THE DOMINANCE OF THE DOLLAR AND ITS SUSTAINABILITY IN THE INTERNATIONAL MONETARY SYSTEM

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THE DOMINANCE OF THE DOLLAR AND ITS SUSTAINABILITY IN THE INTERNATIONAL MONETARY SYSTEM

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ABSTRACT

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The aim of this thesis is to analyze and evaluate the dominance of the dollar and its sustainability in the international monetary system in the light of recent literature and relevant statistical data. Considering the determinants of an international currency, this thesis focuses on the linkages of the dominance of the dollar with the challenge of the euro as an alternative international currency, the current account deficit of the U.S. and foreign exchange reserve accumulation and reserve diversification decision of foreign central banks. The analysis on these determinants indicates that the U.S. dollar is facing many challenges and may face further challenges in sustaining its dominance as an international currency. Given the significance of the U.S. economy and dominance of the dollar as an international currency, the findings of this study indicate that although the euro has not much potential to surpass the dollar as an international currency in the short-term, it is more likely for the international monetary system to witness the existence of multiple international currencies and decline in the degree of the dominance of the dollar in the 21st century.

Keywords: International Currency, The Dollar, The Euro, International Monetary System

ÖZ

DOLARIN ULUSLARARASI PARA SİSTEMİNDEKİ EGEMENLİĞİ
VE BU EGEMENLİĞİN SÜRDÜRÜLEBİLİRLİĞİ

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Bu tezin amacı doların uluslararası para sistemindeki egemenliği ve bu egemenliğin sürdürülebilirliğini son dönem iktisat yazını ve uygun istatistiksel veriler ışığında incelemek ve değerlendirmektir. Uluslararası paranın belirleyicilerini dikkate alan bu tez doların dünya ekonomisindeki hakimiyetinin, Amerika Birleşik Devletleri'nin cari işlemler açığı, avronun alternatif uluslararası para olarak ortaya çıkması ve yabancı merkez bankalarının döviz rezervi biriktirmesi ve bu rezervleri çeşitlendirme kararları ile olan bağlantılarına odaklanmaktadır. Bu belirleyicilerin incelenmesi Amerikan dolarının egemen uluslararası para olma özelliğini sürdürmede birçok sorunla karşılaştığını ve daha fazla zorluklarla karşılaşacağını işaret etmektedir. Amerikan ekonomisinin dünya ekonomisindeki yeri ve doların egemen para olma özelliği dikkate alındığında, bu çalışmanın bulguları avronun egemen para olarak doları kısa vadede geride bırakma potansiyelinin az olduğunu ve uluslararası para sisteminin 21. yüzyılda birden fazla uluslararası paranın etkinliğini sürdürmesine ve doların hakimiyet derecesinin azalmasına tanıklık etmesinin daha muhtemel bir durum olarak ortaya çıktığını göstermektedir.

Anahtar Kelimeler: Uluslararası Para, Dolar, Avro, Uluslararası Para Sistemi

To My Family

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BIS	Bank for International Settlements
CA	Current Account
CAB	Current Account Balance
CAEMC	Central African Economic and Monetary Community
ECB	European Central Bank
ECU	European Currency Unit
EMS	European Monetary System
EMU	Economic and Monetary Union
ERM	Exchange Rate Mechanism
EU	European Union
G7	Group of Seven
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
IFS	International Financial Statistics
IMF	International Monetary Fund
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
PPP	Purchasing Power Parity
SDR	Special Drawing Rights
UK	United Kingdom
US	United States
USA	United States of America
WAEMU	West African Economic and Monetary Union
WB	World Bank
WDI	World Development Indicators
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION

The dollar has been the dominant international currency in the international financial system for most of the twentieth century. Although the dollar surpassed the pound sterling as an international currency in the inter-war period, the dominance of the dollar in the international markets significantly increased after the World War II. In this period, the U.S. had low inflation rates and the value of the dollar was stable whereas the U.K. experienced high inflation and large fluctuations in the value of the pound sterling. The openness of the U.S. financial markets was relatively higher than those of the U.K. and the share of the U.S. in world exports were rising. Furthermore, the OPEC decision for dollar pricing of oil instead of pound sterling in mid-1970s was another reason for increasing dominance of the dollar as an international currency (Salvatore, 2002).

The rise and fall of the international currencies mainly depend on the changes in the main determinants and uses of an international currency. The size and international linkages of domestic real economy, the features of domestic financial markets, stability and confidence in the value of the currency, transaction costs and the inertia of currency are emphasized as main determinants of the international role of a currency in the literature. The U.S. has been the leading economy of the world in most of the 20^{th} century. The world trade was dominated by the U.S. and New York was the financial center of the world economy especially after World War II. Macroeconomic stability of the U.S. and stability and confidence in the value of the dollar which was backed by gold in the Bretton Woods System reinforced the dominance of the dollar in the international monetary system.

In addition to determinants, the functions of an international currency contribute to its degree of dominance in the world economy. An international currency should

function as a medium of exchange, unit of account and store of value in the international monetary system. An international currency is used for denomination of trade and financial relations as well as anchor and reserve currency for exchange rate arrangements. Trade invoicing, investment and anchor currency uses of the dollar were the main drivers of the dominance of the dollar in the Bretton Woods System. Dollar pricing of traded goods led to the use of the dollar as a payment currency. Investment and anchor currency uses of the dollar reinforced the dollar denomination of financial instruments and foreign exchange reserves. Countries with dollar pegged exchange rate regimes accumulated dollar denominated reserves in order to maintain the determined level of exchange rates through the market interventions.

The increasing political and economic dominance of the U.S. in the world led to the dominance of the dollar in the international monetary system during the Bretton Woods era. The breakdown of Bretton Woods System ended the period of gold backed dollar and dollar pegged exchange rate regimes. Many countries adapted more flexible exchange rate regimes. The value of the dollar became unstable due to the breakdown of its link with gold and the outbreak of inflationary environment in the U.S. in late 1970s. Thus, the dominance of the dollar had some erosion due to its instability after the Bretton Woods System. Although, the Deutsche Mark, Japanese Yen and pound sterling were used as alternative international currencies, none of them was able to challenge the dominance of the dollar.

The dominance of the dollar was mainly derived from the stability of the value of the currency, reserve currency use of the dollar and absence of a significant alternative international currency. However, recently, the dollar is likely to lose those features that favor it as a dominant international currency. The introduction and internationalization of the euro, the current account deficit problem of the U.S. economy and possible foreign exchange reserve diversification of foreign central banks are threatening the dominant role of the dollar in the international monetary system. The rise of the euro as an alternative currency is likely to reduce the demand

for dollar as an international currency and erode the dominance of the dollar in the international markets. The current account deficit of the U.S. is a risk for stability of the value of the dollar and closing down of this deficit is likely to lead to a depreciation of the dollar, which may stimulate flight away from the dollar in the international markets and loss of its dominance. Finally, the foreign exchange reserve accumulation and diversification decision of central banks may significantly reduce the international role of the dollar in the world economy. The adoption of floating exchange rate regimes and breakdown of the linkage of the dollar with other currencies may decrease the need for foreign exchange reserves. Thus, the central banks are likely to accumulate fewer reserves and diversify their existing reserves away from the dollar due to risks associated with the value of the dollar.

Since the U.S. is the leading economy of the world, the conditions of the U.S. economy and the changes in the dollar's use in the world markets may have significant impacts on other economies of the world. The risk of deepening recession in the U.S. economy and weakness of the dollar in the foreign exchange markets are highly debated issues in academic environment recently. Questions such as "Will there be a dollar crisis?" and "What are the factors and policies that affect the dollar's dominant role in the world economy?" are looking for answers in the recent literature.

The aim of this thesis is to analyze and evaluate the dominance of the dollar in the international monetary system. By examining the factors that will affect the role of the dollar as a dominant currency in the international monetary system, it assesses the sustainability of the dominance of the dollar in the world economy. Therefore, this study specifically focuses on the challenge of the euro as an alternative international currency, the current account deficit of the U.S. and reserve accumulation and diversification decision of foreign central banks. In this context, this study makes a comprehensive review of literature and analyzes the relevant statistical data.

Starting with the historical background, Chapter 2 focuses on the past and current conditions of the international monetary system. Historical patterns may provide information about stability of the international monetary system and the sustainability of the dominance of the dollar in the system. In this context, Chapter 2 investigates the historical evolution of the international monetary system and analyzes the rise of dollar as an international currency. Moreover, it seeks to explain the reasons of the dominance of the dollar in the international monetary system.

The recent trends in the international uses of currencies may reveal some facts about the degree of dominance of the dollar in the international monetary system. Chapter 3 aims to find out the determinants, functions and uses of an international currency which are defined by the economic literature. More importantly, Chapter 3 compares the dollar and other major currencies, specifically the euro, as an international currency to determine the degree of dominance of the dollar and challenge of the euro in the international markets. In this context, Chapter 3 firstly compares the dollar and the euro on the basis of major determinants of an international currency and then it focuses on the official and private uses of both currencies in the light of available statistical data.

The widening current account deficit of the U.S. is widely discussed as a major determinant of the value of the dollar in the international markets. The sustainability of the U.S. current account deficit constitutes risks for stability and thus dominance of the dollar as an international currency. Chapter 4 seeks to exhibit the link between the dollar, the U.S. economy and world economy by discussing the sustainability of the U.S. current account deficit. The current account deficit of the U.S. and its adjustment process are the subject of a vast literature in economics. Examining various arguments on the sustainability of the current account deficit of the U.S., Chapter 4 discusses alternative views on the current account adjustment of the U.S. and the depreciation of the dollar.

Anchor currency use of the dollar led to accumulation of dollar denominated reserves by foreign central banks. The reserve accumulation of countries contributes much to the international use of the dollar. The greater exchange rate flexibility of the post-Bretton Woods era led to expectations that the central banks would need to accumulate less reserves. Furthermore, the central banks are likely to diversify their existing reserves away from the dollar. The reserve accumulation and diversification problem of foreign central banks are likely to affect the use and dominance of the dollar in the international monetary system. Focusing motivations of reserve accumulation, Chapter 5, firstly aims to explain the reasons for reserve accumulation of countries. Secondly, Chapter 5 seeks to point out the level of reserves for countries by the use of reserve adequacy criteria and available statistical data. Finally, Chapter 5 gives data on currency composition of foreign exchange reserves of central banks and specifically discusses the trends in use of the dollar and other alternative currencies as a reserve currency.

Finally, the last chapter gives results and the concluding remarks of the study. The policy implications of the study are also discussed in this part.

CHAPTER 2

THE ESTABLISHMENT OF THE DOLLAR AS AN INTERNATIONAL CURRENCY

Countries applied different economic policies to adjust their economies to the changing economic environments throughout the history. Having crucial domestic and international effects, monetary policies and exchange rate regimes of countries had different forms over the years. The monetary transactions between countries led to emergence of a monetary system at international level. The world witnessed different international monetary systems with variety of characteristics.

An 'adequately functioning international monetary system' is essential for smooth conduct of international economic transactions (Eichengreen, 1996, p.3). Jereissati (1999) emphasizes that international monetary system is crucial for international economic transactions and establishment of necessary conditions for effectiveness in trade, which leads to an efficient use of resources and variety of consumption choices. Moreover, a well-working international monetary system should have an efficient balance of payments adjustment mechanism to eliminate deficits and surpluses in a short period of time (Jereissati, 1999, p.1). This chapter aims to find out the features and adjustment mechanisms of different international monetary systems which were experienced by the world economy. Before the World War I, the world experienced the Gold Standard which naturally led to fixed exchange rates and inflexible monetary policies in the world economy. The inter-war period witnessed hyperinflation, the Great Depression, free or managed floating exchange rate regimes and finally large decrease in world trade and output. Following the World War II, the Bretton Woods System of fixed exchange rates existed until 1970s. The floating and managed floating exchange rate regimes with monetary policy autonomy have been dominant for 30 years.

Eichengreen (1996) suggests that the development of the international monetary system will not be independent of its past. The arrangements in the system will be reflecting the effects of previous events. Since the current international monetary system and the dominance of the dollar in the system are directly related, it will be worthwhile to have a look at the evolution of the international monetary system and the rise of the dollar as an international currency. The first three parts of this chapter provides a historical background and analyzes the development of the role of the dollar in the international monetary system. The last part of this chapter aims to explain the characteristics of the current international monetary system. By identifying the features of the current international monetary system, this part points out the recent conditions of the world economic system and exhibits the link between the dominance of the dollar and the working of the current system.

2.1 The Gold Standard

The international Gold Standard existed for a relatively short period of time in the world economy, between 1880 and 1914. In this period, Great Britain was the leader of the world both politically and economically. The sterling was the most widely used currency in international markets and London was the dominant financial center of the world. Trade policies and level of industrialization in Britain contributed to the dominant role of the sterling in the international markets. The monetary policies of Britain were followed by the other countries due to existing trade relations and financial power of the country. Therefore, adoption of Gold Standard by Britain started the period of international Gold Standard in the second half of the 19th century (Eichengreen, 1996, p.21).

In this system, countries declared a specific par value for the gold. The currency of each country was backed by gold, which was a widely accepted international asset. The national currencies and gold were easily converted to each other at a given level. Since all currencies are linked to the gold, they were automatically linked to each

other and exchange rates were necessarily fixed. For example, the dollar-sterling exchange rate was 4.8665635 U.S. dollars per pound sterling (Officer, 2001). Mundell (1997) indicates that "when the international monetary system was linked to gold, the latter managed the interdependence of the currency system, established an anchor for fixed exchange rates ..." The exchange rate stability contributed to growth of international trade and investment.

The Gold Standard worked under some rules called "Rules of the Game" which are summarized as: (1) There is no restriction on movement of gold across countries. (2) Changes in money supply due to gold flows are not sterilized, namely money supply is directly linked to gold reserves of the country. (3) Prices and wages are assumed to be flexible (Appleyard et al, 2006, p.577).

The price-specie-flow mechanism[1] of David Hume was the external adjustment mechanism under the Gold Standard. According to that mechanism, if a country has a balance of payments deficit, the gold will move out from the country leading to a decrease in money supply. The tightening of the money supply will lower the inflation which makes the exports of the country more competitive and erasing the deficit by higher exports and lower imports. Moreover, decreasing money supply will cause interest rates to rise and this attracts capital inflow into the economy affecting capital account. On the other hand, rising interest rates will decrease investment, income and thus imports reducing the current account deficit. The reverse of the mechanism will apply for the surplus country.

This theoretical mechanism had some limitations. According to Officer (2001), Hume's mechanism did not work since the rules of the game are not followed by countries. Especially monetary policy is not determined only by gold flows where wage-price inflexibility prevented the mechanism. The wages were not flexible

[1] See (Appleyard et al, 2006, pp. 21-23) for details.

downward and price adjustments were not achieved in deficit countries. Additionally, Eichengreen (1996) indicates the fact that Hume assumed that only gold was circulating in the world economy, which was not the case.

Silver, gold and other forms of money was actually circulating in the leading economies of the world throughout the 19th century. The structure of money supply for the U.S., the U.K. and France in 19th century is summarized in Figure 2.1. According to Figure 2.1, in 1848, the silver was the most widely used form of money. In 1872, gold was used more than silver. After 1892, demand deposits have been increasingly used in the world economy. Moreover, currency and coins replaced silver and gold as a form of money. Although the volume of gold circulating in the world economy was increasing throughout the 19th century, gold was used less than demand deposits and currencies as a form of money.

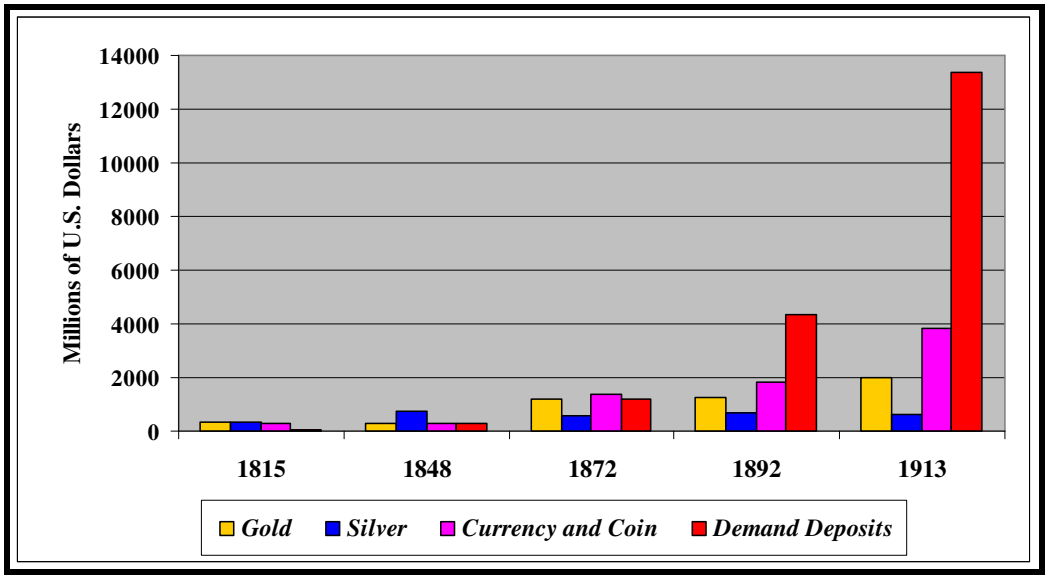

Figure 2.1 Structure of Money Supply (Aggregate for the U.S., the U.K. and France) (Millions of US Dollars) (1815-1913).
Source: Derived from (Triffin, 1964, p. 58).

Revealing the data on currency structure of Gold Standard after 1880, Table 2.1 indicates that the leading countries of the world economy such as the U.S., Britain, France and Germany were mostly using gold in their domestic economy and they held their reserves in the form of gold. However, large part of the remaining countries used different forms of money in their domestic economy and they had reserves mostly in the form of foreign exchange.

Table 2.1 Currency Structure of the International Gold Standard after 1880

Form of Domestic Circulation			
Form of Reserves		*Largely Gold Coin*	*Gold, Silver, Token Coinage, and Paper*
	Gold	England Germany France United States	Belgium Switzerland
	Largely Foreign Exchange	Russia Australia South Africa Egypt	Austria-Hungary Japan Netherlands Scandinavia Other British Dominions
	Entirely Foreign Exchange		Philippines India Latin America

Source: Derived from (Eichengreen, 1996, p.21).

The World War I ended the period of the international Gold Standard. With the outbreak of the war, the countries expanded expenditures to cover the costs of war and they faced with budget and current account deficits. European countries bought war supplies from the U.S. and gold moved to the U.S. The Gold Standard was abandoned, firstly by England and gold became unstable in 1914 (Mundell, 1997). The war led to nationalism and changes in the political and economic power of the countries. After the war, the role of Britain started to decline in the world whereas

the U.S. was the rising country both politically and economically. During war time, the dollar was the only major currency that was convertible to gold, whereas the sterling was in decline in the world economy. Wartime events such as rise of the U.S. as an international creditor, increasing dollar holdings of foreign central banks, instability of the European currencies contributed to the emergence of the dollar as an international currency (Aliber, 1966, p.17).

2.2 The Inter-war Period

After the World War I, countries tried to establish the pre-war exchange rates. Although all countries returned to the Gold Standard by 1928, those attempts were not successful due to new conditions of the world economy. The government intervention in the markets was increasing as a result of domestically oriented economic policies such as decreasing unemployment and increasing national income. Free trade and achieving external balance were not as popular as they were in the pre-war period. Equality in distribution of income, price stability and high employment were given priority by the governments. To achieve those objectives, governments imposed restrictions both on trade and capital movements. Monetary policies of central banks did not allow the external imbalances to change the money supply, which was the case of pre-war time (Seyidoğlu, 1999, pp. 540-541).

