystems, or otherwise ensure its own long-term viability (UNU-IHDP and UNEP, 2012). There must be therefore an increased productivity globally. Moyo (2011) suggested – not only in quantitative terms – but also in qualitative terms since productivity accounts for 60% about why countries develop.

She gave the burden to lead the global productivity to the United States simply because she is convinced that – not only the United States is the absolute front runner in technology, innovation, and research and development (R&D) – with over 40% of the entire world's R&D – but also almost the entire world relies on United States for getting things right and therefore it should do what it does best: to innovate for itself and for the world.

The United States has also been the cornerstone-nation upon which the conception, initiation, and launching of major multinational organizations such as United Nations, World Bank, International Monetary Fund, WTO took place and it still holds sweeping influence in them.

Maybe one of the greatest public goods above all is the United States stepping into the international plate and allow its currency to serve as a global currency and bear the costs that go with such status.

The highest cultural diversity and vibrant performing immigrants

United States has by any measure an unrivaled cultural diversity which is one of its greatest strengths. The United States is indeed a culturally rich nation, shaped by its history and tradition of immigration, which enriches its culture with new faces, languages, traditions, expertise, food, and ways of life (Partnership for a New American Economy, 2011). It is the home of the fourth largest population in the world, but with a relatively low density of 34 people per km^2 compared to China with 80 and European Union at 96. And – compared to Europe – the U.S. population is relatively young.

The two centuries of dynamic, free, and open U.S. economy has turned the United States into a powerful magnet for the world's brightest and most creative minds and in each generation, millions of talented people from around the world take the risk of leaving their homes to seek a better life at the shores of the United States which enormously benefits from the contributions of these hard-working, innovative individuals (Partnership for a New American Economy, 2011).

The facts are staggering: One out of every five engineering graduates from American universities are foreign born; at the master's degree level, the ratio is closer to one out of every two; and 56% of

doctoral grads in engineering were from abroad in 2011 – the more advanced the education level, the higher probability that STEM graduates are foreign born (Wright, 2013). In fact, 55% of PhD students in engineering and 45% of PhD physicists working in the United States were foreign-born in 2004 (Wulf, 2005).

In terms of business, even though immigrants made up only 10.5% of the American population on average since 1850, immigrants or their children founded more than 40% of the 2010 Fortune 500 companies which generated $4.2 trillion of revenues – an income greater than the GDP of every country in the world outside the United States at the exception of China and Japan and excluding European Union as a whole according to Partnership for a New American Economy (2011) which argued that the combined revenue of the new American fortune 500 companies generated by the Immigrant Entrepreneurship the would constitute the third largest economy outside the United States.

The Fortune 500 companies founded by immigrants or children of immigrants collectively employ more than 10 million people worldwide and the immigrant-founded Fortune 500 companies alone employ more than 3.6 million people. To their above impressive contribution in the Fortune 500, immigrants own 18% of all small business in the United States.

On the cost-effectiveness scale, the positive contribution far outweighs the negative costs from the United States' perspective. On average, foreign-born adults pay $7,826 in federal, State, and FICA taxes, while their families receive $4,422 in cash and in-kind transfers from major government programs in a given year. Cultural diversity set aside; there is a net tax-benefit of $3,404 for the U.S. government.

3.2.2.5. Summarizing

No other nation on earth has such a combination of superpower attributes. In fact, the United States could close its doors, and be completely self-sufficient in all its basic needs and no country on the planet would present real existential threat – let it be militarily or economically or otherwise. The bedrock of the global reserve status of the dollar – which is an integral component of the United States' geopolitical power and global leadership – while being supported by the U.S. economic fundamentals, but it is rather strongly sustained by the U.S. geopolitical superpower which supersedes the United States' balance sheet (Tarango, 2008).

The dollar critics who claim that the dollar is just a fiat currency that is exuberantly printed by the Fed **out of thin air** and pushed into the throats of the global markets to easily accumulate debts from the rest of the world is miserably misleading. The dollar is just a derivative whose value is **holistically** derived from the geopolitical

superpower of the entire **Being** of the **United States** as its underlying asset. The dollar will continue to be the best currency in the world – in stable and crises times – as long as the United States sits in the driving seat of the global geopolitical setting.

As Tarango (2008) correctly pointed out, the world is a complex mosaic of geopolitical alignments with the United States standing at the center of the world geopolitical landscape. The world stability is therefore heavily dependent on this established U.S. geopolitical leadership without which there will be a vacuum that can lead the world to explode into chaos in accordance with the Hegemonic Stability Theory that stipulates that the international system is more likely to remain stable when a single nation-state is the dominant world power because for a society or an international system to function anarchy-free, it requires a strong transcendental rule-giver and enforcer over the system – regardless if these rules are counter or serve its domestic interests at the expense of the system as a whole (Hubbard, 2010).

Throughout history – because of the reserve currency inertia – a transition of the reserve currencies always lags the superpower changeover – meaning that a reigning reserve currency falls out of market favors long after the geopolitical and economic power of its issuer has declined. The problem is that superpower changeover has never been peaceful and smooth – but rather a radical transformation and a leap into a new economic model and geopolitical setting of the rising superpower.

Before discounting the dollar one must consider the geopolitical support behind it which has precedence far beyond purely economic indicators. Even though U.S. twin-deficits are an issue of concern, but their importance in impacting the demise of the U.S. dollar pale before the geopolitical strength which serves as its substratum.

In this regards, China – which has been publicized as the natural successor of the United States as the issuer of the global reserve currency – doesn't present that much threat to the U.S. geopolitical superpower and therefore to the U.S. dollar supremacy. Much has been debated about its huge dollar-denominated reserves as a serious political leverage over the United States; but this is really a fallacy. China doesn't really have this kind of power.

First of all China doesn't have that many market alternatives to offload these reserves that would threaten and seriously impair the value of dollar without damaging its own politico-economic delicate equilibrium. The U.S. dollar is so entrenched into the global financial structure and dominates the global economic activities with such network of externalities that the opportunities to diversify away from it are very slim and very costly.

While there might be real concerns about large U.S. current account deficits, a shift away from the dollar – without a global

coordination to a tested viable alternative – could trigger a crisis of confidence in the dollar, causing – not only its disorderly hard landing – but also lead to massive losses in the value of dollar-denominated assets and uncontrollable instability within the global financial system with harmful consequences for economic activity and development worldwide.

Suppose China suddenly decides to move away from its dollar holdings. There is no way it can offload all of them at a go – simply because there are no markets liquid enough to absorb them. Can China find refuge into Euro – the next world reserve currency to the U.S. dollar? China runs already a huge trade surplus with the Euroland in the tune of around $120 billion – meaning that it has already a sizable Euro-denominated assets in its coffers. You add the survival uncertainty and disintegration risk of the Euro in its current form; then, the Eurozone becomes at best not a promised land for the Renminbi.

Let say China is so determined to move away from US-dollar denominated assets. It might want to get rid of half or a third – whatever initial quantity it contemplates. Needless to say that just hearing that information alone would be a signal strong enough to move the Renminbi at dizzying heights.

This Renminbi exponential appreciation would certainly break the competitive edge of Chinese exports and make them too expensive worldwide – especially for the consumers in the United States – considered as the consumer of last resort – which absorb 20% of them. Simultaneously as the U.S. dollar will nose-dive; the value of residual dollar-reserves still on hold will simply be wiped out.

Secondly, the moment China attempts to massively dump its dollar-denominated assets holdings; it would no longer be an issue of economics only – but more importantly an issue of geopolitical alignments because such an attempt would represent a challenge to the world stability order which the United States assumes the leadership (Tarango, 2008).

Any significant switch from the U.S. dollar as the world reserve currency would inevitably lead to a restructuring of the geopolitical alignments worldwide (Tarango, 2008). Just as most currencies in the world take refuge into the dollar in time of crises, all the U.S. Allies such as Europe will certainly not sit on the sidelines or join a communist China in pushing United States – its longtime ally – to the drain.

They will certainly support the United States and help it to absorb the dumped dollars, just as the United States has been bailing them out during the Great Recession or pulled them out of the ashes of the WWII. Consequently, the United States and Europe would certainly cut off most trade with China and its government might not survive the internal political consequences of losing the American and European Consumer Markets (Tarango, 2008).

It is beyond imagination that China would harbor such intentions that will surely lead to disaster by sacrificing its growth. As long as China and other Asian countries practice the export-led growth, the main reason to stockpile the dollar-reserves as enabler to keep their domestic currencies cheaper than the dollar for export, employment, and growth purposes; there will be no incentive or impediment strong enough for these countries to move away from their export-led growth strategies mainly supported by U.S. deficits – especially since they have worked wonders in propelling them into tiger economies and especially since there is no sign that Fed will inflate the dollar supply to get the United States out of its debt.

Furthermore, China holds no real sway over military, energy, or food security for either the United States or Europe as Tarango (2008) pointed out. The American and European economies can thrive without China; thus, China poses neither threat to America's Primacy nor to the U.S. dollar reserve status. With one of twins – the U.S. budget deficit – shrinking rapidly to around 3% of GDP, the United States won't need that much China to buy its debt and it can easily diversify away its 7.9% exports away from China to other world markets.

While it is geopolitically impossible for China to just dump its US-denominated assets load, it is even more complicated to do it technically. For China, to avoid reserve accumulation, China would need to eliminate the very sources of this accumulation by either eradicating its current account surplus or achieving a corresponding deficit in the capital account (Wyplosz, 2007).

Even by implementing one of the above options – with an overwhelming percent of foreign holdings denominated in U.S. assets – China's individual effort alone is not sufficient even if diversification of foreign reserves portfolios is a prudent risk management. For the reasons elaborated above – unless there is a massive coordinated speculative run on the dollar globally; which is unlikely – there is no incentive strong enough for the holders of U.S. dollar-denominated assets to precipitously dampen the U.S. dollar in the drain. The benefits of every diversification away from the dollar pale in face of the damages the dollar's noise-dive could inflict to their investments. These investors have so much to gain by supporting the value of the U.S. dollar and that is what they exactly do!

From current account standpoint

With a savings rate close to 50% of GDP, China faces a serious capital absorption capacity hurdle (Wyplosz, 2007). There are just few markets and investment opportunities to absorb such savings that continue to pile up every year. Thus, the China's high savings rate translates into a gigantic current account surplus. Since the surplus cannot be eliminated by a consequential exchange rate appreciation because of the strategic peg and market interventions

geared to prevent this appreciation under the dictates of the export-led growth strategy – the current account surplus naturally translates into foreign reserves accumulation.

The CIA World Facts Book estimates show that China heavily depends on the United States for its exports – to the tune of around 20% of its total exports in 2014. This is almost 20% or $0.38 trillion of Chinese exports flooded in the United States. American exports dependency to China is only 6.6–7.7% of U.S. ($0.08 trillion). It is much easier for the United States to diversify its exports away from China; but it is not easy for China to diversify its exports away from the United States.

The United States can exercise this leverage politically if it wants to force China to devaluate the Yuan; however, there is no incentive to do so as long as China uses its surplus to buy the U.S. securities. China is engulfed into a reserve-trap and it is not easy to un-trap itself without serious macroeconomic adjustments including unemployment while the economy takes the necessary transitional macroeconomic hits. However, talking unemployment means to put into danger the delicate political equilibrium.

Furthermore, in terms of GDP per capita even in PPP (purchase power parity) terms, China is still a developing economy with a young political system not yet tested by time. The collapse of the Soviet system has clearly demonstrated that Communism is a failed and bankrupt system.

In nutshell, to lean on the U.S. dollar reserve status is the right thing to do from China's standpoint, and offers the safest heaven and creditworthiness for Chinese foreign exchange reserves through U.S. debt, which the United States use to complement the restrained Chinese domestic demand by opening its large consumer market for the cheap Chinese exports. Is it a win-win situation? In spite of their inter-locked embrace; it is costly to the United States because it has to absorb a big portion of China's trade surpluses.

More delicately – as discussed above – China as a major surplus country only has an internal pressure to adjust especially to inflationary pressure; but there is no external pressure to move toward current account balance. The orthodox path to balance its surplus imbalance would be to prompt a process toward trade deficits which can be achieved by re-evaluating its currency. The problem is that a sharp appreciation of the Renminbi can trigger severe adverse effects like those that engulfed Japan and stagnated its economy for nearly two decades when the Yen abruptly appreciated between 1985 and 1987.

From capital account standpoint

In which vehicle should the accumulated reserves be kept is the probably the daily headache of the Chinese monetary authorities. Should they be in cash at hand and in which currency? Or should

they be kept in deposits in a bank and which bank, or in money market funds, or in government debt and which sovereign securities?

Sitting on its gigantic mountain of reserves, China has the whole world to invest in. So, China can invest its huge savings into domestic public investments such as infrastructures, productions geared to domestic consumptions, etc. However, these investments would require government spending that will lead to budget deficits. This policy would necessary alter the export-led growth equation accordingly as the resources dedicated for export productions would be reallocated toward productions for domestic markets. Painful – but necessary – macroeconomic adjustments must take place for this shift to happen. These adjustments might not be very palatable to the Chinese political establishment.

The problem remains where China can find things to buy with its new dollar-wealth that are safe and would hold value over the long term. It can acquire equity in foreign companies for example and it does. But sound and sustainable large foreign companies are – not only scarce – but also mostly big enough not to be in need of capital injections from China or operate in sectors considered strategic for host governments that are unwilling to allow for a buildup of Chinese ownership such as the killing by the U.S. government of the infamous deal where China's state-owned CNOOC tried to buy petroleum company Unocal Corp for $18.5 billion in 2005 (Hill, 2014).

Furthermore, the Great Recession has been – but a painful lesson – whereby global companies that presented all the attributes of invincibility disappeared overnight. The risk in such investments is indeed considerable.

Could the natural and energy resources be the best bet by aggressively pursuing diversification into commodities – such as strategic minerals and oil? No doubt, China's companies are going global and continue to exploring new markets, acquiring advanced technology and securing much-needed raw materials (Laidler, 2014). From Russia, Brazil, Ecuador, Australia, and Europe and throughout Africa, both State and privately owned corporations along with Chinese government have been very busy signing deals in mining and oil concessions, increased gold stocks, IMF bonds, etc.

While the Chinese investments in foreign land have been intensifying, so the capital flight has been escalating. According to the Bank of China more than half of China's millionaires have taken steps to emigrate or are considering doing so. WealthInsight estimates that $658 billion of Chinese wealth are stashed in offshore havens such as Virgin Island; Boston Consulting Group puts that figure at $450 billion and it is expected to double in the next three years (Hill, 2014) – making the Chinese capital flight the largest and fastest wealth migrations across time and space.

In spite of Chinese foreign investments spree and the huge drain of capital into safe havens, these steps are certainly not enough to meaningfully and safely absorb so many trillion dollars in foreign reserves reaching around $4 trillion by the end of 2014 – which bulk has to be held in liquid securities with deep markets – not gambled into risky assets such as equity and real estate.

Given this thin investment opportunity diversification for its gigantic reserves that continue flowing inside the coffers of its Central Bank, China continues to relentlessly ride into the global reserves wildness dominated by the U.S. dollar; and therefore has little recourse but to continue accumulating dollar-denominated assets – especially the U.S. treasuries as neither the Euro nor the Yen are backed by adequately deep bond markets.

In broader terms, the only single market – neutral enough, deep enough, and reliable enough – to handle the gigantic reserves accumulated is the worldwide government's treasuries markets and because they are overwhelmingly dominated by the U.S. sovereign debt market; the dollar is ipso facto the only currency stable enough, cost-effective enough to deal with the China's mountain of foreign reserves.

Can this game of depraving domestic markets of their Hard-won savings by accumulating unrewarding foreign assets continue forever?

The party of reserves currency stockpiling will be over someday and it will force the policy-makers to bow down to the politically detested macroeconomic adjustments in order to correct the global imbalances that continue to harm the domestic equilibriums in both the deficit and surplus countries such as the failure of China to alter its aggressive export led-growth and shift its economy to rely more on domestic demand.

While the above aggressive export led-growth is the main source of relentless accumulation of world reserves – it is one of the major causes of the widening of global imbalances which fueled the most destabilizing credit bubble that busted into the 2008 Great Recession which plunged the world into a slow-moving growth – particularly in Europe and United States – where the low returns on safe sovereign debt were vanishing to near-zero and even the once-unthinkable negative nominal interest rates was becoming the norm.

But, why do investors get entangled into negative yields and not look for other investment opportunities with positive yields? It is because of the striking link between the global liquidity cycle and the shortage of safe assets in the global economy as the financial crises trigger a rise in global risk aversion inducing global investors to fly to safety; thus pushing global demand for safe assets to spiking heights according to Merk (2012) who also contended that global investors in time of financial turmoil are less concerned about the

return on their money; their main anxiety is rather on the safe return of their money

Slowly getting out from the ashes of the hugely damaging 2008 Great Recession, banks, conservative investors, and central bank reserve managers shy away from risky investment undertakings given the losses and bankruptcies the global economy suffered during the crisis.

Unfortunately, as every treasury manager is flying to safety, the room for maneuvering in terms of safe investment for such amounts of reserves in order to get a decent return gets smaller. There has been an intense scramble for the assets denominated in currencies that make up the IMF's currency – SDRs especially the U.S. dollar followed by Euro, British Pound, and Yen in much lesser degree.

There is literally a run on the sovereign assets denominated in these premier currencies to the extent that investors are now willing to pay for the privilege of lending money to the government rather than putting their money into risky investments. The investing equation is being turned on its head. In other words, investors have been willing to be punished by the government for lending their money to the same government.

But, the United States' response to the Great Recession was the most forceful and produced substantial results. The confidence in the U.S. economy has been growing even stronger in spite of the sovereign credit rating downgrade slammed on its economy. Fortunately, this credit downgrade didn't really mean anything as far as the credit quality of the United States is concern.

These Rating Agencies are the creatures a Congressional Panel accused for igniting the Great Recession by inflating credit rating grades on securities backed by subprime mortgages and many junk securities to AAA.

As the CRAs claim that their credit ratings are just opinions, not a prediction of market behavior; the global investors have simply rejected such opinion regarding the U.S. downgrade and continue to flock to its government debt instruments as if this downgrade never happened – especially since the U.S. economy continues its slow recovering trend.

Indeed, while China is transitionally slowing from investment to consumption economic model, Japan and Russia appearing to slid into a recession and Europe barely growing, and in spite of the current stronger dollar that could indent the U.S. exports competitiveness – the United States is expected to grow at 3.1% in 2015 – a growth rate that is edging closer to full health and that will drive growth of the global economy out of its sluggish growth (CNBC, 2014).

All things being considered – this study agrees with Singapore Prime Minister Lee Hsien Loong who clearly stated that the United States has a robust and creative economy and concluded that – not only it has the capacity to "reinvigorate and reinvent itself" – but

also, it will remain the dominant superpower for the foreseeable future (Perlez, 2012).

The U.S. capacity and willingness to bring the twin-deficits to their normal is not out of reach; but this move might be detrimental to the global economy; thus the U.S. continue to shoulder this burden for sake of the global economic good.

3.3. The Paradox of the U.S. Dollar

3.3.1. OVERVIEW

The paradox of the U.S. dollar is multifaceted. One of its most baffling paradoxes is that the financial crises – especially those occurring in emerging markets and which are often triggered by the dollar swings generated by huge cross-border capital flows – do not weaken the U.S. dollar; they actually strengthen and deepen its centrality.

This was the case during the Latin America crises in 1980s where very large amounts of funds fled out of Argentina ($15.3 billion), Mexico ($32.7 billion), and Venezuela ($10.8 billion) to take refuge into the dollar safe haven; thus reinforcing its supremacy (Khan and Haque, 1987). During the 2008 Great Recession that was epicentered in the United States, the investors – instead of flying away from the dollar – instinctively flocked to the safety of the dollar-denominated assets – especially the U.S. government debt instruments because of their exceptional liquidity – which is the most precious of all commodities in time of crisis (Eichengreen, 2011).

Paradoxically, U.S. Federal Reserve policy to cut back its Easing Program by slowing its program of bond buying which conveys a clear signal of confidence in the U.S. economy, put emerging market economies under renewed pressure by triggering an exodus of foreign capital as the prospect of higher interest rates diverts funds back to the United States in search of higher returns (Monaghan, 2014).

3.3.2. DUAL GLOBAL AND DOMESTIC ROLE PARADOX

The most striking paradox of the dollar has its origin in its dual role as both (1) a global currency & international reserve asset and (2) a domestic currency. Simultaneously functioning as medium of exchange, store of value and unit of account in both U.S. economy and the economies in the rest of the world, there has been an ongoing and often conflicting dichotomy in terms of monetary and fiscal policies. The changes in U.S. monetary policy – which is understandably, tailored and therefore appropriate to U.S. economic

realities – can trigger immense economic distress and disruption to the rest of the world.

This paradox has induced many critics to charge that the current international reserve system is inherently unstable because of this dichotomy as the centrality of the U.S. dollar over the global financial system help to propagate the risk originated in the United States to the rest of the world; thus, exacerbating the vulnerabilities of the global economic system (Yap, 2011).

The tightening of U.S. monetary policy – such as the sharp increase of U.S. interest rates like the one which occurred in the early 1980s in response of the excessive borrowing of recycled petrodollars – is believed to have helped precipitate the financial crisis that rocked Latina American debt crisis of the 1980s.

While U.S. monetary tightening policy did harm the emerging markets, the expansive monetary easing didn't do any favor to them. Paradoxically, back in in May 2013; in anticipation of the normalization of monetary policy by the Fed's through the discontinuation of the extraordinary expansive monetary policies such as Easing Programs that were geared to spur economic growth in the aftermath of Great Recession, capital reverse out from the emerging markets and rose their interest rates while the depreciating their currencies in the mix (IMF, 2014). In nutshell, the rest of the world are affected by both the expansive and tightening of the U.S. monetary policies.

The problem however is that these long term rates divorced from their natural interest rates cousins according to the distinction developed by Wicksell (1898) between the natural or real interest rate – an unobservable rate neutral to prices in the real market – and the financial or nominal rate of interest – set by the banking sector and which is mostly operational in the capital markets. However, since the natural rate is unobservable, its practical efficacy becomes questionable – especially for monetary policymakers in search for a reliable benchmark rate.

Whenever there is a mismatch between the natural rate of interest and the financial rate of interest, the economy might be either stimulated if the financial rate is above the natural rate or derailed from its spin if the financial rate is under the natural rate. The greater and the longer the negative divergence (financial rate under the natural rate); the severe the adverse price movements and the deeper the economic imbalances. Now the question is how inflation was kept so low for so long with financial rates well below natural rates?

As White (2012) pointed out, expansive monetary policies such the series of quantitative easing might stimulate the economy in the short term, but such stimulus might come with a longer term price such as misallocation of real resources due to an inordinate

reallocation of capital from more to less productive uses, reduced saving rates, debt accumulation, excess capacity buildup in the financial economy, etc.

This scenario was observed during upswing of the credit cycle leading to the Great Recession where the financial resources were diverted to pump up the housing bubble worldwide. The housing bubble also triggered – not only large scale spending on infrastructure whose financing costs went far beyond the social rate of return – especially in emerging markets such as China – but also massive buildup of export capacity in many countries in South East Asia.

This export capacity buildup in turn triggered a bubble in international commodities trade, high levels of consumption in developed countries such as the United States in order to meet the huge supply from the export-led growth in the emerging markets whose governments resisted upward exchange rate pressures, and encouraged easier monetary policy that bubbled the accompanying industries such as automotive industry, renewable energy industry, global distribution industry (White, 2012).

Obviously when the bubble busted, the above scenario reversed and coldly revealed the unsustainability of the previous expansion and its inevitable end. The consumers in the United States and Europe – burdened by huge debts could no longer afford to borrow in order to consume the excess exports supplied by the emerging markets.

Schumpeter (1951) has contended that a crisis never goes wasted and propels the creative destruction with the emerging of new ideas as to how to adapt domestic supply to changing patterns of demand and foreign competition.

However, expansive monetary policy and stimuli can at the same time encourage all the parties involved to gamble for resurrection and allow the zombies financial institutions and moribund corporations to stay alive and continue to compete and ultimately drag down the healthier institutions; thus setting the stage for the next boom and bust cycle into serial bubbles fueled by ever-declining credit standards and ever-expanding debt accumulation according to White (2012) who echoed the view of Keynes (1936) that crises are driven by psychology and the belief of Minsky (1986) who argued that crises are inevitable in capitalistic systems (Figure 3.2).

In spite of the economically damaging serial bubbles, Bernanke (2004) argued that the Great Moderation smoothed out the instability in the economic landscape over the past 20 years that witnessed the variability of quarterly growth in real output as measured by its standard deviation that declined by half since the mid-1980s; while the volatility of quarterly inflation fell by about two thirds (Blanchard & John, 2001).

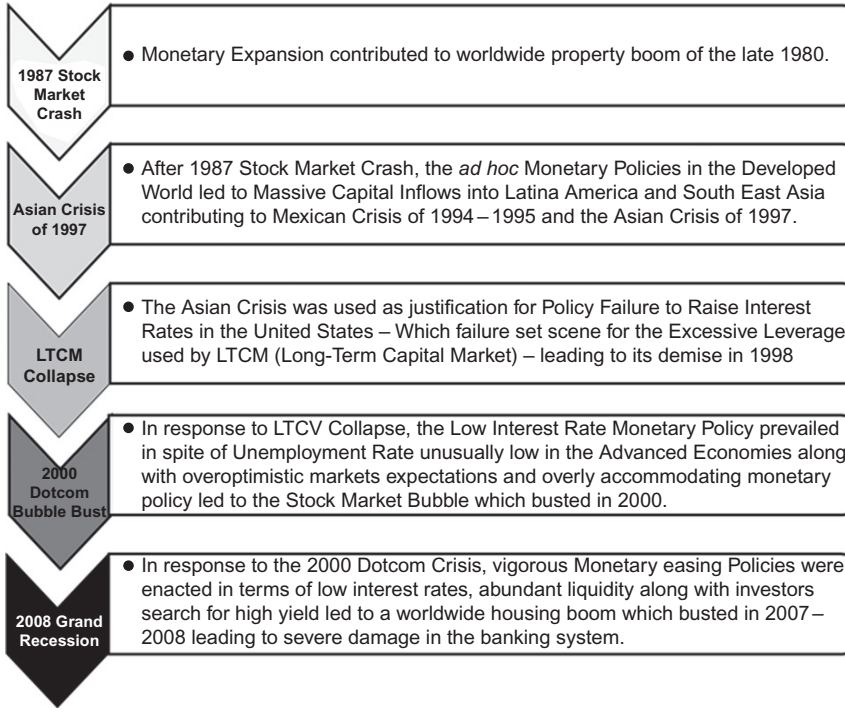


Figure 3.2: Loose Monetary Policy and Serial Bubbles. *Source*: Figure designed by Dr. Ganziro based on White (2012).

Bernanke (2004) went on to explain that the Great Moderation has been fostered and sustained by two main factors:

i. Structural change in terms of economic institutions, technology, business practices, or other structural features of the economy – which have improved the ability of the economy to absorb shocks – along with the increased depth and sophistication of financial markets; deregulation in many industries; the gradual shift away from manufacturing toward services; and increased openness to trade and financial liberalization – which led to the macroeconomic flexibility and stability.
ii. Improved performance of macroeconomic policies particularly government economic stabilization policy such as monetary policy which Bernanke believes to be the most important contributor to Great Moderation.

Economic good luck was added to the deterministic factors of the Great Moderation, but it was quickly dismissed as a standalone factor and attributed to the improved monetary policies (Bernanke, 2004).

Uncertain about how many aspects of the workings of the economy, including the channels by which the effects of monetary policy

are transmitted, Bernanke (2004) conceded that monetary policymakers face difficult challenges in their efforts to stabilize the economy and to depict the underlying economic reality.

Other researchers such as Taylor (2011) – the father of the Taylor Rule which stipulates that for each 1% increase in inflation, the central bank should raise the nominal interest rate by more than one percentage point – indicated that the Great Moderation resulted from the abandonment of discretionary macroeconomic policy by the federal government, and the adoption of a rules-based macroeconomic policy working mainly through monetary policy.

Others economists have speculated that the Grand Recession may have brought the Great Moderation to an end after its 20-year run from 1987 to 2007 characterized by predictable policy, low inflation, and modest business cycles (Clarida, 2010).

Ironically, this supposedly Golden Period of Great Moderation was also the upswing period of the Great Bubble which busted into the Great Recession – making the Great Moderation Hypothesis looking very much as the Great Mistake. Cooley (2008) asserted that Great Moderation – also labeled as the Golden Decade – led to Great Conflagration as the decline in volatility induce the financial institutions to underestimate the amount of risk they faced, thus essentially reintroducing a large measure of volatility into the market.

3.3.3. PARADOX OF STRONG DOLLAR POLICY

The strong dollar concept is certainly the most misunderstood and misinterpreted especially by the political policymakers. No month pass by without hearing a member of Congress reiterating the ultimate importance for the United States to have a stronger dollar for the best interests of the country and the world economy. What does exactly mean? Is it beneficial for the country? Which are the policies to achieve this goal? There is no clear answer.

While the United States needs a strong dollar rhetoric to keep the global confidence in it alive; but paradoxically, it also needs a weak dollar to sharpen its global competitiveness and spur economic growth. If this is the case which is preferable?

There have been no clear uses of monetary policy to exclusively target a strong dollar exchange rate, as except being side-effect of some macroeconomic policies, such as fiscal stimulus, or monetary policy such Fed's direct intervention in the foreign exchange markets.

