Implications of the Dollar as the World Reserve Currency

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I. Introduction

"The United States enjoys exorbitant privileges because of the status of the dollar."

- M. d'Estaing

The rise of the dollar and its status of the leading international reserve currency was sealed within the Bretton Woods arrangements which were established in the aftermath of World War II. At the beginning of the 20th century the British sterling was by far the most important international currency. The German mark and the French franc played only secondary roles, while that of the US dollar was negligible.[1] Even as late as 1940, the pound sterling maintained its position as the strongest international currency ahead of the dollar, mark and franc. The relative rise of the dollar to the pound sterling reflected long-run trends in economic fundamentals: The United States overtook the United Kingdom in the size of its economy in the year 1872 and in export volume in the year 1915. The United States, however, did not establish a central bank until 1913, which hindered the development of the financial system. In post World War I period, the United States moved into a net debtor position due to heavy lending to the European allies to conduct their war efforts - including the United Kingdom, which moved into a net debtor position. As the US dollar evolved into a major international currency, its utilization in international trade and finance widened continuously. That the pound sterling kept its dominant position as a key currency in the interwar period was primarily due to inertia in such arrangements.[2]

Today along with being the most important reserve currency worldwide the dollar remains the dominant international money serving as a vehicle for clearing international payments between banks, as a unit of account for international trade in goods and services, and as a reserve cum intervention currency for governments. There is a "euro standard" in Eastern Europe. But the euro is not yet important for transaction outside of Europe, whereas the dollar dominates transactions not involving the United States.[3]

[1] Eichengreen, (p. 388 - 389)
[2] Chinn, Frankel (p. 49 – 50)
[3] McKinnon (p. 2)

The United States remains the only nation with a virtually unlimited line of credit with the rest of the world to sustain its current account deficits.[4] What makes the position of the U.S. dollar, and the borrowing capacity of the American economy, so different?

In this paper we will ask why the US dollar holds such a special status among currencies and by which determinants does it retain this role as the leading international currency (*Chapter II*)? Secondly, in *Chapter III* we will explore which benefits and costs the United States derive from this US dollar status. We will see that Mr. d'Estaing's claim in the 1960's of 'exorbitant privileges' which the US derive from the international currency status of its dollar are not quite so beneficial. Chapter IV offers some conclusion on these insights and an brief outlook into the future.

II. Why The Dollar? The Role of US Dollar as an International Currency

In the literature mostly long-run and structural changes in the fundamentals are named to explain the international role of currencies. Short-term and volatile factors such as the exchange rate are disregarded. On the supply side an international currency must possess stability and the emitting economy must be adequately large as well as open with deep and liquid financial markets. On the demand side there is a differentiation between the private and the public sector and the respective usages in third countries. In this context Paul Krugman identifies six roles of the dollar:[5]

	Private	*Official/Public*
Medium of exchange	**Vehicle**	**Intervention**
Unit of account	**Invoice**	**Peg**
Store of value	**Banking**	**Reserve**

Table 1: Functions of money and international role of currencies

The private demand for an international currency is determined by several factors: hedging, diversification and broadening of financing possibilities as well as taking advantage of arbitrage opportunities (banking); transaction costs on currency markets (vehicle); the degree of homogeneity in internationally tradable goods, the size of the trading partner, the relative market power of exporting firms and the elasticity of the demand for its goods (invoicing);

[4] McKinnon (p. 2 - 3)
[5] Krugman (p. 263)

internal and external stability as well as the inflation volatility.[6] The demand of the public sector is determined primarily by the exchange rate regime. In the case of a fixed exchange rate regime there is a necessity to determine an anchor currency. According to the theory of optimal currency areas this should be a stable currency of the economy which is most integrated with the respective country in trade and finance. This way the risk of asymmetric shocks and business cycles can be kept to a minimum.[7] The choice of the anchor currency then determines the choice of the reserve currency, since the primary goal of acquiring currency reserves is to stabilize the exchange rate around a fixed rate.

Deep rooted changes are required so that the supply of another currency is demanded and used for its international functions. On the supply side changes in the relative internal stability and the relative financial market liquidity and depth might trigger such a change. For the private demand side changes in the anchor currency‘s trade and financing structures could bring about a shift. The public sector will reconsider its demand for the anchor currency when the anchor currency’s economy shrinks in importance and the risk of asymmetric shocks and business cycles increase. Alternatives are the choice of an alternative anchor currency or the transition to a flexible exchange rate regime.[8] There are several determinants of an international currency established by the literature, which we will discuss in detail in the following.