Germany's stabilization plan to prevent hyperinflation in 1924 made the country return to gold. Following Germany, Britain returned backed to the gold in 1925 and in 1926, France did the same. The Gold Standard was on the scene but the high demand for the gold led to deflation in the 1930s, contributing to the depression. Although other factors were effective in the Depression, including the Smoot-Hawley tariff, 50% increase in the U.S. tariffs, but the major factor was the deflation resulting from the restoration of the internal gold standard (Mundell, 1997).

Attempts to return to the Gold Standard did not solve the problems of post-war period. The floating exchange rate regimes and instability led to depreciation of European currencies against the dollar. The Great Depression was another factor that accelerated the break-down of postwar Gold Standard. The crisis of the U.S. financial markets, in 1929, led to a decrease in industrial production and employment level of the country. Additionally, The Smoot-Hawley Tariff Act, aiming to reduce unemployment, resulted in decreases in trade volumes of the U.S. The recession and protectionist policies of the U.S. reduced the economic activity all around the world. In response, other countries applied protectionist policies such as tariffs, quotas and competitive devaluation policies to increase their national income and employment level. Countries used exchange rates to adjust their competitiveness in the world export market and they applied protectionist measures to achieve trade balances. That is, beggar-thy-neighbor policy[2] was in action. Those kind of policies resulted in a large reduction in world trade and income (Seyidoğlu, 1999, pp. 540-541).

The problems of Great Depression and protectionism, i.e. low income, high unemployment and decreasing world trade, ended the period of currencies which are linked to gold. "Britain went off gold in 1931 and America in 1933. America then went back to gold after devaluing the dollar in 1934. … In 1936, France had to devalue and it was the last country to leave the Reformed Gold Standard of the post war period" (Mundell, 1997).

Since the countries abandoned the Gold Standard, there was no way to convert the national currencies to each other. This problem resulted in additional decreases in world trade. Countries started to make bilateral agreements to overcome the currency

[2] "A course of action through which a country tries to reduce unemployment and increase domestic output by raising tariffs and instituting non-tariff barriers that impede imports, or by accomplishing the same objective through competitive devaluation. Countries that pursued such policies in the early 1930s found that other countries retaliated by raising their own barriers against imports, which, by reducing export markets, tended to worsen the economic difficulties that precipitated the initial protectionist action. The Smoot-Hawley Tariff Act of 1930 is often cited as a conspicuous example of this approach." Source: (ASYCUDA, 2008)

problem, which prevented trade. Those kinds of arrangements created currency areas and currency blocs in the world economic system. There were mainly three currency blocs in the world in late 1930s (Seyidoğlu, 1999, pp. 541-542).

Great Britain was the leader of "the sterling area"- a group of countries which pegged their currencies to the sterling. Abandoning the Gold Standard, Great Britain allowed the sterling to float freely against the gold. She established Exchange Equalization Fund to intervene to foreign exchange market for the purpose of preventing large fluctuations in the value of the sterling. The sterling area countries, mainly ex-colonies of the Britain, pegged their currencies to the sterling and they were holding their reserves in the form of sterling in London. Trade and capital movements across those countries were relatively easy whereas they applied strict protectionist measures for the other countries (Seyidoğlu, 1999, pp. 541-542).

France was the leader of "the Gold Bloc"- a group of countries (Switzerland, Holland, Belgium, and Italy) which pegged their currencies to gold. They applied protectionist policies such as tariffs and quotas to prevent the external imbalances that resulted from fixed exchange rate regime. Moreover, the U.S. also set the value of the dollar fixed against the gold. An ounce of gold was set to be equal to 35 U.S. dollars, which became the value of the dollar in the beginning of the Bretton Woods System (Seyidoğlu, 1999, pp. 541-542).

Finally, Germany was leading the third group, mostly developing countries, which applied capital account restrictions and protectionist trade policies with competitive devaluations (Seyidoğlu, 1999, pp. 541-542). Those countries mainly focused on problems of their domestic economy and they tried to stimulate industrialization to achieve economic development.

The effects of World War I, the instability of interwar period and the repercussions of the Great Depression contributed to rise of the dollar as an international currency.

Between 1914 and 1924, as the U.S. became a major world power, the dollar, based on the gold, started to lead the international monetary system and the other countries based their currencies more on the dollar rather than gold. The European central banks did not want outflow of gold due to their external deficits and budget deficits. They intervened to foreign exchange markets by buying and selling dollars. By selling their assets in the U.S., European powers get more dollars than they needed for imports from the U.S. The surpluses of dollars were accumulated in national central banks, which was an important event that accelerated the international rise of the dollar (Aliber, 1966, pp.16-18). Moreover, European prices and exchange rates were unstable whereas those of the U.S. were relatively more stable during the inter-war period.

2.3 The Bretton Woods System

2.3.1 The Establishment of the System

The end of World War II was the beginning of the Cold War and bipolar world system-the U.S. leading the West vs. the U.S.S.R. directing the East. 1944 meeting of 44 nations at Bretton Woods, New Hampshire, led to emergence of a new monetary system, called Bretton Woods, for the world economy. The problems of inter-war period – i.e. the hyperinflation, the Great Depression, strictly fixed exchange rates, protectionist policies- were in the minds of all participating sides. The U.S. had primary objective of stability for exchange rates whereas the Britain was considering monetary policy flexibility (Eichengreen, 2004, p.7).

There were two proposals developed by two economists, J. M. Keynes and H.D. White, about the new system. The Keynes Plan suggested construction of an international organization which would act as an international central bank. The international central bank would lend to the countries which are in need of credit to finance reconstruction and external deficits. Additionally, Keynes emphasized that

all countries should adjust their policies to achieve external balance in case of balance of payments imbalances. Like Keynes, White suggested construction of an international organization to support the reconstruction of Europe and Japan after the war. The White Plan proposed adoption of fixed exchange rates to stimulate trade. Unlike the Keynes Plan, White Plan advocated that balance of payments imbalances were problem of the deficit country and adjustment policies should be only applied by deficit countries. With the acceptance of the White Plan in the meeting of Bretton Woods, new monetary system of the world was arranged (Seyidoğlu, 1999, pp. 543-544).

In Bretton Woods System, all currencies were pegged to the dollar, which was backed by gold. An ounce of gold was equivalent to 35 U.S. dollars and all countries were required to keep their exchange rates fixed against the dollar within the band of plus or minus 1%. The dollar was the leading currency of the system and the international position of the dollar was supported by gold reserves of the United States under Bretton Woods System. In the Bretton Woods System, the only currency directly linked to gold was the dollar. All the other currencies were tied to dollar with fluctuation margins. The Bretton Woods System had qualifications that enhanced the autonomy of the central banks. The United States accepted paying out gold at $35 an ounce only to its official foreign creditors, not to private markets. The U.S. desire for stable exchange rates to stimulate international trade, and the British desire for exchange rate flexibility to accommodate the policies to maintain internal balance resulted in adjustable peg (Eichengreen, 2004, pp.7-9).

Bretton Woods System aimed to create an international monetary system with exchange rate stability without Gold Standard. The IMF (International Monetary Fund) and the World Bank were created to contribute to smooth running of the system. According to Mundell (1997), the IMF played a crucial role in leading the countries to continue with fixed exchange rate regimes depending on the dollar between 1946 and 1971, namely in Bretton Woods time.

The IMF would provide loans and enforce both discipline and flexibility for the members, which had balance of payments problems, speculative attacks on exchange rate, etc. The IMF wanted countries to use foreign exchange reserves and domestic policies to adjust their imbalances. Devaluation was not to be used as a competitive trade policy, but if a currency became too weak to defend, up to a 10% devaluation was allowed without formal approval from the IMF (Seyidoğlu, 1999, pp.545).

By providing the system's central currency and hosting the IMF in Washington, the U.S. would be the leader and guarantor of the system. Moreover, the three elements - the IMF, pegged adjustable exchange rates and capital account restrictions - of the Bretton Woods system were complementary to each other. The restriction of capital flows prevented the instability of the exchange rates and made the adjustable pegged exchange rate regimes possible. The IMF helped the countries with achieving the stable exchange rates and prevented the abuses of the system by not allowing discretionary changes in parities (Eichengreen, 1996, p.94).

2.3.2 The Dollar Shortage

After the Second World War, the European countries and Japan had to reconstruct their economies. The Marshall Plan[3] contributed much to the restoration of European economies. The U.S. was the only industrialized country for those countries to get the supplies they needed for the recovery. Since the industrialized countries heavily imported from the U.S., gold was flowing into the U.S. economy. The United States was experiencing balance of payments surpluses whereas the recovering economies were facing deficits. In this period of post war, there was "dollar shortage" due to increasing demand and restricted supply of the dollar until late 1950s. The deficit countries frequently used devaluations to overcome the problems of imbalances (Seyidoğlu, 1991, pp. 546-547). For example, Great Britain devaluated the sterling

[3] See (Eichengreen and De Long, 1991) for details.

by 30 % and France devaluated the franc by 22% against the dollar in September of 1949 (Turan, 1979, p. 165).

2.3.3 The Dollar Glut

In the early 1950s, the U.S. started to have balance of payments deficits, which was crucial for the longevity of the Bretton Woods System. The foreign economic agents could borrow from the U.S. financial markets leading to capital outflows. The dollar supply started to increase in the international markets. The continuation of the U.S. external deficits led to "the dollar glut" in 1958. By late 1950s, the Europe and Japan had reconstructed their economies. Having balance of payments surpluses, they started to exchange their dollar reserves for gold to increase their gold reserves to the pre-war level. The dollar was overvalued in the system but its key currency role did not allow devaluation. Although the U.S. had some trade restrictions and domestic measures to prevent the gold outflow, those attempts were unsuccessful (Seyidoğlu, 1999, p.547).

Displaying the data of the U.S. gold holdings, Figure 2.2 indicates that the U.S. gold stock was decreasing especially after 1960. The Triffin Dilemma[4] of the Bretton Woods System was on the scene. The stability of the Bretton Woods System became dependent on the U.S. deficits, which was the solution of international liquidity problem. However, the dollar supply was growing larger than gold reserves of the U.S. which threatened the convertibility of the dollar to gold as Triffin (1961) emphasized[5]. To prevent speculation on dollar, the deficits of the U.S. should be stopped. However, the future of the system was dependent on the U.S. deficits which would reduce the confidence about the system (Cohen, 2008).

[4] See (Kregel, 1999) or (Eichengreen, 1996) for details.

[5] See (Triffin, 1961, pp.70-75), (Triffin, 1966) for detailed argument.

The speculators expected devaluation of the dollar in response to the decreasing gold reserves of the U.S. The instability of the system started with a speculative attack on gold in London markets in 1960. In order to help central bank of Britain with supporting fixed price of the gold, the Gold Pool was established by the U.S., Britain, Belgium, Germany, France, Italy, Holland and Switzerland. The U.S. was the biggest supplier of the gold that was necessary to prevent instability in gold prices. The speculation was sterilized by mostly support of the U.S. whereas the instability and confidence problem of the system had not been solved yet (Seyidoğlu, 1999, p.547). According to Figure 2.2, in 1948, the U.S. had 700,000 millions ounces of gold whereas the U.S. gold stock was around 300,000 millions ounces by 1970s. The gold holdings of the U.S. had gradually decreased between 1948 and 1980, namely in the Bretton Woods era.

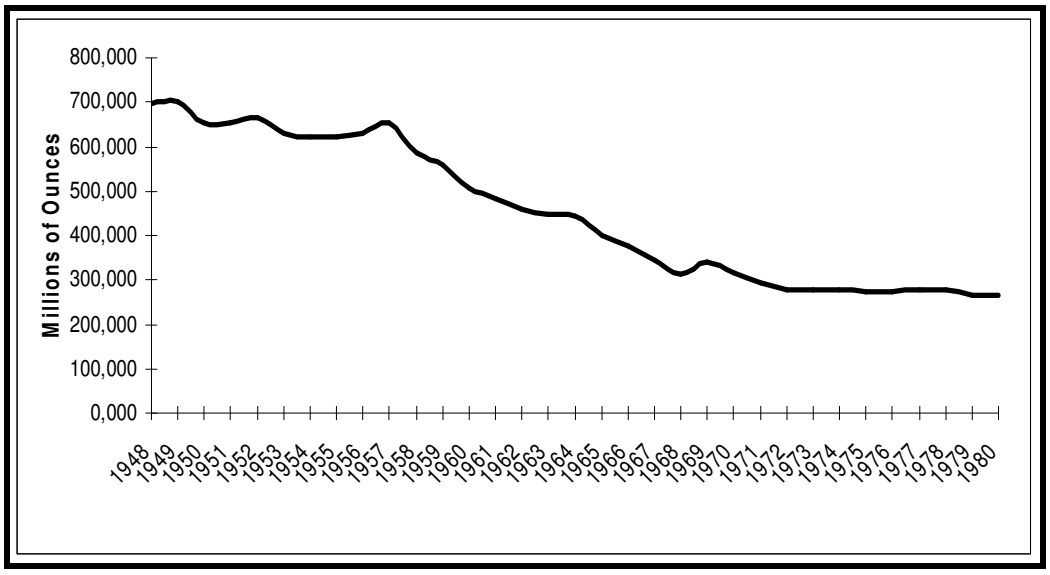

Figure 2.2 The U.S. Gold Holdings (Millions of Ounces) (1948-1980)
Source: Derived from (IFS, 2008).

2.3.4 The Breakdown of the System

The instability of financial markets continued in 1960s. The sterling was in decline, especially after 1964. In 1967, the sterling area experienced a speculative attack on gold and the sterling was devaluated. Considering these developments, the Gold Pool decided not to support the price of gold in private markets. The official transactions of gold would continue at the determined price between central banks. Thus, gold had two prices - one for central banks and one for private market transactions-. In other words, the Gold Pool left its role to the two-tier system in which central banks fixed an interbank price for gold and did not attempt to fix a price for gold in private markets. Afterwards, in 1969, the franc was devaluated and the value of mark adjusted after a period of floating (Seyidoğlu, 1999, p. 548).

The instability of the Bretton Woods System significantly increased in late 1960s. Facing with balance of payments deficit, the U.S. wanted surplus countries such as Germany and Japan to revalue their currencies. However, the advantage of having balance of payments surplus and domestic political pressures from the exporters and farmers did not allow those countries to make adjustment in their currencies. As a response, in 1970, U.S. President Richard Nixon increased tariffs by 10% and decreased domestic tax rates to achieve external balance. More importantly, the convertibility of the dollar to gold was temporarily stopped. After these events, in 1971, the Group of Ten (Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States) made the Smithsonian Agreement[6], which devalued the dollar by nearly 9%. The new dollar gold exchange rate was $38/ounce and the other currencies were allowed within plus or minus 2.25% trading bands around the dollar relaxing the previous band of 1%. Additionally, the gold window was closed, i.e. the dollar was not backed by gold anymore. The balance of the world financial system was left to the use of

[6] See (Turan, 1979, p.188) and (Appleyard et al, 2006, p. 726) for details.

Special Drawing Rights (SDRs)[7] alone. The U.S. decreased the tariffs after this agreement.

Although the agreement created some flexibility by widening the fluctuation margins for the other currencies, it failed to create a mechanism to reduce the U.S. external deficit. The pressure against the dollar in gold continued. In February 1973, the speculative movements resulted in devaluation of the dollar again. The new value of an ounce of gold was 42.2 dollars. In 1971, the dollar's convertibility to gold was ended and adjustable fixed exchange rate principle was abandoned in 1973, allowing countries to choose their exchange rate regimes and effectively ending the Bretton Woods era. In 1973, free floating period of the dollar started and value of the dollar declined. However, the impact of OPEC crises increased the value of the dollar since petro-dollars were invested in financial markets of the U.S. in mid 1970s (Seyidoğlu, 1999, pp. 548-549).

2.3.5 Reasons of the Breakdown of the System

2.3.5.1 Problem of External Adjustment

The Bretton Woods System did not have an automatic external adjustment mechanism as in the case of floating regimes and the Gold Standard. The use of competitive devaluation was not allowed by the IMF to make the exchange rates stable. The use of exchange rates was "untouchable" as a policy tool. Additionally, countries were encouraged to liberalize their trade and capital account. The restrictions on trade account were not accepted by the IMF. The adjustment of external imbalances was left to the domestic policies such as strict monetary and fiscal policy. However, the results were low income and employment in the deficit countries due to contractionary effects of monetary and fiscal policies (Seyidoğlu, 1999, pp. 557-558).

[7] See (Turan, 1979, p.140) and (Appleyard et al, 2006, p.725) for details.

The pain of external adjustment was only left to the deficit countries in the Bretton Woods System. The deficit countries had to finance the deficit by using their reserves or by borrowing from the IMF and other countries. Since there was a limit for borrowing, those countries would use domestic policies to decrease the deficit. On the other hand, there was no mechanism that forced the surplus countries to apply policies to achieve external balance. Those countries accumulated reserves as they had surpluses, which had no limit. Therefore, there was an inequality between deficit and surplus countries, which accelerated the breakdown of the Bretton Woods System (Seyidoğlu, 1999, pp. 558).

After-war expansion of world trade was accompanied by expansion of international capital flows. "The impossible trinity" problem of the system emerged as the capital account liberalization increased. Namely, under a fixed exchange rate regime, liberalized capital account and domestically oriented monetary policy would not be achieved. The countries should leave one of those objectives. The leading countries of the system did not want to leave the domestic economic targets in exchange for maintaining fixed exchange rates, which led to use of flexible exchange rate regimes (Fischer, 2000).

2.3.5.2 Seignorage of the Dollar

The dollar has been rising as an international currency since the World War I. The Bretton Woods System contributed substantially to the increasing dominance of the dollar in international markets. The dollar was used as an international store of value and medium of exchange at international level. The central bank reserves were mainly in the form of dollar and gold. The foreign exchange market interventions of the central banks were made by the use of the dollar. The gold convertibility of the dollar was a crucial factor for its use by the foreign central banks. The Bretton Woods System did not have a mechanism for creation of international liquidity.

Since the gold supply of the world was limited, the dollar became the most liquid international asset of the system. This made the Bretton Woods System dependent on the supply of the dollar. The special position of the dollar created advantages for the U.S. in the Bretton Woods System. The countries, except the U.S., exported goods and services to get international assets such as gold and dollars. Namely, they sacrificed real resources in exchange for the dollar. However, the U.S. did not have such a problem. By printing dollars, the U.S. was able to finance its imports from the rest of the world. The difference between the cost of printing dollars and real value of the goods and services which the U.S. imported by using newly printed dollars was the seignorage revenue for the U.S. (Seyidoğlu, pp. 559-560). For example, France, C. De Gaulle - the president -, indicated that the system was unequal in the sense that the U.S. had 'exorbitant privilege' of not having to adjust its external imbalances since it owned the principal reserve currency, the dollar (Bordo, 2005, p.13). Not surprisingly, France was leading the countries, which rushed to the Federal Reserve of the U.S. to exchange dollars for gold.

2.3.5.3 Other Factors

The effects of Vietnam War on the U.S. economy were significant for the breakdown of the Bretton Woods System. By the impact of Vietnam War, the U.S. had a budget deficit financed by printing money, which led to inflation and external deficits. Due to inflation and increasing number of dollars in the world, the doubts occurred about the U.S. stock of gold whether it was large enough to back the dollar (Bordo, 2005, p.14). The U.S. was in a period of inflation from 1960s to 1979. The monetary growth and the impacts of oil price shocks were listed as the reasons for high inflation period of the U.S. Accommodation of oil price hikes by the U.S., the U.K. and Canada resulted in higher inflation rates than countries such as Germany and Switzerland which did not adjust their monetary policies to the oil price shocks. The dollar was depreciating against DM and yen in this period (Bordo, 2005, p.15).