3.3.4. TRIFFIN PARADOX

The United States is boxed in a no solution paradox as the issuer the world reserve currency according to Triffin (1978) who contended that for the United States to supply the world economy with

adequate dollar-liquidity, it has no other choice than running current account deficits. However if these deficits – which translate into U.S. ever-mounting dollar-liabilities corresponding to ever-increasing accumulation of dollar-denominated assets held by the rest of the world – persist; they are bound to damage the confidence in the dollar because these foreign liabilities would far-exceed the U.S. ability to pay them – either by converting them into gold upon demand as it had promised to do at the Bretton Woods Conference – or to meet the deadlines of the dollar-assets held by the foreigners – especially the U.S. Treasuries – when they become due after the above promise was broken in 1971.

To get out this impasse, the only correction possible is for the United States to cease to be the world consumer of the last resort and reduce the number of dollars in circulation by cutting its current account deficit and reversing it into a surplus and therefore raise interest rates to attract dollars back into the country. In this scenario – subject the world trade continues to be invoiced and settled in dollar – the dollars out of the net exports would be flowing from the rest of the world to United States; thus choking the world economic growth with a severe dollar-liquidity drought and drag the global economy into recession.

The rest of the world – especially the reserve-countries such as China are in the impasse as well. They can get out of their fears about their perceived collapse of the U.S. dollar by switching away from it. But, the costs of an abrupt and concerted switching – which can wipe out their dollar-holdings – are far greater than the opportunity costs of maintaining their competitive currency pegs to the dollar and accumulate dollar-denominated assets to effectively defend the value of the dollar because this strategy allow them to achieve their export-led growth and industrialization goals.

The reserve-countries are therefore also boxed into a liquidity trap; they would rather shock-absorb the U.S. monetary policy – which is automatically transmitted to them by virtue of their currencies peg – to the dollar than sacrificing their growth and industrialization strategies – which sacrifice would translate into the closure or conversion of industries producing for exports that would be accompanied by bankruptcies and untold employment and other social costs that the political establishment would even think to tackle.

Since its monetary policy is adopted in the pegged countries that defend the value of the dollar in order to defend their pegs, the United States doesn't have any disciplinary pressure toward macroeconomic adjustments to correct its external deficits – especially since they will create a global dollar-liquidity drought that can implode the global financial system. Concurrently, the surplus countries that relentlessly accumulate foreign reserves resort only to internal

adjustments to avoid inflationary pressure; but ignore external adjustments because there is no source of pressure to move toward balanced current account.

The problem is that the surplus and the deficit countries cannot hold each other in such convenient embrace forever, because the stability requirements for such embrace system as a whole are inconsistent with the pursuit of their economic and monetary policy forged solely on the basis of domestic rationales (Padoa-Schioppa, 2010), living in a system which is based on Triffin inherent contradiction between the national monetary policy and the global monetary policy of the issuer of the reserve currency.

3.3.5. TRILEMMA HYPOTHESES

3.3.5.1. Mundell-Flemming trilemma

The Mundell-Flemming economic trilemma has been a mind-captivating hypothesis formulated by Mundell and Flemming as an Impossible Trinity from the classic IS-LM model (Investment-Saving/Liquidity Preference-Money Supply) in a small open economy in the early 1960s.

It is a paradigm that simply postulates that it is impossible for a country to achieve three commendable monetary policy goals: (1) fix its exchange rate – as opposed to floating exchange rates – in order to promote stability in trade and investment by reducing exchange volatility and preferably cheaper exchange rate to stay competitive on the global marketplace; (2) open its capital markets to allow full cross-border capital mobility to promote efficient capital allocation and risk sharing, permit global portfolio for domestic players and attract foreign investments; and (3) run a domestic independent monetary policy to manage its business cycles, control their domestic monetary conditions – by increasing the money supply and reducing interest rates when the economy is depressed, and reducing money growth and raising interest rates when it is overheating – and self-shield against external financial shocks. A choice of any two excludes the third one which must be abandoned.

As it is clearly expressed in the trilemma-triangle in Figure 3.3, in an open economy, a country can align its monetary policy along only one side of the triangle and get access to only two sub-triangles because the third one would be out of its reach: if free capital flow (2) and fixed exchange rate (1) triangles are chosen, then, the sovereign monetary policy (3) triangle is excluded. The choice of free capital flow (2) and sovereign monetary policy (3) triangles excludes the pink fixed exchange rate (1) and the choice of fixed exchange rate (1) and sovereign monetary policy (3) abandons the free capital flow (2) in the choice.

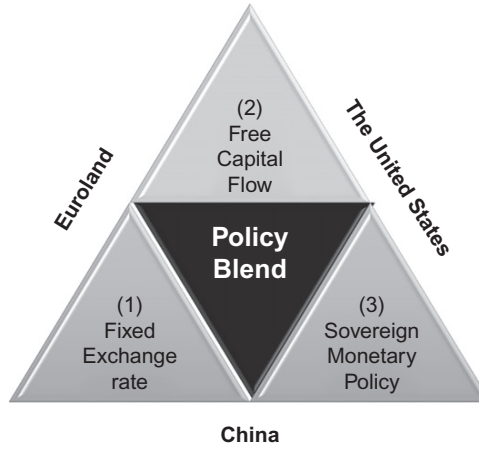


Figure 3.3: The Mundell and Fleming's Economic Trilemma. *Source*: Figure designed by Dr. Ganziro based on Mundell (1968).

Within the economic trilemma choices, the United States has picked the monetary independence by setting the monetary policy to target full employment and price stability and the free capital mobility; but its ability to fix the value of dollar is sacrificed at the altar of the whims of the FX markets.

In the Euroland, the choices at the economic trilemma were rather very radical as the domestic currencies of the Members were fully replaced by the Euro; thus, eliminating all exchange-rate instability within the Eurozone and letting the capital freely moving within the zone. However, such monetary arrangement meant that the individual countries completely abandoned their national monetary sovereignty which they wholly transferred to Brussels at the European Central Bank (ECB) headquarters, which sets the European monetary policy such as interest rates for Euroland as a whole; thus, negating the member the use of their own monetary policy to address their domestic economic problems. Many experts now believe that this abandonment and transfer of domestic monetary power to ECB is one of the root-causes of the crisis that has been wrecking Europe.

All these choices have been made within the challenges of the intensifying global capital flows whereby all countries have been devising incentive packages to attract foreign investments – not only by primarily guaranteeing the inflow of capital and its repatriation along with its return – but also by establishing sound monetary policies to deal with the crossborder capital movements to the best domestic interests.

It is within this global context that China's decided to respond to trilemma by (1) tightly controlling the exchange rate of its pegged

currency and (2) retaining its monetary policy autonomy. However, to accomplish these two monetary goals, China had no other choice than containing the international flow of capital – including the ability of Chinese citizens to move their wealth abroad – in addition to Foreign Direct Investments (FDIs) – driven by incentives and market opportunities and the growing current account surpluses that keep pushing China toward capital account liberalization (Mankiw, 2010).

It is important to note that – prior to 1994 – China maintained a dual exchange rate system consisting of an official fixed exchange rate system used by the government, and a relatively market-based exchange rate system that was used by importers and exporters in swap markets. Due to significant differing rates in the dual system – the dollar was 5.77 versus 8.70 Yuan in 1993 – a large Forex black market developed – which prompted China to unify the two exchange rate systems at an initial rate of 8.70 Yuan for 1 Dollar in 1994.

Without restrictions over capital mobility, money would flow into and out of China, forcing the domestic interest rate to match the foreign interest rates through the Interest Rate Parity (IRP) postulate according to Mankiw (2010). The IRP is defined as the no-arbitrage equilibrium whereby the rate of return achieved from covered interest arbitrage – which links the domestic interest rate, foreign interest rate, current spot exchange rate, and expected future spot rate – is equal to the rate of return available in the home country.

If this equilibrium is broken, there will be intense pressure from global speculators in search of potential risk-free profits from the interest rate differential they can reap by using forward contracts to mitigate their exposure to exchange rate risk.

The current account surpluses also put increasing pressure on the Yuan toward appreciation. To diffuse this upward pressure, Chinese monetary authorities must intervene in the foreign exchange markets and attempt to offset the market forces on the Yuan spot exchange rate. The Bank of China must therefore undertake – through its open market operations – the sale of China Treasuries to relevant domestic financial institutions in order to reduce bank reserves exploding out from the its current account surplus.

As the market forces – such as interest rate differentials, trade flows, political and economic risk, and expectations of changes in the Yuan peg – strengthen the Yuan, the Central Bank of China must resort to sterilization so as to offset their effects on the Yuan by undertaking equal foreign and domestic asset transactions in opposite directions to nullify the impact of its foreign exchange liquidity on the domestic money supply.

To do so, it has to sell the strengthening Yuan and buying the weakening dollar for example on the foreign exchange market in

order to mitigate the market demand for the Yuan and maintain its exchange rate – the price of U.S. Dollar in terms of Yuan – at the desired level.

However, such move has also its own side effects as it diverts financial resources from enhancing the China's capital base toward purely monetary purposes and exchange rate stability. Furthermore – even though the sterilization tools of open market operations and reserve requirement ratio are indispensable to avoid problems associated with exchange rate instability – they can be very costly and unsustainable in long-run.

First of all there is a sterilization-fiscal burden emerging from the interest differential between the domestic and foreign assets. In order to lower or maintain the value of the Renminbi in the face of market pressure for its appreciation, China overwhelmingly and continuously buys the safe dollar-denominated assets, but which pays low-yield.

Concurrently, for China to prevent its ever-increasing reserve accumulation from leading to an increase in the domestic money supply, it has to issue Renminbi-denominated domestic debt in order to sterilize its intervention in the foreign exchange market where it acquires the above safe dollar-denominated assets so as to suck inflationary pressures out of the domestic monetary system. In other words, China finances its enormous stocks of low yielding foreign reserves – primarily U.S. Treasury-bills and other U.S. government debt instruments – with the issuance of high-yielding local Renminbi debt (Roubini & Setser, 2004).

The major issues here is that the domestic financial markets of China are not well-developed, sophisticated, and liquid like the U.S. financial markets. This simply means that – due to shallow depth of China's financial markets – not only China will have to pay higher interests to attract buyers for its illiquid domestic debt instruments, but also there would be a limited supply of Renminbi-denominated assets to keep up with the sterilization requirements of the relentless pace of reserve accumulation.

The limited supply of Renminbi-denominated assets would therefore lead to an incomplete sterilization of the foreign exchange intervention required to prevent the Renimnbi upward appreciation against the dollar; thus leading – not only to a partial alleviation of the potential inflationary pressures out of the monetary aggregates; even if distortionary steps like internal price controls such as wages partially succeed – but also the un-sterilized growth in the monetary supply would help feed a credit boom, which in turn risks feeds asset bubble in housing, commercial real estate, and even in new manufacturing plants (Roubini & Setser, 2004).

Secondly, the accumulation of dollar-denominated assets exposes China to the U.S. dollar exchange risks. If the Renminbi is

let loose and sharply appreciates against the U.S. dollar, China will incur enormous capital loss in its reserves holdings especially since the Renminbi-value of its dollar-denominated reserve assets would fall sharply while the value of the Renminbi-domestic debt would stay constant; thus incurring an ongoing fiscal cost expressed by the difference between the interest rate it pays on Renminbi-domestic debt and the interest rate it receives on its reserve assets.

Finally, the sterilization operations might encourage moral hazard, leading to financial distortions and carry the risk of increasing interest rates that reinforces further capital inflows; thus, tending to make the sterilization permanent (Aizenman & Glick, 2008).

3.3.5.2. Rodrik Political trilemma

As if the economic trilemma was not hard enough a choice, Rodrik (2007) added a political dimension with more draconian choice trade-offs. He argues that the fundamental political trilemma of the world economy is that a country cannot simultaneously and fully pursue political democracy, national sovereignty, and global economic integration because all three are mutually incompatible: a choice of any two excludes the third one (Figure 3.4).

If a country chooses National Sovereignty (Blue Triangle) and Political Democracy (Purple Triangle) then it has to give up Deepening Global Integration (Pink Triangle) which is counter-national sovereignty as it encompasses the reduction in barriers to commodity and factor markets, including the technology to diffuse information across political boundaries and unrestricted capital mobility.

If a closer Global Economic Integration (Pink Triangle) is the primary choice of a country along with National Sovereignty (Blue Triangle), then the Political Democracy (Purple Triangle) is sacrificed and the State will be responsive more to the needs of Global Integration at the expense of other domestic objectives and the

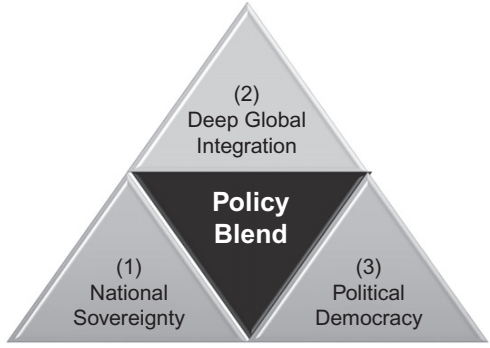


Figure 3.4: Rodrik Political Trilemma. *Source*: Figure designed by Dr. Ganziro based on Rodrik (2007).

adjustment costs to the deepening of the globalization process must therefore be imposed on its citizens. Austerity measures can be undemocratically forced from global institutions such as IMF or European Central Bank to the citizens. The descent into the street is one way to reject – or at least to complain about these costs – even if these demonstrations can be massively and severely repressed.

If the third choice is to maintain a Political Democracy (Purple Triangle) alongside the Global Integration (Pink Triangle), then, some National Sovereignty (Blue Triangle) – as we know it – must step down from its pedestal of national pride and accommodate the forces of economic globalization and greater international governance. The globalized nature of many economic processes and business activities means that the nation state can no longer effectively regulate the various externalities that arise from them such as financial market transactions, international trade, counter-terrorism, environmental issues which are dealt by supranational regulatory agencies such IMF, World Bank, UN, etc.

Applied to China, the Rodrik political trilemma reveals political contradictions in the long-run. China has chosen National Sovereignty (Blue Triangle) along with Global Integration (Pink Triangle) through its ardent longing to be integrated into WTO (World Trade Organization) for example; thus bypassing the Political Democracy (Purple Triangle). However, as the global trade and financial integration relentlessly increase and living standards rise, China's Communist Political Establishment will have to deal with a rising richer middle class and masses trying to express their inalienable rights on democratic political process.

Along the Rodrik political trilemma, the United States – having already embraced free capital mobility and monetary independence along the Mundell trilemma – must face the constraints inherent to the deepening of the international economic integration generated by the globalization forces ignited by the ensuing economic openness that continuously reallocates resources on a global scale according to the theory of the comparative advantage through which relevant mobile resources such capital and labor will move into comparative advantage productions from the comparative disadvantage productions both domestically and globally. The above shocks require a strong government capable mitigate negative economic shocks.

In the Euroland, the choices along the Rodrik political trilemma has been extremely radical as pointed out by O'Rourke (2011) who contended that the seeping abandon of the national monetary policy-making to a technocratic Central Bank without common Eurozone policies in complementary areas such as financial and banking regulation; and without a common fiscal policy – which is an important complement to a common monetary policy – has put the Euro experiment under an existential threat. There is really no

escape or detour: a true economic union requires a harmonized and symbiotic political union without which the monetary union would be in peril.

As the Member States eurolized their economies, they allowed free capital movements within the Euroland – and concurrently, they surrendered the domestic monetary policy to a supranational entity – meaning that it could no longer serve as a domestic lever for monetary adjustments to internal and external shocks. To this vacuum in terms of domestic monetary policy, the European Union didn't fill the gap and provide for a Regulatory Agency empowered to stabilize the business cycle across Member States by serving as lender, insurer and bailer-out of last resort, prosecutor of financial wrongdoing, funder of transfer payments and other automatic stabilizers, adjudicator of disputes, and bankruptcy proceedings (O'Rourke, 2011).

Pisani-Ferry (2011) has objected that there is no co-responsibility over public debt within the European Union as each governments in the Euroland is individually responsible for the debt they have issued and more importantly it is prohibited for the Union or any of the national governments to assume responsibility for the debt issued by other member countries.

Furthermore, the Euroland has a monetary integration without integration of their banking systems – which are still largely national and exhibit strong home bias in the composition of their sovereign debt portfolios. This means that adverse shocks to sovereign solvency perversely interact with adverse shocks to bank solvency.

Per contrast and in comparison with the United States – not only the U.S. federal debt is not a critical component of the U.S. banks' assets – but also, the banking bailout is the responsibility of the federal government – not the State – and; the Federal Reserve is allowed, equipped and able to intervene so as to prevent the escalation of sovereign bond yields.

The bailout for troubled economies in the Union couldn't be done domestically like in the United States, the United Kingdom, Japan, or China; but it had to come from outside the national boundaries from stronger economies through the ECB, IMF, etc. The problem is that the bailouts which came so far had very stiff conditionalities hunging on them that undercut the national sovereignty and led to the descent into the streets by the masses longing for self-determination without foreign dictates over the running of their lives.

The political leaders of countries – such as Greece, Spain, or Italy – face real dilemmas: (1) stay in the Union and give up decision-making authority to austerity and un-democratic rules imposed to their people by stronger members in the Union such as Germany or (2) get out of the Union and recover their full sovereignty and democratic space over monetary and fiscal policy; but, sacrifice

economies of scale, greater economic and financial integration provided by the Union. This is a hard sale to say the least.

This is why some experts have described the European Union as a political halfway house – that is both intergovernmental and technocratic – which was caught midway in its economic integration process by the worst financial crisis which revealed the paradox of this partial integration.

On one hand, the interconnected nature of the Euroland had been open enough to let cross-national exposure from an economic collapse of one or more of its members to be broadcasted and reverberate throughout the Euro system and threaten the entire Euroland with a systemic crisis.

On the other hand, the economies were not connected enough to deal with the domestic monetary policy needs at the Union level according to Zoffer (2012) who pointed out that as Greece's import-export ratio worsened, the expansionary monetary policy it needed to forge its global competitiveness was off the table, worsening economic conditions, and undermining any hope of paying off its sovereign debt.

Will this Euroland house ever be fully political given the strong cultural and nationalist biases? No one has the answer in the seeable future; what is certain is that without full political integration that will enact a common financial and fiscal regulator, the Euro has a long way to ever wearing the heavy mantle of the global reserve currency status – currently on the shoulders of the U.S. dollar.

It is difficult for any country to navigate and comply with the rigidity of the above trilemmas because the choices are too restrictive according to Strauss-Kahn (2012) who further argued that in real life countries mend the impossible trinity by keeping a managed currency and a fairly closed capital account such as China and India do and resolve the Rodrik trilemma by domesticating the forces of globalization for a flexible global financial integration.

However, for a country that contemplates to expose its currency as a global reserve currency and is committed to provide adequate liquidity to oil the world economy, the choice is clear: it has to deepen its global integration and this requires a commitment to – not only open commodity and capital markets – but also to subject the domestic economy to a competition for mobile factors of production and to a flood of finished products from countries looking to accumulate foreign reserves.

3.4. U.S. Dollar and Global Imbalances

The world economy has been marked by profound crises and global imbalances in opposing direction. On one pole of the imbalance

spectrum, there are surplus countries and the deficits countries occupying the other pole. Although these global imbalances have been subject of heated debates, there is no consensus of their real causes and the adequate remedies. Generally, there are two distinct blocks that argue to have located the sources of the global imbalances and the relevant medicines to cure these global crises predicaments.

3.4.1. SUPPLY-SIDE SCHOOL

This school views the United States – and the deficit-countries at large – as the major disruptors in the global financial balances. Some critics believe that the United States – by recklessly exploiting the U.S. dollar exorbitant privilege and pushing the United States spending far beyond its means – unremittingly spells havoc to the delicate equilibriums of the world economy.

The Fed is particularly kept at the highest contention for engineering cheap money and relaxed credit policies along with the accompanying low real interest rates that are responsible for fueling a debt-driven consumer boom financed through issuing huge volumes of securitized debt that is used to suck record volumes of imports – particularly from Asia (Yap, 2011). In nutshell, the U.S. dollar reserve currency status fostered the United States in becoming the world system maker and the global privilege taker.

Others have contended that the major source of market failures lies within the Fiduciary Dollar Standard that replaced the Bretton Woods System in early 1970s as it excessively pushed the financial globalization into the throat of the global financial system with its volatile and pro-cyclical capital flows crisscrossing the world over (Yap, 2011).

Given the complaints, the solutions are very clear at the Supply-Side School: bring the deficit countries back to sanity by balancing their deficits. This means for the United States diluting or even eliminating its presumed exorbitant privilege by reducing or removing the role of the dollar as a global currency and international reserve asset out of the global economy which would lead to the depreciation of the U.S. dollar; thus increasing the competitiveness of its exports and eventually reverse the its current account deficits.

Needless such drastic change would trigger a global recession by negating the U.S. demand to particularly emerging markets and strangle the world economy with dollar-liquidity drought. The U.S. economy has indeed been providing around 65% of the global demand growth over the past decade (World Bank, 2011) and was therefore one of the main drivers of the global economic development – especially in the emerging markets which continue to feed the U.S. current account deficits with an average of $500 billion per

year – a necessary funding of the U.S. demand; but which has been vital for their economic growth and employment.

This consumption was entertained by rapid expansion of domestic credit in United States and cheap imports mainly from Asia which kept the U.S. inflation low. And since the savings in the United States were at low levels, the economic booms were less income-driven and more asset-driven based on equities and expanded on property such as housing – leading to the 2008 Great Recession.

Furthermore, to overcome its current account imbalances, the United States can also resort to restrictive tariff regime or other protectionist methods or competitive devaluations – but these measures would suppress global trade and potentially result in an economic recession as well. This is a serious dilemma because in all honesty the United States cannot continue to entertain the global export production by sacrificing its domestic economic future and the emerging markets cannot continue suppressing their domestic demand on the altar of export-led growth and accumulating exorbitant dollar-assets – which value can be wiped out by market adverse movements.

In final analysis, the tenants to the Supply-Side School have not been able to pinpoint the causality of the financial globalization, U.S. monetary and fiscal policy or the fiduciary dollar standard in driving the global macroeconomic imbalances that continue to explode into financial crises.

They have rather opined that the above factors have set the United States on a path of vulnerability because any increase in interest rates or sudden economic shocks will – not only exacerbate the ratio of high levels of household debt over the median household income – but also dramatically increase the U.S. Debt Service and suppress its demand for external imports; thus potentially lead to global crisis since the U.S. demand is the engine of the global economic growth as discussed above.

3.4.2. DEMAND-SIDE SCHOOL

The staunch tenant of the Demand-Side School is Bernanke (2005) in his Global Saving Glut Theory in which he basically blames the emerging economies – especially China – for gaming the world economic system so as to take advantage of the deep and liquid U.S. financial markets and channel their surpluses into the U.S. Treasury instruments.

In Bernanke's view, it is China's single-minded pursuit of export-led growth that has been inducing an excessive capacity of its export production beyond its aggregate domestic demand. It is therefore China's refusal to allow the Yuan to appreciate, its

unyielding accumulation of foreign reserves, and its relentless recycling of its accumulated foreign exchange reserves back into the U.S. government debt instruments and mortgage-backed securities, that created a global savings glut which artificially reduced global interest rates and created perverse incentives for an unsustainable buildup of debt in the United States and spitefully propelled global financial institutions – flooded with huge liquidity – to switch from investing in the real economy to speculating in financial instruments (Bernanke, 2005).

For the tenants of the Demand-Side School, the solution is also crystal clear: normalize the economy in major emerging markets – particularly China – with well-thought and deep reforms toward market mechanisms and institutional restructuring to domestic financial system to make large scale capital inflows possible, which must include the reevaluation of the Yuan that the School believes to be one of the catalysts in reducing global imbalances as it will reverse the China's surplus trend.

This school has been warning that without a wholesale and profound macroeconomic adjustments, the Chinese fast growth would be compromised and might be doomed into the realm of unsustainability. The deep economic reforms obviously entail slashing its overall current account surplus through shifting from primarily export driven growth to domestically driven growth.

But, such a 180 degree-turnaround also requires having investment profitability in mind away from communitarian and mercantilist economic policies that have given birth to zombie-like State enterprises and financial institutions burdened with bad debts and under-performing assets – often driven by rent-seeking politics.

Without an overhaul of domestic financial and macroeconomical system and State-owned firms' corporate reforms and even privatization, an ignored-profitability-driven path would break the back of China's economy in the long run. Such path has the potentiality to precipitate the Eastern Asia into a regional crisis triggered by the subsequent financial crisis in China as a major player in the region.

This is path of relentless pursuit of megalomaniac mercantilist goals of bigger and bigger output without ensuring financial profitability has already been treaded by Japan at its detriment as it took its economy straight into a decade-long stagnation – to which its government had to apply very painful and radical measures in order to cleanup non-performing assets pleaguing the mega financial institutions they accumulated during the 1980s' asset bubble.

Paradoxically, there is genuine concerns about such reforms because China fears that they might erode the pool of foreign reserves – built over years – that are supposed to shield its domestic market from shocks spread by global financial turmoil through contagion and which can lead to economical and political disruption as

they would also lead to a sharp appreciation of the Yuan that might lead China to experience the adverse effects Japan suffered with the sharp appreciation of the Yen in 1980s.

Furthermore, some analysts such as McKinnon (2010), argue that there are sound theoretical reasons why an appreciation of the Yuan might not even generate the desired effects as the imbalances are reflected in both the current account and the disparity in savings and investment levels. He explained that an exchange rate adjustment may be coursed through the difference between savings and investment through interest rate and capital account responses; thus, negating changes in exports and imports due to price movements and therefore unable to offsetting the current accounts surplus.

Provided that protectionist pressures do not arise, Demand-Side School believe that an efficient global financial system will eventually resolve these imbalances as a devaluation of dollar will reduce the value of the dollar-denominated asset holdings and a potential decline in U.S. demand from increasing interest rates from their current near-zero level will rapidly expose the insolvency in many East Asian financial institutions and increase the risk of a China-centered financial dislocation.

This raises the question of sustainability of the export-led growth development models. By nature this model is (1) too dependent to foreign demand which is vulnerable to global shocks such as the Great Recession which has shaken the demand in United States and Europe – the major trading partners of China and the region and (2) one of the fundamental sources of global imbalances.

If the external demand disappears – for example the United States ceases to act as the global consumer of last resort that compensates for demand deficiencies that have been intrinsic to the above economic model – it simply means that the large current account surpluses generated by this model will shrink and the foreign reserves accumulation will be impaired – removing the buffer that protects the infant domestic financial market, the currency peg and more importantly exposing the banking system which continuously draws from those reserves to cover up their imminent collapse due to bad debts and a host of under-performing assets plaguing their books.

This heavy reliance on the ability of trading partners such as United States to accommodate the export-led growth model by tolerating current account deficits build-ups and increasing debt levels indefinitely is evidently not sustainable. Mobilizing and intermediating the national savings through inefficient and ill-managed state-linked banking system and relentlessly channeling them toward export-oriented investments cannot be sustained either as this transfer from consumer to investments – not only depresses the domestic demand – but also tends to rig domestic markets through cartels

very much eager to produce favorable outcomes for State-connected enterprises and financial institutions at the expense of the rest of the economy.

The export-led growth model was mastered by Japan for decades – which were labeled as Japanese miracle – before it landed into the 1980s lost decade. The model allowed Japan to single-mindedly focus on accelerating the development of its production systems without concern for financial outcomes – not only creating huge bubble and gigantic bubbling banks that busted or scaled down – but also exporting its savings mainly to the United States at virtually zero interest rates to boost foreign demand for Japanese products.

In nutshell, China cannot aspire to be both the world's largest trading nation and largest economy while conducting itself as if it were an outsider to the international monetary system. It can no longer play a bystander passive role to the global system upon which it was able to build its fast economy and accumulate its gigantic reservoir of foreign exchange reserves.

3.4.3. REBALANCING ACT

Just as it takes both a borrower and a lender to create a debt crisis; the solution to the crisis lies in balanced adjustments on both sides that created the global imbalances in the first place. Currently the deficit countries such as the United States are locked into a marriage of convenience with the surplus countries such as China, but there will be a time when this marriage would be unbearable and unsustainable unless the spouses' fundamental behaviors are changed – given the widening of global imbalances which points to an unsustainable trend (Visco, 2010).

For the moment, one spouse – the emerging markets – led by China – finds the marriage convenient to strategically peg their currencies to the dollar to maintain competitive currency depreciation resulting into current account surpluses and reserve accumulation that allow them to achieve their export-led growth goals and the much-desired industrialization. The other spouse – the developed world led by the United States – finds also the marriage suitable by running current account deficits and simply exchanging its fiat-based dollar-denominated liabilities against the real goods and services to boost its consumption – which one of the leading factors of the U.S. GDP growth.

The critical challenge is whether this marriage is a happy marriage; and if yes, can it last forever since both spouses are immune to death! The marriage seems to have endured because the spouses up to now have been complementing each other.

The United States has been – willingly or unwillingly – compensating the structural demand deficit from fast-growing emerging

economies – especially from Asia – by being the major source of global demand growth; but at the same time by experiencing draining financial imbalances fostered by unprecedented external deficits and debts.

China doesn't seem to have a problem in buying this demand by investing its savings into the U.S. deficits and accumulating low-yield dollar-denominated assets in the mix. In spite of whining noises from both the United States and China, the two-way relationship benefit both countries enormously and everybody is happy!

However, while it is vital for the East Asian economies to continue re-cycling capital into U.S. demand for their rapid development, this can only continue as long as the U.S. consumers are not heavily debt-stricken and U.S. financial institutions are able – or even interested – to absorb it; given the quantitative easing programs that are flooding them with liquidity.

And for how long will the increasing dollar liabilities reach the breaking point whereby the surplus countries will be forced to abandon their export-led growth and therefore cease to accumulate dollar reserves; thus turning the above marriage of convenience into a bitter divorce? Radical changes in terms of macroeconomically balanced economic systems would be required; but it might also require radical socio-political adjustments the political establishments might not dare to tackle.