Grand domestic product and trade volume

The currency of an economy that has a large relative size in GDP, trade and finance markets has an edge. The United States sits firm ahead of most other nations in these categories only rivaled by the European Monetary Union. Equally important to the relative gross domestic product is the country’s trading volume as another indication of their relative importance in the context of the world economy.[9]

Liquidity and depth of financial markets

Crucial for attaining the status of an international currency, is the openness, efficiency and liberalization of capital and money markets in the issuing country as well as the depth, development and size of its financial system. The large and developed financial markets in the

[6] Remsperger, Winkler (p. 23 - 24)
[7] Remsperger, Winkler (p. 22 - 23)
[8] Remsperger, Winkler (p. 22 - 25)
[9] Chinn, Frankel (p. 56 – 57)

United States as well as in England have given the dollar and pound a stark advantage over the euro and its predecessor the German mark, since the financial market place in Frankfurt remains a great deal behind those in New York and London in depth and liquidity.[10]

Balance of Payments

In connection with the depth and liquidity of financial markets, the aspect the balance payment of an economy is relevant. The United States has taken a position in which its net liabilities to rest of the world are and remain high. This provision of liquidity requires a balance of a continuous payment deficit. In the case of the euro zone there is a net surplus position, which does not necessarily guarantee the necessary liquidity for an international currency. Due to this net surplus position the euro zone will not rival the dollar in terms of liquidity unless this position is overturned. The current account deficit of the United States is and remains the main source of international liquidity.[11]

Invoicing and trade payments

The most important role of money is the unit of account. It provides a point of reference for economic activity. Once established, the united of account becomes difficult to alter. For example, with the introduction of the euro as a currency, the unit of account was still the old currency for most old countries even until this day. The example of the pound shows that its decline as an international currency was eminent in the 1930's but it still served as a unit of account until the 1960's. This shows that the dollar is by far the most important invoicing currency to date and is not close to being challenged by the euro in the foreseeable future.[12]

Vehicle currency

Transactions costs of trading lead agents to make and receive payments in a currency which has a high trade volume and is widely acceptable to all countries. It is cheaper for payments between agents in small countries with thinly traded currencies to be made indirectly using US dollars than to use direct bilateral trade in their own currency markets. While there are clear welfare benefits to a vehicle currency in avoiding transactions costs of multiple currency trade, it introduces an asymmetry into the international monetary system by giving a central role to one currency.[13]

[10] Chinn, Frankel (p. 57)
[11] Ponsot (p. 27)
[12] Ponsot (p. 27 – 28)
[13] Devereux, Shi (p. 2)

Valuation of raw materials

A major reason for the US dollar's supremacy as an international currency is the fact that the vast majority of recourses and raw materials are denominated in US dollars.[14]

Confidence in the value and stability

A necessary requirement for an international currency is the relative stability of its value, as it is also used as a form in which to hold assets. Therein there must be trust that the value of the currency will not fluctuate excessively and show considerable stability. In particular it is crucial that there is sufficient confidence that its value will not be inflated away in the future. Japan, Germany and Switzerland did better than the US for most of the recent past. This reputation was the main reason for their consideration of becoming international currencies. The lowering of the inflation rate in the 1990s helped blow away the concerns about the stability of the dollar value. A more important problem for the dollar is the exorbitantly growing US debt. The continuing US current account deficit is will continue to be a downward pressure on the dollar. This could harm the long-run attractiveness of the US dollar as an international currency.[15]