The Bretton Woods System was unsuccessful in the sense that it did not supply the needs of underdeveloped countries. The liberal trade policy structure of the system was not suitable for the developing countries. The external imbalances created debt problems for those countries. The Bretton Woods system neither contributed to development of the third world countries nor ensured a real resource flow to those countries. Finally, fixed exchange rate base of the system made speculations possible. The instability of the system and devaluations of major currencies resulted in increases in speculative attacks on gold and major currencies. Those factors increased the lack of confidence about the sustainability of the Bretton Woods System (Seyidoğlu, pp. 558-560).

2.4 The Current International Monetary System

The crisis of Bretton Woods led to use of flexible exchange regimes. However, the central banks were ready to intervene in foreign exchange markets in case of high volatility. The gold support for the dollar was abandoned and variety of exchange rate regimes increased. The free floating, managed floating, pegged exchange rate regimes are used by many countries. Figure 2.3, Figure 2.4, and Figure 2.5 indicate that the fixed exchange rate regimes have been replaced by more flexible regimes such as independently floating regime and intermediate regimes.

In 1984, 63% of 148 countries had pegged exchange rate regimes whereas in 1994, 39% of 178 countries used this kind of an exchange rate regime. In 2004, hard pegged regimes were used in 26 % of 187 countries whereas 45% of the countries preferred intermediate exchange rate regimes such as managed floating and crawling peg. Finally, it is observed that independently floating regime of exchange rates have been used by more countries. In 1984, 8% of 148 countries used this regime whereas nearly 30% of 187 countries had freely floating exchange rate regime in 2004.

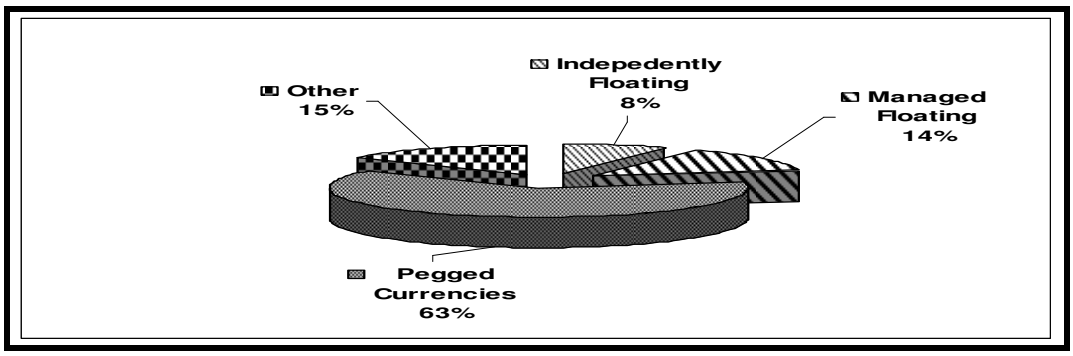

Figure 2.3 Exchange Rate Arrangements (148 Countries) (1984)

Source: Derived from (Eichengreen, 1996, p.193).

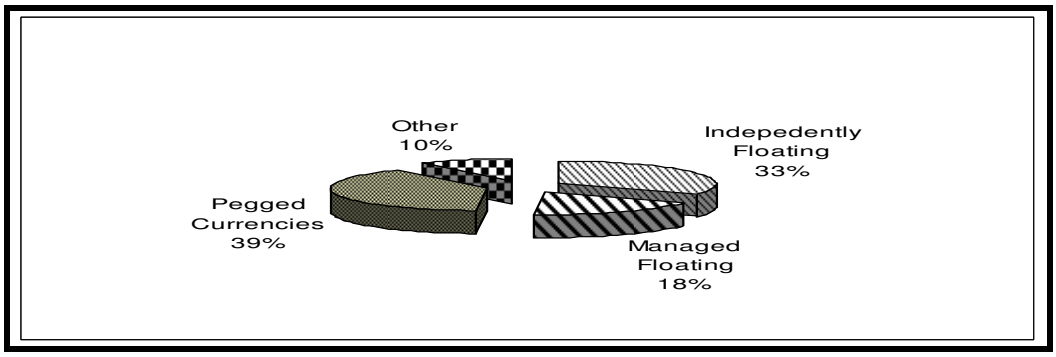

Figure 2.4 Exchange Rate Arrangements (178 Countries) (1994)

Source: Derived from (Eichengreen, 1996, p.193).

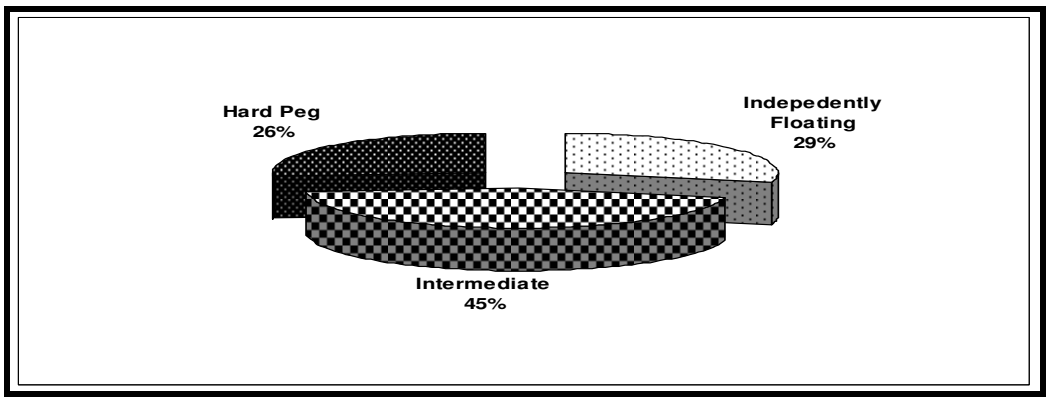

Figure 2.5 Exchange Rate Arrangements (187 Countries) (2004)

Source: Derived from (Eichengreen and Razo-Garcia, 2006, p.401).

After the collapse of the Bretton Woods Agreement, the world experienced a period of high risk in financial markets. High government deficits, high inflation and the OPEC oil crises increased financial volatility. The European countries tried to establish a system of stable exchange rates through the European Money System (EMS) which led to the establishment of EMU and the creation of the euro. The Snake in the Tunnel, The Snake without the Tunnel and Exchange Rate Mechanism (ERM) were applied by the European (Union) countries to achieve exchange rate stability.[8]

Starting from the Bretton Woods era, increasing pace of international capital movements led to important changes in the international monetary system. The private international capital flows had important effects on especially emerging market economies since 1980s. Domestic policies are highly influenced by the capital inflows and outflows. The international monetary system has witnessed the increasing role of private capital flows especially after 1970s. This led to a shift towards flexible exchange rates among the major currencies three decades ago, and it continues today, as the system experiences the emerging market crises (Fischer, 2000).

The supply side economics[9], which claimed that economic growth would be effectively created by using incentives for private sector to produce goods and services, such as decreasing tax rates, was on the scene in 1980s. The U.S. president, R. Reagan, applied those kinds of policies, which increased the value of the dollar in the international markets. The supply side policies required decreases in tax rates and government expenditures. The resulting budget deficit of the U.S. was financed by domestic and international debt with high interest rates. The capital from East Asia and Europe was flowing into the U.S. with attraction of high interest rates, which

[8] See (Seyidoğlu, 1999, pp.554-557), (Eichengreen, 1996, pp.136-175) , (Kondonassis and Malliaris,1994).

[9] See (Case and Fair, 2004, pp. 658-660) for details.

contributed much to the value of the dollar. The U.S. did not take a policy action as a response to rising dollar, which was labeled as "benign neglect" policy, which continued until 1985 (Seyidoğlu, 1999, p.550).

Germany and Japan were experiencing capital outflows due to existing policies of the U.S. On the other hand, the U.S. wanted those countries, especially Japan, to apply loose policies and liberal trade policies to reduce their external surpluses, thus reducing the external deficit of the U.S. To solve those problems France, Germany, Japan, the United States and the United Kingdom agreed to depreciate the dollar against yen and the DM. The Plaza Agreement September, 1985, New York, resulted in expansionary policies of Japan and decrease in the U.S. interest rates. After the agreement, the dollar depreciated and had more or less a stable pattern (Seyidoğlu, 1999, p. 550).

The rising capital mobility, greater exchange rate flexibility and the declining role of the gold are emphasized as the elements of the current international monetary system (Eichengreen and Sussman 2000, p.36). As the volume of capital flows grows, the effects of reversals become larger, and countries relying on such flows, especially short-term flows, became increasingly vulnerable to crises. The contagion, the spreading of crises from one country to another, had significant effects on the other economies (Fischer, 2000). The volatility and spreading effects of capital flows are observed in emerging markets financial crises such as Latin America in the 1980s, Venezuela 1994, Mexico 1994-95, East Asia 1997-98, Russia 1998, Brazil 1999, Ecuador 1999, Turkey 2001, and Argentina 2001-02.

The features of the current international monetary system are not dependent on a specifically designed model of agreement. The current international monetary system consists of a mixed set of exchange rate policies, global current account imbalances, volatile capital movements, the European Economic and Monetary Union owning the new international currency and the IMF as a regulator of economic policies.

Labeling the current system as Bretton Woods II, Dooley and Garber (2005) summarize the features of the system. There is a group of countries with currencies pegged to the dollar to support their policies of export-led-growth. The United States is the center of the system and the provider of the reserve currency. The U.S. accepts current account imbalances and provides financial intermediation for Asian savings. The poor countries of the system export capital to the U.S. The surplus of savings in those countries resulted in low and falling short and long term real interest rates in the U.S. Finally, there is a group of industrialized countries, which use floating exchange rate regime and experience pressure on their currencies to appreciate (Dooley and Garber, 2005, pp.1-2). This argument only considers the U.S. and East Asian blocs of the world. Additionally, the existence of European Union as a third bloc is an important feature of the current system (Eichengreen, 2004, p.1).

The current international monetary system consists of three large currency blocs: the dollar, the euro, and an Asian bloc of currencies that are pegged to the dollar with variety of degrees. Three blocs produce more than 65% of world output in total. Given their size, the choice of exchange rate regime has crucial effects on the options available to the others. There are constraints in choosing their exchange rate regime. The impossible trinity – an independent monetary policy, a fixed exchange rate and an open capital account-constraint always existed for the countries. In the current international monetary system, not only the exchange rate policies but also other economic policies of countries are interdependent (King, 2005).

CHAPTER 3

THE ROLE AND RIVALS OF THE DOLLAR IN THE WORLD ECONOMY

The dollar has been the most widely used currency in the world markets. However, the dollar has been depreciating in the exchange rate markets since 2002. The other major currencies such as euro of European Economic and Monetary Union (EMU), yen of Japan, renminbi of China and the pound sterling of the United Kingdom are appreciating against the dollar. Did this pattern affect the dominance of the dollar as an international currency? This chapter focuses on the use of the dollar in the world economy as an international currency by both private sector and public sector. It compares the use of the dollar and other major currencies in the world economy, specifically euro, the most striking rival, on the basis of determinants and functions of an international currency.

The first part of the chapter summarizes the literature and gives recent statistical data on the issue by focusing on the four main determinants of an international currency suggested by literature, i.e., the inertia of the currency, the domestic real economy, the stability of the currency and the domestic financial markets. By observing the available current statistics, second part of the chapter analyzes the use of major currencies by private sector and public sector to determine the magnitude of dollar's use as an international currency. This chapter analyzes and evaluates the recent trends in the use of major currencies by private and public sectors of the world economy. The trends, given by statistical data, are likely to reveal information about the sustainability of the dominance of the dollar and the use of other major currencies in the international monetary system.

3.1 Determinants of an International Currency

An international currency is a currency that is not only used by residents of the issuing country but also used by non-residents, namely foreigners. Throughout the 19th century, the British pound was the dominant currency in the world markets. As the economic and political power of the British Empire declined, the U.S. dollar dominated the world markets and surpassed the pound as a leading international currency after World War I. Despite the international use of the Japanese yen, the British pound and the German mark, the dollar has been dominant over the 20th century.

The euro was launched on January 1, 1999 and euro notes and coins replaced national currencies in most of the European Union member states. The euro became the second most widely used international currency after the U.S. dollar. With the creation of the euro, the dollar had a potential rival for its international status. Mundell (1998) suggests that " the euro is likely to challenge the position of the dollar… this may be the most important event in the history of the international monetary system since the dollar took over from the pound the role of dominant currency in World War I."

There are different factors that affect the international use of a currency. There exists a large literature on determinants of an international currency. Early analyses focused on the role of the trade and the real economy whereas the recent literature emphasized the role of financial markets, international financial relations (Hartmann and Issing, 2002, pp.3-4).

This part of the chapter reviews the literature on the issue by focusing on the four main factors suggested by the literature, i.e., the inertia of the currency, the domestic real economy, the stability of the currency and the domestic financial markets. The domestic financial markets, the domestic real economy and the inertia of the

currency are related to size and liquidity whereas the stability of the currency corresponds to risk factors and diversification needs. The size factors, leading to economies of scale in the use of the currency, can explain the existence of a single dominant international currency. The risk factors may be the reason for the coexistence of more than one international currency (Hartmann and Issing, 2002, p.4). Eichengreen (2005) states that more than one currency existed as international currencies over the past and the improving financial market instruments will contribute to the existence of more than one international currency in the future, namely euro and the dollar, instead of the monopoly of one.

3.1.1 Inertia of the Currency

The world witnessed the existence of different dominant international currencies over the centuries. In the 18th century, Holland was the leader of the world economy and Amsterdam was the financial center. In the 19th century, the Britain was leading the world and London emerged as a financial center. In 20th century, the United States dominated the world and New York was financial center of the world economy. International currencies of the world economy followed the same path. The Amsterdam bank guilder was followed by the pound sterling and the dollar dominated the pound. The transition from one leading currency to another takes long time and one currency is dominant whereas the others have less effect in the international arena (Eichengreen, 2005, Chinn and Frankel, 2008).

Cohen (2000 and 2003) emphasized that the inertia in monetary transactions resulted from previous establishments of transactional networks and risks of choosing the alternative. Changing the currency will require changes in records, prices and etc. Additionally, the network externalities and degree of acceptance of the currency have strong effects on the inertia of a currency. Network externalities implies the fact that as more of the agents use a currency, the transaction costs associated with that

currency become lower and the currency attracts additional users contributing to its liquidity (Galati and Wooldridge, 2006, p.3).

Economies of scale in currency use do not allow frequent changes in the international currency rankings. The dominant international currency has the largest financial markets and is used in numerous transactions. In the absence of a major shock or structural change, it is very difficult for another currency to obtain the benefits of the network externalities and become dominant, breaking the inertia of the former currency (Hartmann and Issing, 2002, p.11, Cohen 2003).

At this point, it's worth quoting the explanation of McKinnon for the existence of a dominant international currency and the inertia of the currency use in international markets.

> … an international money is both necessary and a natural monopoly. In the absence of purely non-national international money such as gold, world financial and goods markets will naturally pick one national currency to be at once the inter-bank vehicle currency, the invoice currency of choice in international trade, preferred official intervention currency, and the principal official reserve asset. To facilitate international exchange, the network effects and cost savings from using just one national money are so strong that, once established, it cannot easily be displaced (McKinnon, 2002, p.356).

Although the international monetary system had different international currencies such as the U.S. dollar, the DM (Deutsche Mark), the pound sterling, the yen and finally the euro, the dollar has been the dominant international currency since the World War I. Although the DM had some international role, it had strong role at a regional level, namely in Europe. In other words, the dollar did not face with a significant challenge in international monetary system until the internationalization of the euro.

The dollar has still the advantages of its extensive inertia in the international monetary system whereas the euro inherited a significant role from the DM and other ECU currencies. Since the euro is a new currency, we cannot easily assess the

previous use or inertia of the currency. However, the most realistic view about the role of the euro suggests that the euro inherited, from the past, the previous role of the DM outside the euro area. Thus, the euro had a much smaller inertia than the dollar and a larger inertia than yen had (Hartmann and Issing, 2002, p.12, Chinn and Frankel, 2005, 2008, Eijffinger, 2003).

The Figure 3.1 gives information about the foreign exchange market turnover of different currencies. The dollar is the leading currency with a share above 80% whereas the euro takes the second position with a share near 40% due to the inertia of German mark and other ECU currencies. The Japanese yen and the pound sterling are the followers of the dollar and euro. The inertia of the dollar, which is a result of its existence and use in international markets over a century, provides an advantage for the dollar ahead of the euro as an international currency.

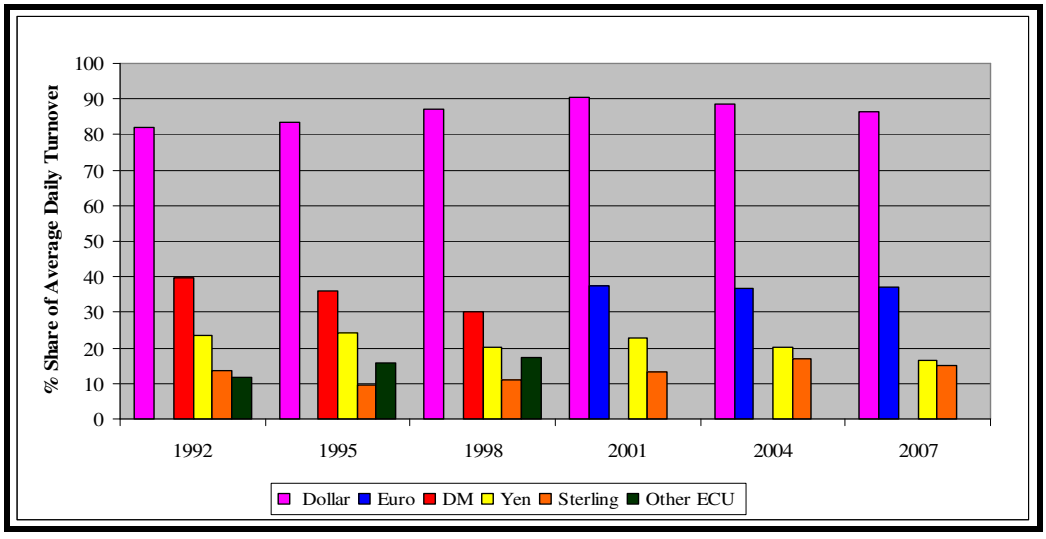

Figure 3.1 Currency Distribution of Reported Foreign Exchange Market Turnover[10] (% Share of Average Daily Turnover) (1992-2007).
Source: Derived from (BIS, 2005, p.9) and (BIS, 2007, p.11).

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

3.1.2 Domestic Real Economy

The size, strength and international linkages of the domestic real economy are other factors that affect the international role of a currency. The shares of the country in world output and trade as well as its integration to the international markets affect the use of the country's currency by the rest of the world. Additionally, the share of the country's trade and exports in world economy are important since 'Grassman's Law (1973)' indicated that the largest part of the exports among industrial countries is denominated in the home currency of the exporter (Hartmann and Issing, 2002, p.10). Additionally, as the scale of transactions increases associated marginal costs and average costs will be falling, increasing the attractiveness of the currency at international level. Therefore, international currencies tend to be belonging to large and dominant economies of the world (Lim, 2006, p. 6).

Table 3.1 indicates the relative size of the leading economies of the world. The United States and European Union produce more than 20% of world output. The economic size of each region is nearly the same in GDP figures. China is the third largest economy of the world with nearly 10% share of world GDP. Although Japan and the United Kingdom have significant shares in the world output, their sizes are not comparable to that of the United States and the European Union. The United States and the EU are the largest producers in the world economy.

Table 3.2 reveals information about the international linkages of the U.S. and the European Union area. The EU-25 region has the largest share, 16.4% in 2006, in world merchandise export whereas the U.S. is the largest importer of the world with a share of 20.5% in 2006. The U.S. has the second rank in export shares and the EU is the second largest importer in the world merchandise trade. China, with its increasing impact on world economy, takes the third place in merchandise trade figures. Japan is the follower but it experienced a decrease in its export shares in 2005 and 2006. In short, the world trade is dominated by the U.S. and the EU.