The world economy is so intertwined and the U.S. dollar is so entrenched into the global financial system and world economic activities that it would require a very strong global political will to untangle and free the dollar from ever-increasing dollar-reserve accumulation, untangle and free China from dollar-liquidity trap and untangle and free Europe from its crisis and finally untangle and free the emerging markets from their reliance on U.S. consumption, economic growth, and financial markets efficiency.

No country is going to solve its economic problems by relying on adjustments by its trading partners instead of confronting domestic problems and the constituencies that oppose change and therefore enacting adequate domestic reforms. What really most countries expect from their partners is therefore exaggerated or simply inexistent in order to perform their balancing act.

According to IMF analysis, currency appreciation by China alone will neither yield the expected benefits to the U.S. economy, nor to the global economy unless it is accompanied by greater Chinese consumption and an expansion of the services sector.

Every currency appreciation necessarily yield short- and long-term implications on the economy according to the J-curve effect whereby the appreciated Renminbi could actually worsen the U.S. trade deficit in the short-run simply because the volume (demand) of imports from China would not decline concurrently and at the same

rate with the increasing prices due to the appreciation of Renminbi. There will be a transitional gap in switching to non-Chinese lower-priced products or other alternatives.

The price increase out of the Renminbi might not even be compelling enough to affect the U.S. end-consumers' behavior, because they might be absorbed by various players on the value chain such as Chinese laborers, producers, or exporters due to economic repression – or U.S. importers, wholesalers, retailers by adjusting their profit margins. In nutshell, there is no guarantee that the Renminbi appreciation will yield trade deficit reduction in the United States – even if the elasticities are right.

In fact – contrary to the contentions of the Chinese currency manipulation – empirical evidence shows that the US-China bilateral trade deficit is inelastic to the changes of the Renminbi-U.S. dollar exchange rate – as there has not been a significant drop in the China/U.S. trade deficit in response to the Renminbi appreciation which has been reevaluating at an annualized pace of nearly 6% since June 2011 – making the Renminbi undervaluation an insignificant factor in the US–China trade deficit or U.S. employment (US-China Business Council, 2011).

The rising US-China trade deficit – blamed on China for disrupting the level playing field – has also been challenged by the US-China Business Council (2011) which reported that much of what the United States imports from China is a replacement to what it used to import from other countries in the East Asia region – simply because China has developed to be the regional processing trade platform by becoming the final point of assembly for companies headquartered in the much-more industrialized East Asian economies – such as Japan, South Korea, Singapore, Taiwan, and Hong Kong – due to Mainland China's lower costs comparative advantage (US-China Business Council, 2011).

The U.S. import-equation from the East Asia region remains relatively unchanged. What basically changed is the increase of the weight of Made in China label while Made in Japan or Hong Kong labels diminished and became less visible at the shelves in the U.S. malls. With this shift, China's share in the U.S. trade deficit gained 22% from 19% to 43% while the share in the U.S. deficit from the rest of East Asia declined almost accordingly – shrinking 19% from 32% to 13% (US-China Business Council, 2011).

This is why, compared to other regions, the United States has not over-invested in China at all. In fact, it has been out-invested by Europe by almost 2 to 1 ratio; by Japan, South Korea, Singapore, and Taiwan by a combined 5 to 1 ratio and Hong Kong by almost 10 to 1 ratio.

Contrary to the propaganda pinpointing China as the mother of currency manipulation – which would render the U.S. Exports to

China more expensive – the exports of United States to China have been accelerating since China got its membership into the World Trade Organization (WTO). China is the third largest export market for U.S. goods. The U.S. exports to china grew to 542% by 2012 while growth in its exports to rest of world reached only 80%.

China is also the third-largest and the fastest growing export market for the 27,742 U.S. small and medium sized companies – which account for 35% of total U.S. exports to China with sales reaching $23.5 billion in 2008 – a total that rises to around $33 billion when Hong Kong is included – that's equivalent to all U.S. exports to Brazil and more than America's total exports to France in 2008 (US-China Business Council, 2011).

The diehard reformers for the Renminbi appreciation should think twice because its appreciation might even hurt the U.S. exports to China since it would lead to lower Chinese economic growth as its exports will contract due to the Renminbi appreciation – which would diminish China's demand for imports, including those from the United States. This contradicts with the political rhetoric hovering around the notion that the United States is exporting jobs in China – which is grossly misleading.

In this globalized world, the United States and China are increasingly interdependent with mutually vested interests. It would be in the best interest of the United States to see that China doesn't explode into chaos as it goes through the political, socio-economic, and geopolitical transition to becoming a great partner of the United States in its engulfing role at the center of the global governance and the informal global financial system centered around the Fiduciary Dollar Standard.

3.5. Exorbitant Privilege

3.5.1. OVERVIEW

Back in the 1960s, Valéry Giscard d'Estaing – then French Finance Minister – was the first to coin the term of exorbitant privilege – which is often wrongly attributed to French President Charles de Gaulle. His claim was that the U.S. derives exorbitant privilege from the envious U.S. dollar reserve status in the world. More precisely, the French politicians were complaining that by that time, U.S. businesses were buying European industries cheaply using a dollar overvalued by its global reserve currency status.

Since then, critics of U.S. global hegemony have been passionately claiming that with the dollar status, the United States was able to finance its global and domestic strategies with foreign cheap credit without ever having concern of the ensuing macroeconomic

adjustments that would be falling on other countries if they adopted the same behavior of the United states. Simply put, the United States was able to finance its deficits with liabilities denominated in its own currency. This conveys the impression that international investors just throw valuable money at the United States which the Americans then use for consumption or global expansion (Zimmermann, 2010).

Norrlof (2010) has argued that under the fiduciary dollar standard, the exorbitant privilege has grown stronger because of capital and exchange rate gains on the net liability position of the United States since a large portion of the U.S. investment position is composed – on one hand of liabilities that are dollar-denominated and on the other hand of assets that are mostly denominated in foreign currency; thus, there is a built-in protection against the depreciation of the dollar which – arguably – induced the United States to incur large external imbalances especially since the United States enjoys higher returns on its assets than it pays on its liabilities.

Many other economists have scrambled to unearth this exorbitant privilege for better understanding and eventual quantification or to find out if this privilege really exists. They generally agree on the following list of benefits that are uniquely enjoyed by the United States on the basis of dollar reserve and global currency status.

3.5.2. EXORBITANT PRIVILEGE BENEFITS TO UNITED STATES

That the U.S. dollar global and reserve currency status help the American people and corporations and the U.S. government is obvious.

3.5.2.1. Convenience for U.S. citizens

One can argue that Americans are doubly blessed with dealing in their own currency and in their own language in their international activities – thus avoiding the costs and uncertainty of dealing in foreign currencies.

Lower to zero exchange costs

The universe of the U.S. exporters, importers, borrowers, and lenders – by dealing in the dollar rather than foreign currencies on their international transactions – is not subjected to the exchange transactional costs of converting the dollar back and forth into foreign currencies – especially since the dollar dominates the global trade and payment settlements. The exchange rate risk is therefore shifted from the United States to its trading partners as the dollar reserve and global currency broadens and deepens its status over global markets.

Lower interest to interest-free borrowing

It is heavily claimed that the dollar global status bestows upon U.S. taxpayers an effective interest-free loan in the amount of dollar-denominated assets held overseas because of their low yield. They also gain through lower interest on their domestic borrowing because the more accumulation of dollar-denominated assets by foreigners means the higher demand on those assets, which means the higher their price for the buyers, which translates into lower interest the United States will pay on those risk-free financial instruments sought after by the foreigners given the cheer intensification of their global demand – especially in time of crisis.

As the risk-free instruments serve as the benchmark in determining the general interests, the cost of borrowing faced by U.S. borrowers is lowered as well. As Cohen (2011) argued, the massive dollar-denominated reserves held by governments such as China translate indeed into a subsidized or interest-free loan – an implicit economic transfer that constitutes a real-resource gain – to the U.S. economy.

3.5.2.2. Convenience for the U.S. Government

Prestige

Prestige is the most obvious and visible benefit a country derives from having a leading reserve currency in the world. Although this benefit is symbolic, but being an issuer of a global reserve currency has a reputational capital derived from the U.S. position of prominence in world affairs. This prestige is clearly a form of geopolitical soft power which the United States can use to foster its capacity to exercise leverage in the world through its control of access to financial resources (Cohen, 2011).

However, the causality between dollar reserve and global currency status and the prestige can be the chicken and egg paradox: which comes first? Is the prestige and its accompanying politico-economic power the real source of the reserve currency status and therefore of those benefits? Or is the reserve currency status the cause of that prestige?

Referring to Susan Strange (1998)'s theory that the dollar has been and still is an indispensable bedrock of American global influence by bestowing upon the United States an enormous structural power to propagate its global hegemony, Randall (2014) further argued that the unyielding accumulation of U.S. dollar-denominated reserves – confirms that – not only there is no viable alternative to U.S. Dollar as a leading global reserve currency and the United States "still has the world's confidence as the pre-eminent provider of global liquidity" – but also this accumulation conveys to U.S. a "super-exorbitant privilege" of creating its own dollar-liquidity at will; whereas the rest of the world has to earn it.

As Mundell (1993) pointed out great powers have great currencies and this is true for the dollar which rose to the dais of the global and reserve currency throne with the rising of the U.S. economic and geopolitical power.

Cheap financing for domestic and global strategies

This is probably the mother of all critics: the United States takes advantage of the dollar global status which creates a system of global arbitrage in which the United States has been able to access abundant and cheap capital and literally sucked global savings at very lower rate.

It is contended that the United States enjoys both the wealth accumulation effect as this flood of liquidity keeps low its interest rates and its cost of funding; and the exchange rate effect because – even if the dollar depreciates – its low yield-dollar-denominated liabilities held by foreigners will shrink while the U.S. high yield-investments abroad will rise in value.

It has also been extensively complained that – instead of using these funds to balance its domestic and external accounts for the sake of strengthening the global financial system – the United States spent them on its expansive domestic consumption and selfish pursuit of its international policies – including the funding of baseless wars.

Insulation from foreign shocks

There is no doubt, the dollar reserve and global currency status helps the United States to insulate its economy from foreign shocks by financing external deficits with its own currency. This insulation helps to relax or delay the traditional balance-of-payments constraints or even avoid altogether the burden of macroeconomic painful adjustments required by payment imbalances through domestic monetary and fiscal policy (Cohen, 2011).

Furthermore, monetary policy shocks are transmitted abroad – especially to the countries that peg their domestic currency to the U.S. dollar – through the dollar reserve and global currency status channel giving the United States the latitude to financially implement its internal and external public spending objectives without too much concern with the subsequent macroeconomic adjustments. Obviously this status can be a double edge sword which can slash any macroeconomic discipline and prudence – leading to budget and trade imbalances which could burst into serious crises.

3.5.2.3. Seigniorage

The Seigniorage has been quite confusing in terms of benefit it brings to the United States. In its simplistic technical form, the Seigniorage is defined as the dollar face value minus its economic cost of

production and distribution. In other words, it is the revenue the United States gets from dollar creation.

The term seigniorage connotes with a French word Seigniorage which means the right of a Sovereign to mint currency. Its origin dates back to Middle Ages' Sovereigns who monetized and earned profits from the monopoly of coinage.

If it costs twenty cents to print $100 bill to the U.S. government and the foreigners must give real resources worth one hundred dollars in order to get the bill; then, the U.S. taxpayers have neatly reaped $99.80 in terms of profit – theoretically called Seigniorage – as long as the 100-dollar bill doesn't come back to Fed for redemption. Since the cost of dollar production is near zero, seigniorage is a unique and highly profitable business whereby the gross income is quasi-identical to the profits!

On the face of it, a $100 bill is just a piece of paper like a receipt, the government can use to get real things like cars and there is no obligation to pay back the car! The government is clever, he used its regulatory power to make a currency a legal tender which cannot be refused for payment! Even more sophisticated,

In monetary economics, the monetary seigniorage has been regarded by some economists as a form of inflation tax through the expansion of monetary base. In terms of fiscal economics, there is a fiscal seigniorage is regarded as residual finance – a deficit non-covered by new borrowing forcing the government to print money to fill up the fiscal gap.

Under the Gold and the Bretton Woods Standards, the foreign dollar claims were supposedly to be redeemed into gold; but under the Fiduciary Dollar Standard, the dollar – like all the currencies on this planet – is a fiat-debased currency supported by a global trust in the U.S. government. Moreover, unlike the Gold and the Bretton Woods Standards where the value of the dollar is tied to a fixed amount of gold; this value is determined by the FX markets.

In this regards, it is important to note that the United States should not be held accountable for the volatility of the dollar-denominated instruments accumulated by the foreign holders in their relentless path to implement their export-led growth because these instruments – even though issued by the United States – are not sold under bilateral contracts, but sold and bought on the markets – through auctions or otherwise – and therefore under the vagaries of the markets' favorable or adverse movements.

One can argue that it is rather the inner contradiction built-in in the deliberate choice for development shortcut via export-led growth which compels these countries to competitively undervalue currencies and neutralize trade surpluses via sterilization after accumulating foreign exchange reserves denominated in the above

market-driven volatile dollar-instruments; instead of pursuing a wholesale organic macroeconomic growth strategy.

There is a big difference of buying financial instruments issued by United States, but sold on financial markets and debts borne out of bilateral agreements – where the U.S. commitment is driven by formal agreements as opposed to instruments driven by the markets.

From international standpoint – as the dollar is a global currency that circulates internationally – the dollar-Seigniorage is obviously dependent upon the willingness of foreign market players to hold it; which they can get in cash or in dollar-denominated financial claims in exchange for their traded goods and services. This transfer of real wealth against IOUs (I Owe You) paper instruments has led some economists to qualify Seigniorage as a form of inflation tax that channels real resources to the currency issuer.

Since the surplus countries reinvest their surpluses back into the U.S. debt instruments, the exorbitant privilege boils down to the ability of the United States to run large current account deficits and the ability to borrow large amounts at low interest rates by selling its risk-free treasuries and simultaneously earn much higher returns by making riskier investments – such as foreign direct investments (FDIs) – with the same funds in foreign markets; thus earning much higher revenues than the lower returns they pay on the dollar-liabilities held by the rest of world because of the risk differential.

3.5.3. EXORBITANT BENEFITS TO THE REST OF THE WORLD

The rest of the world benefit by accessing a refined currency polished over many decades – if not centuries – and backed by the most liquid markets on earth along with the greatest economic, military, and geopolitical power in the world. In terms of efficiency, the countries don't need to hold a variety of foreign currencies in their reserve portfolios; holding the dollar – which is quite stable, is sufficient enough because it can be easily exchanged to any other currency if the countries want to intervene on the exchange markets in its monetary exercise. The citizens of rest of world don't need to pack every currency of the countries they visit; cash-dollars or dollar-traveler's checks will do a good job in facilitating the expenditures abroad.

3.5.4. EXORBITANT PRIVILEGE UNDER SCRUTINY

Can the exorbitant privilege stand a careful analysis? Most economists agree that the United States derives real benefits from the dollar global status. But are those benefits really from the dollar global status? How exorbitant are they? In other words, how much does the United States make from dollar production? Some analysts

believe that the United States collects roughly $90 billion per year from Seigniorage since 2007. Smaghi (2008) estimated the size of that Seigniorage 0.05% GDP; while McKinsey (2009) found the net benefit of the exorbitant privilege to the United States in 2007/2008 might have been 0.3 to 0.5% of U.S. GDP (between $40 and $70 billions). These numbers don't seem exorbitant for an over $17 trillion economy.

Even more questionable is the supposedly funding privilege the United States derives from the dollar reserve and global currency status and upon which it makes a killing by reinvesting into higher yield opportunities abroad. Curcuru, Dvorak, and Warnock (2008) found that it is the composition differential between the outward investments upon which the United States realizes higher rates of return and inward capital flows, on which it pays low funding costs. It is the classic buy low and sell high premise! Whether this buy low and sell high is attributable to the dollar global status – or to the size, vibrancy, and attractiveness of U.S. markets and the safety of its very liquid Treasury instruments – is highly questionable. What is not questionable is that the investing equation asymmetry carries a risk premium due to risk differential rather regardless of the dollar reserve and global currency status.

Gourinchas Rey and Govillot (2010), went even further and expanded this insurance premium argument by contending that there should be an insurance premium the rest of the world should pay to the United States as a compensation for its exorbitant duty in giving to the world a stable anchor currency and for providing other countries a lender of last resort in time of crisis – a duty well-performed by the Fed which prevented the meltdown of the global financial system during the Great Recession by providing sufficient liquidity to the global economy with trillions of swaps lines and other monetary arrangements to the major world central and private banks.

And since most foreign holders of dollar-denominated assets belong to the developing world with fragile financial markets and soul-searching political systems that it makes an economic sense and beneficial for those holders to accumulate dollar-denominated instruments because of their high quality in terms of liquidity, safety, and stability.

Contrary to the advocates of the exorbitant privilege, the above net positive income from the asymmetric financing and investing position is not necessarily intrinsic to the U.S. Dollar reserve currency status. With or without the dollar reserve status, the United States has historically been the largest and richest currency area with the largest economy, the largest share of world output and trade, the most vibrant financial markets and the most liquid government bond market along with low and stable inflation in the world to be the premier destination of global capital; thus providing the conducive climate for other countries to hold and use dollars.

And since it has the largest presence network of multinational corporations in the world, it would be ipso facto the largest provider of equity and FDIs regardless of this status. As of December 2012, the CIA World Factbook (2012) estimated the stock of direct foreign investments – the cumulative U.S. dollar value of all investments excluding investments through purchase of shares – made by foreigners into the U.S. markets at $2.723 trillion and stock of direct foreign investments made by Americans abroad at $4.507 trillion – each of these in- and out-capital flows is more than twice that of any other country. The notion that the United States sucks savings from the Rest of the World and squanders them into a reckless consumption just because of its status as the issuer of the world reserve currency is not supported by viable economic measure to say the least.

From the above discussions, it appears that the exorbitant privilege is either insignificant or ambiguous to be structured into the U.S. monetary policy.

3.6. Exorbitant Burden

Just as great powers are pregnant with great responsibility; the dollar dominance is pregnant with great burden. This is the fundamental reality the United States must face as the issuer of the world leading reserve and global currency: it must face the burden of being a net debtor; because – in a world of fiat currency – the United States major asset it can send to the rest of the world for reserve accumulation is its debt securities – which other countries must hold by running current-account surpluses against the U.S. willingness to run correspondent current-account deficit. Isn't too much a burden for the United States to provide the dollar-liquidity for the entire $80 trillion word economy?

3.6.1. COMPETITIVENESS BURDEN

Alongside with the interest rates and inflation differentials, economic growth and the geopolitical power, the exchange rate is one of the key determinants of the global trade in a given country. Because of its reserve and global currency status, the dollar is naturally subject to overwhelming global demand which can push it to high appreciation heights that would seriously hurt the competitiveness of U.S. exporters on world marketplace – especially during crisis as global investors fly to the dollar-safety.

This means that a dollar devaluation policy can boost U.S. export competitiveness and raise its net exports which could – not only reduce the current account deficits – but also stimulate the economy without adding to national debt. However, since the U.S.

domestic demand is imported by the rest of the world by forcing its cheap tradable goods into the United States as per their export led-growth policies, it is obvious that the U.S. tradable goods sector must shrink and related unemployment must follow.

Some experts argue that the squeeze that the trade deficit puts on the tradable and import-competing manufacturing sector in the United States is a necessary price to pay – not only to access the flood of cheap financing from surplus countries, but also to subsequently keep U.S. interest rates low in order to support the U.S. consumption-led expansion (Roubini & Setser, 2004).

The disappearing of some sectors of the manufacturing industry to the dictates of the comparative advantage draconian premise leads to damaging unemployment in the manufacturing arena. In order to ensure sustainable growth – either investments have to increase in order to absorb the masses thrown into unemployment by diversion of the U.S. demand to meet the expanding exports from the surplus countries – or expand U.S. domestic consumption.

But the problem is that by increasing consumption, the United States must provide financial facilities to already over-leveraged consumers to meet this expanded consumption – especially, since their income shrank because of the above domestic demand diversion and the job competition that drag salaries to lower levels.

This explains the emphasis put on U.S. consumption which is greatly facilitated by engineered domestic liquidity by the Federal Reserve through manipulation of interest rates downward. However, this is not an ordinary consumption; it is an overconsumption that increases as the current account deficit deteriorates. This means that capital flows into the United States by the virtue of the reserve currency status to finance the U.S. deficit mainly finance additional consumption.

It is worthy to note that the infliction imposed to the U.S. competitiveness is not the monopoly of China. Japan and many Asian Tiger economies along with Mexico and Brazil relentlessly implemented the similar Chinese export-led growth. Their much-chanted economic miracles were – in a sense – the result of their savvy gaming of the global system by actively accumulating foreign reserves which relied on foreign demand – mainly from the United States – to compensate for their own limited or constrained domestic demand through financial repression.

Not only they have been able – with relaxed labor and environmental regulation, cheaper labor and other factors of production – to efficiently produce inexpensive products such as steel, textiles, footwear, auto parts and electronics in high demand in the United States - but also, they have been able to peg their domestic currencies at cheaper exchange rate than the US dollar, thus maintaining the US in a kind of perpetual bilateral trade deficits.

The above developments have compelled U.S. companies to move to foreign markets trying to achieve the same level playing field as their international competitors.

3.6.2. EXORBITANT RESERVE CURRENCY CURSE

Just as the oil has become a curse for its producers, a reserve and global currency can become a curse to its issuer. To finance its own deficits in its own currency might look very enchanting, but it might – not only deflect the macroeconomic discipline and sound regulations required to improve economic growth in the real economy by resorting to enticing shortcut to bubbling growth offered by the financial economy – but also put off the necessary policy changes that would have enabled the United States to cope better with the changing economic environment.

While the dollar's status as the global and world's reserve currency along with the depth of U.S. financial markets – especially for the U.S. Government debt instruments – have a built-in source of demand for both dollars and dollar denominated assets and therefore makes it easier for the United States to get external financing and further consume and invest; it could prove to be a mixed blessing as the above dollar's privileged position can push the spending across the barriers of economically justifiable and globally bearable.

The dollar's privileged position increases the risk of accumulating large U.S. trade deficits for too long – leading to excessive U.S. debt growth – thus, increasing the cost of delayed adjustments at later stage – which will necessarily be larger and happen much faster than the un-delayed gradual adjustments. These kinds of sharp adjustments would reverse current patterns requiring U.S. income to grow much quicker than its consumption and overall domestic expenditure.

The catch is that the consumption is the driver of the U.S. Economy and therefore the only way this can happen without a slowdown in U.S. growth is if the net exports start to drive the U.S. economy – this simply means that the United States would trend toward becoming a current account surplus economy which would require the current surplus countries such as China to shift from relying on U.S. demand to spur its growth to providing a surplus of demand that helps support U.S. growth.

As it has been discussed above, through the global savings glut, surplus countries poured unprecedented liquidity in the United States and inundated its major financial institutions with cash which was diverted to financial economy – changing the culture of Wall Street from funding the real economy to reckless trading activities – mainly provided by the speculative and creative finance of unregulated derivative markets.

3.6.3. POLITICAL BURDEN

Although it has been extensively discussed in the U.S. geopolitical power, the global public good of dollar-liquidity to fuel the global economy can arguably turn into a political nightmare as large holders – such as China – could theoretically have leverage over the United States because of their hypothetical ability to offload their large stockpile of U.S. treasuries at will.

In fact, China – whose much-publicized export-led growth heavily lean on the U.S. twin-deficits – has been pinpointing to the irresponsibility of the United States in running twin deficits and calls for tighter U.S. monetary and fiscal policy in order to protect the value of its massive reserves.

The reality is it is not the United States to blame. China made a colossal mistake by keeping its currency undervalued for so long in order to put high gear for a full force economic growth that was certainly to lead to high inflation and eventually to the bursting of the bubbling Chinese economy. Paradoxically, if the United States embarked on sound monetary and fiscal policies that reduce its deficits; the U.S. policies will – not only spell the end of the Chinese export-led growth – but also the rest of the world will have to absorb the released U.S. deficits as the above policies will put the United States on a strong exporting footage.

3.6.4. MONETARY POLICY BURDEN

As it has been discussed, the fundamental role of the U.S. dollar in its primary functions as global store of value, medium of exchange, and unit of account – requires a delicate alignment of fiscal and monetary policies – not only to diffuse the global aggregate demand pressures with their built-in volatility on the U.S. dollar in fulfilling its inherent duty embedded in its status as the world reserve currency – but also to limit adverse effects of these policies on world markets.

This alignment means that the United States cannot fully exercise its monetary autonomy and must sacrifice some of its domestic agenda that can improve its terms of trade and stimulate growth and employment by adjusting the value of its currency. The $24 trillion total potential exposure to the Great Recession estimated by the U.S. Special Inspector General was certainly not a small burden – but, it was necessary to prevent the systemic collapse of the global economy (U. S. Treasury Department, 2012) (Figure 3.5).

3.6.5. CAPITAL FLOW BURDEN

Without a total openness with un-restricted global capital flows and full eradication of domestic financial repression, no currency can achieve a reserve and global currency status. On the flip side, these

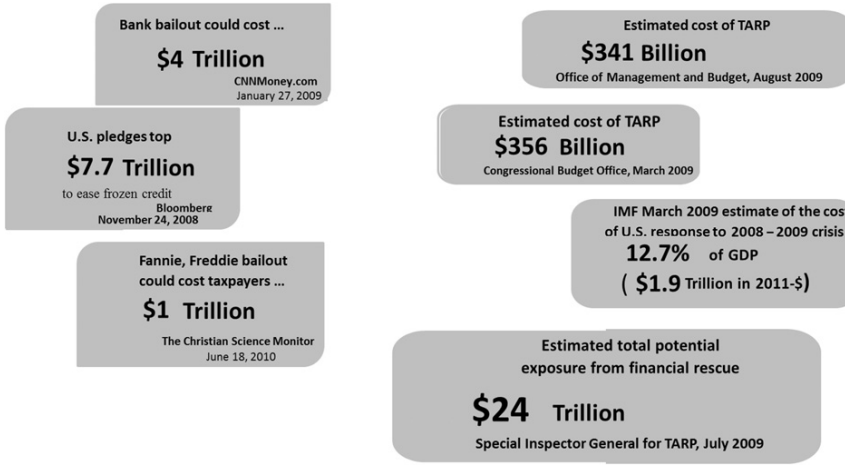


Figure 3.5: Costs of Financial Stability Programs. *Source*: U. S. Treasury Department (2012).

global capital flows have such built-in macroeconomic instability that a hopeful economy – in order to be the home of a reserve currency – the weight of its financial markets – far more than its economic size – must be strong enough to be able to contain the global financial shocks.

This greatly contradicts the export led economic growth which requires – for its survival – to maintaining a strategic undervalued exchange rate peg which would collapse in total open economy to free capital flows once foreigners start to buy massive issuer's assets for their reserve needs. These global demands for the domestic currency would make the currency stronger and exports less competitive. And that is the dilemma in which China is locked in according to Subramanian (2011) because its export-led growth strategy requires denying foreigners the ability to buy Chinese assets; while promoting the Renminbi to reserve currency status requires the opposite – unrestricted access to foreigners to buy Chinese assets.

3.6.6. RESERVE CURRENCY STATUS MAINTENANCE BURDEN

Once the reserve and global currency status is achieved, this is where the real problems start because it will occupy a very visible place at the center of the global economy. In this regards, it will be subject to all kinds of financial shocks such as relentless demands for its accumulation. If the economy of the issuer is not strong enough to financial sector until such time that it is confident that it can sustain such shock, the above status will be impaired beyond repair.

If the currency reserve status it is not restored, the country might lose the global confidence and appeal in its economic fundamentals and its anchoring currency may suffer disproportionate depreciation as the foreign holders of its currency-denominated assets get gripped by the perception of sharp prices drop of their holdings and start to short-sell them.

3.6.7. THE TWIN DEFICIT BURDEN

3.6.7.1. Overview

A twin deficit economy is one that suffers from the fraternity of a fiscal and current account deficits because of an umbilical cord that links its government budgetary balance to its current account balance and vice-versa. The twin-deficit postulate has been subject to conflicting debates and unanswered questions. Does this causality really exist; and if it does, is it short- or long-term? If this correlation is significant, what is its direction? Is the causality unidirectional from government budgetary deficit (GBD) to current account deficit (CAD) or the reverse? Or is it bidirectional between these two variables?

3.6.7.2. Twin Deficit Identity

There are three major competing theories of the twin deficit Hypothesis.

Keynesian and Mundell – Fleming twin-deficits hypothesis

The most popular theory is articulated upon the Keynesian tradition – which claims that an expansionary fiscal policy stimulates income and spending through the multiplier mechanism. Part of increased spending falls on imports, hence the current account deteriorates and the twin deficit hypothesis is verified according to Kosteletou (2011) who opined that this is true irrespective of exchange rate regime, capital mobility situation, or phase of the business cycle of the economy. According to this tradition – if its twin deficit hypothesis holds – the United States should be able to improve its current account deficit through a fiscal austerity that reduces the government budget deficit.

According to Mundell (1968), with perfect capital mobility and negligible transaction costs, fiscal expansion increases real interest rates that in turn trigger capital inflows; and the subsequent real exchange rate appreciation leads to the current account deterioration regardless of the exchange rate regime.

The above twin-deficits hypotheses presumes the causality running from the government budget deficit to current account deficit. The reverse causality channel from current account deficit to government budget deficit can also occur if a government response to the

deterioration of the current account balance – triggered by factors such as global financial integration and easier access to borrowing – is the budgetary expansion; the twin-deficits can then be observed. However if the government response is the budgetary austerity, the two deficits are inversely related and therefore the twin deficit hypothesis does not exist (Kosteletou, 2011) because the government budget deficit will be contracting while current account deficit will be worsening.