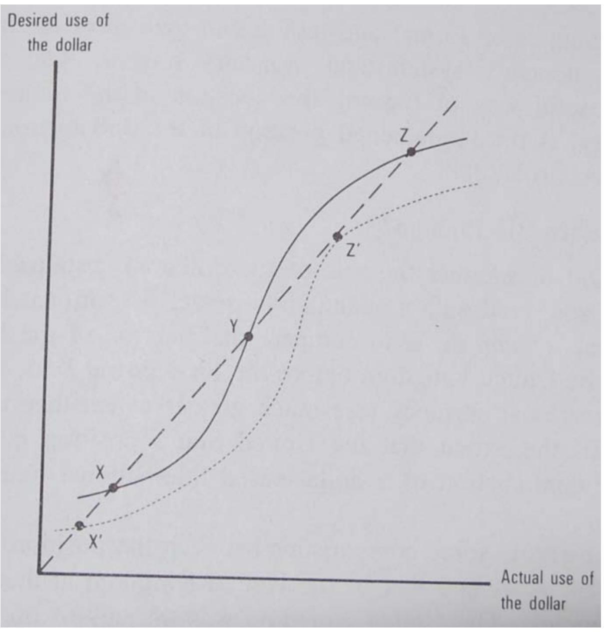
Network externalities

An international currency derives its value because others are using it, which is a typical case of network externalities. In this sense, the intrinsic characteristics of a currency are of less importance than the path-dependent historical equilibrium. There is a strong inertia to using the existing leading international currency. Chinn and Frankel make an analogy with language. "If one sat down to design an ideal language, it would not be English. Nobody would claim that the English language is particularly well-suited to be the world's lingua franca by virtue of its intrinsic beauty, simplicity or utility. It is neither as elegant and euphonious as French, for example, nor as simple and logical in spelling and grammar as Spanish or Italian. Yet it is certainly the language in which citizens of different countries most often converse and do business, and increasingly so. One chooses to use a lingua franca, as one chooses a currency, in the belief that it is the one that others are most likely to use." [16]

[14] Ponsot (p. 29)
[15] Chinn, Frankel (p. 58)
[16] Chinn, Frankel (p. 58)

On the private level actors are inclined to use a certain currency in transactions if enough others use it as well. If currency that is internationally used to invoice trade, there is an interest to employ it to invoice financial transactions also and then it is more likely to be a vehicle currency on the money markets. Having earned the status of a vehicle currency, it is more likely to be used as a currency to which smaller nations peg.[17]

Thus international currency use is not linear in the determinants. Rather, there may be a tipping phenomenon. Krugman illustrated this phenomenon in the simple graph shown on the right. The *desired* use of the dollar is an increasing function that goes through points X, Y and Z. The position of this function depends on fundamentals such as relative size of the economy, the openness and efficiency of the capital markets (as well as other possible factors). Given these factors there are several possible exilibria (X, Y, Z). Say Z is the current state of the United States. A change in the fundamentals would lead to a shift in the demand function to the dotted function. There would be an adjustment towards Z'. Now, however, a further shift in the fundamentals could lead to a dramatic decline in the desired dollar use (towards X').[18]



The implication is that small changes in the determinants will not necessarily produce corresponding changes in the reserve currency numbers, at least not in the short run. At a minimum, changes will show up only with a long lag. As noted, this was the case for the pound sterling as well, as inertial effects maintained its status far beyond the fundamentals would suggest. In the present context, the inertial effects speak against any change away from the status quo. The tipping point is not close to being reached even if the euro matches the US dollar in most of the outlined determinants. The US dollar greatly overtook the pound sterling in nearly all determinants before finally its role as an international currency was manifested

[17] Gilman
[18] Krugman (p. 274 – 275)

and the inertial effects were overcome.[19] The euro zone will not grow this dominant in terms of GDP, trading volume and financial market liquidity and homogeneity relative to the United States in the near future. Thus, from the point of view of international currency determinants it is safe to say that the US dollar will continue to sit tight in its seat as the leading international currency.

III. Benefits and Costs of the International Role of the Dollar to United States

In this chapter, the most important findings related to the status of the US dollar as an international currency are presented. The empirical study presented finds that the United States derives a relatively modest net financial benefit from being the world's primary reserve and international currency.