Table 3.1 Real GDP* of Countries (% of World GDP) (2005 and 2007)

Countries	**2005**	**2007**
The United States	22,5	21
European Union	23,6	21,9
China	9,7	10,7
Japan	6,1	6,6
The United Kingdom	3,4	3,2

Source: Derived from (Wikipedia, 2008a).

* Real GDP figures are calculated at Purchasing Power Parity (PPP).

Table 3.2 The Leading Exporters and Importers in World Merchandise Trade (% of World Trade) (2003-2006)

Exports	2003**	2004	2005	2006
The U.S.	12.7	12.3	11.7	11.5
EU-25*	19.4	18.1	17.1	16.4
China	7.7	8.9	9.8	10.7
Japan	8.3	8.5	7.7	7.2
Imports				
The U.S.	21.8	21.8	21.4	20.5
EU-25*	18.7	18.3	18	18.1
China	6.9	8	8.1	8.5
Japan	4.1	6.5	6.3	6.2

Source: Derived from (WTO, 2004, 2005, 2006, 2007).

*Excludes intra EU-25 trade. ** 2003 only includes EU-15.

"The United States has remained for larger, especially in terms of GDP [and] trade than any other…economy. … reinforced by its incumbency advantages, the dollar has remained preponderant and generated a [high] share [in] currency markets…" (Bergsten, 2002, p.309). Although the U.S. had advantages of being large and dominant in trade throughout several decades, formation of European Union and introduction of the euro decreased the differences among the U.S. economy and the European economy in terms of size and trade volumes. The inclusion of the United Kingdom in EMU will change those figures in favor of the EU economy and may create advantages for the euro in the international markets.

3.1.3 Stability of the Currency

The stability of the currency, confidence in its future stability and the convertibility of the currency affect the international use of a currency. According to Hartmann and Issing (2002), price stability in the currency area gives confidence about the purchasing power of the currency. Internal monetary stability affects the volatility of the exchange rate and the expectations about depreciation. Thus, the more stable the currency, the more attractive the currency as an international currency.

Macroeconomic stability of the domestic economies will have significant repercussions on the international use of the currency. Lim (2006) states that since the international currencies are used as a store of value, the value of the currency in real terms should be stable. Fluctuations in the value of the currency create risks for the holders and domestic inflation erodes the purchasing power of the currency both at domestic and international level, which reduces the attractiveness of the currency for foreign holders. Table 3.3 gives data on key macroeconomic indicators of the leading economies of the world between 2004 and 2008. Although, the EU and the U.S. economies have similar sizes in terms of GDP and trade figures, the unemployment rate is higher in the EU area. According to Table 3.3 the unemployment rate in the U.S. fluctuated around 5% whereas that of the EU area

moved around 8% between 2004 and 2008. On the other hand, the Euro area has more or less achieved the current account balance whereas the U.S. has been experiencing current account deficits up to 6% of GDP. Moreover, the budget deficit of the U.S., with an average of 3% of GDP between 2004 and 2008, is higher than that of the euro area. Therefore, the dollar has risks about its stability of its current and future value.

Table 3.3 Key Macroeconomic Indicators for Leading Economies (2004-2008)

	2004	***2005***	***2006***	***2007***	***2008****
Unemployment Rate (% of Labor Force)					
The United States	5,5	5,1	4,6	4,5	5,4
The Euro Area	8,8	8,6	8,2	7,4	7,3
Japan	4,7	4,4	4,1	3,9	3,9
The United Kingdom	4,8	4,8	5,4	5,4	5,5
Inflation (Annual % Change in Consumer Prices)					
The United States	2,7	3,4	3,2	2,9	3,0
The Euro Area	2,1	2,2	2,2	2,1	2,8
Japan	0,0	-0,3	0,3	0,0	0,6
The United Kingdom	1,3	2,0	2,3	2,3	2,5
Current Account Balance (% of GDP)					
The United States	-5,5	-6,1	-6,2	-5,3	-4,3
The Euro Area	1,1	0,2	-0,1	-0,2	-0,7
Japan	3,7	3,6	3,9	4,9	4,0
The United Kingdom	-1,6	-2,5	-3,9	-4,9	-4,8
Government (Budget) Balance (% of GDP)					
The United States	-4,4	-3,6	-2,6	-2,5	-4,5
The Euro Area	-2,9	-2,6	-1,4	-0,6	-1,1
Japan	-6,2	-5,0	-3,8	-3,4	-3,4
The United Kingdom	-3,4	-3,4	-2,6	-3,0	-3,1

Source: Derived from (IMF, 2008a). *2008 data are estimates of IMF.

The formation of the European Monetary Union is an essential factor that affects the role of the euro and the financial markets of the euro area. Not having an exchange rate target, The European Central Bank (the ECB), conducts the monetary policy with the primary objective of price stability. Trichet (2004) emphasizes that "price stability is a key precondition for the development of the international role of a currency. Thus, the stability-oriented monetary policy of the ECB contributes to the euro's potential for expanding its international role". Table 3.3 indicates that the EU has an average inflation rate of 2% between 2004 and 2008 whereas the U.S. has slightly higher inflation rates with average of 3% during the same period. Moreover, Japan has the lowest inflation rates among the leading four economies.

Figure 3.2, which shows the interest rates of the two regions, indicates that the U.S. financial markets offered higher interest rates until 2008. During the given period between 2006 and 2008, the European Central Bank has been increasing the lending rates. The Federal Reserve started to decrease the lending rates in September 2007, with the rates being reduced to 2 % recently, and this trend still continues as the risk of deep recession in the U.S. economy continues. The European Central Bank maintains 4% lending rate since June of 2007. Recently, the U.S. interest rates are lower than that of the EMU. This pattern will affect the capital flows and thus demand for the dollar and the euro. Higher interest rates in the euro area may induce capital inflows and lead to appreciation of the euro in foreign exchange markets.

Hartmann and Issing (2002) claim that whereas the internal stability in the euro area is clearly supporting the development of the international role of the euro, it does not provide for a great advantage compared to dollar. On the other hand, fluctuations in the value of the dollar and risks of further depreciation of the dollar contribute to attractiveness of the euro as an international currency.

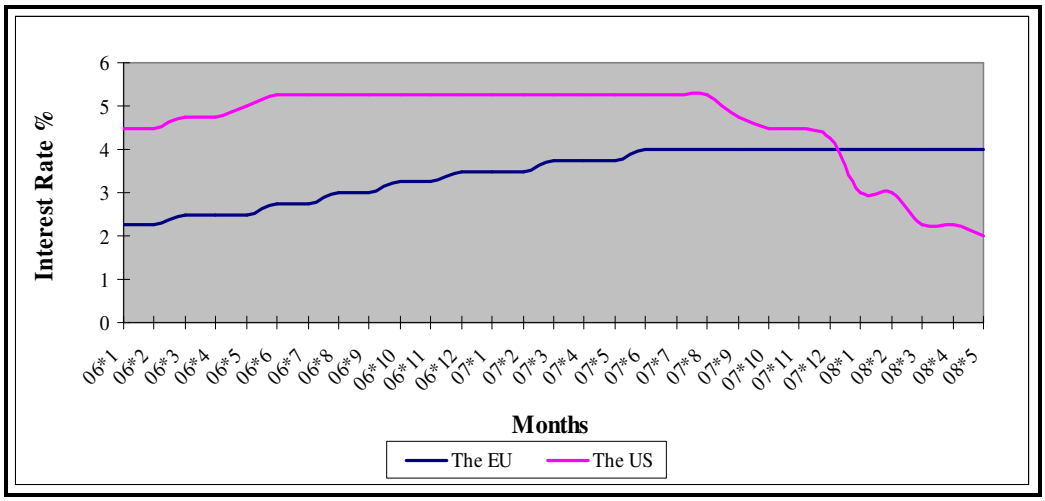

Figure 3.2 Central Bank Lending Rates of EU and the U.S. (%) (2006-2008)
Source: Derived from data taken from (TE, 2008).

Figure 3.3 shows the yearly averages of nominal exchange rates for the dollar against the euro, sterling and yen between 1999 and 2008. According to Figure 3.3, the dollar has appreciated against euro, yen and pound until 2002 and then it has started to depreciate. In 2002, one dollar was worth of 1.1 euro whereas in 2008 one dollar was only worth of 0.66 euro. Shams (2005) indicates that depreciation of the euro in the first three years resulted from a weak demand for the new currency due to lack of confidence and the depreciation of some euro area currencies are reflected in the value of the euro between 1999 and 2002. The adequate performance of the euro in EMU countries increased the confidence about the currency. The euro has been appreciating in the foreign exchange markets possibly due to its acceptance as an international currency (Shams, 2005, p.18).

The exchange rate fluctuations of the dollar with respect to the three major currencies have more or less the same pattern. Especially, pound-dollar and euro-dollar exchange rate movements follow a parallel path. The yen-dollar exchange rates have a less stable pattern. The depreciation of the dollar still continues as the risks of

deepening recession in the U.S. economy and doubts about the sustainability of the U.S. twin deficits, especially the current account deficit, continue. In short, the euro seems to be the most stable currency among the four major currencies of the world economy.

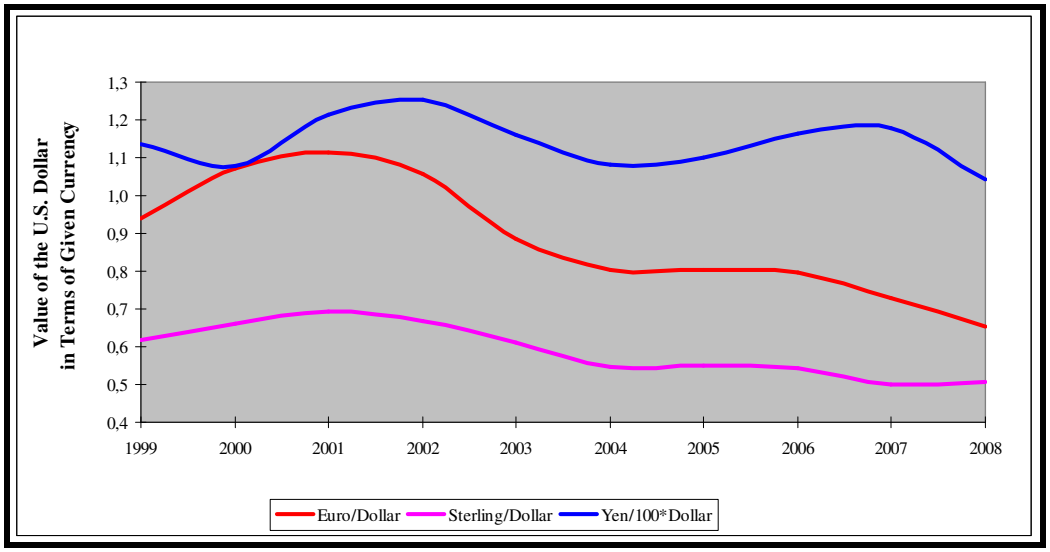

Figure 3.3 Nominal Exchange Rates (Value of the U.S. Dollar in terms of Given Currency- Euro, Sterling and Yen) (Annual Averages for 1999-2008).

Source: Author's calculations from the data taken from (X-rates, 2008).

*2008 includes 6 months (January, February, March, April, May and first week of June).
For scale adjustment, yen/dollar exchange rate was divided by 100.

3.1.4 Domestic Financial Markets

Recently, the world is experiencing the era of so called globalization with liberalization of financial systems and capital flows. The financial innovations create more resources for the firms to expand their investment and more choices for the financial investors to diversify their portfolios. With the liberalization of capital account transactions, the size of domestic financial markets and openness to cross-border financial transactions became more important factors than the trade

transactions in the determination of the international role of a currency. The convertibility of a currency and restrictions on exchange of currency for currencies will affect its international use. Thus, the openness of financial markets of the country will be another factor that affects the international role of a currency (Pollard, 2001, pp.18-19).

The size and liquidity of the domestic financial markets are essential for the role of the currency in international markets. Larger, more liquid and developed domestic financial markets offer more chances for their currencies in international monetary system. Hartmann and Issing (2002) indicate that large and liquid financial markets will have lower transaction costs and they will offer a wide range of liquid financial instruments and derivatives. These features will attract foreign agents to use a country's financial markets and thus the currency of that country, contributing to the international role of that currency. For example, London was the financial center of the world and the sterling was the dominant international currency in the 19th century. New York replaced London as a financial center while the dollar dominated the international markets in the 20th century.

Being smaller than the U.S. markets and lacking the developments that existed in the U.S. markets, the EU financial markets are larger than Japanese financial markets. The Figure 3.4 gives the figures on market capitalization[11] of companies of the U.S., the EU, Japan and the U.K. The U.S. companies have much more market capitalization values than the EU firms. The market capitalization of the U.S. firms fluctuated around 150 % of the U.S. GDP between 2001 and 2006. The U.K. and the U.S. firms have similar patterns whereas the euro area firms are far behind with a capitalization value lower than 80% of euro area GDP. Additionally, moving from 50% to 100% of GDP, Japanese firms have an increasing trend in market capitalization between 2001 and 2006.

[11] A measure of corporate size which is equal to price of share times the number of outstanding shares of a company. In this part, it is used as a proxy to compare the financial markets of four regions.

Since the U.S. and the euro area have similar shares in world GDP as Table 3.1 indicated, these figures implies that the U.S. firms issue more shares than the euro area firms. Alternatively, price of shares in the U.S. may be higher than the euro area prices. Both of these cases may be true at the same time. The U.S. financial markets are larger than the European financial markets, which contributes to the attractiveness of the dollar for the foreign domestic agents.

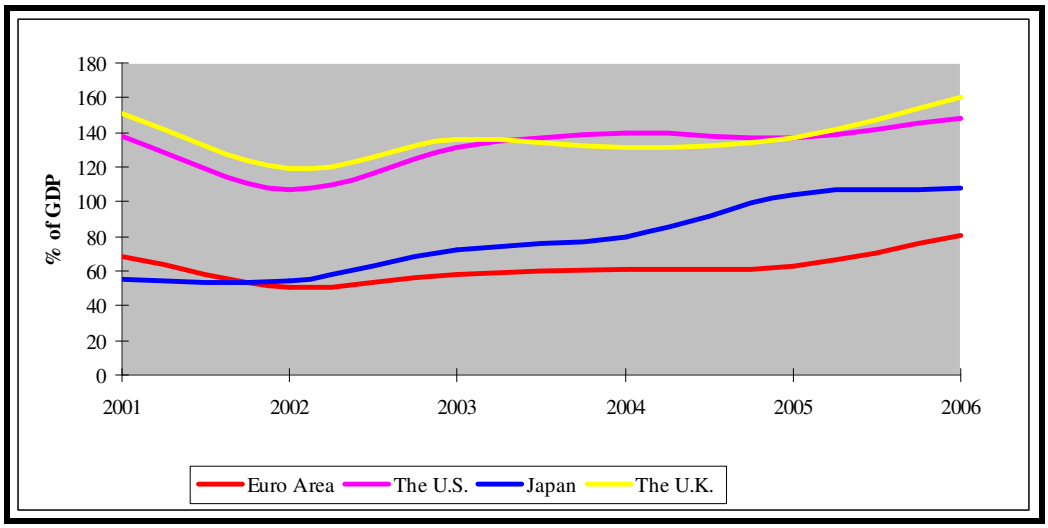

Figure 3.4 Market Capitalization of Listed Companies (% of GDP) (2001-2006)
Source: Derived from figure taken from (WB, 2008).

The data given in Table 3.4 indicates that the banking sector has an important role in the euro area. In 2007, there are 12 banks that hold 75% of the market in the U.K. whereas that of the U.S. remains at 10. Moreover, the banks in Switzerland, Germany and France aggregates to 15 in 2004 and 12 in 2007 which is bigger than that of the U.S. in both years. It is observed that the degree of competition in banking sector has been decreasing in all countries between 1995 and 2007 as the number of banks holding 75% of market share is decreasing. The degree of competition in banking sector is higher in the European economy. Hence, the EMU membership of the U.K. will contribute much to the international role of the euro since the

increasing number of banks and competition in the banking sector will contribute to size, liquidity of financial markets in the European economy.

Table 3.4 Concentration in Banking Sector (Number of Banks Accounting 75% of Turnover)

Countries/Years	***1995***	***1998***	***2001***	***2004***	***2007***
United Kingdom	20	24	17	16	12
United States	20	20	13	11	10
Japan	24	19	17	11	9
Germany	10	9	5	4	5
Switzerland	5	7	6	5	3
France	7	7	6	6	4

Source: Derived from (BIS, 2005, p.11) and (BIS, 2007, p.9)

3.2 The Functions of the International Currency

The international currency should serve as means of payments, as unit of account and as store of value at the international level. To operate as a unit of account, prices must be set in terms of the money. To function as a store of value, the purchasing power of money must not deteriorate over time. To function as a medium of exchange, the money must be used for purchasing goods and services. For an international currency, used outside its country of issue, its functions are differentiated with respect to its use by public and private sector. The functions and principal uses of an international currency are summarized in Table 3.5.

A vehicle/payment currency is used to achieve settlement in international trade and financial transactions. The invoicing/quotation currency denominates international trade and financial instruments as a unit of account. Financing/investment currency is used to denominate credits, loans, deposits and international securities. Anchor currency is used for governments for pegging exchange rates. Intervention currency is used to regulate foreign exchange markets. Reserve currency is accumulated by the central banks as a form of internationally acceptable liquid asset (Eijffinger, 2003, p.2).

Table 3.5 Uses and Functions of an International Currency

Functions	**Private Sector**	**Public Sector**
Unit of account	Invoicing currency Quotation currency	Anchor currency for exchange rate regimes
Medium of exchange	Payment currency Vehicle currency	Intervention currency for exchange rate markets
Store of value	Financing currency Investment currency	International Reserve currency

Source: Derived from (Sakkoulidis, 2003, p.1), (Papaioannou and Portes, 2007, p.2).

The functions of an international currency affect each other. For example, if a country uses a pegged exchange rate regime, it holds reserves in the anchor currency and uses that currency in foreign exchange market interventions. On the private side, the use of a currency in trade invoicing and financial asset denomination increases the probability of the use of the currency as a vehicle currency. The use of a currency for international private transactions also reinforces its use in official transactions. The denomination of securities in a currency will increase its use in portfolios of both private and public sector (Pollard, 2001, p.18). Mussa (2002) states that the dollar and the euro will compete as international currencies in three specific areas - use in foreign countries, foreign exchange reserves for central banks and the denomination of international credits.

3.2.1 The Principal Uses by Private Sector

The use of an international currency by the private sector as a unit of account is related to the international trade and financial transactions as well as the expression of commodity prices.

> "As a private unit of account, an international currency is used to invoice, i.e. to set the price of goods and of assets, as well as when issuing bonds or defining a bank loan. This function is different from the means of payments function, since prices may be set in one currency, and payments [may be made] in another [currency]" (Bénassy-Quéré et al, 1998, p. 10).