The government budget deficit and current account deficit were largely recognized as twin-brothers and emerged at the forefront of the policy debate in early 1980s when the U.S. government cut the tax rates without corresponding cuts in government spending. The theory that emerged claimed that when a government increases its fiscal deficit by cutting taxes, the taxpayers get richer and boost their consumption, leading to the decline of national savings in terms of both private and public savings. So the theory goes: the changes in the government budget will be transmitted to the current account in a co-movement fashion.

Since the government falls short in its revenues to cover its expenditures – and because of the mismatch between the taxes and the expenditures while the national savings are on the descending slope – the only options to go around this budgetary predicament – if the domestic investment doesn't decrease enough to offset the saving shortfall – is either to borrow money from other nations in exchange for foreign-made goods in order to compensate its income shortage, or to liquidate some of its foreign assets – which would deteriorate its net international investment position (NIIP).

Based on this simple logic, the Keynesian advocates of the twin deficit theory claimed that if a government runs a budget deficit, it has also to run a current account deficit. In other words – as stated above – the improvement in U.S. fiscal situation should have a beneficial impact on the U.S. current account deficit – if it is accompanied by a combination of favorable changes in the net private savings, competitiveness, and interest rates.

Testing the theory against time, the U.S. budgetary surpluses started vanishing after the 1930 Great Depression as President Franklin D. Roosevelt implemented the New Deal socio-economic programs for relief, recovery and reform between 1933 and 1936 to get the country out the Great Depression. The U.S. government deficits were later exacerbated by the WWII spending. After the WWII, the U.S. dollar wore the mantle of reserve and global currency and the draconian responsibility to provide dollar-liquidity to the global economy through its current account deficits.

In course of the twin-deficits' growth to adulthood, they didn't receive the same and uniform childcare by the successive U.S. administrations. The Bill Clinton Administration was the worse babysitter

and literally strangled one of the twins – the GBD (government budget deficit) – by balancing the government budget while dearly caring for the CAD (current account deficit) twin – given the inner workings of the dollar reserve global status. It was the following George Bush Administration which brought the GBD-twin back to life by simultaneously cutting taxes while heavily increasing spending by forcefully engaging in its Afghanistan and Iraq wars.

The Bush Administration's noxious ingredients prescribed on both sides of the U.S. government budget equation – not only erased the $5.6 trillion Clinton budget surplus – but also pushed the GBD to unprecedented heights at 3.5% GDP by 2004 – and simultaneously entertained the trade deficit growth from 3.8% GDP in 2001 to 5.7% in 2004.

At the end of the Bush Administration's second term, the GBD and CAD twins were already grown-up men in good health and still under the steroid of tax cuts and wars spending when they were handed over to Obama Administration for adult care during the raging of the Great Recession with a budget deficit hovering at 9.2% GDP as of February 2009, an anemic economic growth in terms of annualized change in quarterly real GDP standing in the negative territory at 8.9% as of 2008-Q4 and the private sector losing jobs in the tune of 839,000 as of January 2009 (U. S. Treasury Department, 2012). The Obama Administration happened to be the worse caretaker of both twin-deficits by closing the budget deficit gap to 3% GDP and the current account deficit to 2.4% GDP in 2014.

Ricardian equivalence twin-deficits hypothesis

According to the Ricardian Equivalence Hypothesis, there is no connection between the CAD and the GBD; and therefore the twin-deficits hypothesis doesn't hold. Any fiscal expansion, or contraction induces inter-temporal reallocation of savings, leaving the current account balance unchanged (Kosteletou, 2011).

Twin divergence hypothesis

The worsening of the GBD doesn't necessary lead to the deterioration of CAD; but rather to the improvement of the current account balance and vice versa; if this is the case, there is no causal effect between the twin-deficits; but there exists an inverse association (Kosteletou, 2011).

Besides being perceived as the progenies of the same national womb, the impregnating seeds of the GBD and CAD come from different core determinants. The GBD is domestically driven by spending and tax policies – such as discretionary and non-discretionary spending – while CAD is externally driven by trade – such as tariffs – and exchange rate policies. In essence, the CAD is fundamentally

a reflection of national saving shortfall. The Twin Deficit Identity can be derived from the National Income Identity (GNP) as follows:

$$Y = C + I + G + X - M \tag{3.1}$$

where:

- Y stands for gross national income or **GNP**;
- C for private consumption;
- I for real investment spending in the economy such as spending on equipment, plant, building;
- G for government expenditure on final goods and services;
- X for the export of goods and services; and
- M for the imports of goods and services.

The current account (CA) balance is defined as follows:

$$\text{CA} = (X - M) + F \tag{3.2}$$

F stands for net income and transfer flows. It is composed of net income from abroad and net unilateral transfers. The net income is the difference between income receipts from the rest of the world such as wages and compensation and assets income such as interests, profits, dividends minus similar income payments to residents of the rest of the world. The net unilateral transfers are payments the United States receives from or sends abroad; but which are not related to trading of any asset, service or good such as gifts, foreign aid, etc.

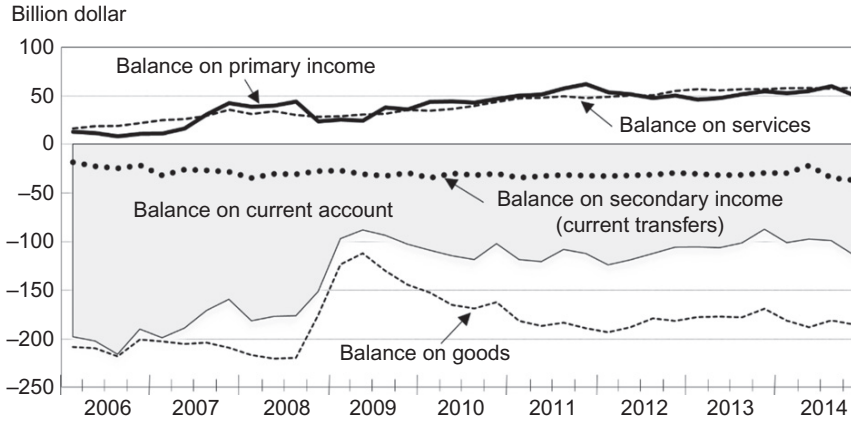
According to BEA (2015) – see Graph 3.1 – the income and transfer flows from and to the United States have been growing in parallel; and therefore F doesn't have a significant effect au CA. This means that the current account balance (CA) can be validly represented by the trade deficit ($X - M$). From (3.1) the GNP Identity: ($Y = C + I + G + X - M$) we can derive: $X - M = Y - (C + I + G)$ where ($C + I + G$) is defined as the domestic spending.

Based on the above definitions and contrary to the autarky (closed) economy where national savings (S) = national investments (I); in an open economy, S might be different from I because a country can seek funds for investment internationally. The components of national savings can therefore be:

1. **Private Savings**: $S_P = S_H + S_B$: disposable income saved by domestic householders (S_H) and businesses (S_B). It is represented by

$$S_P = Y - T - C \tag{3.3}$$

2. **Government Savings**: $S_G = T - (G + R)$ where R stands for the government transfers as a redistribution of income in the market system. They include payments such as Medicare and



Graph 3.1: The Current Account Balance and Its Components. *Source*: U.S. Bureau of Economic Affairs (2015).

Medicaid, unemployment benefits, Veterans' benefits, financial aid, research and development funding, subsidies to business, etc. R can therefore be inclusive in government spending G; thus:

$$S_G = T - G \tag{3.4}$$

3. **Foreign Savings**: S_F = CA: they are mainly expressed by the current account balances or $X - M$.

In an open economy, the major sources of funds to finance investment are therefore households, businesses, government and the rest of the world. Thus,

$$I = S_H + S_B + S_G + S_F$$

Since: $S_H + S_B = S_P$; S_F = CA and $S_G = T - G$. The investment identity is therefore:

$$I = S_P + (T - G) + (X - M) \tag{3.5}$$

This identity brings the two deficits together:

$$I - S_P = (T - G) + (X - M)$$

$$-(I - S_P) = -(T - G) - (X - M)$$

$$(S_P - I) = (G - T) + (M - X)$$

$$(S_P - I) - (G - T) = (M - X)$$

$$(S_P - I) + (T - G) = (M - X)$$

$$\text{CAD} = \text{GBD} + (S_P - I) \tag{3.6}$$

From the Investment Identity (3.5), we can derive the Twin-Deficits Identity (3.6) whereby CAD = $(S_G - I_G) + (S_P - I_P)$. The Twin-Deficits Identity clearly shows how important is the role of private savings relative to private investments. A positive relation between CAD $(M - X)$ and GBD $(S_G - I_G)$ can only holds if the difference between Private Savings and Investments $(S_P - I_P)$ remains constant. But, if $S_P - I_P \neq 0$, the Private Saving S_P might be correlated to the Private Investment in the following fashion according to Kosteletou (2011):

1. If in the following equation

$$S_P = \beta_0 + \beta_1 I_P \tag{3.7}$$

$$\beta_0 = 0 \text{ and } \beta_1 = 1$$

Then, $S_P = I_P$ and CAD = GBD + (0). Thus, the twin deficit hypothesis is accepted.

2. The relation between net public savings, $(S_G - I_G)$, and net private savings, $(S_P - I_P)$, is not straightforward. If net public $(S_G - I_G)$ and private $(S_P - I_P)$ savings are positively correlated, the twin deficit hypothesis would be verified according to Kosteletou (2011) who further argued that in case of negative correlation, or, of no correlation at all, twin deficit hypothesis should be further examined through the following equation:

$$S_G - I_G = \gamma_0 + \gamma_1 (S_P - I_G) \tag{3.8}$$

1. If $\gamma_0 > 0$ and $\gamma_1 > 0$; then, the twin deficit hypothesis holds, but;
2. If $\gamma_0 = 0$ and $\gamma_1 = -1$, the Ricardian Equivalence hypothesis is valid and the twin deficit hypothesis is rejected (Kosteletou, 2011).

From $(S_P - I) = (G - T) + (M - X)$, if S_P and I are held constant, the National Savings are in equilibrium with the Investments and the economy would be producing at capacity output. Then, $-(G - T) = (M - X)$ or $(T - G) = (M - X)$. With this equilibrium, there is a bi-directional causality between net government budget $(T - G)$ and net exports $(M - X)$. A deterioration of the budget deficit will worsen current account balance; as the government consumes more than it brings in terms of revenues, it will look to foreigners to meet its extra spending savings.

It is important to note that the external financing of the budget deficit leads to a foreign influx of capital which necessarily impacts the exchange rate; which in return plays a crucial role in the transmission mechanism between the two deficits as the subsequent government spending affects both the real interest rate and the real exchange rate and the terms of trade.

From the Current Account perspective, as the deterioration of the CAD would depress the economic growth due to export earnings retraction; the only way the government will maintain or increase its spending to compensate for export earnings shortfall; will the recourse to budget deficit and debt.

However, the savings-investment balances are rarely in equilibrium and from an economic standpoint, S_P and I_P will also adjust in response to changes in the fiscal shocks. If $S_P > I_P$; then the budget deficit will be absorbed both by private savings and imports as GBD = $(S_P - I)$ + CAD. If $S_P < I$, both the budget deficit and investment would be financed by world financial markets.

Critics of the Twin Deficit Hypothesis span from empirical evidence to prove that the behavior of the GBD and CAD doesn't exhibit twin quality over long haul. In fact – except some temporary co-movement – the GBD and CAD have demonstrated the ability to move apart, even in opposite directions like during the U.S. investment boom of 1990s. They further argue that a causality or even a correlation between the current account and budget deficit has yet to be established.

Additionally, the capital doesn't flow into the United States because the government is necessary having budget deficit trouble; but it mostly flows into its markets mainly because of the U.S. conducive and safe investment environment with a decent return on capital and because the United States has to provide sufficient liquidity in terms dollar-denominated assets to the world for settling global transactions and for accumulation purposes.

3.6.8. DEBT BURDEN

According to the Congressional Budget Office's extended-baseline scenario, the United States debt-to-GDP ratio will rise rapidly, reaching nearly 1 time GDP around the year 2040 (U.S. debt held by the Public). The projection is based on scheduled spending under current law.

In its role as the leading reserve currency, the United States runs current accounts deficits which are financed by the rest of the world by buying U.S. government debt. Gilpin (1987) has contended that the United States is caught in a vicious cycle: on one hand, it requires foreign capital to finance its budget deficit. But on the other hand, the availability of foreign capital causes a great dollar overvaluation and weakens its industrial base.

A weakened economy in turn increases the need for foreign capital, and the drain of interest payments further undermines the competitiveness of the economy. Servicing interests alone stood at $454 billion in Fiscal Year 2011 while foreign holdings of U.S. Treasuries alone will reach over 20 trillion by 2020 with debt service to foreigners standing at over $1 trillion.

The total U.S. gross debt stands at over $18 trillion in 2014 and the gross debt-to-GDP ratio is already over 100%. These are large numbers and the debt issue should be addressed with adequate policies and well-measured macroeconomic adjustments.

According to IMF (2014), the total foreign exchange holdings stood at $11.77 trillion with allocated reserves standing at $6.19 trillion and unallocated reserves at $5.58 trillion as of 2014-Q3. In the allocated reserves, the U.S. dollar accounts for 3.86 trillion or 62%. For simplicity let us assume that the U.S. dollar accounts also for 62% in the unallocated reserves – the total dollar-denominated reserves $11.77 trillion × 62% = $7.30 trillion in nominal terms. In real terms, these reserves would roughly stand at $11.77 trillion × 72% = $8.47 trillion.

The official FX reserves at $11.77 trillion, now amount to around 57% of $18.41 trillion-world imports on CIF basis (UN Trade Statistics, 2015). If the world imports grow at 10% – annual rate, they will reach $36 trillion in 2020 and $241 trillion in 2040. If the reserve holding to imports ratio stays the same at 57%, the global reserves will reach $20.52 trillion in 2020 and $137.37 trillion in 2040.

If the U.S. dollar continue to account for 62% of global reserves in nominal terms, the world would like to hold $12.72 trillion of dollar-reserves in 2020 and this would be an additional $5.42 trillion from the current $7.30 trillion-dollar-denominated reserves. As it has been discussed, the United States provides the global liquidity through its current account deficit.

In order to meet the global demand for U.S. dollar-denominated assets, it would have to increase its current account deficit to meet the additional $5.42 trillion-dollar component of the global reserves by 2020. Since these dollar-assets are mainly the U.S. government debt instruments, this would be a huge additional debt burden.

Does this mean the end of the U.S. dollar supremacy? As Subramanian (2011) argued, the correlation between government deficits and debt and economic dominance is still ambiguous. He pointed out to the rising deficits and debt that was associated with consolidation and exercise of British Empire building and the subsequent imperial power after the mid-1600s. Great Britain successfully ran deficits through bond financing at low interest rates without raising taxes while France focused on lower deficits with higher taxes during the Napoleonic wars according to Bordo and White (1990) who opined that France's finances were not necessarily in better shape that British finances because of her dependence on taxation and focus on low deficits. To be a net debtor country by running large deficits was at least a sign of strength rather than weakness.

Even the United States ran up massive fiscal deficits to finance World War II, and – contrary to the orthodox wisdom – that episode reflected, perhaps even caused, economic dominance rather

than decline (Subramanian, 2011). Conversely, the decline of British power after World War II was associated with fiscal surpluses and declining debt (Subramanian, 2011). The U.S. twin-deficits during the Great Recession and the expansive monetary policies didn't deter the investor to scramble for the U.S. debt for sake of safety for their reserve holdings. The secret resides mainly in the overall economic strength and the robustness of the confidence in the U.S. geopolitical power.

3.7. Currency Wars

The currency war is a war which has been raging on the rhetoric battlefields using a panoply of tactical weapons ranging from quantitative easing to competitive pegs, tariff protection, and controls of cross-border capital flows up to bond withholding tax on foreign holders and many other restrictive exchange measures.

The U.S. currency war trumpets have been alerting its European allies about the China's undervalued currency as the weapon of mass economic destruction and unfair trade practices; while China, Brazil, and other emerging markets prepare to contain – what they view as the West conspiracy ploy to destroy their miracle economic achievements claiming that real purpose of quantitative easing policies is to devalue the dollar.

The missile protection system at the ramparts of these emerging economic wealth fortresses are made of capital controls and heavy artillery of sterilization to sharpen their global competitiveness and diffuse inflationary pressures propagated through the relentless accumulation of reserves necessary to guard themselves from the financial shocks flying from the expansionist monetary and fiscal policies staged in the belligerent developed economies.

Furthermore, the emerging economies feel that they are being ambushed by the near-zero interest rates strategy of the developed world led by the United States which has been prompting savvy investors to leverage low cost funding opportunities to take advantage of high commodity prices and higher-yielding investment opportunities in the emerging markets – thus, pushing very fast capital inflows with the endgame of bubbling their fragile emerging markets.

Countries have been warming their muscles in case the real currency war erupts. The U.S. Senate has passed missile-like bills targeting the currency manipulators. Record amounts of money has been printed by central banks in the United States, the United Kingdom, Japan, Eurozone, and Switzerland to weaken their currencies for competitive gains.

However, these skirmishes – while far from leading to a real currency war and head-to-head trade retaliations – could quickly

turn into a dogfight as most of the policymakers worldwide are more inclined in taking the much less painful financial route rather than the necessary domestic macroeconomic adjustments to come to term to the necessary global imbalances.

The global imbalances are in many ways like global warming in terms of countries posturing. You can recognize it and take required – even painful measures – to curb the pollution; or you can ignore it and wait the Nature to hit back with its natural disasters such as tsunamis, earthquakes, tornedos, rising temperatures leading to severe drought or rising ocean levels leading to heavy rains, etc.

Likewise, countries can recognize the deadly nature of the global imbalances and make the required and globally coordinated – but draconian macroeconomic adjustments – or everybody can sit in his corner and wait the markets to correct themselves – and when they do; they can do it with vengeance with untold wealth loss, unemployment, and sluggish economic growth for a long time.

Some economists preach that the global demand needs rebalancing, away from indebted rich economies toward more spending in the emerging world; and for this to happen, structural reforms to boost spending and appreciate real exchange rates in surplus economies – while fiscal corrections in the deficit countries must take place. There no free lunch or painless process. There must be a domestic reform.

Without a sound domestic reform, competitive devaluations, capital controls, heating economies, trade wars, descent into deflation, and stagnation might turn the dogfight into a full blown currency war as imagined by Rickards (2012). For him, this is a serious business – more dangerous than the wars with boots on the grounds and missiles in the air; and it is worldwide; they are ones of the most destructive and feared outcomes in international economics.

He also named those wars and defined their timelines. The First World Currency War (WCW I) erupted in 1921 and lasted up to 1936. It was probably the most devastating as it claimed the Great Depression and its WW II offspring by extension. The Second World Currency (WCW II) claimed the end of the Bretton Woods Fixed Exchange Standard – centered on dollar pegged parity to gold – and the 1970s economic turmoil and inflation that followed.

According to the fatidic gloomy future as contemplated by Rickards (2012), The Third World Currency War (WCW III) already in the making has been mainly driven by the Fed secret weapon of quantitative easing programs that are flooding the emerging markets with dollar-liquidity that is driving global price inflation. He vehemently condemns the Fed for engaging in the greatest gamble in the history of finance by its sustained effort to stimulate the economy by printing money on a trillion-dollar scale – a

solution that presents hidden new dangers while resolving none of the current dilemmas.

But the rest of the world is not sleeping to the U.S. scheme he contended, simply because the United States too is facing serious threats to its national security, from clandestine gold purchases by China to the hidden agendas of sovereign wealth funds geared to collapse the dollar. He considered the above scheme as the great of the greatest threats to U.S. security.

Many experts don't seem convinced about the World Currency Wars in the imagination of Rickards. Whereas it is a historical fact that there have been a series of devaluations during the raging Great Depression between 1930 and 1938, but a causality between these devaluations and full-blown currency war can hardly be established as they can rather be attributed to the generalized depression that substantially crushed the global trade.

Most importantly, it is not clear that competition for export markets was the main motivation for these devaluations and therefore their direct responsibility in the world trade deterioration was small and not very significant to cause a World Currency Wars. Furthermore, when Nixon collapsed the Bretton Woods Fixed exchange System – giving space for Currency Floating System – competitive devaluations were not part of the equation.

Let it be depression, let it be recession, these economic crises are market corrections – which are made harder by mostly the government's ill-policies that delay the ripe time for corrections. For example with the Great Recession countries have been forced to rebalance without currency cannons. In the deficit countries such as US, deficits have been going down and savings up; while the surplus countries such as China, have been working in creating domestic demand and slowly adjusting their currencies to market realities.

While, there is no guarantee that this rebalancing act will last and prevent countries to revert into their comfort zones of financial intoxication through deb and reserves accumulation – nothing seems – even remotely – to a World Currency Wars.

On the other hand, if competitive pegs are part of the criteria of currency war declaration, then the United States has been under attack right from the implementation of the Bretton Woods Exchange System. Most of economic recoveries from the WWII and economic development strategies have been achieved by taking advantage of the global monetary system in which the U.S. dollar has been and still is the center of this system.

Trade-led growth was the path the Europe and Japan took to emerge from the ashes of the WWII; export-led growth has been the strategies of the Asian tiger-economies. All these strategies literally gamed the dollar-reserve and global currency status to have easy access to the U.S. demand. They really developed very fast by taking

this shortcut path to development that has taken years for the United States in terms of nation-building, democratic political institutions strengthening for peaceful political change, time-test regulatory system, pure and applied research and development.

As it has been stated in this study, there is no easy way or free lunch. Taking a short cut to development can work through technological advancement by discarding the obsolete technologies and embracing the cutting edge processes as Africa did with the mobile technology.

But, there is no such thing like technological fallouts in terms of socio-political system. These are people with their personal sentiments, judgments, cultural traditions, equality aspirations, political participation, social contract, and even inertia to change. You might achieve the economic growth of the world, but if these personal and societal values greatly lag the economic growth, the growth will be perverse, stale, and definitely burst.

3.8. Is There a Viable Alternative to the US Dollar as the World Leading Reserve Currency?

3.8.1. OVERVIEW

Some governments are showing unease about the perceived far-stretched financial burden of the U.S. twin-deficits and debt; and countries such as China fear that their foreign reserves stockpiles might suddenly vanish if the U.S. dollar abruptly collapses. The Great Recession was – for some critics – supposedly to be the last nail on the dollar coffin.

Ironically – as it has been already discussed, the last global recession – which was epicentered in the United States – has on the contrary reinforced the centrality and global standing of the dollar which became instinctively the asset of refuge for investors worldwide. Just in the middle of raging crisis in 2008, the global demand for U.S. treasury bills became so intense that yields fell to zero or below (Cohen, 2008). The dollar might not be loved, but it is deeply respected.

3.8.2. VIABLE ALTERNATIVES

Even if U.S. dollar demise is pronounced, is there a credible successor that can wear its mantle? The much-aired candidates – Euro, Yen, Renminbi, and SDR – to take center stage have their own self-defeating flaws and there seems to be no reasonable alternative in the seeable future.

The optimum number of reserve currencies that should be leading in the global economy is still debated among economists. Should a single reserve currency or a basket of reserve currencies or a multi-reserve currency system dominate the global economy? The current dollar-dominated system is heavily criticized as volatility-bringer; but there is no serious proposal out there that can validly take the place of the dollar without damaging the key dimensions of the global balances.

3.8.2.1. Special drawing rights (SDR)

The SDR is a basket of four key international currencies: the U.S. dollar, the Euro, the Yen, and the Pound from which it can be freely exchanged and therefore derives its value. It was created by the IMF in 1969 – as a supplement – in response to what was perceived as inadequacy of dollar-liquidity to meet the rising trade and international payments in the global financial system.

The debate to replace the U.S. dollar with SDRs as the new global reserve currency intensified in the midst of the raging Great Recession. However, it is one thing to strongly wish something to happen, but it is another to make it effectively happen and to maintain it once it occurs. In all honesty, the SDR doesn't seem to be predestined to become a leading global currency.

Currently the share of SDRs in the global foreign exchange reserves is insignificant at around 1% and it flows only through official channels between Members of IMF – thus, it a total a stranger within the private sector community and banking system – and this denies the SDR the function of medium of exchange and its usefulness market operations. As of 2012, only three countries – Botswana, Libya, and Syria – anchor their domestic currencies to the SDRs (IMF, 2014).

In order to perform international payments or intervene in Forex markets in its current form, the SDR and its denominated instruments must be converted first in one of the component currencies – which conversion process might lag to the beats of the Forex markets that literally move at the light-speed.

The defendants of the SDRs who vehemently opine that these challenges can be overcome. However, must have answers to a whole host of questions: How can IMF – in its current organizational configuration – be able to create and manage a sound – fits all – monetary policy on a global scale? How will the IMF create the SDR-global liquidity to meet the ever-rising global trade, settlements and payments along with reserve accumulation for central banks which the United States provides by running persistent trade deficits? How will IMF create deep markets to trade SDR-denominated financial instruments – especially in time of liquidity drought?

Furthermore, how IMF would resolve the lack of government backing syndrome that is wrecking the womb of the Eurozone – without which a world reserve currency of any kind would have difficulty attaining the minimal level of credibility? How will IMF preside over a major crisis like the Great Recession when the current SDR issuance must go through an overly cumbersome process that requires agreement among 85% of the IMF's 187 members – which further require approval by their national Parliaments or Congresses?

Another very important issue is the basket itself. If the SDR is to supplant the U.S. dollar, does the basket stay the same? If it does, this will be a self-defeating undertaking since the currencies in the baskets – led by the U.S. dollar – are the main reason why the SDR would be promoted to reserve and global reserve currency status. If the dollar and its three acolytes – the Euro, the Yen, and the Pound; which control over 90% of global Forex activity – are perceived weak to play this role, then SDR is itself another weak currency and there is no reason to promote it to reserve and global reserve currency status in the first place.

Another option would be to reinforce the SDR by adding other currencies in its basket such as the Chinese Renminbi. However, this addition must make sure that the SDR remains usable – a condition that requires that the currencies in the basket have to be widely traded and freely convertible (Beattie, 2011). Indeed, it is precisely for this reason the basket was shrunk from 16 currencies to 5 back in 1981 (and later to 4). The currencies with thin or restricted trade – such as the Saudi Riyal and the South African Rand – were simply thrown out of the revered SDR basket (Beattie, 2011).

In the hypothetical case that the Renminbi is included into the SDR basket, it automatically becomes a reserve currency and China has to meet all the prerequisites of a global reserve currency. China must have acceptable markets transparency, most of its banks must be fully commercialized, its market supervision and regulation strengthened, its monetary and fiscal policies sound and stable, its Renminbi exchange rate flexible enough to accommodate larger flows of capital.

For these radical changes to take place: China would have to first abandon its export-led growth model and de-peg its currency and most importantly, the global capital inflows and outflows must be free. It has to move to the United States side on the Mundell-Flemming economic trilemma. This is a radical change to bear.

Otherwise, since the holders of SDR instruments have the latitude to exchange them against any currency in the basket, there will be tremendous attacks on the Renminbi and exploitation of other financial and economic inefficiencies in the Chinese economy – such as interest rates differentials – that its reserves would dry out in no time in trying to contain those attacks.

Furthermore, for SDR to fully assume the role of world reserve currency, it would require to build liquid markets on which governments and corporations could issue SDR securities at competitive cost, make SDR-denominated deposits and SDR-denominated loans attractive to the global banking system and create an SDR-based foreign exchange market in which the IMF would be the obvious market maker with an adequate budget enabling it to trade SDRs with all participants, private and official, at narrow bid-ask spreads, competitive with those for Dollar, Euro, Yen, Pound which will be still around and competing.

One needs also to keep in mind that the United States still have an active involvement and high voting power in the IMF based on its 17% stake worth roughly $54 billion – the biggest contributor in the IMF. So, even though an SDR-based system would move away from or alter the dollar dominance, the SDR's value would remain heavily linked to the conditions and performance of the United States – an awkward competitive position against the dollar the SDR will be replacing.

For such scenario to be real, the IMF must be completely revamped and become an independent global central bank and an international lender of last resort, capable of issuing additional SDRs at short notice in periods of shortage. This is totally contrary to its current rules that require 85% of the IMF'S members' quorum for new SDRs to be issued as stressed above.

Furthermore, the IMF is still under heavy criticism that continuously question its legitimacy. It's ineptitude in solving, let alone preventing the major financial debacles such as those that engulfed Mexico, Argentina, Thailand, Russia, Indonesia, South Korea, Greece – is still fresh in the minds of many in both developed and developing worlds. Others still wonder why this institution is still alive because they consider it as a ghost institution as it formally died in 1971 when President Nixon put the last nail on the coffin of the Bretton Woods System.

Since then, critics contend that its extended life has outlived any useful purpose and this why it has embarked into soul- and relevance-searching for a new mission – which boil down to collecting data and make research papers and projections, but not solving the economic problems of this world.

Even though billions of U.S. dollars have been invested the world over through the IMF and the World Bank without clear and conclusive development achievements – but the IMF is still ill-resourced to be able to tackle the fundamentals problems in the current global financial and economic landscape.

The financial resources of the IMF at its disposal come from (1) Quotas paid its member-states which amounted to SDR 477 billion ($655 billion) as of December 2010 as fixed by the 14th General

Review of Quotas, (2) two standing multilateral borrowing arrangements – New Arrangements to Borrow (NAB) and the General Arrangements to Borrow (GAB) – with a total borrowing capacity of SDR 370.0 billion (about $508 billion).