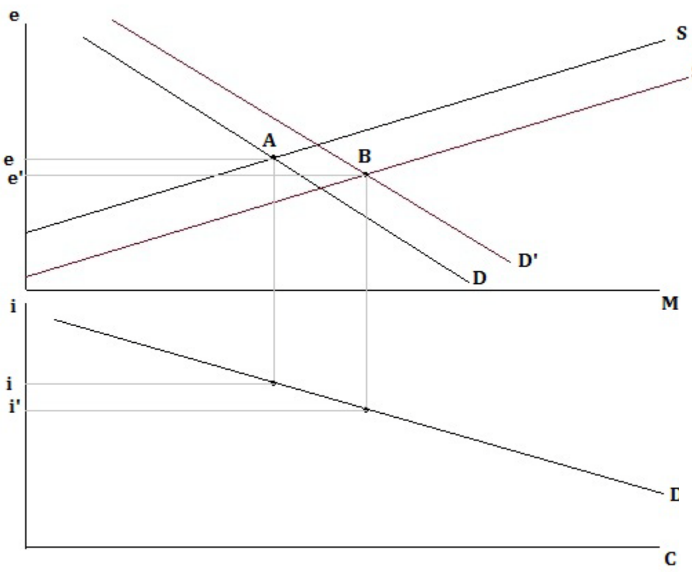
Deriving a theoretical model

In the following we will recall the determinants of an international currency. From these relationships we derive a simple graphical model which highlights some of the benefits for an economy with a currency with reserve currency status. Our model exhibits the relationship between the foreign exchange market as well the capital market. The supply of US dollars on the foreign exchange market has a positive upward slop – with an increasing exchange rate (dollars become more expensive relative to other currencies) more dollars will be supplied to the market. The US dollar supply curve can be shifted by a change in liquidity – for instance increasing the amount of US Treasuries (or other dollar assets) by the Federal Reserve. For the purpose of this model, *liquidity* remains the only variable of the US dollar supply curve. The US dollar asset demand curve has a negative downward slope: When the exchange rate rises, the demand for US dollar assets declines. We now introduce the integral part of this model. Liquidity and network effects increase the international demand of US dollars by private and public actors, due to its international currency status. The variable initiating a shift in the US dollar demand curve is therefore liquidity, which would not be the case for currency without international currency status. If the variable *liquidity* is altered, the US supply as well

[19] Chinn, Frankel (p. 58)

as the US demand curve are shifted. The graph below exhibits the shifts of both curves when liquidity is increased. The equilibrium shifts from point A to point B. In point B more US dollars are brought out. The peculiarity about this adjustment is that it does not initiate a significant decline in the exchange rate.

The increase in US dollar circulation must be compensated for by capital imports if we assume that the US dollars were acquired from international actors. The increased supply of capital in the United States will therefore lead to a decline in overall interest rates as can be seen in the adjustment from *i* to *i'*. The United States therefore enjoys higher seigniorage income by providing more Treasury Bonds as well as lower domestic interest rates due to the increase in capital imports to pay for them.



Graph1:

Relationship between (foreign exchange) money markets and capital markets with an increase in liquidity.

We will now summarize the findings of an empirical McKinsey study, which estimates the various benefits and costs for the United States that arise from the US dollar having an international currency status. The McKinsey study differentiates between years of normal economic activity and years of economic crisis.

Seigniorage income

For a normal year the McKinsey study estimates the net benefit to United States from US dollar's reserve currency status to be about $40 billion to $70 billion or 0.3 to 0.5 percent of US grand domestic product. As we have seen in the graphical model, the first type of benefit is from seigniorage income. The US Federal Reserve's revenue from the US dollar's status of an international currency is an estimated $10 billion. This seigniorage income is the result of the United States receiving a de facto loan on the currency it issues and are held by foreigners without paying any interest. These foreign holdings exist because the US dollar is a medium of exchange abroad. The McKinsey study concludes that an estimated $400 billion (about half of the physical US money) are held by foreign actors.[20]

Lower interest rates

The second type of benefit is the cost of capital advantage for actors within the United States due to the increased foreign demand for dollar assets. The McKinsey study isolates the portion of this effect that is due to the reserve currency status of the United States by calculating the effects on capital costs to foreign government purchases of US government securities. The US cost of capital for United States as estimated by the McKinsey study is lowered by 50 to 60 basis points as a result of these purchases. Applying this estimated cost of capital advantage to borrowing by all levels of US government, households, and companies it leads to yearly savings of $130 billion. However, with lower interest rates there is a decrease in the amount of interest income earned on deposits by households and companies. This amounts to a negative income effect that is an estimated $40 billion. This leads to an overall net effect of $90 billion in benefits from lower cost of capital effect of reserve currency status.[21]

In addition to these two benefits, there are also costs associated with the inflows of foreign capital that are associated with being a reserve currency. As seen in the theoretical discussion the exchange rate of the US dollar is higher than it would be without the reserve currency status due to the increased international demand for US dollar asset, the costs and benefits of which will be discussed in detail in the following.