The euro has lower share than the U.S. dollar as an invoicing currency even in the imports of the euro area. In first quarter of 2006, 55.7% of extra-EU imports are denominated in the dollar and the share of the euro was 35.2%. On the other hand, the dollar had a share of 44% in extra-EU exports and 49.7% was the share of the euro (ECB, 2007, pp.36-37). As the U.S. is the largest importer and second biggest exporter of the world, the dominance of the dollar most probably will continue in the invoicing of trade. Additionally, the euro has been increasing its role in trade invoicing mostly in European area and neighboring regions. Finally, the dollar is still dominant in trade invoicing of primary commodities such as oil and wheat. Momani (2006) emphasizes that pricing of oil in terms of the dollar supported the dominance and value of the dollar in international markets. However, sustainability of the U.S. twin deficits and the pressures on the value of the dollar create risks for the oil exporting countries. Belton (2003) discusses the possibility of a Russian decision to use euro in pricing of oil and potential effects of this on the role of the dollar in the world economy. This kind of an event will most probably support the growing role of euro in international monetary system and decrease the degree of dominance of the dollar. Moreover, decision of Iran to invoice its oil exports in euro may trigger a move away from the dollar invoicing of oil. However, the political and economic influence of the U.S. on other oil exporting countries may not leave for a worldwide shift to euro in oil exports.

The international currency is used in international trade and capital flows as means of payment and it must be used as a vehicle currency through which two other currencies are traded. "The use of a currency as a vehicle-currency (that is as a means of exchanging two other currencies) in exchange markets is an essential

function" (Sakkoulidis, 2003, pp.2-3). Figure 3.1 reveals that the dollar is the most widely used currency in foreign exchange markets. Although the euro has some increasing trend in its use in foreign exchange markets, the dollar is dominating the exchange rate markets far ahead of the euro. For example, according to Figure 3.1, the share of dollar in foreign exchange market turnovers was around 90% whereas the euro's share was around 35% between 1992 and 2007. Due to existing large networks and inertia, the U.S. dollar is still the dominant vehicle-currency in the foreign exchange markets.

The international currency is used as a store of value by the non-residents of the issuing country and by financial systems of the other countries. The store of value function of the international currency creates opportunity for the private sector to maintain the value of their savings through risk and portfolio diversification. The securities, bonds, equities, shares namely assets denominated in the euro expands the role of the euro as an international currency. Table 3.6 reveals data on currency composition bond issuance in leading economies of the world in 2005. According to Table 3.6, 63 % (5127 of 8022) of bonds issued by the companies of four regions, the EMU, the U.S., the U.K. and Japan, are denominated in dollars whereas that share of euro is around 13% (983 of 8022) for 2005. Moreover, Table 3.6 reveals the fact that each currency is dominant in its domestic economy.

Table 3.6 Currency Composition of Bond Issuance-2005 (Number of Bonds)

	Currency				
Region	*Dollar*	*Euro*	*Sterling*	*Yen*	Total
EMU	441	744	54	92	1331
The U.S.	4490	101	49	35	4675
The U.K.	107	124	191	40	462
Japan	89	14	2	1449	1554
Total	5127	983	296	1616	8022

Source: Derived from (ECB, 2005, p.42).

The U.S. companies are issuing more bonds than the companies of EU and Japan. The number of dollar denominated bonds is nearly 5 times higher than that of the euro and nearly 3 times higher than that of the yen. Thus, the dollar remains dominant in the denomination of bonds. The dollar is the leading international currency in bond issuance since it has significant shares in four regions. Moreover, Figure 3.5 shows the dominance of dollar in international debt securities and the share of the euro. The share of dollar denominated international debt securities increased more than the share of euro denominated securities between 2002 and 2006. Especially after third quarter of 2005 the share of the dollar was more than 50%. Wijnolds (2006) emphasizes the fact that, the share of euro in stock of international debt securities has an increasing trend whereas the shares of dollar and the yen have a downward trend, after the start of EMU. For example, in 2000, nearly 50 % of international debt stocks were in the form of dollar issues and the share of the euro was nearly 20%. However, by 2005, 44% of international debt securities were denominated in dollar whereas the share of the euro increased up to 31.5%. The issuers of debt securities are governments and financial institutions of non-euro area and corporate and financial institutions of the United States (Wijnolds, 2006, p.12).

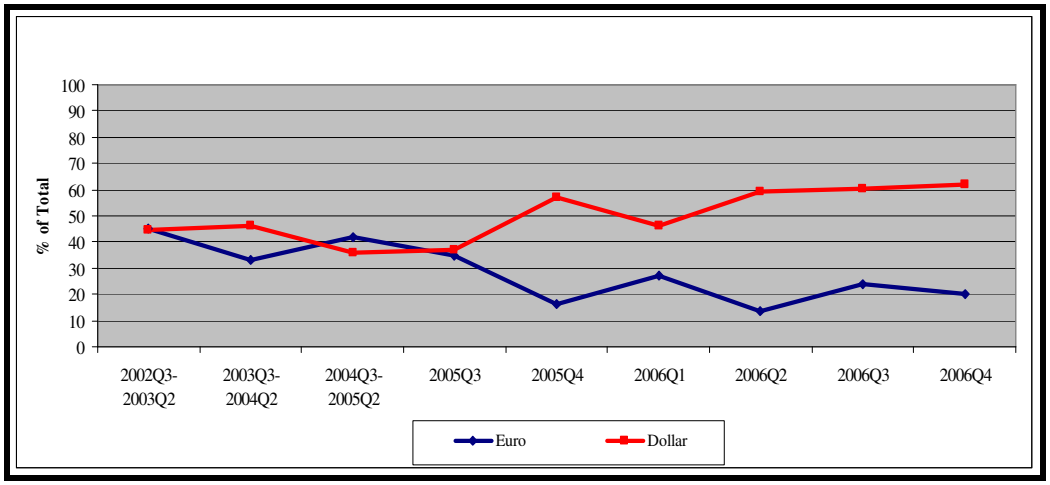

Figure 3.5 Currency Shares in Net Issuance of International Debt Securities (% of Total) (2002-2006)

Source: Derived from (ECB, 2005, p.13) and (ECB, 2007, p.15).

* Net issuance of debt securities is defined as gross issuance minus repayments.

According to Table 3.7 dollar is the most widely used currency in portfolio assets in the form of securities. In Asian countries, 75% of the debt securities held in portfolios are denominated in dollar whereas the euro and yen have shares around 6% by the end of 2005. It is not surprising that the dollar is heavily used in countries of the American continent with 90% share in debt securities of portfolio assets. In the European region, the dollar and euro have nearly the same share around 40% in the countries, which are not in EMU by 2005. Finally, the portfolios in EU neighbors, Israel, Switzerland and Russia, includes more dollar denominated debt securities with a share of 62,3% than the euro denominated ones with a share of 18,6%. According to ECB (2007), in euro area, the share of euro denominated assets was about 50% in portfolios and the share of euro denominated liabilities was about 60% in portfolio investments in 2005. Finally, Campbell et al. (2007) estimated that demand for dollar in the portfolios had a small decline whereas the euro and Swiss franc faced with an increasing demand. They concluded that the use of euro is expanding in the portfolio of investors.

Table 3.7 Currency Breakdown of Portfolio Investment Assets Held in Debt Securities (% of Total Debt Securities) (End of 2005)

	Currency			
Regions[12]	Dollar	Euro	Yen	Other
Non-Euro Area	42,2	41,5	0,5	15,3
Other EU Neighbors	62,3	18,6	0,3	18,3
America	90,4	2,6	0,3	6,4
Asia	75,8	7,8	6	10,4

Source: Derived from (ECB, 2007, p.21).

[12] * The given shares are the average share of the currency in the given region. Non-euro area includes Denmark, Sweden, Cyprus, Poland, Bulgaria, and Hungary. Other EU Neighbors are Switzerland, Israel, and Russia. America consists of the United States, the Bahamas, Mexico, Colombia, Venezuela, Uruguay, and Costa Rica. Asia includes Japan, Republic of Korea, Malaysia, Thailand, and Indonesia.

In brief, the dollar and euro are the leading currencies of their regions. However, the dollar has relatively higher shares outside its own region and the euro takes the second place as a follower of the dollar. The comparison of euro and dollar in the uses of private sector reveals that the dollar is the dominant currency in the international markets and the euro is expanding its use and weight.

3.2.2 The Principal Uses by Public Sector

A currency serves as an international currency for official purposes if it is used as an official exchange rate peg, if governments and/or central banks hold foreign exchange reserves in this currency, and if it is used as an intervention currency. The economic policy makers can use the international currencies as a unit of account when they peg the domestic currency to the international currencies. The dollar and euro are used as anchor or reference currencies in exchange rate regimes of many countries. More than fifty countries, mainly European and African countries, have exchange rate regimes, which are either solely or in combination with other currencies linked to the euro. The trade and financial flows between those countries and the economy of the euro area are reasons for those economies to have an exchange rate regime linked to the euro. For some countries, EU accession creates extra incentive for such a policy (Sakkoulidis, 2003, p.4). Similarly, the dollar is widely used in Asian, Latin American, and Middle East countries as an anchor currency due to the existing trade and financial links of the U.S. with those areas.

The degree of the link between exchange rate regime of a country and the international currency varies from the case of dollarization or euroization to the case of a currency basket which involves different currencies. For example, European microstates such as Kosovo, Andorra, San Marino, Principality of Monaco, Vatican City, Montenegro, which officially use euro with no separate legal currency, are examples of the euroization case. Bulgaria, Serbia and Herzegovina, Estonia, and Lithuania have euro-based currency board arrangements. Southern Cyprus,

Denmark, Latvia, Malta, Slovakia, Hungary, Czech Republic, Romania, Croatia, Macedonia, Serbia, CFA Franc Zone[13] are examples of countries, which pegged their currencies to the euro as a reference currency. Russia, Tunisia and Libya pegged their currencies to a currency basket including euro. Countries such as El Salvador, Panama, and Ecuador are examples of as dollarized economies. Asian countries such as China, Hong Kong, Korea, Singapore, Philippines, Thailand, Taiwan and Indonesia and most of oil exporting countries of the Middle East have exchange rate regimes pegged to the dollar (IMF, 2008b, ECB, 2007, p.41, Wikipedia, 2008b).

An international currency may be used as a means of payment by the public sector when the authority wants to intervene in the foreign exchange market. The dollar is most widely used currency in the current international monetary and financial system. Additionally, the euro is being used as an intervention currency by many countries due to its role of anchor currency. The use of international currencies by public sector as a store of value can mainly be observed in the foreign exchange reserves of a country. The official reserves of a country consist of the international currencies and assets denominated in international currencies. The dollar again has the dominant position as a reserve currency.

Indicating the currency shares in international reserves, Figure 3.6 reveals that over 65% of the international reserves were held in dollars between 2000 and 2007. The euro has a stable share around 25% and its share has an increasing trend. Total share of reserves held in sterling and yen is around 8% of total allocated reserves. Moreover, IMF data (2008c) reveals the fact that the shares of currencies in international reserves of developed and developing countries have similar patterns. However, the regional grouping of countries will give relatively more shares to the euro in the reserves of European and neighboring countries.

[13] WAEMU (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo) and CAEMC (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon).

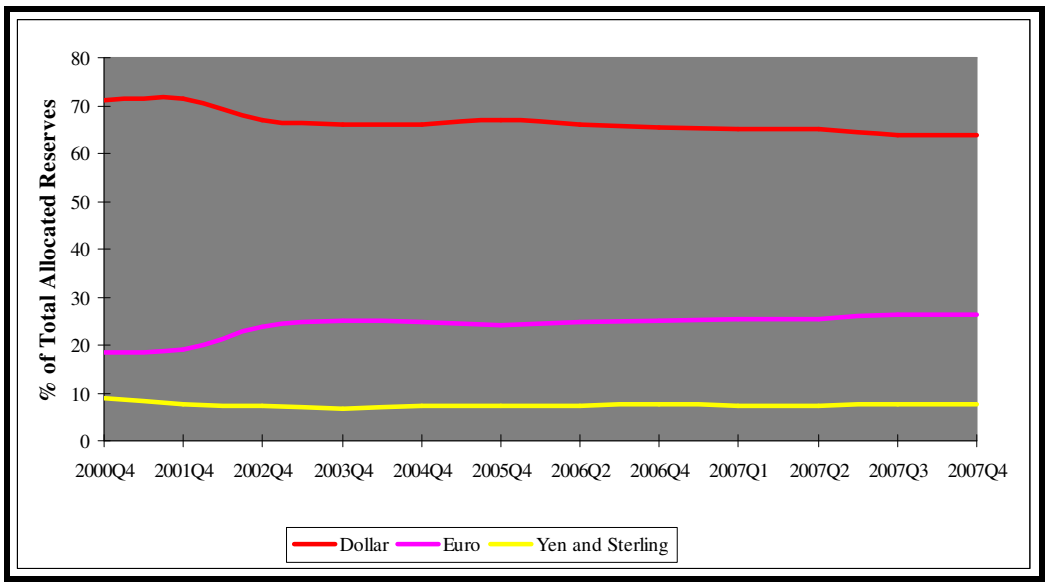

Figure 3.6 Currency Shares in International Reserves (All Countries) (% of Total Allocated Reserves) (2000-2007).
Source: Derived from (IMF, 2008c).

According to IMF (2008c) data on foreign exchange reserves, the developing countries accumulated large amount of foreign exchange reserves between 1995 and 2007. For example, the total value of foreign exchange holding of developing countries was 729,596 million U.S. dollars in 1995. In 2007, this figure is estimated as 4,889,419 million U.S. dollars. The accumulated reserves of developing countries are mostly denominated in dollars.

CHAPTER 4

THE CURRENT ACCOUNT DEFICIT OF THE UNITED STATES AND DOMINANCE OF THE DOLLAR

The value of the dollar has been declining in foreign exchange markets since 2002. Will the depreciation of the dollar continue? There are mainly three arguments about the decline of the dollar in international markets. The hard landing view argues for a sudden substantial decrease in the value of the dollar due to unsustainable external debt and current account deficit of the United States (Roubini and Setser, 2005, p.11). On the other side, the soft landing view[14] expects a smooth decline of the dollar, not a sharp depreciation for the current account adjustment of the U.S. Finally, the Bretton Woods II (Dooley and Garber, 2005) and the Dark Matter (Hausmann and Sturzenegger, 2005) arguments suggest that the external debt and the current account deficit of the U.S. are sustainable and there will not be a decline in the value of the dollar. Additionally, considering the importance of the expectations in behavior of economic agents, Krugman (2007) emphasizes the role of expectations about the sustainability of the U.S. twin deficits and the decline of the dollar in international markets.

The basis of arguments is the U.S. twin deficits, mainly the current account deficit and adjustment of these imbalances. Since the twin deficits of the U.S. and the value of the dollar are interdependent, the movement of the current account deficit and the budget deficit of the U.S. may have a significant effect on the value of the dollar in international markets. This chapter analyzes the literature on these arguments. Additionally, observation and analysis of the recent relevant statistics about the twin deficits of the U.S. economy are the other basic tools of this chapter. In short, this

[14] The Global Savings Glut argument of Bernanke (2005, 2007) is an example for soft landing view.

chapter discusses the sustainability of the U.S. current account deficit which is likely to affect the dominance of the dollar in the world economy.

4.1 Sustainability of the U.S. Current Account Deficit

Since the U.S. is the largest importer of the world, especially the Asian and European economies are dependent on their exports to the U.S. A sudden decrease in the U.S. imports will have significant effects on the rest of the world. Therefore, the sustainability of the U.S. current account deficit is crucial both for the U.S. and the world economy.

Figure 4.1 gives data about the current account balances of different regions of the world economy. Three groups - Latin America and the Caribbean, Middle East and North Africa, Euro Area- had more or less balanced current accounts between 2002 and 2006. On the other side, East Asia and Pacific group including Japan had current account surpluses between 1994 and 2006. Especially after 2001, this group of countries has an increasing trend in current account surplus. The United States had current account deficit between 1994 and 2006. However, the United States had sharp increases in the current account deficit after 2001. While the current account deficit of the United States was around 100 billion dollars in 1994, it became than 800 billion dollars in 2006. According to IFS (2008), the current account deficit of the United States was around 740 billion dollars in 2007. Although it has declined in 2007, the widening of the U.S. current account deficit creates doubts about its sustainability.

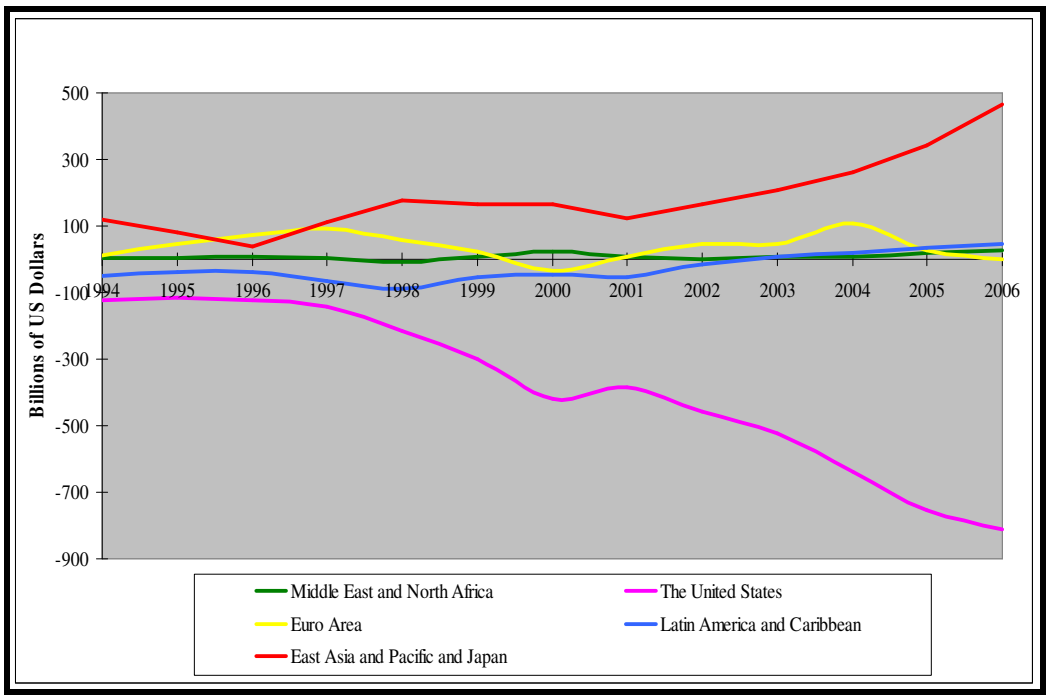

Figure 4.1 Current Account Balances (Regions) (Billions of Dollars) (1994-2006)
Source: Derived from (WDI, 2007).

*The given regions are classification of World Bank. East Asia and Pacific includes China.

Weber (2005) emphasizes that there is not a precise definition for an unsustainable current account. However, a country will not be able to run current account deficits forever and there is a limit for a sustainable current account deficit. Although the U.S. is the leader economy of the world, it seems to require some adjustment in its current account. The important issue is the time and pace of the adjustment (Weber, 2005, pp. 5-6). This part of the study elaborates on the arguments in favor of sustainability of the global imbalances, namely, the U.S. twin deficits and external surpluses of Asian countries.

4.1.1 Bretton Woods II

The debate over the sustainability of the twin deficits of the U.S., the longevity of the current international monetary and financial system, and the changes in the value of the dollar led to the emergence of various researches recently. In this context, Bretton Woods II argument claims that current international monetary system is stable and the U.S. current account deficit is sustainable at least for a decade.

Roubini and Setser (2005) claim that the Revived Bretton Woods System is not stable and they give a good summary of the Bretton Woods II argument.

> …nations of the Pacific have constituted a new Bretton Woods system. …Asian economies formally or informally tie their currencies to the dollar. …system of fixed and heavily managed exchange rates is fundamentally stable, and the intervention required to prevent Asian currencies from appreciating will continue to provide the bulk of the financing the US needs to run ongoing current account deficits. For countries on the periphery [Asian countries], the benefits of stable, weak exchange rates exceed the costs of reserve accumulation. China relies on rapid export-led growth to absorb surplus labor of hundreds of millions of low-skill poor workers from its vast agricultural sector into the modern, industrial and traded sector. Continued reserve accumulation by Asian – and other – central banks … allows the US to continue to rely on domestic demand to drive its growth, and to run the resulting large current account deficits (Roubini and Setser, 2005, pp.2-3).