The IMF is also a rich-gold holder with 90.5 million troy ounces (2,814.1 metric tons – approximately $150 billion); making the IMF the third largest official gold holder in the world; but its gold sale falls under draconian conditions. The sale has to be approved by an 85% of total voting power of member countries (IMF, 2015).

All in all, the funds at the disposal to IMF and those she can access through multilateral borrowing arrangements are meager to cope with a major global crisis like the $24 trillion U.S. Fed's response to the Great Recession through credit lines, swap lines, etc.

The IMF is seriously hamstrung in its funding capabilities and functioning rigidities that very few analysts really still believe that the IMF is the competent and authoritative body to tackle fundamentals threats that besiege the global economy. Eichengreen (2010) was right by stating that no global government means – no global central bank – which means no global currency. Full Stop.

If the SDR to becoming a global reserve currency is far-fetched at least in the seeable future, can Euro be a viable alternative to the dollar?

3.8.2.2. EURO

The birth of the Euro was like a child born with a silver spoon in a rich family: the world of opportunities was there waiting for the child to reach the mature age. Officially introduced on January 1, 1999, the Euro had only one way to go: to fulfill its destiny of dethroning the dollar and becoming the leading global reserve currency.

All the fundamentals were right: backed by (1) a $10.5 trillion economic bloc made of a dozen democratic, politically stable countries, the newly created Euroland accounted for 30% of world trade (half of which within the Eurozone itself); (2) a reputable European Central Bank (ECB); and (3) deep capital markets.

The Euro was ready to go and it went indeed with a very quick rise in the international monetary system. Official reserves began shifting from Dollars to Euros – from 1999 to 2008 as the Euro's share rose from 17.9% to 26.4% in nominal terms while the dollar's share dropped from 71% to 64.1% – although in real terms the dollar share stayed the same according to the U.S. Treasury Department.

These developments prompted several prominent observers – including the then U.S. Federal Reserve Chairman Alan Greenspan – to speculate that the Euro is on its way to eclipse the dollar as the world's premier reserve currency. Chinn and Frankel (2008) were

the most specific by putting the changeover date somewhere in 2022 in their simulation.

With such great performance that heavily relied on the strength of the Euro as the cornerstone of a shift away from the dollar, proposals flourished by passionately advocating that the world has found at last an internationally viable alternative currency that can warrant a feasible change toward a more equitable international monetary system.

Then, the Great Recession came and immediately put the Euro on a surgical table: the perceived strong fundamentals started to collapse one by one and it was put on bailout-life-support for its survival.

The hysteria of the dollar hegemony's detractors and the consensus – among the great minds in global currency system that an end to dollar hegemony was all but inevitable; were put to rest as the Euroland's sovereign debt crisis – that unleashed such market turmoil that far outstripped anything seen in the United States, even at the height of the Great Recession – utterly undermined many of their arguments for a foreseeable shift away from the preponderant role of the dollar at the center of the global economy (Zoffer, 2012).

The homogeneity of the Euroland was suddenly questioned as the Eurozone fiscal union and financial regulator and real market integration were absent to contain the crisis. The exchange-rate flexibility at domestic level was absent as well and the monetary policy was safeguarded in the hands of the ECB at Brussels for all the members of the Union, but absent in the domestic economies where the debt crisis was raging.

Treacherous imbalances born out of the flaws of the Euro design and its sustaining institutions suddenly emerged as the European debt crisis became uglier. The markets discovered that the Euroland was a mix of economic structures that are fundamentally misaligned with a very weak global competitiveness for some members. This was no longer the currency the markets felt in love a decade before and they took revenge by flying to the dollar-safety.

The Euroland is no United States in dealing with financial and economic shock-driven crises of the magnitude of the Great Recession; this is not One Nation under God! Out of 27-country strong European Union (EU), only 17 countries came together to form the Euroland monetary union without forming the essential fiscal union bedrock to support it. Without a working fiscal union, there can't be a working monetary union.

What makes the United States' union work is that there is a fiscal distribution from the States with strong economies to the States with weak economies every single day (Tanious, 2012). There is indeed a continuous flow of tax and fiscal distribution from States to Federal Government regulated by a single U.S. Treasury

Department under the auspices of the Federal Government. This is lacking in the Euroland and even unthinkable to see a daily fiscal distribution from Germany or Finland or Sweden to Greece or Spain or Ireland in order to make the Euro system work.

Concurrent to the fiscal distribution, there is a continuous monetary flow from the depositors in the States and the credits to the consumers from the banking system that are regulated, monitored, and eventually rescued by the Federal Reserve in time of crisis. However, there is no such circulatory system in the Euroland – while the central banks in the Eurozone have been disabled and collapsed into the European Central Bank, but the banks remain the responsibility of the member-countries.

This leaves the crisis-stricken members with no monetary policy levers to offset the shocks as the fiscal spending – the remaining possible policy lever left to combat the recession – has been taken away by austerity pressures from the bailers in the sovereign debt.

So, for the Euro to survive there must be a symbiotic fiscal unity to the like of the United States. This is an almost insurmountable undertaking. Even for the United States, the path of 13 initial colonies to the 50 States Union was treacherous – in spite of absence of huge language and cultural barriers like in Europe. The USA Union went through a deadly civil war, civil right movements and there is still up to this day some secessionist nostalgia.

To translate the United States' Union into a United States of Europe means that the member countries will have to come together, guarantee the debt of one another and establish a unified banking system and a common taxing system in order to eventually issue common Eurobonds (Tanious, 2012).

This might be too much to ask from 17 independent countries – some with over 4,000 years of history and many years of wars between them; with deep-rooted social, cultural and fiscal standards; with 13 different languages – to come together and give up a part of their identity and a part of their being and soul to a super federal authority which is going to tax and govern them (Tanious, 2012). This is too fragmented for a single currency or monetary policy to be effectively operational.

And then, there is this interlacing and overlapping European Supranational Institutional Maze made of NATO, European Economic Area, Schengen Area, The council of Europe, EU Custom Union, European Free Trade Association, Organization for Security and Cooperation in Europe, etc. Each organization covers a different set of States!

Let us focus only on the European Union – there are 10 countries that are Members of the European Union, but not part of the Euroland. Now the question is – even if the European Parliament decides to build a unified Treasury – which is unlikely – how this

Treasury would regulate the tax and fiscal distribution for two different sets of countries within the Union?

All these flaws in Euro design and functionality were uncovered by the Great Recession and they are serious existential threats to the Euro. The Economist (2011) likened the Euro to Titanic in that "the designers of the good ship Euro wanted to create the greatest liner of the age; but it was fit only for fair-weather sailing, with an anarchic crew and no lifeboat; its rules of economic seamanship were rudimentary and broken. When it struck a reef, the water flooded one compartment after another while – and just as the band on the Titanic played on to the end" – the EU's bureaucracy keeps producing studies, policies and regulations, dozens of proposed solutions, countless summits, and negotiations leading to nowhere.

As Zoffer (2012) rightly pointed out, without solving the fiscal union, there is almost one near-universal conclusion: the Euro System was plagued from the start and cannot be trusted as a stable alternative to the hegemonic dollar.

The successive bailouts to Greece and the alike have been accompanied by the descent into the street – not into the bottom of the Atlantic in case of the Titanic – by demonstrators angered by the constraints tied to them. The fundamental problem is that to avoid such socio-political uprising, there must be economic growth in the Eurozone periphery which is suffering from the sovereign crisis. However, since lowering debt burdens is the order of the day to get bailed out; the only option to create that growth – without government spending through issuing a new debt – is to restore the competitiveness of the periphery.

However, since a currency depreciation is not possible – because it is handled by ECB union-wide, to regain competitiveness would require reducing costs of inputs – meaning wages and price deflation. The problem is that this deflation strategy is growth killer which will harden the deficits and debt burden. To get out this impasse, it has already been rumored that countries such as Greece will be better-off outside than inside the smothering Euroland.

This Greek impasse is within a larger Euroland predicament which is nurtured by three interlocking crises according to Shambaugh (2012) who accurately argued that the Euroland is faced with three intertwining crises that challenge the viability of the Euro: banking, sovereign debt and macroeconomic & growth crises. He added that the challenges in responding to these three crises reflect difficulties of having a monetary union of somewhat disparate economies without political and economic institutions to manage various shocks.

Euroland banking crisis

The Euroland's banks are – not only undercapitalized or confronted with capital shortfall – but also faced with interbank illiquidity and

uncertainty in terms of future losses – and what adds oil to fire is that firms in the Euroland rely more heavily on its banking system for their financing needs than U.S. firms who additionally and significantly rely on capital markets (Shambaugh, 2012).

This means that a major disruption in the banking system can be systemic and easily broadcasted throughout the entire Euroland economy – especially since the creation of the European Union meant that boundaries that used to keep problems within one country have been erased; thus, leaving the responsibility of bank supervision and banking crisis entirely in the hands of the Members who are paradoxically deprived from performing any monetary measures to keep the banking system solvent in times of distress (Shambaugh, 2012).

Euroland sovereign debt crisis

The Euroland lacks a unified debt market and as such, investors who want to hold its debt have the challenge to pick and choose amongst varying domestic debt instruments. While the United States can create a U.S. government bond in a minute, this is not the luxury the Euroland can afford; a Eurobond will be dissected by the markets through the blend of all the members – some like Greece, Spain, Italy who have serious economic problems – and will certainly ask a price premium commensurate to the blended risk – which price, the better-off countries such as Germany are not ready to pay since they can get a better deal by issuing their own.

The sovereign debt crisis in the Euroland is often viewed through the lens of irresponsible fiscal profligacy and this perception has been computed into the rising bond yields that has been complicating the costs of borrowing in the Euroland's periphery and worsening the Euroland debt crisis.

When a country with high level of debt – roughly 100% of GDP – cuts its government spending, it will face an increasing debt to GDP ratio if the multiplier on government spending is at least 1. The government spending multiplier measures the response of GDP to government spending. A higher multiplier (or higher debt to GDP ratio) will generate an even bigger effect. This means that any austerity measures that depress the government spending in a country that has government spending multiplier over one would worsen its debt crisis. The problem is that without conditional austerity, there would be no bailout; and this engulfs a debtor country like Greece into the Diabolic Vicious Loop (10) in which any solution to any of the above intertwined crises is nullified by reactions from the other two crises.

Euroland's sovereign debt crisis has undermined the world's faith in the Euro and destroyed its potential to replace the dollar. Any currency for which there is potential for dissolution cannot be a significant part of world reserves, let alone the international reserve

currency. Those relying on the strength of the Euro to argue for a shift away from the dollar have been proven sorely mistaken by recent events that silenced many of the dollar-detractors (Zoffer, 2012).

In nutshell, without a deep and liquid Eurobond, there is no way the Euro can supplant the dollar as leading global reserve currency – given the highest and deepest liquidity of the U.S. government debt markets on the planet and a strong Treasury Department behind it.

Euroland macroeconomic and growth crisis

The constraints in the real economy in terms of macroeconomic growth and competitiveness may undermine any efforts that focus on the liquidity concerns of the banks and sovereigns. The lack of tools for adjustment at the national level and high costs of adjustment via internal devaluation make any solution that ignores the growth and competitiveness problem doomed to fail (Shambaugh, 2012).

Euroland crises entanglement

Although the occurrence of more than one crisis is not unprecedented – the recent Great Recession showed its ugly head into the housing markets, financial markets, and employment markets and so on – but the Euroland crisis has something diabolic that defies policymaking.

Shambaugh (2012) contended that these three crises are – not only interlocked and feed each other – but also reinforce the downward spiral and greatly preempt any effort geared to solve anyone of them. The more bailouts to rescue the distressed banks lead to greater sovereign debt problems which – not only put banks at risk due to their huge holdings of sovereign bonds – but also push the yields on sovereign debt to higher levels.

This situation calls for more bailouts which come with more draconian austerity measures which constrain the economic growth which in turn leads to lower tax revenues – thus increasing the potential for sovereign insolvency which further weakens the banking sector through the increasing of nonperforming loans – which shrink banks' balance sheets and their lending capacity – which in turn depress the economic growth. It is this chain-reaction between the three crises that make so difficult to solve the unique Euroland Crisis (Shambaugh, 2012) (Figure 3.6).

As observed by Shambaugh (2012), many of the policy approaches have been limited to particular symptoms of individual crises: nation states bailing out a banking system, austerity to balance budgets, massive liquidity allowing banks to buy more sovereign debt, etc. However, these measures didn't achieve the

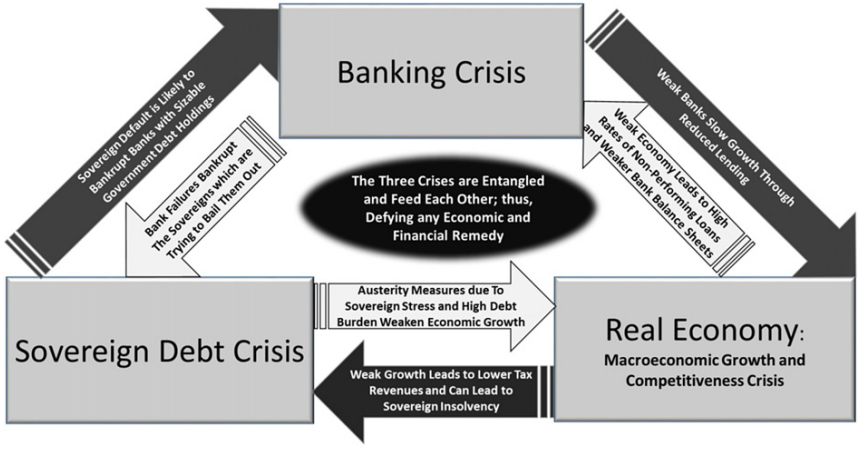


Figure 3.6: The Vicious Circle of the Euroland Interlocking Crises. *Source*: Figure designed by Dr. Ganziro based on Shambaugh (2012).

expect results simply because they made matters worse as their actions worsened the other linked crises – especially macroeconomic growth crisis.

Without growth – especially in the distressed countries – it is likely that the sovereign debt crisis will persist. To complete the circle, continued troubles for the banks could bankrupt certain sovereigns who would struggle under the weight of supporting their banks and a broken credit channel – which in turn becomes a constraint on growth (Shambaugh, 2012).

Furthermore – as it has been profoundly discussed above – the reserve and global currency status is not solely driven by financial factors; it goes far-beyond the economic numbers into foreign policy motivations and security ties. The Euroland has some geopolitical influence, but it is rather regionally localized within Europe than globally spread and cannot be equated – by any measure – to the overwhelming geopolitical influence of the United States – which is definitely the ultimate source of the U.S. dollar hegemony and which clearly explains why the country' pegs and reserve currency allocations into the U.S. dollar are tied mainly to the U.S. geopolitical umbrella of the United states.

Some sparse pegs to Euro outside the Eurozone are geopolitically driven such as CFA (French Community of Africa) franc zone, which is – not only guaranteed by the French Treasury – but also is under the explicit French militaristic and political intervention.

This is why the Middle East – which is next door to Euroland – is strongly pegged to the dollar. Why? Simply because the major Gulf oil exporters would not be willing to endanger their established diplomatic ties to Washington for the sake of few basis points of

return on their reserve holdings by switching to the Euro because geopolitics matters.

Furthermore, the demographics continue to favor the United States, both on birth rates and on immigration according to Posen (2004) who estimated that – given the U.S. productivity growth trend – the U.S. economy will gain in size relative to the Eurozone. Moreover, the population of the United States is relatively young compare to the aging and declining European population.

It is the view of this study that the Euro has no attributes that would propel it to displace the U.S. dollar in the seeable future. If some patches are applied to its fundamental wounds, it can still remain a major transactional currency – given the importance of Eurozone which represents 20% of the world economy and 26% of the world imports. In this regards, one can argue that the United States interests are better served by a United Europe than a constellation of separate States and a strong Euro serves even better the US interests – given the importance of the Euroland in the U.S. global trade.

3.8.2.3. Chinese Renminbi (RMB)

Overview

If the Euro cannot replace the dollar or simply if it is improbable for the Euro to be a leading global reserve currency in the seeable horizon; can the Chinese Renminbi be a better contender – given the China's display of a whole range of elements of power backing it – such as a strong communist state, an explosive economic growth supported with a large export industrial base, huge foreign reserves, a nuclear militarized force, the second largest economy in the world within a continental-sized territory, a permanent seat and veto power in the United Nations Security Council and the largest population on earth?

The socio-economic achievements of China are undeniable since the launch of its Open Door Economic Reform Program back in 1978. How it was able to mutate itself into a thriving global trading power; and morph into a respected world economic powerhouse in such short time is baffling for many economists and politicians.

The International Comparison Program – a statistical project coordinated by the World Bank – even suggested that China's economy was likely to surpass the U.S. GDP size sometime in 2014 in terms of PPP (Purchasing Power Parity) prices – totally taking the forecasters by surprise who have been expecting that crossing date not earlier than 2020s according to Wright (2014).

Defined as the exchange rate adjustment necessary so an identical basket of goods in two different countries has the same price when expressed in the same currency, the economics of the PPP

remains in the theoretical realms and statistical constructs without much significance in the real life economy. Its formula is simple $S = P_{RMB}/P_{\$}$ where S represents exchange rate of currency Renminbi to currency U.S. dollar, P_{RMB} represents the cost of basket of goods expressed in Renminbi and $P_{\$}$ represents the cost of the same basket of goods expressed in U.S. dollar.

At the outset, one can argue that since the Renminbi has been kept undervalued for the sake of the export-led growth strategy, the PPP adjustments would necessary result into higher Chinese GDP in PPP price. But what is the exact meaning of such adjustments in real life economy? Just because the Renminbi is undervalued – let say by 20% – does it mean that Chana's relative economic size will leap 20% bigger if this undervaluation is corrected?

It is hard to fathom that the Chinese economy which was $10.36 trillion in terms of market prices (official exchange rate) by 2014 almost doubles to $17.63 trillion by the magic wander of the PPP adjustments just by comparing prices of some basket of goods in different places by 2014 (The CIA World Factbook, 2014)!

Does it mean that the Chinese people become over 70% richer by adjusting China's GDP in market price into PPP price? What can China do with its newly adjusted PPP dollars? Can China use them to buy oil and other inputs for its economy? Of course not, it has to pay whatever it buy outside its borders at prevailing market exchange rates according to Wright (2014). It is therefore the economy at real markets prices that counts.

Note that the above discussions on the true meaning of PPP don't deny that China is growing in economic stature – this study is just wondering if – even with such undeniable achievements – we can conclude that China is on its way to surpass the United States' superpower status and its currency to displace the U.S. dollar or if the Chinese people are suddenly richer in terms of PPP than in market prices where the United States' per capita income is nearly nine times the Chinese per capita.

Challenges

It might be too soon to endorse China as world's next superpower and relegate the United States to the lower rank – a power that took over 100 years in the making – let alone ratifying the Renminbi as the leading reserve and global currency. It is hard and would be unprecedented that a superpower can be erected and telescoped within few decades since 1978.

Despite the above achievements, China is still faced with such daunting social obstacles, such severe economic impediments; such immature financial system under repression, such environmental deterioration and such geopolitical challenges that oddly push its aspirations to the world superpowerdom and its currency to the

throne of global currency dais far into the unknown future as these roadblocks cannot be contemplated to be surmounted any time soon.

Social obstacles Although China lifted itself from an abused and demoralized society under the absolute power Mao Zedong in 1976 into a society exhibiting self-confidence, its demographics is increasingly becoming a stern liability by such rapid modernization.

Instead of a well-balanced growth, China's social fabric has been critically strained by its much-chanted economic miracle which has been telescoped into a single generation through draconian government economic reform programs – in total contrast with Europe and the United States where the industrial revolution took over a century to unfold (Jackson, Nakashima, Howe, & Zhou, 2009).

To fasten its economic miracle, millions of peasants were uprooted from traditional agricultural villages and moved to bustling manufacturing hubs, where they join a rootless floating population now estimated to over 150 million according to Jackson et al. (2009).

As if this flood of unskilled Chinese was not problematic enough, China is being overtaken by a striking demographic transformation with an increasing mass of the population aging at a furious speed totally turning the elderly to child ratio on its head with 2:1 (two Chinese elders for every one child) by 2035 – from 1:6 (one elder for six children) prevailing by 1975 according to Jackson et al. (2009). Since it is estimated that there will be 438 million Chinese aged 60 or older by 2050, it would require 876 million youth to support them! This is very hard to achieve with one-child policy.

Such trend is bound to turn China demographics – once view as a dividend to economic growth – into a liability which is going to exacerbate its social-economic fabric and resources and derail its primitive healthcare system (Jackson et al., 2009).

Furthermore, Schuman (2014) argued that – with its gargantuan pool of cheap labor and improving infrastructure – China became the center of a sprawling global production network that turned it into one of the largest world's manufacturers. However, as wages continue to grow in China and might even outpace similar growth in Southeastern region such as Indonesia, Philippines, Malaysia, Thailand and Singapore – such trend will necessarily reverse the capital inflows into these countries as better destination of FDI than China.

The above countries have already seen their FDI rate climbing to 7% while it was falling by almost 3% in China in 2013 by attracting $128 billion of FDI while China receiving $118 billion in the same year (Schuman, 2014).

Economic challenges If we assume that China's impressive economic growth will be sustained in long haul, then, there are compelling arguments that China could be the next economic superpower. However, to maintain this level of growth even in the seeable future is an uncertain suggestion. Among the chief impending challenges to the sustainability of the Chinese miracle economic growth is the very soul of this growth; that is, heavy dependence on export-led growth articulated upon the external demand because China's middle-income class has a limited domestic demand.

You can't expect to get rich on the back of others for so long! The Chinese policy of devaluated currency pegs to keep its exports competitive can cause severe economic disruptions to its trading partners due to its sheer economic size. This Chinese mercantilist strategy has already got to the nerves of its major trading partners – led by the United States and Europe and their protectionist resistance will be stiffening if China doesn't change the course as its policies are being blamed – rightly or not – for worsening global imbalances and weakening the U.S. and European economies.

The export-led growth strategy's overdependence on exporting and fixed investments has made China particularly vulnerable to the effects of the global economic slowdown and it is very difficult to reverse these vulnerabilities because, the State-owned enterprises – armed with the State financial repression – have been gearing up into investment spree which continue to create an industrial overcapacity in the State sector and leaving the private sector with inadequate investments. Another challenge at the core of the Chinese State-owned enterprises and banks is that they put too much emphasis on the turnover rather than return on capital in order to show-up a voluminous output that might convey the sense that China is catching up the United States and that the Communist centrally planned economy is the best economic system and paid little attention to the performance of undertaken investments and financed assets and created a sea of non-performing loans that were made possible by financial repression.

The problem however is that profitability – not the turnover – is the best indicator for efficient capital allocation simply because growth can only be sustained in the long term if it is based on productivity and value added growth. The State-driven investments have accounted for over 50% of Chinese output and were mainly focused on development of infrastructure and urban facilities by State institutions financed by banks drawing on local savings – and generating bad debts because the profitability of those investments was not the primary priority.

No wonder, China has a poor competitiveness rating at 29th out of the 30 top most competitive nations (Schwab and Sala-i-Martín, 2012); precisely because the concerns about China's State-

owned industries plagued by mismanagement – while the United States – in spite of its fiscal and external liabilities issues – is still amongst the most innovative economies in the world with ninth ranking after small countries such as Switzerland and Singapore in the Global Competitiveness Index 2012–2013 Rankings.

The question remains why a country such as China – which has demonstrated such economic dexterity in lifting so many people out poverty, its unprecedented high economic growth – stays unbalanced and its growth can even reverse. Some experts attribute the perversity of China's economic growth in the centralized nature of Chinese economy and contend that no centralized system can come closer to the efficiency of decentralized markets in allowing investment resources to seek out the highest return; thus in efficiently allocating input-resources.

The Soviet Union – through the iron hand of the Communist Politburo – tried the centralized recipe in order to catch-up the United States as quick as possible and – after experienced very rapid investment-driven growth in the 1950s – the Soviet economy miserably stagnated.

As in the Euroland, the Great Recession unveiled the flaws of China's economic growth contradictions. It forced the Chinese government to close many factories because of the collapsing external demand for their products – leaving China with a very high unemployment rate – which is believed to reside within the State secrecy and fiction.

According to Hairong (2011) from the respected Beijing Review – by the end of 2009 – China's total population stood at 1.3 billion (excluding that of the Hong Kong and Macao Special Administrative Regions and Taiwan Province), with a labor force of 1.1 billion people out of which 0.8 billion were employed. This means that 300 million – an equivalent of the 315-million U.S. entire population – are unemployed – that is 27% unemployment rate which doesn't take into account the floating immigrant workers who are not included into the official unemployment rate.

As Acemoglu and Robinson (2012) argued that there is still some room for growth that China can easily score based on catch-up in its copycat economy – which bases its progress by copying foreign innovations. However, this growth cannot continue forever – soon or later China will have to originate its own innovations and its own technologies in order to do things more efficiently and also start innovating new products to appeal to consumers both at home and abroad.

China is already in a dire dilemma in its efforts to cool down the economy: if it gets serious in its policy of deleveraging and financial market liberalization, it will have to allow for defaults because defaults are a necessary evil condition for a healthy financial market;

thus, it has to transition away from 100% State guarantees to banks rattled by vast under-performing loans and moribund state corporations; which in turn could spark panic amongst investors, triggering a wave of defaults (Ro, 2014).

Such hard landing would have serious implications to the Rest of World because China – with its imports standing at 30% of its GDP is a major source of global demand – obviously Asia would be the hardest hit because its exports to China as a percent of GDP are the largest – but also since investments make around 50% of Chinese GDP, it would be a blow to global investments (Badkar, 2014). This is going to be a difficult balancing act between the economic growth and the structural reforms.

Financial constraints In spite of unceasing pressures from the United States, China doesn't buy into claims of some economists that the undervaluation of the Renminbi undermines the global economy and its recovery is a source of global imbalances. China feels that the Renminbi is in the right value place at the right time as far as its development is concerned. To cede to the Western pressures to reevaluate its currency would be tantamount to caving to the capitalistic interests by jeopardizing its economic growth it has been building over decades.

The fixed and undervalued Renminbi peg acts as an export subsidy which – in some ways – doesn't benefit the Chinese people – but instead transfers that subsidy to the China's trading partners – particularly to the U.S. consumers and effectively subsidize their living standards by selling them cheap products that they would be able to get under market conditions. Furthermore, by selling lower priced exports and buying higher priced imports, China effectively deteriorates its terms of trade – the ratio of export prices to import prices or the quantity of imports that can be purchased through the sale of a fixed quantity of exports.

Clearly a market-based Renminbi might be more beneficial than a pegged Renminbi to the Chinese economy simply because it will reduce or erase the impediments to China's terms of trade, improve Chinese living standards by allowing competition between imported and domestically produced goods and services, expand the ability of the government to use monetary policies to control inflation and to allocate capital according to its most efficient use through a market-based credit system and finally eliminate the complaints of China's trading partners about the undervalued Renminbi and its beggar-thy-neighbor policies that promote its economic development at the expense of depressed growth in other countries (Morrison and Labonte, 2011).

However, there is a cost and it is very significant. A market-based Renminbi will throw the darling export-led growth through

the window, the huge export-driven industrial base has to be redirected to the domestic demand, and radical macroeconomic adjustments must take place such as privatizing the State-owned banks. This a cost the Chinese communist politburo might not cherish as they have rejected the claim that their undervalued currency has anything to do with the global imbalances – and embrace the proposition that it is compatible to China's level of development.

The trouble with this rejection is that many experts believe that its economy is bubbling and runs the risk to bust as asset prices are becoming dangerously inflated – such as housing – as the economy is suffering with such financial waste like the enchanting New South China Mall – the biggest mall in the world – bolstered with gross leasable area of 7.1 million square feet with Las Vegas and Disney-style theme parks – which has been 99% vacant since its 2005 grand opening. According to Singapore-based Economy Watch, China has 64.5 million apartments where the electricity meters have not been turned on, because the apartments have never been occupied.

As it has been extensively discussed above, one of the preconditions of reserve currency status is relaxing capital controls so foreigners can reinvest their accumulated Renminbi back into the markets. But are Chinese Communist leaders able and willing to take their grips off the strict capital controls prevailing in China? This is doubtful for many reasons.

If capital controls were to be relaxed to the level needed, there will be massive market-driven money inflows that would naturally drive exchange and interest rates from the iron hands of the Chinese political leaders into the hands of the markets. Even if relaxing capital controls is financially sound, but there is no incentive or pressure strong enough for the political leaders to give away their main economic levers of capital controls and trade restrictions – which have been absolutely necessary for China to reach this stage in its economic development (Mills, 2013) by enabling massive investments in fixed assets after harnessing inflow of foreign direct investment (FDI) and tapping into the immense pool of Chinese savings.

With such financial constraints characterized by the low level of financial development and financial repression, the prospects for the Renminbi to ever achieve the reserve and global reserve currency premiership are very limited – let alone to be the engine of the global economy while energetically pursuing its primarily mercantilist goals articulated on its export-led growth strategy that entails competitive Renminbi exchange peg fixing.

Political upheavals China won the race of becoming the world's second largest economy, but at huge political costs. First of all, the benefits of this unprecedented economic miracle have been unequally

distributed; and when the inequality is stretched to the limits, it can lead to political instability, which Mao – the father of the Communist China – fought ardently to eliminate. Furthermore, by occupying the second rank in the global economy, there must be a minimum integration into world economy.

However, the more global integration means that the political system must be more inclusive and more embracing of more ideologically driven diversity because there is a fundamental incompatibility between maintaining strict political control over economic and financial systems mechanisms and the internationally accepted practices.