Costs and benefits of overvaluation of the dollar

It is widely believed that the dollar is overvalued.[22] It is difficult to be precise about what proportion of this overvaluation is due to the reserve currency status of the dollar. According to the statistical estimates in an EPI Briefing Paper by Robert Blecker, the rise in the dollar exchange rate up to 2002 caused the following negative effects on the US economy:

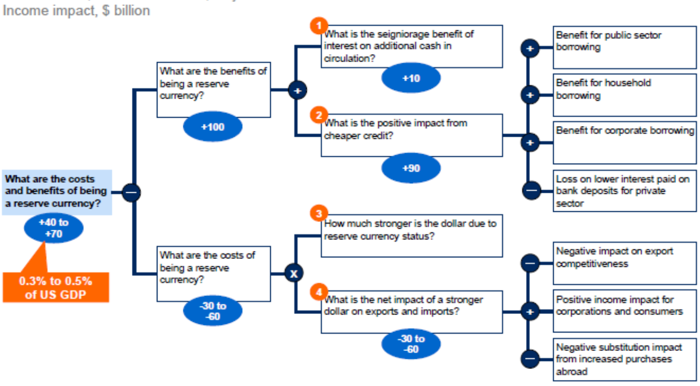
[20] McKinsey (p. 19)
[21] McKinsey (p. 20)
[22] The Peterson Institute calculates that the dollar was overvalued by 7.4 percent in June 2008 (REUTERS 2009)

- A loss of three-quarters of a million U.S. manufacturing jobs;
- A decline in profits on U.S. manufacturing operations of about $100 billion per year;
- A reduction in capital expenditures at U.S. manufacturing plants of over $40 billion at an annual rate.

Furthermore, he identifies the strong dollar exchange rate as one of the causes of the large US trade deficit, along with depressed economic conditions in foreign markets and a long-term shift of manufacturing production to other nations.[23]

In a normal year, the dollar's status as a global reserve currency provides a modest net benefit to the United States

United States, normal conditions, July 2007–June 2008
Income impact, $ billion



Note: The impact is calculated relative to a scenario in which the dollar is not held as a reserve currency at all (i.e., a zero baseline).

SOURCE: McKinsey Global Institute analysis

The McKinsey study estimates that on the basis of an average dollar overvaluation of 5 to 10 percent the overall income effect on trade exposed sectors would be $30 billion to $60 billion in 2007/8 – a sensitivity of about $30 billion for every 5 percent overvaluation. There are several consequences that affect US competitiveness. Firstly, the McKinsey study estimates that US exports drop by $45 billion to $85 billion since they become less competitive abroad which supports Robert Blecker's findings.[24] Additionally and also in line with Blecker, an increase in the exchange rate will give an advantage for imported goods and services over to those produced within the United States. The following increase in the US demand for imports leads about a negative income effect of about $10 billion to $20 billion. Another effect as mentioned above is that the higher exchange rate benefits consumers due to the lower prices for imports for foreign goods and services. The estimated consumer benefit amounts to $25 billion to $45 billion annually. This amounts to an overall yearly net financial cost of $30 billion to $60 billion due to an augmented exchange rate. It should be noted that these estimates are based on the assumption that the recourses are employed efficiently in the economy. If this is not the case, the net financial cost might be lower.[25] The United States also enjoys significant privileges related to the geopolitical and strategic benefits from being the center of the global economic and financial system and the policy autonomy that status

[23] Robert Blecker
[24] There is a negative correlation between the dollar exchange rate and US exports. (McKinsey p. 22)
[25] McKinsey (p. 10)

confers. In particular, the American federal government enjoys the privilege of being able to bear larger fiscal deficits and the Federal Reserve could conduct a looser monetary policy because of the weakened market disciplines incurred on the United States as an issuer of the international reserve currency.[26]