In their recent papers Michael Dooley, David Folkerts-Landau and Peter Garber (2003, 2004, and 2005) labeled the current international monetary system as The Bretton Woods II or The Revived Bretton Woods System. Dooley and Garber (2005) summarize the features of the Bretton Woods II. In this system, there is a group of countries, mainly Asian countries, which pegged their currencies to the dollar to stimulate export-led growth. There are capital flows from poorer countries to the richer countries, mostly to the U.S. The United States is the center of the system and the dollar is the reserve currency. The United States runs a current account deficit by

importing from those countries. The current account surpluses of those countries are invested in U.S. capital markets. The international reserves of these countries are mainly held in dollar denominated assets. The high level of savings, especially in Asian economies, tends to contribute to the existence of low level of real interest rates, especially in the U.S. Finally, there is a group of industrial countries, mostly European, with floating exchange rate regimes and they have been experiencing appreciation of their currencies (Dooley and Garber, 2005). Moreover, McCown et al. (2006) indicates that current account surpluses of oil exporting countries contributed to the global imbalances since most of the petrodollars are invested in dollar denominated assets and central banks of those countries accumulated dollar denominated reserves.

Bretton Woods II argument implies that the current international monetary system has global current account imbalances. Figure 4.1 and Figure 4.2 indicate the fact that global imbalances of the world economy is widening. The United States has been running current account deficit whereas Asian economies have been obtaining current account surpluses. The current account deficit of the United States is obviously reflected in current account surpluses of Asian economies. Trends of both variables are similar to each other. This fact may be an evidence for the Bretton Woods II argument.

Figure 4.2 reveals data on the current account surpluses of Asian economies between 1994 and 2006. Japan had a stable current account surplus around 100 billion dollars until 2003. After 2003, the current account surplus of Japan increased to more than 150 billion dollars. China experienced sharply increasing current account surplus especially after 2001. In 2006, current account surplus of China was 250 billion dollars. Similarly, Russia has been running current account surpluses after 1998. Finally, after the financial crisis of 1998, East Asian countries had significant current account surpluses, which summed up to 300 billion dollars in 2006.

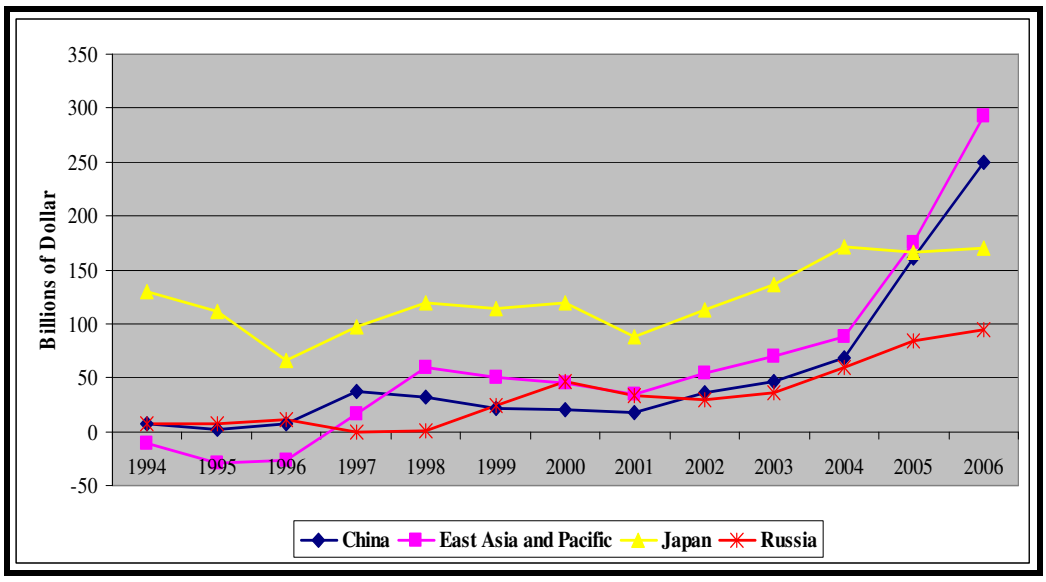

Figure 4.2 Current Account Balances of Asian Countries* (Billions of Dollars) (1994-2006)

Source: Derived from (WDI, 2007).

* East Asia and Pacific includes China.

In brief, the Bretton Woods II argument claims that the current working of the international monetary system is sustainable at least for a decade. The Asian countries are ready to accumulate more dollar reserves to continue their export led growth strategy and the U.S. twin deficits will be financed by those countries with current account surpluses (Dooley et al., 2005). Moreover, Dooley et al. (2008) claim that although mortgage and liquidity crises in the U.S. increased risks for emerging countries, the emerging countries still continue to buy low-yielding U.S. assets. They suggest that the continuity of Bretton Woods II with low real interest rates in the industrial countries and expanding economies of the emerging countries will limit the costs of liquidity crisis. Thus, there will not be a balance of payments crisis for the United States (Dooley, et al., 2008).

Dooley and Garber (2005) indicate the fact that there are significant differences between the current system and the Bretton Woods System such as the existence of euro as an alternative reserve currency. Additionally, unlike the current system, they state that the U.S. current account was in surplus on average and the capital account was in deficit in the Bretton Woods System. Eichengreen (2004) points out that Revived Bretton Woods argument does not consider changes in the world economy and this system is not sustainable. The periphery of the Bretton Woods was Europe and Japan whereas the new periphery consists of Asian countries. Unlike the original Bretton Woods System, the central banks may easily shift out of dollars since it is not backed by gold and the euro exists as an alternative. The capital mobility and liberalization of financial markets increased the difficulty of maintaining fixed exchange rate regimes for central banks (Eichengreen, 2004, pp. 5-7). Moreover, Palley (2006) emphasizes the fact that if the United States goes into a recession, the demand for Asian exports will decline and this will lead to a change in export-led growth strategy of Asian countries. In this case, the demand for dollar reserves will decline and the dollar will experience a decline in its international role.

The opponents of Bretton Woods II argument claim that this system is unstable due to widening of the U.S. twin deficits, the policy dilemma of the East Asian countries[15] - the central banks' asset management problem and costs of sterilization, the policy of export-led-growth and exchange rate policy- and the existence of euro as a potential international currency (Roubini and Setser, 2005, Eichengreen, 2004, Goldstein and Lardy, 2005). Moreover, Feldstein (2008) suggests that both private and public agents of the world economy will not want to take risks of holding dollar reserves when they realize the fact that the dollar is likely to depreciate for current account adjustment. This implies end of the Revived Bretton Woods System.

[15] The East Asian countries are facing a policy dilemma. If they accumulate more dollar denominated reserves and continue to finance the current accoun deficit of the U.S., the fluctuations in the value of the dollar will affect the value of the country's assets. If they divesify their assets away from the dollar, this will lead to further depreciation of the dollar and decrease the value of their remaining dollar assets. Moreover, the U.S. may apply protectionist trade policies in such a case and those countries may have decreasing exports. Finally, as they accumulate more reserves the sterilization costs will increase and these costs may exceed benefits of pegged exchange rate regimes.

The Bretton Woods II argument has some merit on surface in the sense that it captures an important feature of the current international monetary system. The economies of the U.S. and East Asian countries have high degree of interdependency. The East Asian countries are exporting to the U.S. and they acquire dollar denominated assets. The U.S. experiencing current account deficits and continue to import from those countries by the advantage of owning leading reserve currency of the world economy. However, the current account deficit of the U.S. will have a limit for a sustainable level since Asian countries cannot finance the current account deficit of the U.S. forever. That limit will be higher than that of any other country since the U.S. is the largest economy and the largest importer of the world. But there should be U.S. economic policy to achieve sustainable levels of current account deficit. Therefore, although the Bretton Woods II argument gives a good reasoning for the existence of the global imbalances, it does not provide convincing argument for the sustainability of the U.S. current account deficit.

4.1.2 Dark Matter

Hausmann and Sturzenegger (2005, 2006a, 2006b) claim that the U.S. current account deficit is sustainable. They provide an explanation called “dark matter”. Although, the U.S. has been running large current account deficits, it has significant surpluses in investment income part of the current account. They claim that there are measurement errors in the U.S. current account data and exports of the U.S. are underestimated. In their view, the U.S. current account accumulated a surplus of 600 billion dollars, whereas the official statistics indicate a deficit of 2.5 trillion dollars between 2000 and 2004. The difference comes from sources of dark matter. They state that the U.S. is an exporter of knowledge, liquidity and insurance services for international investors which are difficult to measure in official accounts. Those services are invisible exports since they are included in the foreign direct investment of the U.S., reserve currency role of the U.S. dollar and debt of the U.S.

Firstly, by investing abroad, the U.S. had unmeasured exports of services such as brand recognition, know-how, expertise and research and development. Secondly, by providing the reserve currency of world, the U.S. exports liquidity service for the world economy and earn seignorage revenue for this service. Finally, by providing risk-free Treasury bills, the U.S. provides insurance for international investors. Thus, the U.S. get premium for this service, which is the difference between the return of risky emerging market assets and the return of risk free U.S. asset (Hausmann and Sturzenegger, 2005).

Hausmann and Sturzenegger (2006a) develop a model to measure the effects of dark matter. They used the official data of the IMF and estimate the dark matter effect on current accounts of all countries listed in IMF data. According to Figure 4.3, the United States had current account surpluses except 2002 and 2004 due to dark matter effect although the official figures indicate that the country had a widening current account deficit. Especially in 2003, the estimated current account balance and the official current account balance had a difference of nearly 1200 billion dollars.

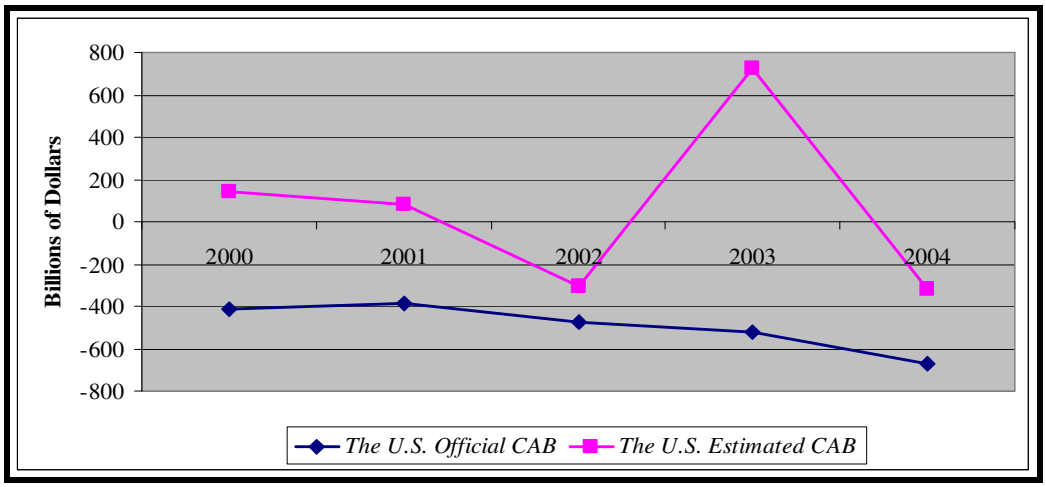

Figure 4.3 Dark Matter Effect on the U.S. Current Account Balance (Billions of Dollars) (2000-2004)
Source: Derived from (Hausmann and Sturzenegger 2006a, p.35).

The dark matter argument implies that there is no need for dollar depreciation in order to reduce the current account deficit of the U.S. since the current account of the U.S. was actually in surplus due to sources of dark matter. Although, this argument captures some important points such as seignorage of the dollar and unmeasured exports of U.S. services, those revenues may not be sufficient to keep the U.S. current account deficit at a sustainable level. Furthermore, dark matter revenue sources may not be stable in the future. A loss of confidence about the value of the dollar will significantly decrease the seignorage revenue and increasing returns on alternative assets may decrease the demand for U.S. securities. Finally, it is questionable that those types of revenues had such a large size that they are able to lead a current account surplus in the U.S. as the proponents suggested (Elwell, 2008).

The Bretton Woods II and Dark Matter arguments are similar in the sense that both are suggesting the sustainability of the current account deficit of the U.S. Moreover, the bulk of both arguments are similar. The Dark Matter argument considers the seignorage revenue of the dollar and issuing of low risky dollar denominated assets. The Bretton Woods II argument states that the Asian countries are the holders of dollars and dollar denominated assets. Unlike Dark Matter argument Bretton Woods II does not consider foreign direct investment of the U.S. to the rest of the world. The Dark Matter argument states that the U.S. current account does not have substantial deficits whereas the Bretton Woods II argument states the existence of global imbalances. Although, two arguments reveals significant facts about the sustainability of the current account deficit of the U.S., the suggested reasons will not be sufficient to keep the U.S. current account deficit at a sustainable level if the widening of the U.S. twin deficits continues.

4.2 Unsustainability of the U.S. Current Account Deficit

There is a large literature focusing on the unsustainability of the current account deficit of the United States. Various scenarios about the current account adjustment of the United States are discussed by the recent literature on the issue. There are number of economists[16] who argue for unsustainability of the U.S. current account deficit, existing fiscal policy and external debt accumulation. The main arguments for unsustainability of the U.S. current account deficit are summarized in this part of the study.

The main focus of arguments for unsustainability of the U.S. deficits is accumulation of dollar denominated reserves by Asian countries. Figure 4.4 gives information about the trend in twin deficits of the U.S. and reserve accumulation of Asian countries. The current account deficit of the U.S. and accumulated reserves of leading countries of Asia had similar trend between 2001 and 2006. In 2001, the United States had current account deficit equal to 4% of its GDP and given Asian countries held nearly 40% of total world reserves. The level of the U.S. current account deficit was 6% of GDP in 2006 and given countries held more than 50% of world reserves. The budget deficit of the U.S. had relatively unstable pattern. In 2001, the U.S. had a budget deficit which was less than 1% of GDP. In 2003, the budget deficit of the U.S. was more than 4% of GDP. After 2003, the budget deficit of the U.S. had a decreasing trend. The data indicates that reserve accumulations of Asian countries are highly correlated with current account deficit of the U.S. rather than the budget deficit. Due to existing trade flows between two regions and exchange rate policies of the Asian countries, more than half of those reserves are denominated in dollars. Thus, reserve management and further reserve accumulation decision of Asian countries will affect the current account adjustment of the U.S. and the value of the dollar in international markets.

[16] They include N.Roubini, B. Setser, K. Rogoff, M. Obstfeld, M. Mussa, and S. Edwards.

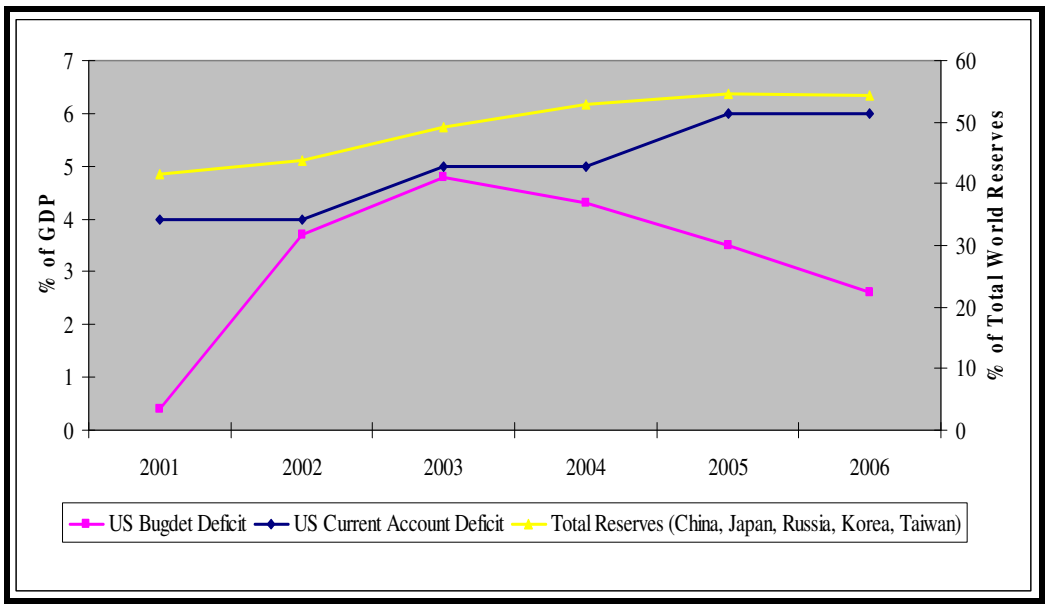

Figure 4.4 The U.S. Current Account Deficit (% of GDP), The U.S. Budget Deficit (% of GDP) and Reserves of Asian Countries (% of World Reserves) (2001-2006)
Source: Derived from IMF (2008a), WDI (2007), IFS (2008).

4.2.1 Soft Landing and the Global Savings Glut

There are arguments for gradual adjustment of the U.S. current account deficit. The soft landing argument and the global savings glut argument are given in this section. Both arguments claim that the U.S. current account deficit is unsustainable and there will be a smooth adjustment process.

Mussa (2007) claims that the U.S. current account deficit is unsustainable and there is a need for adjustment. The current account deficit as a share of GDP should decrease from unsustainable level of 6% to a sustainable level of 3%. The adjustment process will consist of the depreciation of the dollar and appreciation of Asian currencies. The decline in the growth of demand in the U.S. and increase in the demand growth in the rest of the world, specifically Asian and OPEC countries will

have a role in the adjustment process. The U.S. had a budget deficit and if the U.S. applies a strict fiscal policy to achieve budget balance, this tightening of fiscal policy in the U.S. will contribute to proper adjustment (Mussa, 2007, p. 691). Moreover, Mussa (2007) does not expect a hard landing for the dollar due to reserve currency role of the dollar. Instead, given scenario of adjustment is the process of soft landing.

The United States had low private saving rates and high private investment in 1990s. After 2001, budget deficits existed. Both private investment and budget deficit are financed through external borrowing. Thus, the U.S. current account deficit is a reflection of low saving rates in the U.S. (Roubini and Setser, 2004). Moreover, the growth oriented monetary policy of the U.S. seems to be loose monetary policy that contributes to the widening of the current account deficit.

The soft landing view considers the possibility of an increase in the U.S. savings resulting from the tight fiscal policy and rise of household savings. The U.S. needs to adjust its monetary and fiscal policy to achieve current account adjustment and budget balance. The tight fiscal policy will increase the government saving and reduce the external debt. As monetary policy of the U.S. becomes tight, the higher interest rates and slowing of house price growth will support savings. These policies will start the domestic adjustment process of soft landing for the dollar.

On the other side, there will be external side of the adjustment. The financial sectors of Asian countries need reforms and the reform in financial sector will improve the quality and level of investment in Asian countries and increase their domestic demand. High saving rates of Asia will fall due to rising credit and confidence of citizens about the security of their savings. Additionally, the more flexibility of exchange rates will result in appreciated exchange rates and increase the purchasing power of the people (Rajan, 2005).

In sum, the soft landing scenario expects an increase in the U.S. saving rates and a decrease in the Asian saving rates. These developments will lead to adjustment of current account imbalances. On the other hand, Krugman (2007) indicates that the process of gradual depreciation of the dollar will lead to larger losses than expected for investors as they accumulate more dollar denominated assets. As the dollar depreciates, their expectations on the value of the dollar will change and considering further depreciation of the dollar, they will move out of dollar denominated assets. This will result in a sharp decline in the value of the dollar (Krugman, 2007).