However, the economic growth is primarily a critical component to sustaining political stability in the eyes of Chinese officials. Thus, any policy or reform that would disrupt the economic backbone articulated on China's export-led growth strategy would be rejected by the political establishment as a matter of political survival because such disruption would necessarily have built-in pervasive unemployment that could erupt into widespread social unrests – making social stability a top priority for Chinese leaders who have figured out that to achieve it is to maintain at all costs a fast economic growth so as to keep people working (Mills, 2013).

Unfortunately for the Chinese political establishment, the traditional one-way flow of information — from official media to influence the populace's thinking – has been turned to its head in this information age whereby the information can be disseminated in real time through online information transmission and social media.

However, with the dissipation of the veil of information secrecy by the globalized technological advancements in which every mobile handset can be turned into a news broadcast station, any effort to suppress access to information and censor disruptive ideas and the surge of public activism expressing public outrage would be fruitless in a networked society.

China's Public Security Ministry reported 120,000 mass incidents in 2008 – an elegant Chinese way to describe the riots – from 8,700 in 1993; this is over 300 riots per day and some of those riots can reached millions of people participation across the country. Most of these incidents are regionally localized and easily suppressible to present a serious threat to the Communist Party; but they nevertheless express deep malaise and can morph into regional revolts and present serious and violent threats to the political establishment if they gain critical mass.

There is also a serious generational gap in China. While the tradition is articulated on Confucius tenets and communist precepts where the individual comes second to the state in all matters and is expected to show patriotism by sacrificing his self-interest for national interest when called upon; the youngish, more educated

and internet-wired population have begun to change this ancient calculus in the face of free market system that preaches the pursuit of self-interest – totally opposed to communist party of marshaling Chinese citizenry in pursuit of the national interest – which is often bragged to justify individual sufferings (Xiaoji, 2010). China's Internet population is expected to hit 718 million by 2013, accounting for 52.7% of the total (Xiaoji, 2010).

As Pei (2009) pointed out – for all intents and purposes – China is not a nation-state in the spirit of the United States – but rather a multi-national empire with huge chunks of its territory (Tibet and Xinjiang) inhabited by secessionist-minded minority groups – another layer of risks that comes on top of the perennial Taiwan territorial unresolved issue to which China has devote enormous military and security resources to defending its territorial integrity and avert internal fragmentation.

All the above public discontents are part of what limits China's horizon – which is much similar to what limited the Soviet Union in the mid-20th century and which brought the Soviet Communist System to its collapse according to Acemoglu and Robinson (2012) who opined that – being extractive economies run by a narrow political elite largely prioritizing their own benefit – both political structures cannot properly innovate because innovation means to let new winners to emerge in the economy as they outcompete existing power players.

As a very narrow layer of the Chinese political makeup controls all the destiny of the country, the political establishment will always be challenged on a broad legitimacy ground because the current legitimacy of the Chinese Communist Political Establishment is only justified by the absence of a viable political rival – which would be suppressed if it shows its head.

Acemoglu and Robinson (2012) further contended that without political inclusiveness – the dynamics of innovation and creative destruction that powers growth are seriously impeded – especially in a country with an immature legal system. Without opening up its political system to real competition, China cannot become a factual innovative economy according to Acemoglu and Robinson (2012) and be able to set the pace for the future of the world without universally accepted ethical principles and economic practices.

As concisely described by the political dissident and Nobel Peace Prize laureate Xiaobo (2012), in order to guard its power and the vested interests of the privileged elite, the Chinese one-party dictatorship takes power out of the hands of the people – where rightly it belongs – by keeping a tight grip on the appointments and dismissals of officials at every level; thus, turning the political power into an item of private exchange within the party where the first priority

of officials is always to serve the higher-ups – because, in effect, this is to serve oneself.

And as long as China has an oversized peasantry – still living in villages with low-income and surviving on the margins of modernity without access to safe drinking water, basic healthcare, or decent education, it is unlikely that it can become a real superpower – instead as Pei (2009) pointed out, the combination of political challenges from the rising middle-class and progressive internal decay worsened by intestine corruption will increase the probability of a regime change in the future, a process that's likely to be disruptive, even cataclysmic.

For the time being, the Chinese Communist leaders have to feed, clothe and house untold millions of urban residents and hundreds of millions more rural residents moving to urban areas over the next couple of decades – in such condition, their biggest fear is social unrest leading to an overthrow of their communist regime (Mills, 2013) – which obviously take precedence over the search for the Renminbi's reserve and global currency planetary preeminence.

Environmental threats Not only the environment has been sacrificed at the altar of economic growth at all costs – especially by transforming traditional sustainable agricultural practices into industrialized agriculture – but also the population growth continues to reduce the size of land holdings while desertification is shrinking the arable land by 14% a year, deforestation and pollution reducing water table by 1.5 meters per year in major grain growing regions in North China and climate change severely affecting China's water supplies and exacerbating the drought in the north.

It is estimated that air and water pollution kills about 750,000 people a year and that the aggregate costs of pollution are roughly 8% of the GDP (Pei, 2012). Official estimates suggest that mitigating environmental degradation requires an investment of an additional 1.5% of GDP each year. At such environmental degradation rates, China's business-as-usual approach to growth, which relies on cheap energy and no-cost pollution, will no longer be sustainable.

According to the China's Annual Report on the State of its Environment, the country is painted as an overwhelmingly polluted country with 59.6% of 4,788 groundwater sites tested having poor or very poor water quality; only three cities meeting the Chinese government's urban air quality standards in 74 cities tested; acid rain falling on 11% of the land in the southern part of China and along the Yangtze River; 19% of China's offshore water – the seawater along its coast – being so polluted that it is unsafe for human beings to go in or eat fish from (Timmons, 2014). Any commensurate environmental correction will necessary yield a serious distress into the Chinese economic growth.

Geopolitical limitations Although China has been a regional superpower during its 3,000–4,000 years of history; it has not yet be able to display the superpower qualities in its mad dash into capitalism according to Parfitt (2011) who argued that it will be hard for China – with autocratic political system ruled by a single communist party with a very limited moral international stance, a State Regime that doesn't recognize basic human rights, such as freedom of expression and freedom of religion, which is accused of piracy and cyber industrial espionage; which is seeking growth-at-all-costs through a rigidly planned economy with domestic financial repression – to project an appealing superpower image with a political mission articulated on a global vision into the world.

Without a globally accepted socio-geopolitical appeal, there is no way the Chinese currency would likely play a central role in financing international trade and investment and China provide secure, liquid Renminbi-denominated assets to be accumulated worldwide (Tremblay, 2009) and concurrently displace the U.S. dollar at the center of global financial markets.

It is deeply misleading to label China as a superpower simply because it is a nuclear nation, with the largest population on earth that would naturally lead to an economic size larger than the U.S. economy. Countries don't become superpowers merely because they have acquired nuclear arsenal and large armies or large economic size.

In this era of information technology, it is more positive and constructive attractive ideas that go along with the natural blossoming of humanity such as freedom, human rights, equality, right to political participation that have more universal appeal than monopolizing the political power and possessing a large arsenal of instruments of destruction and a system of political beliefs halfway between a liberal arrangement and a communist system which has been proven to be ideologically bankrupt with the demise of the Soviet Union.

China is no United States which is endowed by Nature with a strategic geography second to none – surrounded by the largest oceans and friendly and very militarily weak neighbors when it comes to geopolitics. China is bounded by very strong rivals such as India, Japan, and Russia according to Pei (2009) who contended that even China's middle-sized neighbors, South Korea, Indonesia, and Vietnam, are no pushovers. He further argued that the economic and military rise of China – instead of being welcomed by the neighbors – has instead triggered a deep consternation and a regional geopolitical realignment aimed at checking Beijing's ambitions and reach.

This range of regional rivals will certainly deny China to becoming a regional supremacy – a sine qua non prerequisite to exercise

and project the superpower on the global stage. But this prerequisite of regional geopolitical power will be very difficult to achieve because China's regional rivals are also vying to project the same power.

In anticipation of Beijing's potential power projection, the geopolitical realignment is already in full gear in the region. India has been flirted by the United States and Japan with expanded strategic cooperation and economic aid to be able to stand up to Beijing as a regional power which is even favored to economically overtake China and – given being its friendly free market system and a better inclusive democratic arrangement along with being nuclear with almost the same size of population as China – India would project a better geopolitical image than China in the world.

Russia maintains a feline-like relationship with China as a partner of convenience while Vietnam, Indonesia, Thailand, and South Korea don't seem to be ready to sacrifice their thriving economic and security ties with the United States for a full embrace with their overpowering neighbor and remain skeptical and vigilant about China's future intentions (Pei, 2009).

Furthermore, according to Grygiel (2006), with its tremendous economic growth, China is becoming increasingly more dependent on the supply of oil from the Middle East – while the United States is becoming less reliant by the day – this means that China will continue to intensively depend on the sea for its economic and strategic needs. The challenge is that it is the United States – not China – that controls the Asian sea lanes because up to now it is the American maritime supremacy that guarantees the free flow of oil to Japan as well as to China.

This sea lanes supremacy gives the United States an enormous leverage over China because in case of escalating conflict, the United States may decide to limit, and even cut, the flow of oil to the Chinese economy according to Grygiel (2006) who argued that in the next decades – in part because of fiscal, geopolitical and technological constraints – it is unlikely that China will develop naval capabilities comparable to those of the United States and be able to eclipse the United States over the control of the above Asian sea lanes.

So far, beyond the rhetoric, China neither seems to seriously try to even show-up its economic power newly acquired via its export-led growth strategy nor show interest of military competition with the United States – but rather, it plays safe by avoiding costly international obligations and living with the international economic and security order established and dominated by the United States – as its geopolitical and military influence are bound to remain constrained by internal fragilities and regional rivalry; thus avoiding costly international obligations (Pei, 2009).

3.8.3. IS THERE ANY OTHER CURRENCY ALTERNATIVE?

If the above reviewed contenders – SDR, Euro, Renminbi – are extremely far from the striking distance of taking the mantle of reserve and global currency from the dollar, it would be unthinkable to expect any other currency such as Japanese Yen, Canadian Dollar, Australian dollar, British Pound, Swiss Franc – even though they enjoy some trading volumes on the global FX markets – to be the heir of dollar on the global stage. None of the issuer has the minimum geopolitical power.

The British Pound had its sunshine time during the British Empire apogee; but – as it has been extensively discussed with the disintegration of the British Empire, the sunset gave rise to the night and dark time and the Pound sun never shined back the world over as before after the collapse of the British Empire (Stratfor, 2012).

The Yen also got its own time of international courtship during the 1970s and 1980s, when the fast-growing Japanese economy seemed destined for superpower status. During this period, international use of the Yen accelerated swiftly – particularly in global bond markets – and its economic model seemed invincible to rational Western mindsets (Cohen, 2008). But, at the end of the 1980s, the Japan's economic bubble abruptly busted and stagnation engulfed its domestic economy ending any prospects for the Yen to be ever a leading global reserve currency – especially given its lack of a supportive regional and global geopolitical power.

Could the above currencies put together into a multipolar currency system provide a viable contender to replace the dollar as the leading reserve currency in the world?

3.8.4. MULTIPOLAR RESERVE CURRENCY SYSTEM

Economists have been combing the evolution of monetary standards – especially the era of the British Pound global dominance – in order to find some clues as to how and when the U.S. dollar will be replaced. Replacement candidates went from the German Mark, to Yen and a raging debate continues to Euro and to Renminbi.

Varying predictions from eminent economists have Kemp (2009) arguing that the multipolarity in the world of security and economic relations is set to be matched by a world with multiple reserve currencies; Subramanian (2011) contemplating the Chinese Renminbi equalizing or surpassing the dollar by 2022; or Eichengreen (2011) viewing the world evolving into a multipolar currency in which the dollar will no longer dominates or the former Fed Chairman Alan Greenspan warning in absolute terms back in 2007 that the dollar's longevity was coming toward its end as the Euro was already trending to its replacement as the world's reserve currency (Reuters, 2007).

So, as the makeup of the global economy evolves toward multipolar economic centers disseminated throughout the global marketplace, so the global reserve currency system should be evolving toward reserve currency as this transformation of global patterns of economic growth will inevitably continue to drive change in the international monetary system (World Bank, 2011).

How this currency multipolar system will work is another headache. How will the currencies into the system cohabit in harmony and deliver the solution expected by the above eminent experts is hard to imagine. These currencies will not have the same weight in terms of the domestic economies issuing them and therefore, not the same weight in terms of global confidence into them.

This means that the currency multipolar system will be plagued with regular arbitrage opportunities due the above differentials that would exacerbate instability into the system because of constant shifts from the depreciating currencies into the appreciating currencies. The end result will be the settlement on the currency supported by strong fundamentals in terms of deep financial markets, credible and sound monetary and fiscal policies along with strong global superpower, etc.

The Euro experiment is a testament to the above fundamental question: if the European Central Bank and the European Union are having hard time to keep the Euro intact as just a regional currency, how and which global organization will be able to support a stateless supranational currency without a financial regulator and the lender of the last resort?

How is the multipolar currency system going to be structured is another critical question. Going back into the history of currencies; during the golden period of British Pound dominance – even though the Pound was the leading reserve currency – but it coexisted and shared the global markets with other less dominant – but competing currencies such as French franc and German mark.

This means that the reserve currency system has never been solely unipolar, but rather a multipolar pyramidal system dominated by one monarch-currency at the apex of the pyramid – backed by the reigning superpower. At any given moment, at least one or two currencies were likely to be leading a global reserve currency system according to Cohen (2011).

He categorized the world's diverse currencies into a hierarchical Currency Pyramid whereby, at the zenith of the pyramid reside the (1) Top Currencies whose scope and domain are more or less universal; directly below is the seat of the (2) Patrician Currencies whose use for various cross-border purposes is quite widespread but less than global; at the bottom of the pyramid lie the (3) Elite Currencies who command a certain degree of attractiveness to qualify for cross-border use but with only limited scope or domain (Figure 3.7).

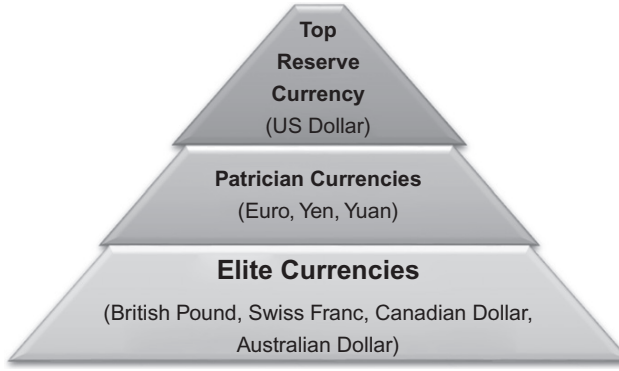


Figure 3.7: Currencies Pyramid. *Source*: Figure designed by Dr. Ganziro based on Cohen (2011).

Under the current Fiduciary Dollar Standard, its flexibility has even allowed countries to effectively choose the monetary system that best suits their domestic and foreign policy conditions and they can hold assets denominated into any currency of their choice and chose not to pay allegiance to the supreme currency deity. However, bypassing the preeminent reserve currency to lesser powerful and menial currencies wouldn't be a wise choice because of the advantages of its externalities.

From this standpoint, the current currency system is truly a multi-reserve currency system. The main area of dispute is that it is dominated by the U.S. dollar. But as we discussed, it is not because there is an extra territorial authoritative hand that is forcing the dollar into the countries' reserves; it is the combination of the hard, soft and smart power – especially the geopolitical strength of the United States that continues to foster the centrality of the dollar in the global financial system and ipso facto making it the most convenient, the most liquid and the most cost-effective to provide safe assets to be accumulated as foreign reserves.

Some advocates of the multipolar reserve currency system argue that the multi-currency system should be at least a Tripolar system made of the U.S. dollar, the Euro and the Chinese Renminbi. Others simply advocate that the dollar should be replaced by the IMF's SDRs because it is already a basket of currency to which other currencies can be added on at will.

This is easy to say, but impossible to do. In 3.8.2. (Viable Alternatives), we have clearly demonstrated that neither the Euro, nor the Renminbi, nor the SDR is suitable to take the mantle of a global reserve currency – either because of their inherent ill-design in the case of the Euro – or because of their flawed functionality in the case of the SDR or the lack of financial depth and geopolitical strength in

case of Renminbi. It is not therefore the combination of three unsuitable currencies that would make the mix suitable and risk-free.

Another question not answered by the advocates of the multipolar reserve currency system is who will be the lender-of-the-last resort in the spirit of the Fed which provided trillion of dollars in line of credit, swaps to save the world financial system from collapse during the Great Recession? The issuers of currencies in the multipolar system might hide behind the diluted responsibility toward the global system and might give too much precedence to their domestic monetary policies regardless of their repercussions to the global system.

This means that countries that are pegged to the multipolar currency system will face the shocks borne out the domestic monetary policy of the countries contributing their currencies into the system.

Furthermore, in the multipolar currency system, there is no other magic to supply liquidity to the world economy for trade and reserve accumulation other than running current deficits. This might alleviate some weight from the burden of external dollar-liabilities off the shoulders of the United States, but it is not sure if the burden will be equally distributed. If the dollar stays in the pool, it will certainly carry the heaviest burden because its deep financial securities and treasuries markets can supply very liquid assets which are the most suitable for accumulation. In this case, the multipolar system would only add layers of risks without solving the currency liability problems.

3.8.5. IS THE U.S. DOLLAR TRAPPED INTO THE GLOBAL SYSTEM?

No viable alternative to the U.S. dollar as a global and reserve currency; then what? Does it mean that the U.S. dollar is paradoxically trapped into a global system it financially and monetarily dominates; and militarily, economically, and geopolitically dominated by the United States?

Clearly, it is not the topics for complaint and blame against the dollar and its issuer which are lacking. The current Fiduciary Dollar Standard has also been blamed for its supposed built-in recessionary bias; for its instability and unsustainability; for the conflicts it imposes between global interests and the U.S. national interests; for its inability to supply adequate global dollar-liquidity and for its inequity in sucking savings from the developing world and recycling them in the developed financial markets (Ocampo & Stiglitz, 2009).

Padoa-Schioppa (2010) – echoing the dilemma and trilemma we discussed before – further argued that the stability requirements of the global financial infrastructure as a whole are inconsistent with the pursuit of economic and monetary policy forged solely on the basis of domestic rationales.

The critics of the fiat currency – which is the main feature of most currencies in the world – have contended that it is the root-cause of the recurring economic crises – especially since in fiat scenario – the currency is debased; thus without a lever that would prevent governments to print excessive money and manipulate its free floating supply – which distorts the currency purchasing power and greatly impedes the market mechanism in the real economy.

This study don't fully buy into this somber picture and don't believe that exchange rate system centered on the U.S. dollar – is fundamentally flawed. Compared to its predecessors – the Gold, Pound, and Bretton Woods Exchange Standards – the current Dollar Fiduciary Standard – as discussed above – has served the global economy fairly well – especially in the most difficult of times.

This view was reinforced by the U.S. Treasury Department (2012) which claimed that – although the Great Recession was caused by a shock larger than that which caused the Great Depression – its blazing financial fires were quickly extinguished at much lower cost with much less overall economic damage than those which occurred during a broad mix of financial crises over the last few decades. The Department highly praised the financial reforms that swiftly turned the tide and – not only allowed the U.S. financial system to return to sanity as an engine for economic growth, jobs, and innovation – but also made the U.S. economy even stronger.

3.8.6. WAY FORWARD

If the current international monetary system has served the global economy fairly well; then, it should be left intact in its fundamentals with relevant spatial and temporal refinements rather than a major overhaul or reinventing the global financial infrastructure.

This is a time-tested system that carried the world economy to safe shores during the major crises since its existence in 1973 – especially during the Great Recession – which is believed to have been a much bigger depression than the 1930 Great Depression if the global financial system of 2008 was under the rigidity of the gold standard with its uncertainty in terms of gold supply and monetary policy tied to the maintenance of fixed peg to gold.

The question is how the Fiduciary Dollar Standard can be maintained fairly for all players? It might be easy to criticize the monetary policies adopted by the United States – which are not at all domestically aberrant as they are most of time geared to revive the U.S. weak economy and improve its labor market even if they are not necessary congruent to the interests the rest of the world – but which are necessary for the United States to be able to continue providing a refined global and reserve currency to the world.

The reserve currency accumulators – mostly in the emerging markets – cannot expect to develop their economies on the back of the United States. If to do, the United States has be crippled by deficits and debt, how will it be able to provide adequate dollar liquidity to them and to the world economy at large?

In time of crisis, the United States as a global key country is expected to lead – and to lead, its economic and geopolitical power must be preserved so it can be able to provide a reserve and global currency as a truly global public good and allow the Fed to be a truly lender of the last resort for the world economy.

The response of the United States to the Great Recession clearly demonstrates the utmost importance of a strong government behind a leading reserve and global currency in the world. Despite of the appearance of simplicity, the above measures were highly sophisticated and politically suicidal and some of them were required to go through the political surgery of the Congress. Nevertheless, the response was appropriate, impressive, forceful and right to the target – making the Fed the best lender of the last resort and therefore proving that the dollar is and will remain indeed the best global reserve currency.

From the above discussions, we can safely conclude that there no viable alternative to the dollar in the global economic activities. This means that the dollar is literally trapped into the Fiduciary Dollar Standard: it cannot just exit the system because the global economy would collapse; it cannot continue to accumulate dollar-liabilities and be submerged by debts and deficits without damaging its balance of payments and its domestic economic growth and political balances.

The dollar is effectively in a burdening impasse in which the United States has been striking very delicate and measured balances to maintain the global system going. This burden could be even greater if the Chinese Communism and its State Capitalism fail; and it will fail if its centralized communist political establishment doesn't become more inclusive as the Chinese economy fervently leaps into the integrative globalized world.

We live in a world of duality governed by the law of balance and therefore there cannot be a vacuum; thus, every lack is automatically replenished by a fulfillment. When the cold war ended and the Soviet Union collapsed – this collapse left a vacuum that was naturally filled by the United States because of its geopolitical power and responsibility.

Once China busts, there will be a huge vacuum which will be mostly filled by United States and to a lesser degree by the Euroland and the neighboring economic powers such as Japan. This is not to say that the end of China is near and that the United States is

ambushing China's decline – in fact as we discussed above, the United States wins big when China wins just by the sheer of its fast growing buoyant consumer class. In meantime, there is no alternative currency to assume the leadership status of the U.S. dollar as a global and reserve currency.

CHAPTER

4 Methodology

As introduced above, this book is set to evaluate the quantitative impact of the determinants of the U.S. Dollar Reserve and Global Currency Status and their dynamic causal chain in the context of the U.S. External Debt as a proxy of the U.S. Twin-Deficits. Although economists have yet to reach an agreement on the main determinants of the U.S. Dollar Reserve and Global Currency Status, the importance of quantitative studies on the U.S. Dollar Reserve and Global Currency Status can be hardly overexaggerated.

4.1. Model Specification

4.1.1. OVERVIEW

Before formalizing our statistical model into a mathematical equation that expresses the relationships between our variables, it is essential to specify our model in order to avoid the misspecification problem that can lead to wrong coefficient output. This means finding the most suitable regression model by choosing the correct independent variables that are unambiguously essential to the regression on the basis of the theory underlying the study, the correct functional form, and the correct form of the stochastic error term.

In this study, Model Specification means the theoretical statement about the causal relationship from the determinants of the U.S. Dollar Reserve and Global Currency Status to the U.S. External Debt.

Generally, the determinants of U.S. Dollar Reserve and Global Currency Status range from the (1) economic size measured by GDP; (2) trade patterns; (3) size, depth, and liquidity of the financial markets as measured by Net International Investment Position

(NIIP); (4) economic and trade openness proxied by trade; (5) financial openness proxied by financial globalization and capital flows and FX controls; (6) confidence that the value of the reserve currency would remain stable without erratic fluctuations driven by rampant inflation up to the (7) network externalities (Cohen, 2011).

Additionally, Chinn and Frankel (2008) have found that there is a strong inertial bias in favor of using whatever currency still prevailing in the global economy. Cohen (2011) added military and diplomatic considerations as critical factors in shaping the choice of governments in their international monetary relationships such as currency pegging.

Other economists such as Chinn and Ito (2006) brought in financial market development as measured by capital markets openness and institutional development such as rule of law, degree of corruption into the key variables in determining the currency reserve status.

Our model is tested on time series data of macroeconomic variables which – by nature – tend to exhibit long-run equilibrium toward which the model converges whenever this equilibrium is disturbed by shocks undergone by the exogenous variables. Cointegration analysis is thus used to evaluate the response of the U.S. External Debt within an equilibrium model to the key determinants of the U.S. Dollar Reserve and Global Currency Status, and correlations within an error correction model are estimated.

Before embarking on the cointegration analysis, stochastic trends common to the respective time series are investigated through stationarity tests. If the cointegration analysis indicates that the variables cointegrate, we infer that the tested series on the determinants of the U.S. Dollar Reserve and Global Currency Status and U.S. External Debt exhibit a long-run equilibrium toward which they revert after any short-term drift that may take place.

4.1.2. VARIABLES SPECIFICATION

Building upon the evidence provided by the existing literature, we identified a set of main exogenous variables that are critical in determining U.S. Dollar Reserve and Global Currency Status and in explaining the burden impacted on the U.S. economy by that status.

4.1.2.1. Dependent variable specification

As exhibited in Table 4.1, the U.S. Dollar is a multidimensional currency used domestically by the U.S. citizens and internationally by both foreign governments as a reserve currency and by foreign private market players as a global currency in their trade, payment settlements, and other economic activities.

Table 4.1: Proxy Independent Variables for the Model.

US Dollar Reserve and Global Currency Status	Key Determinants	Proxy Independent Variables	Variable Label in the Model
Reserve currency	• Global Reserve Holdings	• US Dollar Share in global reserve holdings	• dollarshare
	• Confidence in the U.S. Dollar	• US 10-Year Treasury Constant Maturity Rate	• treasrate
		• US Inflation Rate	• inflarate
	• US Financial Openness	• Global Capital Inflows as Percentage of GDP	• finopen
Global currency	• US Global Trade Openness	• Global Trade ($X + M$) as Percentage of Real GDP	• tradeopen
	• Geopolitics, Network of Externalities, Inertial Bias	• Geopolitical Power (National Defense + Global Capital Outflows + Foreign Economic Assistance + Foreign Military Assistance) as a Percentage of Real GDP	• geopower

Source: Table Designed by Dr. Ganziro.

For the rest of the world to be able to continually accumulate dollar-reserve-denominated assets, the U.S. capital account must be in the surplus zone by selling U.S. debt instruments the foreigners can hoard. For the balance of payments identity to hold, the U.S. current account – as a mirror of the U.S. capital account – must be in deficit – meaning that real goods and services must flow into the United States and the countries accumulating the dollar-reserve assets must be in current account surplus against the United States.

For this to happen, the rest of the world has to allow the United States to purchase a growing quantity of goods in order to facilitate the flow of capital to the rest of the world (Zoffer, 2012). Theoretically, this is only possible if the value of the dollar is higher than the value of other currencies in order to cheapen the price of imported goods into the United States and make them extremely price-competitive – especially if their quality is far less than the US-made products.

The dollar-denominated liabilities accumulated by the rest of the world are therefore provided by the United States at the cost of running ever-growing current account deficits which is possible if the trading partners – with the corresponding current account surplus – continuously cheapen the value of their domestic currencies against the dollar.

More concisely, since the accumulated global dollar-reserve assets are provided by the U.S. current account deficits which are financed by the U.S. government debt instruments sold to the rest of the world, the ultimate burden the U.S. Dollar Reserve currency status impacts on the United States economy via twin-deficits morphs

into the U.S. External Debt. This study uses the U.S. Debt Held by the Foreigners – or U.S. External Debt – as a proxy of our core dependent variable of U.S. Twin-Deficits.

It is important to note that an external debt for a country that is the home of the leading reserve and global currency can be also give rise to a misleading interpretation. While the United States creates dollar-liabilities by providing to the rest of the world with the required dollar-liquidity – as long as the U.S. dollar is a global reserve fiat currency – the United States government has the latitude to create sufficient quantities dollars – at no cost – to meet its dollar-denominated foreign liabilities according to Greenspan (1997) who contended that when there is confidence in the integrity of government, the monetary authorities can issue unlimited claims denominated in their own currencies and can guarantee or stand ready to guarantee the obligations of private issues as they see fit.

In other words, a government – like the United States government that runs a fiat monetary system – cannot become insolvent to foreign holders of its debt instruments as long as these obligations are denominated in its own currency simply because it can produce such claims without limit (Greenspan, 1997).

There is also a school of thought led by Roubini and Setser (2004) claiming that United States is in a much better financial shape that defies the critics from the U.S. debt detractors by arguing that the rising dollar value of U.S. external assets from dollar depreciation could erase much of the debt taken on to finance the United States current account deficit. Their argument was based on 13.2% dollar's real depreciation from the end of 2001 to the end of 2003 which translated into a $680 billion valuation gain of U.S. external assets.

It is very important to note that – while the geopolitical power along with the depth and stability of U.S. financial markets as a whole were part of the original reason why nations gravitated toward the dollar as a reserve currency – the explosive growth of U.S. government debt has made U.S. Treasury Bonds not only the most widely held form of dollar reserves but also the largest and most liquid multi-trillion dollar market in the world for a single financial asset – providing the United States the latitude to pay off its existing debt by issuing new securities (Zoffer, 2012).

4.1.2.2. Independent variables specification

This study has identified six independent variables selected through the global role the U.S. dollar at the center of the international financial and economic system: (1) U.S. Dollar Share in the Global Foreign Reserve Holdings, (2) U.S. 10-Year Treasury Constant Maturity Rate, (3) U.S. Financial Openness, (4) U.S. Geopolitical Power, (5) U.S. Inflation Rate, (6) U.S. Global Trade Openness.