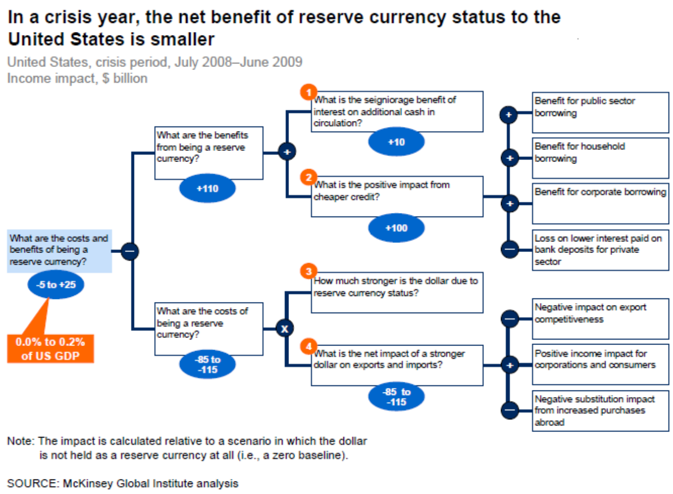
This is a clear advantage of the reserve currency issuer. But the large accumulation in recent years of foreign-held US debt has created a potentially significant responsibility that could increasingly limit US policy autonomy. An argument could be made that the reserve currency status is increasingly creating larger costs to the US economy by forcing the United States to run significant current account deficits and accumulate debt. This is similar to Triffin's Dilemma, first identified in the 1960s. Triffin's Dilemma is the idea that because the reserve currency issuer must provide liquidity to the global system by issuing debt denominated in its currency, at some point the pressure to provide additional debt will endanger the sustainability of the reserve currency issuer. This could possibly place the system under great strain and cause it to fall apart.[27]

Distributional effect

Reserve currency status brings about some severe distributional effects. Internationally, the US benefits at the expense of the countries holding and acquiring US dollar assets. The financial advantages from US dollar reserve currency status amount to an overall annual net benefit of $40 billion to $70 billion. This constitutes a financial transfer from the rest of the world to the United States in exchange for the American provision of a liquid reserve currency. For instance, countries that have large US dollar reserves, in particular China, Japan, Taiwan and South Korea, earn a lower rate of return on US dollar assets and other investments. The reserve currency status also has remarkable distributional effects within the American economy. The American economy taken as a whole benefits from the reserve currency status of the US dollar. The costs and benefits, however, are not distributed uniformly across all affected sectors. As has been mentioned above especially exporters in the context to Blecker's findings, industries that compete with imported goods and services, and savers carry the bulk of the cost while consumers and borrowers largely reap the fruits. In fact, the federal and state governments are the biggest single beneficiary of the reserve

[26] McKinsey p. 27
[27] McKinsey p. 27

currency status in the United States, benefiting from seigniorage revenue as well as lower borrowing costs on public debt.[28] There is a redistribution of resources and welfare from US companies that are exporters and those that compete with importers, to private and public sector borrowers. In this sense, the reserve currency status of the United States has reinforced the imbalances that have developed in its economy.[29] Furthermore, it becomes apparent that there are also transfers among households. Those households with a higher debt than interest earning assets will obtain greater benefit from the reserve currency status of the United States. On the other hand those who have more assets earning interest than debt will face a cost. With regard to age younger generations benefit stronger while older generations tend to incur a cost. Interestingly the benefits shift disproportionately to those households with above average and high incomes due to the higher tendency to take on substantial bank loans.[30]



Cost and benefit in crisis years

What has been stated thus far about costs and benefits relates to normal economic conditions. We will now consider how the distribution of costs and benefits changes in an economic downturn. The net benefit as a result of reserve currency status is $40 billion to $70 billion in a normal year (0.3 to 0.5 percent of GDP).These figures reduce in a bad economic conditions to the range of a net cost of $5 billion to a net benefit of $25 billion (0 to 0.2 percent of GDP) annually[31]. This decline in the size of the net benefit occurs due to substantial inflows of foreign capital into the American economy during a crisis year. There is a subsequent rise in foreign purchases of US Treasuries which significantly increases the capital cost advantage in early

[28] McKinsey p. 22- 23
[29] McKinsey p. 23- 24
[30] McKinsey p. 23 -24
[31] McKinsey p. 24 - 25

2009. However, this larger benefit was outdone by a sharp appreciation of the dollar, which had negative consequences on the competitiveness for the exporting industry as well as companies in competition with imported goods and services. As can be seen in the US Dollar Index for the past decade on the left[32], the dollar appreciated considerably during the financial crisis, which had a highly negative effect on company's competitive position. The incurred cost for trade increased from $30 billion to $60 billion in a normal year to between $85 billion and $115 billion during the financial crisis in 2009 (a negative impact on GDP of 0.5%).[33] This exhibits some of the problems that a reserve currency issuer faces in global economic downturns. The overall benefit of reserve currency status diminishes to negligible levels. The crisis conditions even reinforced the distributional effects of that status in a way that increase the outlined inherent imbalances in the American economy.[34]