The Global Saving Glut argument gives an explanation for the emergence of the current account deficit of the U.S. Bernanke (2005) argues that although the current account deficit of the U.S. has resulted from domestic dynamics, there are significant external factors. In the last decade, the supply of global saving increased. "The global saving glut" is the reason for widening of the U.S. current account deficit and lower real long term interest rates of the world economy (Bernanke, 2005 and Clarida, 2005).

Indicating the fact that the U.S. twin deficits have partially resulted from low levels of national saving of the U.S. economy, Bernanke (2005) suggests that global saving glut is the external reason for the deterioration of the U.S. current account. Bernanke lists number of reasons for the emergence of the global saving glut.

Firstly, industrial countries have been experiencing increases in their saving rates due to low returns on their domestic investment. The labor forces of those countries are declining due to highly aged population and higher capital-labor ratio in those advanced economies make investments less attractive since emerging economies will have higher returns to capital. Therefore, most of the industrial countries, other than the U.S., have current account surpluses and they are able to lend abroad (Bernanke, 2005). Moreover, the developing countries contributed more to the global savings glut. Since the developing countries experienced a number of financial crises in the

last decade, for precautionary purposes, they accumulated large amounts of international reserves by achieving current account surpluses and attracting capital inflows. East Asian countries had increased the level of their saving rates to stimulate exports and run current account surpluses. The resulting rise in central bank reserves are invested in dollar denominated assets and thus financed the U.S. twin deficits. Finally, oil exporting countries have been experiencing large current account surpluses due to rising oil prices. Most of those countries also hold dollar reserves contributing to the finance of the U.S. twin deficits (Bernanke, 2005).

According to Bernanke (2007), the large current account deficit of the U.S. will not be sustainable indefinitely since the investors will be satiated with dollar denominated assets. There will be need for adjustment and earlier adjustment will decrease the pain of the adjustment process for all countries. Bernanke (2005) expects that the current account adjustment of the U.S. will be smooth since in the longer term industrial countries will save more due to aging population and the developing countries will increase investment expenditures and reduce their savings due to their younger population. Thus, the U.S. current account deficit will decrease as the current account surpluses of the developing countries decrease. Bernanke (2005, 2007) also suggests that the U.S. policies to decrease the budget deficit and stimulate household saving, which will accelerate the adjustment.

Labonte (2005) indicates that data do not support arguments of Bernanke since the world saving has been at low levels for some decades and low interest rates indicate lower investment demand in the world economy. Moreover, the U.S. current account has primarily resulted from domestic dynamics of the U.S. economy and financed mainly by central banks rather than private agents of the developing countries (Labonte, 2005, p.1).

According to Figure 4.5, where the gross savings as percentage of GDP for major regions of the world are given, the United States has the lowest saving rates in the world economy. In 2006, the United States gross savings corresponded to 14% of GDP whereas gross savings of the world economy was higher than 20% of world GDP. Asian countries have the highest saving rates between 1992 and 2004. Middle Eastern countries have been increasing their savings after 1998. In 2006, Asian countries and Middle Eastern countries had gross savings higher than 40% of their GDP. The saving rates of European Union were lower than the world average in the given period. The data implies that there is regional saving glut rather than global saving glut.

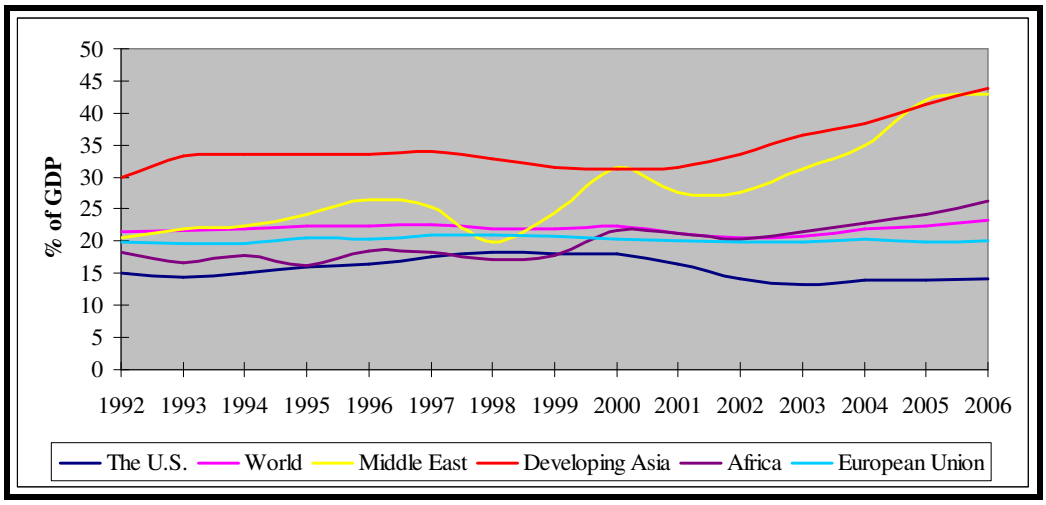

Figure 4.5 Gross Savings of Regions (% of GDP) (1992-2006)

Source: Derived from (IMF 2008a).

* Developing Asia includes China and excludes Japan.

The global savings glut argument is similar to Bretton Woods II argument in the sense that it mainly focuses on current account surpluses of developing countries. The Asian countries achieve high level of current account surpluses thorough high saving rates. Unlike Bretton Woods II argument, the global savings glut argument claims that the current account deficit is not sustainable since the international investors will have a limit to accumulate dollar denominated reserves.

Similar to soft landing argument the global savings glut argument expects a gradual adjustment for the current account deficit of the U.S. and a smooth decline for the dollar. Both arguments points out fiscal policy tightening and saving rate increases for the U.S. together with decline in saving rates in the current account surplus countries. However, the global savings glut argument suggests an additional reasoning for the adjustment process. It is expected that there will be a change in saving rates of countries due to differences in aging of their population and labor force. Although, the argument may have some merit on surface in explaining reasons of huge current account deficit of the U.S., it does not give convincing evidence for smooth adjustment of the U.S. twin deficits.

Elwell (2008) points out that the global savings may move towards different alternatives other than dollar denominated securities. Especially, risk of recession in the U.S. economy and fluctuations in the value of the dollar increase the probability that developing countries will not continue to finance the U.S. twin deficits by buying dollar denominated assets. A sudden shift towards other alternative assets will induce a sharp decline in the value of the dollar.

4.2.2. The Hard Landing

The most pessimistic scenario about the adjustment of the U.S. current account deficit is given by the hard landing view. The hard landing refers to a sharp decline in the value of the dollar, which will lead to the adjustment of the current account deficit of the U.S. According to this view, the Asian countries will not continuously finance the U.S. current account deficit and as they diversify away from the dollar denominated assets, the dollar will substantially depreciate. Thus, the hard landing view claims that the current international system called Bretton Woods II is unstable and it will come to end in the short term.

Indicating the significance of foreign central banks' financing of the U.S. deficits, Roubini and Setser (2005) list number of reasons for unsustainability of the U.S. current account deficit. Firstly, increasing capital losses on dollar assets of the foreign central banks will lead to portfolio diversification of central banks. Some small country central banks had already diversified their portfolios away from the dollar to the euro and the yen. Asian countries will have higher costs associated with reserves as they continue to finance the U.S. external deficit. Moreover, sterilization of large amount of reserves will be difficult especially for China and partial sterilization of foreign exchange market intervention will lead to money creation, creating pressure on China to change its pegged exchange rate regime (Altig and Roubini, 2005, Roubini and Setser, 2005).

According to Roubini and Setser (2004), the imports of the U.S. is rising faster than exports and rising oil prices will contribute to the widening of the current account deficit of the U.S. Moreover, the external debt of the U.S. has been rising due to twin deficits. The hard landing scenario states that the twin deficit of the U.S. is likely to worsen in future. When the economic policies did not aim to close the current account deficit and the budget deficit, the foreign investors will realize that the dollar has to depreciate more significantly. Losing confidence, they will sell dollar assets leading speculation and adjustment- rise in the interest rates in the U.S. and the substantial depreciation of the dollar leading to anticipation of appreciation which will attract foreign investors. That adjustment will be highly costly leading to unemployment and output loss (Rajan, 2005, Roubini and Setser, 2004, 2005).

The reserve currency position of the dollar and borrowing in terms of dollar are listed as advantage for the U.S. Given the significant effect of the policies of foreign central banks, the fiscal policy adjustment and reduction in deficits are seen as the tools to be used by the U.S. policy makers to slow down the landing (Altig and Roubini, 2005).

Roubini (2007) expects a hard landing for the dollar and recession for the U.S. economy. However, he indicated that domestic factors of the U.S. economy such as existing slowdown of the economy and risk of deepening recession may trigger the hard landing instead of external factors such as unwillingness of foreign agents to finance the U.S. twin deficits (Roubini, 2007). On the other hand, Xafa (2007) argues that the adjustment will be achieved smoothly through market forces and the most important risk for the dollar and the world economy will come from the protectionist policies of the U.S. against current account surplus countries, especially China.

The hard landing argument captures the fact that China's decision on currency composition of international reserves will have significant effect on the value of the dollar. Figure 4.6 reveals data about the reserves of leading reserve holders of the world economy. Figure 4.6 indicates that China and Japan are the leading reserve holders of the world economy. In 1995, China held nearly 5% of world reserves whereas in 2006, it held more than 20% of world reserves. China had accumulated large amounts of reserves between 1995 and 2006. Similarly, Japan held nearly 20% of world reserves in 2006. Other Asian countries, Russia, Korea and Taiwan, held nearly 5 % of world reserves in 2006. Total reserve holdings of given countries corresponded to more than 50% of total world reserves. Therefore, reserve management of Asian countries, especially China will have significant repercussions on the sustainability of the U.S. current account and dominance of the dollar in the international monetary system.

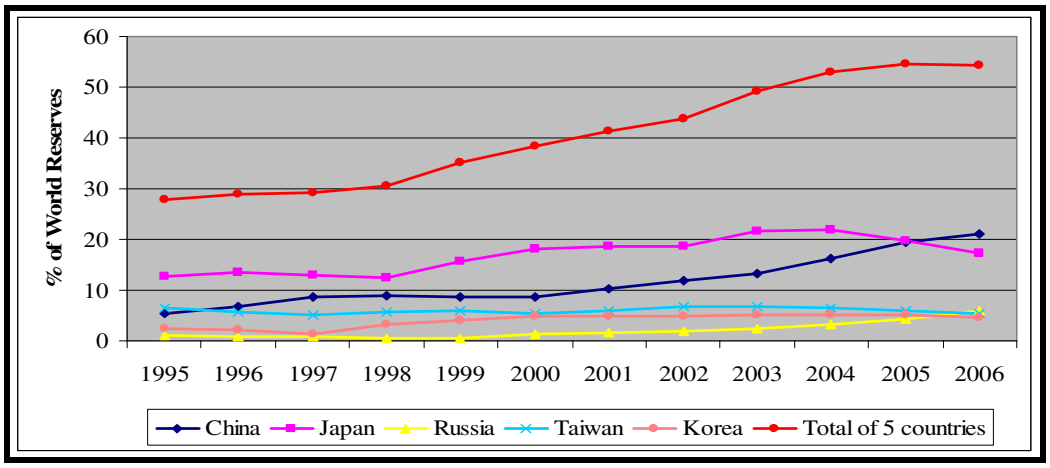

Figure 4.6 Leading Reserve Holders (% of World Reserves) (1995-2006)
Source: Derived from (Papaioannou and Portes, 2007).

4.3 Other Arguments about the U.S. Current Account Deficit and the Dollar

Since the sustainability of the U.S. current account deficit is a controversial issue in the recent literature. There are different arguments other than literature given in the previous sections of this chapter. This section summarizes the literature which directly focuses on the exchange rate adjustments and the current account deficit of the U.S. Firstly; there are economists who claim that current account adjustment of the U.S. will require significant changes in the exchange rates. The next idea, given by McKinnon (2007), claims that there is no need for a change in exchange rates to achieve current account adjustment of the U.S. Finally, some economists suggest policy coordination to solve the problem of global imbalances.

Rogoff (2007) states that unless the adjustment of the U.S. current account deficit takes place in the long term, this will heavily influence the exchange rates in the world economy. The economic policies aiming to prevent recession in the world economy will not be able to prevent exchange rate adjustments (Rogoff, 2007, p.705). Moreover, Feldstein (2007, 2008) suggests that the adjustment process of the

U.S. current account requires both depreciation of the dollar and higher saving rates for the U.S. economy. Edwards (2007) indicates that adjustment of global imbalances will require significant exchange rate movements since higher growth rates of Asia and Europe with slowing down of growth in the U.S. will not be enough for adjustment. Obstfeld and Rogoff (2005) estimate that dollar should depreciate by 20% against Asian currencies for halving of the current account deficit of the U.S.

Unlike Rogoff (2007), Feldstein (2007, 2008) and Edwards (2007), McKinnon (2007) states that the adjustment process of the U.S. current account is a transfer problem in the sense that spending should be transferred from the U.S. to the Asian countries. The savings should increase in the U.S. and decrease in the Asian economies. Therefore, there is no need for exchange rate adjustment (McKinnon, 2007, p.669).

Chinn (2005) emphasizes that oil imports had a large share in imports of the United States and reduction of oil imports of the U.S. will help the current account adjustment. According to WDI (2007) data, in 2006, fuel imports corresponded to 18 % of total merchandise imports of the United States. For a smooth adjustment process of the current account, the United States should decrease the fiscal deficit and quantity of oil imports. Moreover, appreciation of Asian currencies should be negotiated (Chinn, 2005).

Finally, Summers (2006) and Bergsten (2008) suggest a policy coordination for the adjustment of global imbalances. Bergsten (2008) emphasizes that there is a risk of instability in the international financial system and thus risk of recession in the world economy. The correction of global imbalances of the world economy is needed. The reduction of the U.S. current account deficit and reduction of the current account surpluses of Asian and OPEC countries will reduce the risk of hard landing for the dollar. Moreover, Bergsten (2008) suggests that the U.S. and Europe should take necessary policy actions to prevent large fluctuations in the value of the dollar with

respect to the euro. The Asian countries should allow currency appreciations against the dollar. Additionally, the IMF should take a crucial role in policy coordination and create a Substitution Account[17] for portfolio diversification of central banks. The creation of such an account will be a non-market solution for the diversification problem of central banks. This will prevent sharp decline in the value of the dollar and sudden appreciation of the euro (Bergsten 2008). This kind of agreement may be beneficial for the world economy as a whole.

In brief, the sustainability of the U.S. twin deficits is a controversial issue in the recent literature. Although the present levels of current account deficit may be sustainable for the U.S. in the short term, it is obvious that the U.S. cannot borrow from abroad to finance the deficits forever. A tight fiscal policy may successfully narrow the budget deficit of the U.S. Therefore, an adjustment is necessary especially for the current account deficit of the U.S. The adjustment process may include a sharp decline or a gradual decline in the value of the dollar. The hard landing for the dollar will be harmful for the U.S. as well as for the other regions of the world economy. Unless supported by policy actions, the soft landing process may not start and may run risks for a case of hard landing due to possible changes expectations. Policy actions by the U.S., the EU and Asian countries may affect expectations about the value of the dollar and prevent the hard landing. Although the hard landing case is less likely to occur, the optimal solution for the global imbalances problem of the world economy will be the case of soft landing accompanied with policy actions which reduce the risk of hard landing. Whatever the case, the decline in the value of the dollar will affect its role as a store of value in international markets. Thus, the current account deficit of the U.S. will be leading risks for the dominance of the dollar in the international monetary system.

[17]"Such an account, which was actively negotiated and almost came into being during an earlier [crisi] of dollar diversification in the late 1970s, would accept unwanted dollars from official holders in return for Special Drawing Rights at the Fund. The investors in the account would receive a widely diversified and highly liquid asset with a market interest rate while protecting the value of their (very large) remaining dollar assets." (Bergsten 2008).

CHAPTER 5

RESERVE ACCUMULATION OF CENTRAL BANKS AND DOMINANCE OF THE DOLLAR

One of the most important features of recent international monetary system is the huge accumulation of foreign exchange reserves, specifically in terms of dollars, by East Asian countries. Moreover, Momani (2006) indicates that oil exporting countries of the Gulf Cooperation Council[18] had a crucial role in supporting the dollar as an international currency by determining oil prices in terms of dollar and accumulating dollar denominated assets since 1970s. However, there are costs of accumulation of foreign exchange reserves and central banks should take these costs into account in the determination of international reserve levels. Some recent studies showed that the cost of excess international reserves to developing countries reached one percent of their GDP (Rodrik, 2006).

Recently, central banks have been considering policies to diversify their assets and reserves. The portfolio diversification and movement of central banks away from the dollar may heavily influence the use and the value of the dollar in international markets. A recent study by Papaioannou, et al. (2006), indicates the fact that the diversification process has already started. "The introduction of the euro, greater liquidity in other major currencies, and rising current account deficits and external debt of the U.S. have increased the pressure on central banks to diversify away from the dollar" (Papaioannou et al., 2006). Therefore, this part of the study elaborates on the foreign exchange reserve accumulation of the central banks. Specifically, reasons for reserve accumulation, reserve adequacy criteria and cost of reserves are discussed. Additionally, current statistics on currency composition of international reserves are briefly given.

[18] A regional organisation consisted of Arab states. Member countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.

5.1 Reasons of Reserve Accumulation

After the collapse of the Bretton Woods system of fixed exchange rate regimes and with increasing capital mobility which provides easy access for many developing countries to the international capital markets, it was expected that the demand for international reserves would decrease significantly. On the contrary, the world economy witnessed the reverse (Mendoza, 2004). Developing countries have accumulated large amounts of foreign exchange reserves, especially after the Asian financial crisis. Data on foreign exchange reserve accumulation of countries between 1995 and 2007 are displayed by Figure 5.1.

Figure 5.1 exhibits that the reserve accumulation of all countries rapidly increased after 2001. In 2001, total foreign exchange reserves of all countries were around 2000 billions of dollars whereas total reserves were over 6000 billions of dollars in 2007. Moreover, developing country reserve holdings have been rising faster than that of industrial countries since 2001. In 2007, total reserve holdings of developing countries were around 4500 billions of dollars and industrial countries held reserves around 1500 billions of dollars.

There are many approaches to explain reserve holding motivations of the countries in the literature. The buffer stock models, precautionary demand/self insurance motives and mercantilist motives are frequently used explanations of demand for international reserves. This part discusses the motivations for reserve accumulation behavior of developing countries by briefly discussing the motivations for reserve holdings.

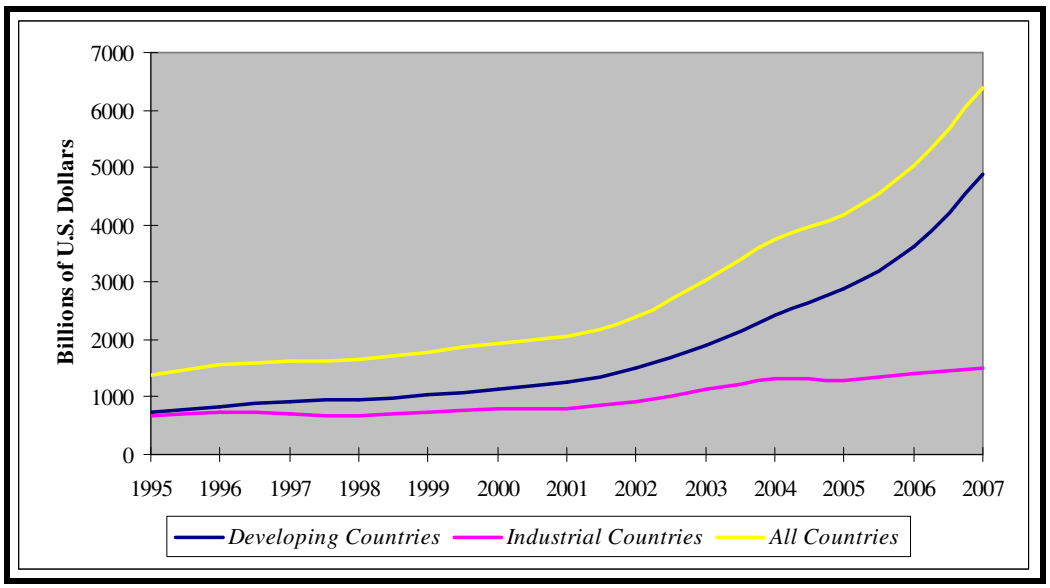

Figure 5.1 Total Foreign Exchange Reserves (Billions of Dollars) (1995-2007)
Source: Derived from (IMF, 2008c).