Share of U.S. dollar in global reserves holdings (Dollarshare)

The U.S. dollar has been an outstanding currency in fulfilling its role as the reserve and global currency. Through all trials and tribulations, the dollar proved resilient as a global safe haven currency and tested to be the best currency centric to global trade and international economic operations such as cross-border financial/foreign exchange transactions.

The dollarshare variable is expected to move in tandem with the U.S. External Debt in a positive correlation manner.

10-Year U.S. Treasury Constant Maturity Rate (Treasrate)

The 10-Year U.S. Treasury Constant Maturity Rate is an index published by the Federal Reserve Board based on the average yield of a range of Treasury securities, all adjusted to the equivalent of a 10-year maturity from the yields determined by the U.S. Treasury. Because of the U.S. Treasury securities' risk-free feature due to the backing of the full faith of the U.S. government, the 10-Year U.S. Treasury Constant Maturity Rate serves as a benchmark for pricing most of the fixed income securities such as Treasuries and corporate bonds.

It is mainly because of this risk-free feature why the U.S. dollar is the darling of foreign central banks in their reserve accumulation – especially as it serves as the currency of refuge in time of global financial distress – which theoretically increases the dollar-liabilities floating in the rest of the world.

The treasrate variable should therefore be positively correlated to the U.S. External Debt.

US Financial Openness (Finopen)

To attain international currency status, capital and money markets in the home country must be not only open and free of controls but also deep and well-developed (Frankel, 2012). Bekaert, Harvey, and Lundblad (2009) found in their research paper on financial openness and productivity that financial openness not only leads to higher rates of economic growth because of the improvement of domestic distributive efficiency but also enhances the development and effectiveness of the stock market, the quality of institutions, and macroeconomic policies and more importantly, its growth effects appear to be largely permanent, not temporary.

It is important to note that trading activity on FX markets is mainly driven by transactions in financial flows, because the dollar-financial transactions dwarf the dollar-transactions occurring on goods and services markets in terms of the size, scale, strength, and speed of capital flows according to McCauley and Scatigna (2011) who found that the daily dollar-financial trades are about 100 times the value of corresponding international trade transactions. They

concluded that it is the financial transactions that drive the supply and demand for dollars in global foreign exchange markets and ultimately which dictate the direction of the dollar exchange rate (McCauley & Scatigna, 2011).

However, most of the FX transactions are the consequence of activity taking place in other markets such as settlements of securities trading operations and international trade, foreign direct investment (FDI), and international tourism. The primary aim of most participants in the FX markets is therefore not to make money in currency trading *per se* but to use the FX markets as a service platform to execute their transactions that take place in other markets. Vecchio (2008) pointed out that around 60% of activity in currency market can be attributed to participants nonmotivated by profit.

This financial openness in combination with its very welcoming investment climate make the United States one of the best destinations of global capital flows. In this regards, this study found the financial openness variable to be one of the most compelling key determinants of the U.S. Dollar Reserve and Global Currency Status. Finopen variable is hypothesized to have a positive impact on the U.S. External Debt and therefore negative correlation.

US Geopolitical Power (geopower)

Posen (2008) has contended that foreign policy and national security are critical factors in exchange rate relationships and further argued that there is a link between the U.S. Dollar supremacy and the U.S. global security umbrella that brought him to the conclusion that the geopolitical relationship supersedes the purely economic factors in currency relationships.

In fact, the U.S. geopolitical influence and naval hegemony is both a direct cause and effect of dollar hegemony according to Zoffer (2012) who pointed out that the United States has relied on the dollar's position as the international reserve currency to fund its military apparatus which (1) obviously provides its own security and protects its own prosperity and those of its allies, (2) amplifies America's diplomatic and economic leadership, (3) prevents the outbreak of great-power wars so common in previous centuries, and (4) preserves the international order in the face of aggressive and illiberal threats. More specifically, the following is the mission assigned to the United States' Armed Forces (Table 4.2).

After World War II – which destroyed all other major national navies – a unique opportunity was opened for the United States to impose a series of geopolitical changes on the international system and since then, the world has been running under an informal international order dominated by the United States through which the United States and its Allies – heavily relying on U.S. military might – were able to enforce and maintain a Western-Style Order upon the

Table 4.2: Primary Missions of the U.S. Armed Forces.

• Counter terrorism and irregular warfare	• Project power despite anti-access/denial challenges
• Deter and defeat aggression	• Counter weapons of mass-destruction
• Project power despite anti-access/denial challenges	• Operate effectively in Cyberspace and Space
• Counter weapons of mass-destruction	• Maintain a safe, secure, and effective nuclear deterrent
• Operate effectively in Cyberspace and Space	• Defend the homeland and provide support to civil authorities
• Counter terrorism and irregular warfare	• Provide a stabilizing presence
• Deter and defeat aggression	• Conduct stability and counterinsurgency operations

Source: Table Designed by Dr. Ganziro based au DoD (2012).

world and to intervene militarily in any conflict that threatens their interests (Posen, 2008).

With its preponderant geopolitical power, its global troop deployment and its unchallenged naval supremacy, the United States keeps trade routes open and safe to global traffic, thereby taking off on the mind of its allies and nonallies like the worry about the geopolitical costs and the need to pursue a foreign policy directed at protecting their key trade routes because these routes are firmly under control of the United States which ensures the safety and free flow of products and resources to their markets (Grygiel, 2006).

To protect the above sea lanes for the safety and free flow of products and resources globally along with other geopolitical security issues on the Planet is not a simple duty. The United States maintains 325,000 U.S. military personnel deployed worldwide, operating 845,441 different buildings and equipment spread over 737 bases in foreign lands with a military presence spanning over 156 countries on a total land mass of 2,202,735 hectares (5,443,077 acres) – making the Pentagon one of the largest landlords on the Planet (Dufour, 2013).

The geopolitical power is therefore one of the most important variables in our model. However it is a very difficult variable to quantify because not only it is an unobservable variable embracing a whole range of interacting determinants of hard and soft superpower but also it is dependent to the geographical position and regional importance of a given country (Reynaud & Vauday, 2008). This means that there is no unique variable that can engulf all the breadth and width of a geopolitical power according to Baldwin (1979) as quoted by Grygiel (2006).

Our geopolitical power variable (geopower) therefore can only be an inferred independent variable out of the factors which underlie it. Grygiel (2006) classified the variables proxying the geopolitical

importance of countries in four areas: the energetic, the nuclear, the military, and the geographical areas covering variables from oil and gas reserves, oil and gas pipelines, civil nuclear capacity, possession of nuclear weapon, length of coastlines area, length of roads, number of borders, etc.

This study has specified the U.S. Geopolitical Power as a combination of the National Defense with the Foreign Assistance which is comprised of foreign economic assistance and military assistance. This combination allows the United States to project its Geopolitical Superpower in the world and an overwhelming global deterrence to effectively control the routes and centers of resources that are critical to its economy and markets of its allies and nonallies. The geopower variable is expected to have a huge burden on extdebt variable and therefore in positive correlation.

US Inflation (Inflarate)

A country that has a continuous rampant inflation or enters into the hyperinflation territory cannot have its domestic currency play the global role of a unit of account, unit of exchange, and a store of value simply because it will lead to financial instability and destroy the value of the reserve holdings denominated in its currency.

Much has been said and written about the Fed's expansive monetary policies – especially the Quantitative Easing (QE) programs, about the export of the U.S. inflation to its trading partners, about the world running away from the dollar, etc. But nothing of that kind of prophecy is happening on a significant scale to lead to the demise of the U.S. dollar as the global reserve currency. The U.S. dollar goes through ups and downs like any other instrument traded on the financial markets, but, overall, it remains stable and the most favored global currency.

The inflarate variable is expected to be in negative correlation with the external debt.

US Trade Openness (Tradeopen)

By being one of the leading trading countries in the world, it is obvious that the U.S. dollar – more than any other currency – tremendously changes hands globally – especially since both its exports and imports are denominated in U.S. dollar. This dollar-liquidity along with its stability makes trade transactions in U.S. dollar less expensive and more efficient than any other currency to such degree that other countries – even for their non-US international trade transactions prefer to transact in U.S. dollar.

The demand of U.S. dollars for transactional purposes obviously has an impact on the U.S. Dollar Reserve and Global Currency Status. This impact is expressed by the U.S. Global Trade ($X + M$)

as one of our independent variables. In terms of impact, tradeopen has a mixed effect on extdebt. A rise of global trade can be negative if it is driven by imports, thus, it will be in positive correlation or have a positive effect if driven by exports, in which case, both tradeopen and extdebt are in negative correlation.

In spite of specific trade deficits with major emerging markets such as China, we expect the tradeopen variable to have a positive impact on the dependent variable and therefore in a negative correlation – meaning that the more the trade openness, the lesser the external debt as the major destinations of U.S. exports are developed nations that don't accumulate reserves.

4.1.3. MODEL-EQUATION SPECIFICATION

The economics is too complex and depends upon an enormous number of tightly interconnected variables that are extraordinarily difficult to distinguish and study separately, thus it falls far short from the experiments in natural sciences that can be well-controlled. And without a strong track record of experiments leading to successful predictions, there is seldom a basis for taking social scientific results as absolute.

As indicated above, this study has identified six independent variables selected through the global role the U.S. dollar at the center of the international financial and economic system: U.S. Dollar Share in the Global Foreign Reserve Holdings (dollarshare), 10-Year Treasury Constant Maturity Rate (treasrate), U.S. Financial Openness (finopen), U.S. Geopolitical Power (geopower), Inflation Rate (inflarate), U.S. Global Trade Openness (tradeopen).

The model of the study can be written as follows:

$$\begin{aligned}\text{extdebt}_t = {} & \alpha + \beta_1 \text{dollarshare} + \beta_2 \text{treasrate} + \beta_3 \text{finopen} + \beta_4 \text{geopower} \\ & + \beta_5 \text{inflarate} + \beta_6 \text{tradeopen} + \mu_t \end{aligned} \tag{4.1}$$

$$(\mu_i) = 0,\ \text{var}(\mu_i) = \sigma^2,\ \text{cov}(\mu_i, \mu_j) = 0 \text{ for all } i \neq j$$

where extdebt = U.S. External Debt; dollarshare = U.S. Dollar Share in the Global Foreign Reserve Holdings; treasrate = 10-Year Treasury Constant Maturity Rate; finopen = U.S. Financial Openness; geopower = U.S. Geopolitical Power; inflarate = Inflation Rate; tradeopen = U.S. Global International Trade Openness; μ = Mean-Zero Error Term.

We specified our Model Equation (4.2) as a One-Sided-Logarithmic Model in which our dependent was logarithmically transformed in order to convert the exponential or multiplicative growth patterns to a linear growth pattern in its series.

The final equation of our model is:

$$\begin{aligned}\text{logextdebt}_t = {} & \alpha + \beta_1 \text{dollarshare} + \beta_2 \text{treasrate} + \beta_3 \text{finopen} + \beta_4 \text{geopower} \\ & + \beta_5 \text{inflarate} + \beta_6 \text{tradeopen} + \mu_t \end{aligned} \tag{4.2}$$

$$(\mu_i) = 0,\ \text{var}(\mu_i) \ = \sigma^2,\ \text{cov}(\mu_i, \mu_j) = 0 \ \text{ for all } i \neq j$$

4.1.4. DATA

The dataset consists of time series variables covering the period from 1970 to 2011. These variables are hypothesized to have relationship with U.S. Twin-Deficits as proxied by the U.S. External Debt, but it doesn't mean that they are all significant to the model and this is why they will be submitted to significance tests (Table 4.3).

4.1.4.1. Data source

There has been an ongoing issue regarding the adequacy of samples. Statisticians have not yet come to the common understanding of the size of a sample given the number of explanatory variables; thus rules of thumb are still prevailing in this determination process. One of them indicates that if the number of the explanatory variables is not greater than seven, then, the time series data should be equal or greater than at least 40 observations. Our model – which has six independent variables with time series covering a period from 1970 to 2011 – meaning 42 observations for each explanatory variable – it is therefore adequate according to the above rule of thumb.

4.1.4.2. Data description

All the data used in our model is a collection of historical annual data such as extdebt$_t$ ($t = 1970-2011$) and as such, they qualify to be treated as time series data. As per definition, a time series data is ordered in time and therefore, past values are likely to have some influence on future values through a serial correlation process. A time series data has three major issues: (i) Nonstationarity: variables with nonconstant mean; (ii) Persistence: variables that are serially correlated; and (iii) Endogeneity: bilateral dynamic interaction between variables.

4.2. Quantitative Analysis

4.2.1. OLS REGRESSION

As it is expressed in the OLS Regression at level (Appendix 1), the OLS Model shows robust R^2 of 0.9352 and adjusted R^2 of

Table 4.3: Data Source.

Variable	Symbol	Unit	Source
External Debt	extdebt	Log $Bi	• The White House – Office of Management and Budget http://www.whitehouse.gov/omb/budget/Historicals
US Dollar Share in Global Reserve Holdings	dollarshare	%World	• IMF Statistics Department COFER database and International Financial Statistics Currency Composition of Official Foreign Exchange Reserves (COFER)
10-Year Treasury Constant Maturity Rate	treasrate	%	• Board of Governors of the Federal Reserve System http://research.stlouisfed.org/fred2/search?st=10-Year+Treasury+Constant+Maturity+Rate
Financial Openness	finopen	%GDP	• Treasury Department Total Capital Inflow from U.S. Transactions with Foreigners in Long-term Domestic and Foreign Securities, by Type and Country http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticsec.aspx
Geopolitical Power	geopower	%GDP	• USAID Economic Analysis and Data Services (February 5, 2013) US Economic Assistance, Constant 2011 $US US Overseas Loans & Grants (Greenbook), http://gbk.eads.usaidallnet.gov/ • USAID Economic Analysis and Data Services (February 5, 2013) US Military Assistance, Constant 2011 $US US Overseas Loans & Grants (Greenbook), http://gbk.eads.usaidallnet.gov/ • Treasury Department Total Capital Outflow from U.S. Transactions with Foreigners in Long-term Domestic and Foreign Securities, by Type and Country http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticsec.aspx
Annual Inflation Rate	inflarate	%	• Inflation Data http://inflationdata.com/Inflation/Consumer_Price_Index/HistoricalCPI.aspx?reloaded=true
Trade Openness	tradeopen	%GDP	• World Bank, World Development Indicators Total Imports + Total Exports http://data.worldbank.org/data-catalog/world-development-indicators • The White House – Office of Management and Budget http://www.whitehouse.gov/omb/budget/Historicals
Real GDP	GDP	$Bi	• US Department of Commerce: Bureau of Economic Analysis http://www.bea.gov/

Source: Table Designed by Dr. Ganziro based on Data Sources.

0.9240; however, the Durbin–Watson *d*-statistic is very weak at 0.61589 far less than 2. The OLS Regression at level exhibits the typical symptoms of Spurious Regression with high R^2, but with low Durbin–Watson (DW) Statistic (Granger, Hyung, & Jeon, 1998). A regression with nonstationary variables will typically reveal the problem with a DW statistic being significantly smaller than 2.

4.2.2. STATIONARITY TESTS

The time series variables are seldom stationary in their level form and contain unit roots that can lead to the explosion of variances with time (DeJong & Whiteman, 1991). So the two central properties of many economic time series are nonstationarity and time-volatility. Such variables should be rendered stationary before they are included in an econometric model.

Granger and Newbold (1974) had found that any statistical inference obtained from regressions that contain integrated depended variables is dubious. Unless the variables are cointegrated, the economic interpretation of such models will not be meaningful and would lead to ambiguous statistical inferences. The best way to guard against Spurious Regressions is to check for cointegration of the variables used in time series models.

To address the spuriousness issue, our methodology first conducted stationarity tests of the time series data of the variables incorporated into our model using the Augmented Dickey-Fuller (ADF) Tests (Dickey & Fuller, 1981) in order to assess the presence of unit roots in the system.

Given that all of the series are found to be stationary at first difference – except the dollarshare which was already stationary at level – as evidenced by Table 4.4, we try to estimate the equation (4.3) expressing the stationary variables through OLS Regression.

$$\begin{aligned}\text{logextdebt}_t = {} & \alpha + \beta_1 \text{dollarshare} + \beta_2 \text{treasrate}_{t-1} \\ & + \beta_3 \text{finopen}_{t-1} + \beta_4 \text{geopower}_{t-1} + \beta_5 \text{inflarate}_{t-1} \\ & + \beta_6 \text{tradeopen}_{t-1} + \varphi_1 \text{extdebt}_{t-1} + \varepsilon_t \end{aligned} \tag{4.3}$$

This OLS Regression for the stationary variables (Appendix 2) is clearly not the appropriate method as well because none of the statistics is significant – let it be R^2 of 0.1993, let it be adjusted R^2 of 0.0295, let it be the overall *p*-value of 0.3443 for the model or the *p*-values of the coefficients of all variables and *d*-statistic of 0. 2765672, far less than 2.

Table 4.4: Summary of Unit Roots Tests.

Unit Root Tests							
Series at Level	At Level			Series at First Difference I(1)	At D1: First Difference		
	ADF Test @95 Confidence Level				ADF Test @95 Confidence Level		
	Statistic	Critical Value	McKinnon *p*-value		Statistic	Critical Value	McKinnon *p*-value
logextdebt	−0.759	−2.964	0.8310	D1.logextdebt	-4.014	-2.966	0.0013
dollarshare	−3.087	−2.964	0.0275	D1.dollarshare	−3.288	−2.966	0.0154
treasrate	−1.057	−2.964	0.7319	D1.treasrate	−3.310	−2.966	0.0144
finopen	1.521	−2.964	0.5233	D1.finopen	−4.115	−2.966	0.0009
geopower	−1.704	−2.964	0.429	D1.geopower	−3.967	−2.966	0.0016
inflarate	−1.434	−2.964	0.566	D1.inflarate	−5.286	-2.966	0.0000
tradeopen	1.007	−2.964	0.9943	D1.tradeopen	-3.684	−2.966	0.0043

Source: Table Generated by Strata Software Used to Run the Model.

Since the OLS Model – at both nonstationary level and first difference stationary level – yields inconsistent results, we need to further our investigation in order to find the right method to run our model. As all our variables are stationary at the same order of I(1) – first difference, our model can only be estimated if the variables cointegrate. To determine the existence and the number of cointegrating regressions (r), we conducted cointegration tests.

4.2.3. COINTEGRATION TESTS

It is paramount to perform cointegration tests which have advantages of providing more consistent and efficient estimates of long-run equilibrium parameters – determined by the Error Correction Term (ECT), whereby – if it is significant – indicates evidence of long-run causality running from the explanatory variables to the dependent variable (Engle-Granger, 1987). Concurrently, the Error Correction Model determines short-run dynamics running from each lagged explanatory variable to the dependent variable. The cointegration tests require that all the time series variables used in the model be integrated with an identical order.

We therefore apply cointegration tests to determine if all the variables in our model are linked in some kind of long-run equilibrium relationship in order to choose a meaningful normalized cointegration equation (Johansen & Juselius, 1990) – capable to proficiently assess the impact of the determinants of the U.S. Dollar Reserve and Global Currency Status on the U.S. External Debt under the period under review.

Table 4.5: Lag Order Determination.

Lag	LL	LR	df	*p*	FPE	AIC	HQIC	SBIC
0	10.5098				.048656	−.189719	−.082274	.115049
1	40.358	59.696	1	0.000	.010255	−1.74908	1.62629	1.40078
2	46.2294	11.743*	1	0.001	.007904*	2.0124*	1.87426*	1.62056*
3	46.6801	.90126	1	0.342	.008174	1.98271	1.82921	1.54732
4	47.2294	1.0987	1	0.295	.008415	1.95835	1.78951	1.47943
5	48.1772	1.8954	1	0.169	.008488	1.95552	1.77133	1.43306
Endogenous		logextdebt						
Exogenous		dollarshare treasrate inflarate tradeopen finopen geopower						
Constant		_cons						

Source: Table Generated by Strata Software Used to Run the Model.
*Lag-Order

To consistently test for cointegration, we must choose the appropriate lag length and Stata is capable of making that determination through versoc command (Table 4.5).

Almost all the criteria – Schwarz Bayesian Information Criterion (SBIC), Hannan–Quinn Information Criterion (HQIC), Akaike Information Criterion (AIC), Final Prediction Error (FPE), and Likelihood-Ratio (LR) tests – agreed on the Lag Order of 2 for the Model.

4.2.3.1. Johansen Maximum Likelihood Tests

In order to assess if the time series variables are cointegrated and to determine the number of cointegrating vectors (**r**), the Johansen's cointegration tests are usually performed through the Johansen Maximum Likelihood (ML) Test that produces two test statistics: (1) Trace Test and (2) Maximal Eigenvalue Test to determine – **r** – the number of present cointegrating vectors and estimate the parameters of the equation.

The determination of the rank of the cointegrating matrix was made by proceeding sequentially from $r = 0$ to $r = k - 1$ up to the point where the test statistics were lower than the critical values, denoting a rejection of the Null Hypothesis at both 5% confidence levels.

4.2.3.2. Johansen ML results and analysis

The results of the Johansen ML were obtained by using vecrank Stata Command and they are summarized in the following (Table 4.6).

The Trace Tests in Table 4.6 rejects the Null Hypothesis that there is no cointegration between the variables at $H_0 - r = 0$ and $r \leq 1$. H_0 is rejected at $r \leq 2$ of 64.1174 less than its critical value of

Table 4.6: Johansen Trace and Maximum Eigenvalue Tests.

Johansen ML Results (Trace Test)	Null Hypothesis	Alternative Hypothesis	λ_{Trace}	5% Critical Value[a]	H_0 Decision
	$r = 0$	$r \geq 1$	266.2483	124.24	Reject
	$r \leq 1$	$r \geq 2$	124.4131	94.15	Reject
	$r \leq 2$	$r \geq 3$	64.1174*	68.52	Fail to Reject
Maximum Eigenvalue Tests	Null Hypothesis	Alternative Hypothesis	λ_{Max}	5% value	H_0 Decision
	$r = 0$	$r = 1$	141.8352	45.28	Reject
	$r = 1$	$r = 2$	60.5566	39.37	Reject
	$r = 2$	$r = 3$	26.4986*	33.46	Fail to Reject

[a]Critical values MacKinnon, Haug, and Michelis (1996) *p*-values.
Source: Table Generated by Strata Software Used to Run the Model.
*Hypothesis Rejection

68.52 – meaning that there cannot be more than two cointegrating vectors.

On the other hand, the Maximum EigenValue Tests also reject H_0 at $r = 0$ and $r = 1$; but its statistic at $r = 2$ of 26.4986 is less than its critical value of 33.46, we cannot therefore reject the Null Hypothesis that there are two or fewer cointegrating equations.

The Trace and Maximum EigenValue Tests results found two cointegrating vectors; thus confirming that the variables are linked by some long-run equilibrium relationships.

Because there is evidence of long-run relations, an assessment of the short-run and potential Granger causality can be performed using the Vector Error Correction Model (VECM). The VECM has been proven to be a popular tool for modeling macroeconomic and many financial data as it not only distinguishes between short-run effects and long-run persistent effects and has cointegration relations built into its specifications but also allows adjustments of short-run changes in variables and correction for any disequilibrium from shock in the system by converging the variables back to long-run equilibrium.

4.2.4. VECTOR ERROR CORRECTION MODEL

VECM is applied in a system incorporating six key determinants of the U.S. Dollar Reserve and Global Currency Status and the U.S. Twin-Deficits as proxied by the U.S. External Debt. VECM estimates two main types of parameters: (1) the parameters in the cointegrating equations which express the long-run relationships between the variables and (2) the short-run coefficients which define the temporary dynamics of the model. As the adjustment process

may spill over a number of periods, our VECM cointegrating equation will have lagged variables.

4.2.4.1. VECM regression

Table 4.7 of our VECM regression in its Header contains information about the sample, the fit of each equation, and overall model fit statistics. All the equations – except dollarshare and treasrate equations – are significant with *p*-values of zero. Our focus will be the logextdebt equation which is the dependent variable in the study.

The coefficients of our target equation are contained in the following Table 4.8 along with their standard errors, *z* statistics, and confidence intervals.

The VECM produced two cointegrating ECTs and an equation for each variable in our model. As we pointed out, the cointegrating equation of interest for this study is D-logextdebt. The two coefficients on L_1 – ce_1 and ce_2 – are the overall adjustment parameters for this model. The first Error Correction Term (ce_1) of −0.8307094 is negative and significant with *p*-value of 0.000.

ce_1 represents the Long-Run Causality running from all combined determinants of the U.S. Dollar Reserve and Global Currency Status to the U.S. External Debt – the dependent variable of the Model. The second Error Correction Term (ce_2) of 0.0063932 is positive and significant with *p*-value of 0.000 and it represents the Short-Run Causality running from all combined determinants of the U.S. Dollar Reserve and Global Currency Status to the U.S. External Debt.

Table 4.7: Vector Error Correction Model.

Sample		1973–2011		No. Obs	39
				AIC	29.10115
Log likelihood		−438.4725		HQIC	31.07542
Det(Sigma_ml)		13.74437		SBIC	34.6037
Equation	Parms	RMSE	R^2	χ^2	$P>\chi^2$
D_logextdebt	17	8.68211	0.6971	48.33321	0.0001
D_dollarshare	17	4.81453	0.2135	5.69995	0.9950
D_treasrate	17	1.04937	0.4125	14.74324	0.6140
D_inflarate	17	1.34519	0.7267	55.82613	0.0000
D_finopen	17	60.9894	0.9163	230.0303	0.0000
D_geopower	17	37.8254	0.8763	148.7608	0.0000
D_tradeopen	17	.885859	0.7668	69.04249	0.0000

Source: Table Generated by Strata Software Used to Run the Model.

Table 4.8: VECM Coefficients.

		Coefficient	Std. Err.	z	$P>\|z\|$	Conf. Interval 95%	
						Min.	Max.
D_logextdebt	$\_ce_1$ L_1.	−0.8307094	0.1813736	−4.58	0.000	−1.186195	−0.475223
	$\_ce_2$ L_1.	0.0063932	0.0010695	5.98	0.000	0.0042969	0.0084894
logextdebt	LD.	0.5375430	0.2025064	2.65	0.00 8	0.1406378	0.9344483
	L2D.	−0.0736809	0.0913402	−0.81	0.420	−0.2527044	0.1053426
dollarshare	LD.	−0.0061681	0.0026617	−2.32	0.020	−0.0113849	−0.0009513
	L2D.	−0.0005741	0.0028596	−0.20	0.841	−0.0061788	0.0050306
treasrate	LD.	0.0401934	0.0120567	3.33	0.001	0.0165627	0.0638240
	L2D.	0.0171738	0.0131248	1.31	0.191	−0.0085503	0.0428980
inflarate	LD.	−0.0284743	0.0079709	3.57	0.000	−0.0128516	0.0440970
	L2D.	0.0024834	0.0079162	0.31	0.754	−0.0130321	0.0179990
tradeopen	LD.	0.1812652	0.0459751	−3.94	0.000	−0.0911557	0.2713748
	L2D.	0.1032064	0.0350481	−2.94	0.003	−0.1718994	−0.0345134
finopen	LD.	0.0100014	0.0023297	−4.29	0.000	−0.0054353	0.0145675
	L2D.	0.0086097	0.0024241	−3.55	0.000	−0.0038586	0.0133608
geopower	LD.	0.0224659	0.0051416	4.37	0.000	0.0123885	0.0325432
	L2D.	0.0188596	0.0052728	3.58	0.000	0.0085251	0.0291940
_cons	LD.	0.0530538	0.0311644	1.70	0.089	−0.0080273	0.1141349

Source: Table Generated by Strata Software Used to Run the Model.

The Error Correction Term (ce_1) also measures the speed of adjustment of the short run to the long-run equilibriums. This simply means that the negative ECT of −0.8307094 indicates that when $extdebt_{t-1}$ is dislocated from its long-run level; then ECT_t must be negative so as to pull extdebt back toward its long-run relationship with the determinants of the U.S. Dollar Reserve and Global Currency Status. More specifically, about 83% of this disequilibrium in the model will be corrected within one year since our data series are annually specified.

If the ECT was − let say −1 − it would mean that the entire deviation of the U.S. External Debt from equilibrium caused by a shock from any of the determinants of the USD Status would be corrected for in the following year. So the closer the negative ce_1 to −1, the more rapid is the correction.

This is to say that an Error Correction Term ce_1 − which is negative and ranging between 0 and 1 − is within the acceptable recommended boundaries. If it was negative and more than 1, let say −1.05, it would mean that about 105% of the

disequilibrium would be corrected within 1 year! The correction would be overshooting the long-run equilibrium and such scenario would indicate that the model is misspecified because this is unrealistic by the standards of the U.S. economy.

4.2.4.2. VECM diagnostic tests

Linear hypothesis tests

We tested the Linear hypotheses for the short-run causality at both lags for each individual explanatory variable to determine the significance of each independent variable in the model. We found that the short-run causality running from each explanatory variable – treasury rate, financial openness, geopolitical power, inflation rate, and trade openness – are all significant (Granger-causing the extdebt), except the short-run causality running from dollarshare (Table 4.9).

Lagrange multiplier (LM) test

We performed LM Test for autocorrelation in the VECM residuals through veclmar Stata Command mainly because estimation, inference, and postestimation analysis of VECM are predicated on the assumption that the errors are not autocorrelated.

Table 4.9: Linear Hypothesis Tests.