IV. Conclusions and Implications for the Future

This paper has explored some of the determinants for international currencies offered in the literature, the most important of which are relative economic size of the issuing country, liquidity and depth of its financial markets, confidence in the stability, network effects as well as inertia in the established global system. The paper then illustrates theoretically and empirically how the United States benefits from the status of its currency. The net financial benefit is shown by the McKinsey study to be relatively low in normal economic conditions and even negligible in crisis years. Looking at the future, the negative effect of the augmented exchange rate associated with reserve currency status may grow in size and importance in the near future. There is growing belief that there should be a greater emphasis on export-driven economic growth given the high level of unemployment, the current imbalances in between sectors and the projection that private consumption remains weak these pressures for export-driven economic growth will be persistent. Ken Rogoff commented on the US government's strides to lower unemployment by saying: "I don't think anything they can come up with is as powerful as the dollar declining (…) It's a good short-term boost. Every country's manufacturing sector loves it when the currency has a moderate depreciation."[35] In this

[32] Marsh
[33] McKinsey p. 25
[34] McKinsey p. 23
[35] Marsh

context there are a few obstacles undermining US dollar depreciation. Naturally, dollar depreciation does not bring about increased competitiveness against economies which fix or manage their exchange rates against the dollar and so counterbalance any dollar movement. In the recent past, Asian central banks have been plied to intervene in currency markets to offset the competitive disadvantage for their large export industries and connected fears of deflation caused by an appreciation of their own currency. An indication of this is that global official reserves have doubled over the past five years from $3.4 trillion to $6.8 trillion.[36] The amount of currency reserves that are being held by countries like China, Taiwan, Japan and South Korea clearly exceed what would be efficient by any theoretical standard. The path-dependency of these countries pegging to the US dollar incurrs great costs to them. Given the recent developments and the diminishing benefits of the reserve currency status of the US dollar, it is not clear that even the United States has a vested interest to retain its currency status. Yes, the United States will continue to have an interest to have continued access to cheaper capital and the freedom to conduct continued loose monetary and fiscal policy. However, it is in the realm of possibility that the benefits of reserve currency status may be readily outdone by growing costs and further limitations such as the loss of autonomy on economic, especially monetary policy. A scenario which Triffin predicted may become reality. If the United States indeed pursues a policy of export-driven economic growth, it would close the existing trade deficit. The US dollar in its role as the leading international reserve currency according to Triffin, however, would inquire expanding trade deficits to satisfy the increasing US dollar demand. The way the global system is currently built around the US dollar, there seems no immediate cause for concern about its stability in the next decade (and beyond) and mostly likely the status quo will prevail. However, discussions about establishing an alternative single international currency based on currency baskets[37] such as suggested by China and Russia are becoming more commonplace and will increase if costs continue to grow for all parties involved. The euro as an alternative does not seem plausible because it would face the same limitations as the US dollar does now playing the dual role of a national and an international currency though it does play an increasing role in the euro-zone periphery. The 'exorbitant privileges' which Mr. Estaing to the United States by virtue of being the issuer of the leading international currency to the least do not look all that exorbitant any longer. The status quo with all likelihood will be retained unless the United States and other major actors incur 'exorbitant costs' from the current order of things.

[36] McKinnon (p. 3)/ McKinsey (p. 26)

[37] Special Drawing Rights (SDRs) issued by the IMF are being proposed as an alternative reserve asset

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VI. Declaration of Independant Work – Eigenständigkeitserklärung

Ich versichere hiermit, dass ich die vorliegende Seminararbeit mit dem Thema:

"Implications of the Dollar as the World Reserve Currency"

selbstständig verfasst und keine anderen als die angegebenen Hilfsmittel benutzt habe. Die Stellen, die anderen Werken dem Wortlaut oder dem Sinn nach entnommen wurden, habe ich in jedem einzelnen Fall durch die Angabe der Quelle, auch der benutzten Sekundärliteratur, als Entlehnung kenntlich gemacht.

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