Determinants of the USD Reserve and Global Status	Test Linear Hypothesis with the U.S. External Debt at 95% Confidence Level	χ^2 (2)	Prob > χ^2
dollarshare	([D_logextdebt]: LD.dollarshare L2D.dollarshare)	5.60	0.0608
treasrate	([D_logextdebt]: LD.treasrate L2D.treasrate)	11.38	0.0034
finopen	([D_logextdebt]: LD.finopen L2D.finopen)	22.82	0.0000
geopower	([D_logextdebt]: LD.geopower L2D.geopower)	26.21	0.0000
inflarate	([D_logextdebt]: LD.inflarate L2D.inflarate)	12.86	0.0016
tradeopen	([D_logextdebt]: LD.tradeopen L2D.tradeopen)	18.36	0.0001

Source: Table Generated by Strata Software Used to Run the Model.

Table 4.10: Lagrange Multiplier Test.

Lag	χ^2	df	Prob > χ^2
1	58.2450	49	0.17175
2	47.9919	49	0.51396
3	39.4732	49	0.83257

H_0: no autocorrelation at lag order.
Source: Table Generated by Strata Software Used to Run the Model.

Table 4.11: Jarque–Bera Test.

Equation	χ^2	df	Prob > χ^2
D_logextdebt	0.587	2	0.74569
D_dollarshare	25.480	2	0.00000
D_treasrate	1.682	2	0.43138
D_finopen	9.610	2	0.00819
D_geopower	1.699	2	0.42753
D_inflarate	3.138	2	0.20826
D_tradeopen	1.422	2	0.49107

H_0: Disturbances are normally distributed.
Source: Table Generated by Strata Software Used to Run the Model.

At the 5% level, we cannot reject the Null Hypothesis that there is no autocorrelation in the residuals since all the *p*-values are greater than 0.05 at the lags tested. Thus LM Test finds no evidence of model misspecification (Table 4.10).

Jarque–Bera statistic tests

VECM is also grounded on the assumption that the errors are independently and identically distributed (i.i.d.) according to Johansen (1991). We computed the Jarque–Bera Statistic tests through vecnorm Stata Command to test the Null Hypothesis (H_0) that the disturbances are normally distributed (Table 4.11).

The results for our target equation logextdebt show that Jarque–Bera statistic tests do not reject the Null Hypothesis of normality. In fact, the H_0 is only accepted with D_dollarshare equation.

We can conclude that – even though the coefficient of dollarshare doesn't show short-run causality running from it to the US External Debt – the significance of the overall coefficient of the ECT of −0.8307094 confirms the validity of a long-run equilibrium relationship in our model. Additionally, as tested above, the VEC diagnostics LM reveal evidence against serial correlation and Jarque–Bera Test confirms the normality of distributed disturbances.

VECM stability

With the extdebt cointegrating equation, VECM was adjusted to accommodate the short-run dynamics that converge to a long-term equilibrium and we conduct diagnosis for appropriateness and structural stability of our model. Specifically, we performed the Eigenvalue Stability Condition using the vecstable – Stata Command. For a *K*-variable model with *r* cointegrating relationships, the companion matrix will have $K - r$ unit eigenvalues ($7 - 2 = 5$). Our model is

Table 4.12: Companion Matrix: Eigenvalue Stability Condition.

Eigenvalue			Modulus
1			1
1			1
1			1
1			1
1			1
−.6179033	+	.5788335i	.846672
−.6179033	−	.5788335i	.846672
−.2085401	+	.8159777i	.842205
−.2085401	−	.8159777i	.842205
.4769855	+	.6411528i	.79912
.4769855	−	.6411528i	.79912
.4641076	+	.5565638i	.724679
.4641076	−	.5565879i	.724679
			.662536
−.6625365			
−.2795606	+	.5565879i	.622852
−.2795606	−	.5565879i	.622852
.4154005	+	.4007674i	.577211
.4154005	−	.4007674i	.577211
−.05609923	+	.5641689i	.566951
−.05609923	−		.566951
		.5641689i	.07529
0.07528999			

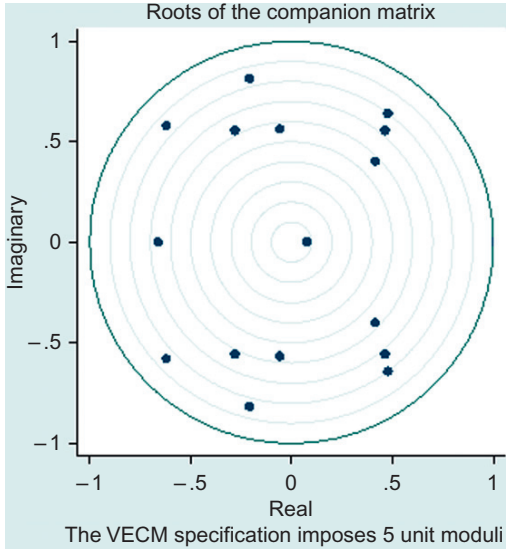
The VECM specification imposes five unit moduli.
Source: Table Generated by Strata Software Used to Run the Model.

therefore stable as the moduli of the remaining r eigenvalues are less than one (Table 4.12).

The stability of the model is confirmed by Graph 4.1 of the Roots of Companion Matrix which plots the eigenvalues with the real component on the x axis and the imaginary component on the y axis in order to give a visual assessment of how close the root with modulus 0.95 is to the unit circle (Graph 4.2).

Graph 4.1 of the Eigenvalues shows that all the remaining eigenvalues lie inside the unit circle indicating that our model is well-specified.

Graph 4.1: The 10-Year U.S. Treasury Constant Maturity Rate. *Source*: Fed (http://research.stlouisfed.org/fred2/graph/?s[1][id]=DGS10).



Graph 4.2: Eigenvalue Stability Condition. *Source*: Graph Generated by Strata Software Used to Run the Model.

Granger causality Wald tests

We perform Granger Causality Wald Tests to determine if the lagged observations of the key determinants of the U.S. Dollar Reserve and Global Currency Status have any incremental

forecasting power that might lead to better predictions of the future values of extdebt. The Feedback Effect was concurrently tested to assess if U.S. External Debt Granger causes any key determinants of the U.S. Dollar Reserve and Global Currency Status in a bidirectional fashion.

It is important to note that Granger causality is not designed to establish the causation in theoretical sense as it doesn't guarantee that changes in any of the key determinants of the U.S. Dollar Reserve and Global Currency Status effectively causes changes in the U.S. twin-deficit through U.S. External Debt. As said above, if Granger causality holds, it simply means that the lagged values of the key determinants of the U.S. Dollar Reserve and Global Currency Status provide statistically significant information that lead to better predictions of the future values of U.S. Twin-Deficits.

At the exception of the U.S. Dollar share in the global reserve holdings (dollarshare), there is an overwhelming strong evidence that lagged values of all other determinants of the U.S. Dollar Reserve and Global Currency Status (treasrate, inflarate, tradeopen, finopen, geopower) help predict the U.S. External Debt as their *p*-values are 0.00 (Table 4.13).

We also checked if there is any bidirectional causality and found that the U.S. External Debt doesn't Granger-Cause any of the identified determinants of the U.S. Dollar Reserve and Global Currency Status in our model. The Granger Causality is unidirectional from the determinants to the external debt (Tables 4.14 and 4.15).

Johansen normalized coefficients

Since our emphasis is on the relation between the extdebt and determinants of the U.S. Dollar Reserve and Global Currency Status, we focus on the cointegrating equation (4.4) (ce_1) in which logextdebt is normalized to one. All the coefficients are statistically significant according to their *t*-values = 0.000.

The final cointegrating equation of our model is therefore:

$$\begin{aligned}\text{logextdebt} = {} & 0.0286258\ \text{treasrate} - 0.0227944\ \text{finopen} \\ & + 0.0428513\ \text{geopower} - 0.082831\ \text{inflarate} \\ & - 0.180625\ \text{tradeopen} - 1.873764\end{aligned} \tag{4.4}$$

It is important to note that dollarshare − is normalized to one in the second cointegrating equation (ce_2) − has been omitted in the first one (ce_1); thus its coefficient in (ce_1) is zero and therefore, dollarshare doesn't appear in the final cointegrating equation of our model.

Table 4.13: Granger Causality Wald Tests: Unidirectional Causality Running from the Determinant of the USD Status to the U.S. External Debt.

Determinants (USD Status)	External Debt (Logextdebt)	Statistic	*p*-value (At 95%)	H_0 Decision	Granger Causality from USD Determinants to US External Debt		
dollarshare	logextdebt	0.1824	0.893	H_0: Accepted	dollarshare	Doesn't	Granger-Cause logextdebt
treasrate	logextdebt	8.1747	0.004	H_0: Rejected	treasrate	Does	Granger-Cause logextdebt
finopen	logextdebt	12.8750	0.000	H_0: Rejected	finopen	Does	Granger-Cause logextdebt
geopower	logextdebt	29.8460	0.000	H_0: Rejected	geopower	Does	Granger-Cause logextdebt
inflarate	logextdebt	12.2630	0.000	H_0: Rejected	inflarate	Does	Granger-Cause logextdebt
tradeopen	logextdebt	14.8720	0.000	H_0: Rejected	tradeopen	Does	Granger-Cause logextdebt
All	logextdebt	77.6980	0.000	H_0: Rejected	All	Does	Granger-Cause logextdebt

H_0: Lagged determinants (dollarshare, treasrate, inflarate, tradeopen, finopen, geopower) don't Granger-Cause external debt (logextdebt).
H_A: Lagged determinants (dollarshare, treasrate, inflarate, tradeopen, finopen, geopower) do Granger-Cause external debt (logextdebt).
Source: Table Designed by Dr. Ganziro based on Model Results.

Table 4.14: Granger Causality Wald Tests: Reverse Causality Running from the U.S. External Debt to the Determinant of the USD Status: Feedback Effect.

External Debt (Logextdebt)	Determinants (USD Status)	Statistic	*p*-value (At 95%)	H_0 Decision	Granger Causality from U.S. External Debt to USD Determinants		
logextdebt	dollarshare	1.35940	0.244	H_0: Accepted	logextdebt	Doesn't	Granger-Cause dollarshare
logextdebt	treasrate	2.43030	0.119	H_0: Accepted	logextdebt	Doesn't	Granger-Cause treasrate
logextdebt	finopen	0.01619	0.899	H_0: Accepted	logextdebt	Doesn't	Granger-Cause finopen
logextdebt	geopower	0.11131	0.739	H_0: Accepted	logextdebt	Doesn't	Granger-Cause geopower
logextdebt	inflarate	1.85780	0.173	H_0: Accepted	logextdebt	Doesn't	Granger-Cause inflarate
logextdebt	tradeopen	0.32451	0.569	H_0: Accepted	logextdebt	Doesn't	Granger-Cause tradeopen

H_0: External debt (logextdebt) doesn't Granger-Cause lagged determinants (dollarshare, treasrate, inflarate, tradeopen, finopen, geopower).
H_A: External debt (logextdebt) does Granger-Cause lagged determinants (dollarshare, treasrate, inflarate, tradeopen, finopen, geopower).
Source: Table Designed by Dr. Ganziro based on Model Results.

Table 4.15: Cointegrating Equation with Johansen Normalized Coefficients.

Johansen Normalization Restrictions Imposed						
Beta	Coefficient	Std. err.	*z*	$P>\|z\|$	Conf. interval 95%	
					Min.	Max.
_ce1						
logextdebt	1	–	–	–	–	–
dollarshare	0	(Omitted)				
treasrate	0.0286258	0.0065761	4.35	0.000	0.0157370	0.0415147
finopen	−0.0227944	0.0010877	−20.96	0.000	−0.0249263	−0.0206625
geopower	0.0428513	0.0020468	20.94	0.000	0.0388397	0.0468629
inflarate	−0.0828317	0.0089813	−9.22	0.000	−0.1004348	−0.0652287
tradeopen	−0.1806250	0.0046086	−39.19	0.000	−0.1896577	−0.1715923
_cons	−1.8737640	–	–	–	–	–

Source: Table Generated by Strata Software Used to Run the Model.

Table 4.16: Magnitude Effect of the Determinants of the U.S. Dollar Global and Reserve Currency Status to the U.S. External Debt.

1% Increase	Regressor	Effect Magnitude	Effect on the Extdebt	Model Sign	Theoretical Sign
A 1% increase in	treasrate	Leads to 2.86%	Increases in extdebt	+	+
A 1% increase in	finopen	Leads to 2.28%	Decreases in extdebt	–	–
A 1% increase in	geopower	Leads to 4.29%	Increases in extdebt	+	+
A 1% increase in	inflarate	Leads to 8.28%	Decreases in extdebt	–	–
A 1% increase in	tradeopen	Leads to 18.06%	Decreases in extdebt	–	–

Source: Table Designed by Dr. Ganziro based on Model Results.

This should be expected because the Granger Causality Wald Test found dollarshare and logextdebt independent because they failed to Granger-cause each other. The dollarshare variable – being independent with the extdebt – doesn't have any predictive power over extdebt and cannot be included in the model in order to avoid misspecification problem (Table 4.16).

4.2.5. RESULTS ANALYSIS

The signs of the normalized coefficients according to the results of our model are all consistent with the hypothesized signs in this study.

In long run, treasrate moves in tandem with the extdebt, because with the increase of interest rate, capital flows – including sovereign funds – should be flocking to the United States looking for higher return on investment as the results indicate.

However, it is important to note that in time of crisis, the empirical evidence shows that the U.S. debt soared while the yields on U.S. Treasuries were hitting record low levels in 2012 according to Merk (2012) who explained this phenomenon by pointing to the striking link between the global liquidity cycle and the shortage of safe assets in the global economy as the financial crises trigger a rise in global risk aversion inducing global investors to fly to safety, thus pushing global demand for safe assets to spiking heights. He further opined that global investors in time of crisis are less concerned about the return on their money, but rather the return of their money and therefore to capital preservation.

The results show an overall positive impact of the finopen on the U.S. External Debt over the period 1970–2011 under review whereby the financial openness is negatively correlated to the extdebt: the greater the openness, the better the U.S. External Debt position.

By virtue of the dollar's position as a reserve currency, the United States traditionally has been able to borrow from abroad in its own currency at low rates while earning a high rate of return on its external assets. Thus, even after the U.S. net international position turned negative, the United States often had a positive balance on investment income that compensated for the fact that U.S. external debts exceeded U.S. external assets (Roubini & Setser, 2004).

Capital continuously flows in and out of the U.S. markets in abundance – making the United States the largest recipient and provider of global capital on the Planet including FDI. The United States is bound to attract global capital not only because of its financial openness but because it remains uncontestably the most open markets with the best investment climate and unrivaled consumer market in the world along with a world-class higher education system; a skilled and productive workforce; an entrepreneurial culture of innovation and risk-taking; a transparent regulatory environment; and the largest venture capital and private equity market in the world.

The results also show that the treadeopen's sign is in conformity with the hypothesized sign and it is negatively correlated to extdebt.

The inflarate variable has also the right sign: its correlation with the extdebt is negative as it should be. The lower the U.S. Inflation Rate, the better the global confidence in the U.S. dollar as it meets one of the necessary qualifications to be a truly global reserve currency: stable inflation. Otherwise, the U.S. dollar cannot serve as the unit of account, a medium of exchange, and a keeper of value of

accumulated assets if it is under heavy inflationary pressures and erratic fluctuations. Overall, the United States has kept the inflation at low level and the U.S. monetary authorities have never been tempted to inflate away the U.S. debt; thus supporting the stability of U.S. dollar as it has been discussed above and reassuring the holding of the U.S. Debt in the mix.

The geopower also exhibits the right positive sign with extdebt. As it has been discussed above, the United States remains the main security provider to most of its trading partners – such as Japan, Taiwan, South Korea – as well as the principal guarantor of the main sea routes to their markets – including the flow of energy and trade of its competitors such as China and Russia (Grygiel, 2008).

These countries will not trade in the U.S. Security Card against some gains of basis points out of switching to another reserve global currency. There will be no incentives strong enough to make that switch in the near future especially since United States is not only their principal trade partner but also is the home of the most open and sophisticated global financial and most liquid government securities markets on earth.

To borrow the theory of Mundell (1993), great powers have great currencies! This leads to the logical inference that – of the key determinants of the U.S. Dollar Reserve and Global Currency Status, the U.S. Geopolitical Power which protects the resource centers and routes to its economy and the economies of its allies and non-allies has indeed greater burdening impact on the Twin-Deficits as it is positively correlated to the U.S. External Debt. The more the U.S. Geopolitical Power, the greater the global confidence in the United States' global security umbrella and the greater the U.S. External Debt.

And because it is through trade deficits the United States can supply the globally needed dollars, the global trade has become a cycle in which the United States produces dollars and the rest of the world produces things that dollars can buy; most notably oil according to Gold (2013) who further opined that nations trade to capture not only comparative advantages on global markets but also the needed dollar reserves to sustain the exchange value of their domestic currencies or to buy oil or to prevent speculative attacks on their currencies.

To this effect, the nations' central banks must acquire and hold dollar reserves in amounts corresponding almost to their own currencies in circulation. This creates a built-in support for a strong dollar that in turn forces the world's central banks to acquire and hold even more dollar reserves, making the dollar' centrality to the global financial system further stronger.

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CHAPTER

5 Conclusion

This study has investigated role of the determinants of the U.S. dollar global reserve currency status on the U.S. external debt as a proxy of the U.S. twin-deficits using time-series data covering the period 1971–2011. We applied a series of tests to our model to check for spuriousness, stationarity, cointegration, and causality through various methods ranging from OLS regression, Augmented Dickey-Fuller (ADF) for unit root tests, Johansen Maximum Likelihood Cointegration, and Vector Error Correction Model.

Postestimation diagnoses such as – Linear Hypothesis Test, Lagrange Multiplier Test, and Jarque-Bera Test, Eigenvalue Stability Condition Test – were conducted to ascertain that our model is well-specified, its errors are normally distributed and its appropriateness and structural stability is assured using Stata Data Analysis and Statistical Software.

As expected, the OLS regression yielded spuriousness at both level and at first difference of the variable series. The unit root tests were then applied to our series data to establish the stationarity of every variable in the model. The ADF results determined that only one variable – dollarshare – was stationary at level and all our variables were stationary at order I(1) – first difference. These findings lent to further investigation in the realm of cointegration and error-correction modeling to determine if empirical evidence supported cointegration.

The end-results of the above tests were conclusive and found our overall model significant and well-specified. The geopolitical power variable proved to be the utmost determinants of the U.S. dollar reserve and global currency status that had the most direct

burdening effect on the U.S. external debt while the financial openness and trade openness variables proved to have the most positive impact as it was theoretically hypothesized.

As a matter of policy implication, there is no easy way to reduce the external debt according to the findings of our model.

Firstly, the most straightforward process would be to reduce the 10-Year U.S. Treasury Constant Maturity Rate which serves as a reference for pricing various debt securities including corporate bonds offered to U.S. debt holders. However, the empirical evidence shows that the global investors didn't barge down even when the yield on the U.S. government debt instruments was kept near zero simply because the holders of these instruments are mainly foreign central banks which are mostly looking for safety rather than return.

What can be expected, however, is that once the interest rate normalizes above the near-zero floor, the U.S. external debt is expected to rise according to the results of our study which found the treasrate positively correlated to the extdebt.

Secondly, since the inflation is negatively correlated with the external debt, can the Fed go against its mantra of inflation control and unleash the inflation rate to reduce the U.S. external debt? Andrés and Hernando (1997) pointed out that unleashing inflation would not be a good policy, because high inflation has a negative impact on growth rates which could lead to significant and permanent reductions in per capita income.

They further found that a reduction in inflation of even a single percentage point leads to an increase in per capita income of 0.5−2% and concluded that higher inflation never leads to higher levels of income in the medium and long run − on contrary, keeping inflation under control will sooner or later pay off in terms of better long-run performance and higher per capita income (Andrés & Hernando, 1997).

It is unlikely that the U.S. monetary authorities would go the route of raising inflation rate for the sake of reducing the U.S. external debt. Another difficulty is that any increase in monetary supply to steer inflation might be offset by the increase in the accumulation of U.S. dollar-denominated assets.

This is because a U.S. expansive monetary policy necessarily leads to an upsurge in global dollar-liquidity supply which creates appreciation pressures to the currencies of U.S. trade-partners, thus indenting the global competitiveness of their exports. And since most hardline accumulators will not allow their currencies to appreciate against the dollar for the sake of their export-led growth strategy, the extra-dollars in the global system will disappear in their reserves war-chests!

Thirdly, since the more financial openness, the more positive impact on the external debt and therefore the more negative is the correlation between these variables, the logical conclusion is that the United States needs to stay with its current position along the Mundell Trilemma and expand its financial openness in order to reduce the U.S. external debt.

The United States cannot do otherwise because this would mean that the U.S. would abandon being the home of the global reserve currency as financial openness is one of the utmost prerequisites for that status. Without the U.S. financial openness, there would be inadequate dollar-liquidity in the global economy that could collapse the global dollar-centered financial system.

Fourthly, given the positive impact of the trade openness on extdebt, it is more trade openness that is needed to improve the U.S. external debt position rather than protectionism. Here also the United States cannot do otherwise because – in its global duty of providing the world with sufficient and quality dollar-liquidity to fuel the global economy – the United States must keep its global trade doors open and run current account deficits to allow the rest of the world to accumulate dollar-denominated assets.

It is therefore advisable that while the United States must run trade deficits to provide dollar-liquidity to the global economy, it has to strive to promote the exports in which it has considerable competitive advantages such as services, cutting edge technology-based exports, shale oil, etc., so as to offset the current accounts deficits it has to incur against the surplus-countries accumulating of dollar-denominated assets.

Finally, by reducing its global geopolitical power and military presence, the United States can reduce its external debt since the geopower is in a direct positive relation with the extdebt. The United States can reduce or eliminate its international economic and military assistance and downsize its military apparatus domestically and on global stage. But this is not easy as it seems, simply because since the end of WWII, the United States has been at the center of a global world order centered on its global geopolitical power. To withdraw from this responsibility would create a vacuum that could precipitate the world into chaos.

More concisely, while providing the enormous and ever-increasing dollar-liquidity to the world is an honorable global public good, it is delivered to the world at the cost of inflicting to the United States burdening external debts and related interest costs as it has increasingly become the responsibility of the United States to create a globally conducive climate by championing for democracy, human rights and a free markets system, maintaining the inflation at low levels, keeping financial and trade borders large and open, insuring a domestic open and relatively inclusive political system,

maintaining a military and global geopolitical influence and superpower – and even to stand ready to be called in every major natural and political catastrophe.

All the above factors are the variables that make the U.S. dollar status stronger and draw global confidence in its ability to be the unit of exchange, the medium of exchange and the store of value and a safe haven for refuge in times of crisis.

The dollar critics who claim that the dollar is just a fiat currency that is exuberantly printed by the Fed **out of thin air** and pushed into the throats of the global markets to suck savings from the rest of the world is miserably misleading. The dollar is just a derivative whose value is **holistically** derived from the geopolitical superpower of the entire **being** of the **United States** as its underlying assets.

Can the United States extricate the dollar from being the global and reserve currency so as to avoid the price of delivering the global public good? The answer is no, simply because there is neither a country ready to take its leadership over the world affairs as a whole – nor a viable alternative to the U.S. dollar as the world global and reserve currency.

Should the United States approach Japan, or Russia, or China, or EU, or India, or Brazil, or South Africa and say: "From now on, I am exhausted; the global responsibility of stewardship of the world order is in your hands?"

Which of the above counties will come forward and say: "Thank you United States, you have done a great job almost over a century as the guardian of the world order; now I am ready, I have all the prerequisites in terms of geopolitical superpower, financial market depth and trade openness, and the benevolent willingness for the Yen, or the Ruble, or the Yuan, or the Euro, or the Rupee, or the Real, or the Rand to wear the garb of the global reserve currency?"

Which country will come forward and say: Here is my navy, it is large and sophisticated enough to crisscross the oceans the world over and protect the movements of goods and resources that flow through sea lanes across the planet?

For the time being, the answer to these questions is that no country is ready and willing. The U.S. dollar is therefore here to stay in the seeable future and it will continue to be the best currency in the world – in stable and in crisis times – as long as the United States is entrusted with the global responsibility to be in the driver seat of the global geopolitical setting. In this regards, this study concludes with the argument of Mills (2013) that there exists no viable alternative to the U.S. dollar, not today, not tomorrow, not for a very long time.

And as long as the dollar preserves its hegemonic status as the preeminent reserve currency, the United States will continue to incur

twin-deficits – and ultimately external debt – in order to provide the needed global liquidity and to be the enduring custodian of the world order that reflects its deep-seated values.

To preserve and keep this world order – premised on its global geopolitical superpower in a symbiotic global harmony – the United States has to keep reinventing itself and its decision-making organs must go beyond domestic political wrangling in order to reflect the cherished American exceptionalism in all its aspects and meet the ideals and the global leadership the Rest of the World expects from America.

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Appendices

APPENDIX A: OLS REGRESSION AT LEVEL

. regress logextdebt dollarshare treasrate finopen geopower inflarate tradeopen

Source	SS	df	MS	Number of obs = 42
Model	41.4441648	6	6.9073608	$F(6, 35) = 84.13$
Residual	2.87376658	35	.082107617	Prob > $F = 0.0000$
Total	44.3179314	41	1.08092516	$R^2 = 0.9352$
				Adj $R^2 = 0.9240$
				Root MSE = .28654

logextdebt	Coef.	Std. Err.	*t*	$P>\|t\|$	[95% Conf.	Interval]
dollarshare	.0111177	.0062206	1.79	0.083	−.0015109	.0237463
treasrate	.0219825	.0261504	0.84	0.406	−.0311056	.0750705
finopen	.0028328	.0026712	1.06	0.296	−.0025901	.0082557
geopower	−.0060837	.0052236	−1.16	0.252	−.0166883	.0045208
inflarate	−.0450765	.0214111	−2.11	0.043	−.0885433	−.0016097
tradeopen	.1603571	.0115835	13.84	0.000	.1368412	.1838729
cons	1.498132	.4983647	3.01	0.005	.4863982	2.509867

. estat dwatson

Durbin-Watson *d*-statistic (7, 42) = .61589

APPENDIX B: OLS REGRESSION AT FIRST DIFFERENCE

. regress logextdebt dollarshare d1treasrate d1inflarate d1tradeopen d1finopen d1geopower d1logextdebt

Source	SS	df	MS	Number of obs = 41
Model	7.45437973	7	1.06491139	$F(7, 33) = 1.17$
Residual	29.9454682	33	.907438431	Prob > $F = 0.3443$
Total	37.399848	40	.934996199	$R^2 = 0.1993$
				Adj $R^2 = 0.0295$
				Root MSE = .9526

logextdebt	Coef.	Std. Err.	t	$P>\|t\|$	[95% Conf.	Interval]
dollarshare	−.0001739	.018234	−0.01	0.992	−.0372712	.0369235
d1treasrate	−.216724	.163936	−1.32	0.195	−.5502542	.1168062
d1inflarate	−.0222519	.1030221	−0.22	0.830	−.231852	.1873482
d1tradeopen	.2632775	.1618739	1.63	0.113	−.0660574	.5926124
d1finopen	−.0013528	.007358	−0.18	0.855	−.0163227	.0136172
d1geopower	.0019579	.0144262	0.14	0.893	−.0273924	.0313082
d1logextdebt	−2.384711	1.008104	−2.37	0.024	-4.435713	−.3337083
cons	3.989275	1.171103	3.41	0.002	1.606648	6.371902

. estat dwatson

Durbin-Watson d-statistic (8, 41) = .2765672

APPENDIX C: JOHANSEN TESTS FOR COINTEGRATION

Stata Command		vecrank logextdebt dollarshare treasrate inflarate tradeopen finopen geopower, trend(constant) max			
Trend		Constant		# Obs.	40
Sample		1972–2011		Lags	2
		Johansen Trace Tests			
Maximum Rank	Parms	LL	Eigenvalue	Trace Statistic	5% Critical Value*
0	56	−622.35963		266.2483	124.24
1	69	−551.44204	0.97116	124.4131	94.15
2	80	−521.29419	0.77851	64.1174*	68.52
3	89	−508.04489	0.48442	37.6188	47.21
4	96	−499.7326	0.34007	20.9942	29.68
5	101	−492.69631	0.29659	6.9217	15.41
6	104	−490.38609	0.10909	2.3012	3.76
7	105	−489.23548	0.05591		
		Johansen Maximum Eigenvalue Tests			
0	56	−622.35963		141.8352	45.28
1	69	−551.44204	0.97116	60.2957	39.37
2	80	−521.29419	0.77851	26.4986*	33.46
3	89	−508.04489	0.48442	16.6246	27.07
4	96	−499.7326	0.34007	14.0726	20.97
5	101	−492.69631	0.29659	4.6204	14.07
6	104	−490.38609	0.10909	2.3012	3.76
7	105	−489.23548	0.05591		

*Critical Values (MacKinnon, Haug, and Michelis, 1996) *p*-values.

APPENDIX D: GRANGER CAUSALITY WALD TESTS (VARGRANGER STATA COMMAND)

Equation	Excluded	χ^2	df	Prob > χ^2
Causality Running from Key Determinants of US Dollar Global Reserve Status to US External Debt				
logextdebt	dollarshare	0.01824	**1**	0.893
logextdebt	treasrate	8.17470	**1**	0.004
logextdebt	inflarate	12.8750	**1**	0.000
logextdebt	tradeopen	29.8460	**1**	0.000
logextdebt	finopen	12.26300	**1**	0.000
logextdebt	geopower	14.87200	**1**	0.000
logextdebt	ALL	77.69800	**6**	0.000
Causality Running from US External Debt to Key Determinants of US Dollar Global Reserve Status				
dollarshare	logextdebt	1.3594	**1**	0.244
treasrate	logextdebt	2.4303	**1**	0.119
inflarate	logextdebt	1.8578	**1**	0.173
tradeopen	logextdebt	.32451	**1**	0.569
finopen	logextdebt	.01619	**1**	0.899
geopower	logextdebt	.11131	**1**	0.739

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