5.1.1 Buffer Stock Models

Mendoza (2004) indicates that the earlier literature focused on using international reserves as a buffer stock- accumulated in times of abundance and decumulated in times of scarcity. Countries generally obtain foreign exchange reserves through trade or capital flows. When a country had balance of payments surplus, it will obtain foreign exchange reserves. In a case of deficit, foreign exchange reserves of the country will decline. Frenkel and Jovanovic (1981) presented reserves as a buffer stock which accommodates balance of payments imbalances.

According to buffer stock view, holding international reserves should decrease the cost of macroeconomic adjustments in the country such as output loss. Optimal level of reserves should balance the macroeconomic adjustment costs in the absence of reserves with the opportunity cost of holding reserves (Mendoza, 2004, p.64).

The buffer stock models imply that amount of reserves is inversely related with the opportunity cost of reserves and exchange rate flexibility. Moreover, GDP and reserve volatility which is driven by the volatility of balance of payments should be positively related with the level of reserves in the country (IMF, 2004, p.355). If the opportunity costs of reserves are high, reserve accumulation will be less. Moreover, the greater flexibility in the exchange rate regime will decrease the need for foreign exchange reserves. Additionally, the more open and volatile an economy's current and capital account, the more vulnerable to sudden stops of capital flows necessitate higher desired level of reserves. However, as Mendoza (2004) indicates, the buffer stock models did not explain all of the recent developments in the accumulation of international reserves. While there are greater flexible exchange rate regimes, the direction of reserve accumulation is upward in recent decades.

5.1.2 Precautionary (Self-Insurance) Motives

Asian financial crisis revealed the fact that emerging markets are highly vulnerable to sudden stops, cases in which a country is not able to borrow from international financial markets. The ability of the country to finance payments imbalances and provide liquidity in the face of runs on the currency is an essential factor that will prevent negative effects of a sudden stop. Fischer (2001) indicates that reserves are seen as a key determinant of a country's ability to avoid economic and financial crisis. Therefore, international reserves can be seen as a self-insurance against the output losses associated with sudden stops and international reserves can reduce the probability of an output drop induced by a sudden stop. In addition, international reserves may be a form of precautionary saving for economies with conditional access to global capital markets and limited domestic tax collection for paying external debts (Aizenman, 2005, 2007). Aizenman and Marion (2004) have noted that the behavior of reserve accumulation has changed since the Asian financial crisis and recent large international reserve holdings in a number of Asian emerging markets may represent precautionary holdings.

5.1.3 Mercantilist Motives

Dooley, Folkerts-Landau and Garber (2003) argue that the resulting accumulation of foreign reserves is used for attracting foreign investment in East Asian countries and for promotion of export-led growth. The Bretton Woods II argument suggests a mercantilist motive for reserve accumulation. Moreover, Aizenman (2005) emphasizes that some part of the motivation for the reserve accumulation may derive from a mercantilist desire by Asian governments to maintain undervalued exchange rates. The reserve accumulation resulted from increasing exports of labor abundant sectors. This strategy is mostly applied by East Asian countries like China, Malaysia and Hong Kong. However, Masson (2007) emphasizes that export oriented economic policies of the East Asian countries have been applied for many years whereas reserve accumulation of those countries increased especially after financial crises of 1997-1998. Comparing the relative importance of precautionary motives and mercantilist motives for reserve accumulation, Aizenman and Lee (2005) conclude that empirical evidence supports precautionary motives for reserve holdings and capital inflows contribute to reserve accumulation. On the other hand, Rodrik (2006) argues that sharp increases in reserves may be derived from policies that aim to prevent domestic currency appreciation and protect competitiveness in exporting sectors especially for the case of China.

5.1.4 Other Motives

There are some other reasons for the accumulation of reserves. The exchange rate regime of a country and the level of its international reserves will be interdependent. Fixed exchange rate arrangements will need adequate foreign exchange reserves. For example, in the case of currency board arrangements the level of reserves is largely determined by capital flows, the size of accumulated fiscal surplus and export earnings. Furthermore, some central banks are constrained to accumulate reserves by agreements with IMF.

Having a flexible exchange rate regime, a county may still need and accumulate international reserves. Williams (2005) indicates that level of foreign exchange reserves will be important for the countries which try to stabilize value of their currencies by foreign exchange market interventions. The *fear of floating*, "defined as a reluctance to allow totally free fluctuations in the nominal or real exchange rate", may be another motive for reserve accumulation (Mishkin and Calvo, 2003, pp.4-5). Some countries may have vulnerabilities like high external debts and financial dollarization such as Turkey, Brazil and Argentina. Central banks of these countries have to take into account the movements in the exchange rates and as a result in order to control exchange rate volatility, sufficient amount of international reserves are needed.

In addition to these, Williams (2005) indicates that reserve accumulation can result from strong performance of the economy and from current and capital account surpluses or it can be accumulated by external borrowing. If a country is earning foreign exchange rapidly, it has to hold its assets in foreign assets, otherwise overspending it on the imports of goods and services can create inflationary pressures. Moreover, Williams (2005) indicates the fact that oil exporting countries are able to accumulate foreign exchange reserves much more easily than those which have import expenditures for oil. Finally, IMF (2001) states that macroeconomic problems such as high current account deficits, high levels of external and domestic debt will force countries to hold high levels of international reserves although it will be difficult for them to obtain international reserves. Moreover, if a country holds adequate level of international reserves, this will contribute to the confidence that the country will be able to fulfill its obligations.

5.2 Reserve Adequacy and Cost of Reserves

Holding international reserves simply means financing expenditures and investments of other countries (Williams, 2005). For example, if the United States increases expenditures by printing dollars, dollar holders will be financing those expenditures. Similarly, international reserve holders are funding the expenditures of reserve provider countries. Therefore, it is crucial for the country to decide on the adequate level of international reserves. There is a large literature on determination of optimum level of international reserves. Monetary based criterion, import based criterion and debt-based criterion are three main types of reserve adequacy criteria.

5.2.1 Monetary Based Criteria

One of the older reserve adequacy criteria was a ratio of international reserves to monetary base, this criteria was used before the World War II. Currently, this criterion is valid only countries with currency board arrangements (Wijnholds and Kapteyn, 2001, p.5). IMF (2004) indicates that the ratio of reserves to broad money (M2) has been widely used to assess vulnerability to capital outflows and loss of confidence about domestic currency. Moreover, this ratio may be indicator of financial fragility and capital flight exposure for the country (Movchan, 2002, p.6). A higher Reserves/M2 ratio will indicate that the country is less vulnerable to capital outflows and capital flights. If economic agents want to change denomination of their assets from domestic currency to foreign currencies, the country should have enough international reserves to prevent instability in the financial markets. Since the measurement of capital flight is difficult, there is not a specifically determined minimum level for this reserve adequacy criterion. Wijnholds and Kapteyn (2001) suggest that adequate level of reserves may range from 5% to 20%, depending on the choice of exchange rate regime in the country. The flexible exchange rate regimes have lower risks of capital flight than fixed or pegged exchange rate arrangements. When the central banks lose credibility of maintaining fixed exchange rates,

residents of the country will rush for exchanging their domestic assets with foreign assets (Wijnholds and Kapteyn, 2001, pp.20-21). Thus, countries with fixed exchange rate regimes should have higher level of international reserves. Reserves/M2 ratios for selected countries are given by Figure 5.2, Figure 5.3 and Figure 5.4.

Figure 5.2 indicates that Argentina, Brazil, Mexico and Chile have adequate level of reserves with respect to monetary based criterion. In 2006, Argentina, Chile and Mexico had reserves more than 20 % of their broad money supply, M2. In 1994, Chile experienced high levels of Reserves/M2 ratio and Mexico had the lowest ratio of 1990-2006 time periods. In early 1990s, Chile had capital account liberalizations. Chile experienced negative effects of Asian financial crises in 1998 (Ffrench-Davis and Agosin, 1999). Volatility of capital flows creates fluctuations in the level of international reserves. Chile case may be explained by reserve accumulation resulted from capital inflows before 1995 and capital outflows during Asian financial crisis. Since the Mexico experienced a financial crisis in 1994, the reserve levels had a minimum in 1994.

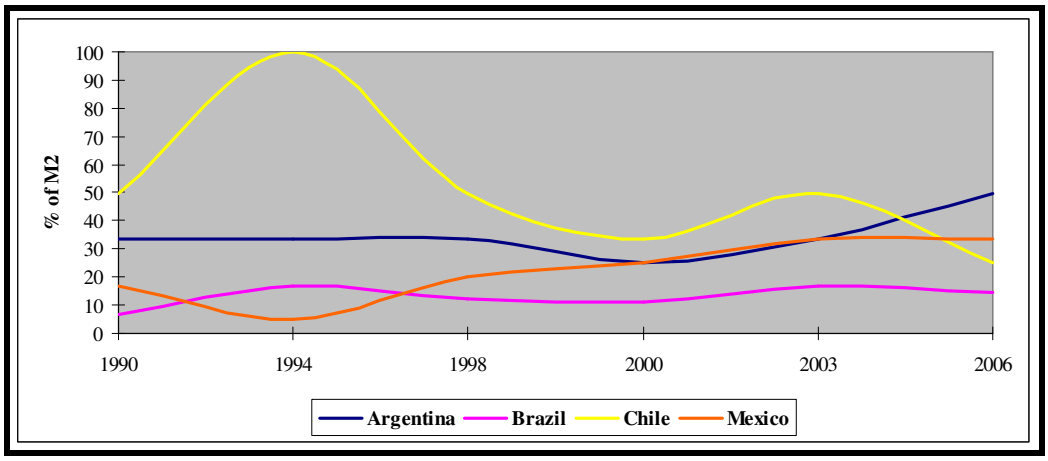

Figure 5.2 Reserves/M2 Ratios of Selected Countries (Latin America) (% of M2) (1990-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

According to Figure 5.3 Russia and Malaysia have more reserves than adequate level. Especially, Russia held reserves equal to M2 by 2006 whereas amount of reserves in Malaysia was around 50% of M2 in 2006. Although, China and Japan held reserves lower than 20% of their M2, they have enough reserves according to monetary based criterion. Reserves/M2 of those countries had an increasing trend especially after 1998, Asian financial crises. The rapid rise in international reserves of Russia mainly results from exports revenues of energy products and reduction of capital flights after Russian financial crisis (Wijnholds and Søndergaard, 2007).

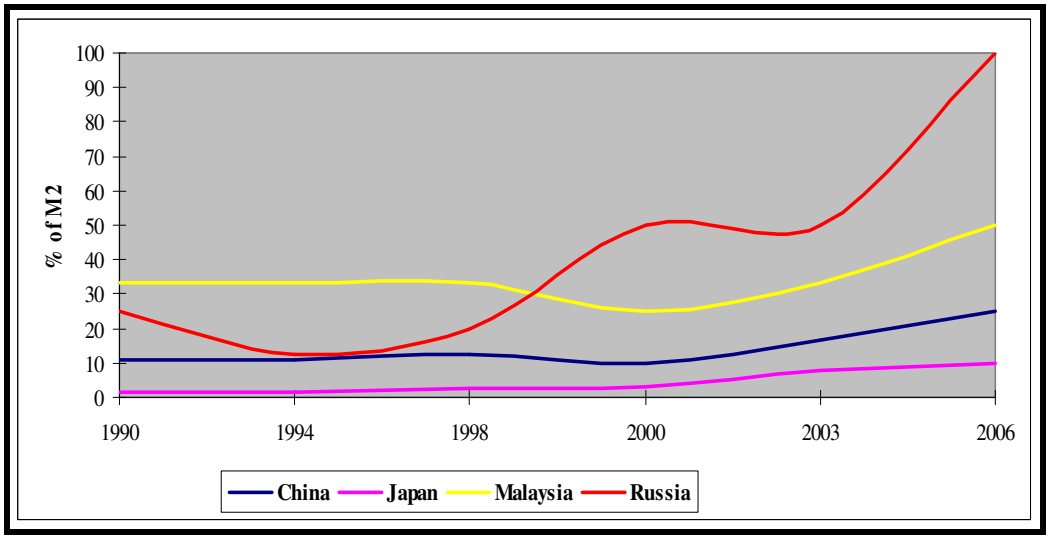

Figure 5.3 Reserves/M2 Ratios of Selected Countries (Asia) (% of M2) (1990-2006)
Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

Finally, Figure 5.4 reveals that Turkey, Israel, Egypt, Saudi Arabia hold reserves more than 15% of their M2 levels. The trend of Reserves/M2 ratio is more or less stable around 20% in those countries. Those countries also have adequate level of reserves according to monetary based adequacy criterion. Similar to the case of Chile, Egypt had liberalized capital account and current account in early 1990s. The resulting capital inflows help the country with accumulating foreign exchange

reserves until 1998. The effects of financial crises in Asia also reflected in reserve levels of Egypt due to herding behavior of international capital movements. After 2001 crisis, the recovery of Turkish economy was accompanied by hot money inflows, which led to increases in the level of international reserves. The inflation targeting policy and cutting down of interest rates resulted in rising M2 levels in Turkey. These developments can explain the movement of Reserves/M2 ratio in Turkey.

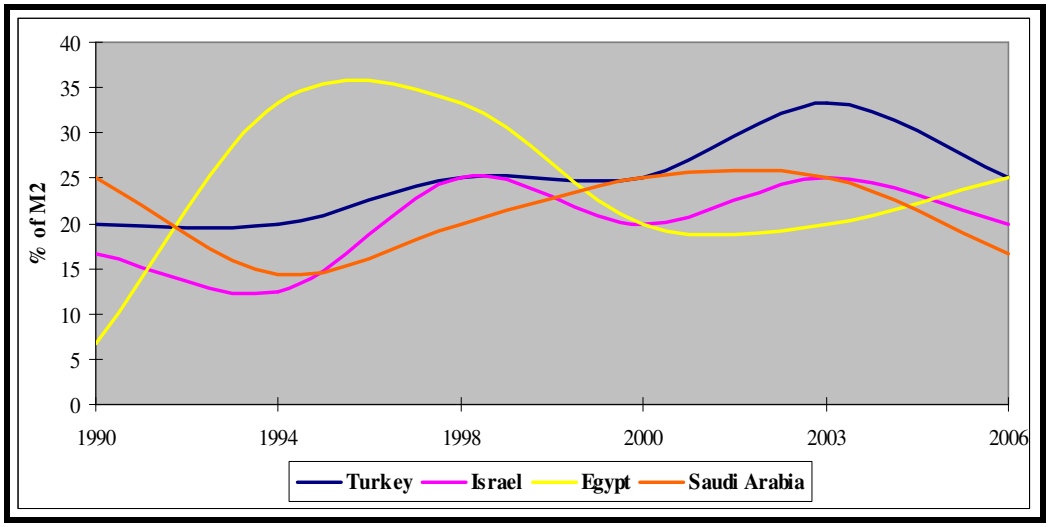

Figure 5.4 Reserves/M2 Ratios of Selected Countries (Middle East) (% of M2) (1990-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

In brief, most of the selected countries hold more than adequate level of reserves according to monetary based criterion. Especially, Asian countries hold relatively more reserves than other countries and they have an increasing trend in Reserves/M2 levels whereas other countries have relatively stable trends.

5.2.2 Import Based Criteria

The widely used measure in determining reserve adequacy is the equivalent number of months of imports. This measure, based on imports, will determine how long a country could continue to import under the case in which inflow of foreign exchange reserves stopped (Williams, 2005). This rule guided reserve management when the balance of payments was primarily dominated by the current account, namely in Bretton Woods System. For many years, the guideline of reserves equivalent to 3 months of imports was used as the accepted measure for adequate reserve by the International Monetary Fund. However, in recent years, this measure has appeared to be a limited measure since it focuses only on the external current account, which was relevant in the years when capital accounts were not as liberalized as recent times. With the liberalization of capital account, import based measure of reserve adequacy lost its significance (Wijnholds and Kapteyn, 2001, pp. 8-9). For instance, Wijnholds and Kapteyn (2001) suggest that import-based measure of reserves adequacy may be applied for low-income developing countries, which have limited access to international capital markets. Data for import based criteria for selected regions and countries are summarized in Figure 5.5 and Figure 5.6.

Figure 5.5 shows that since 1982 the amount of world reserves have exceeded the three months of import rule and especially after late 1990s, the level of reserves has an increasing trend in months of import. The increases in world reserves are mainly triggered by developing countries. East Asia and Pacific countries held more reserves than world average after 1997. According to Figure 5.5, world reserves were corresponding to 10 months of world imports whereas East Asia and Pacific countries held reserves corresponding to 13 months of their imports in 2006. Although Latin American countries hold reserves less than the world average, they held reserves of 6 import months, which is twice the adequate level. In the industrialized countries such as Germany, the U.S., France, The U.K., reserves-

monthly import ratio is generally between 1 and 2 months, especially after 1990 (WDI, 2007).

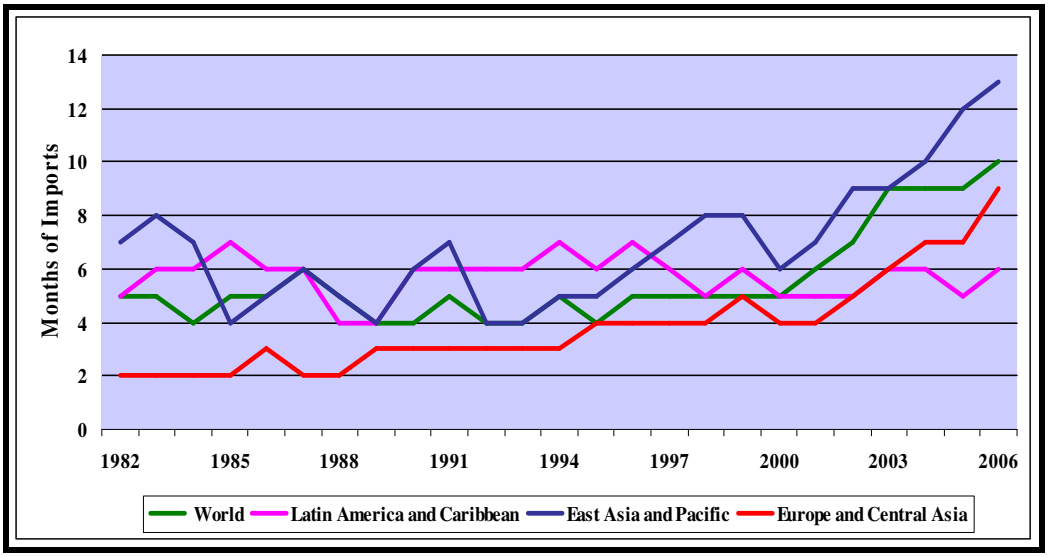

Figure 5.5 Reserves in Months of Imports (Regions) (1982-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the region including gold reserves.

Figure 5.6 gives data on reserves in months of imports of selected developing countries. China and Russia have been increasing their reserves in months of imports especially after 2000. By 2006, these countries held reserves more than the amount corresponding to their imports of 14 months. Turkey, Malaysia and Argentina had relatively stable patterns around 5 months of imports.

In brief, the world reserves are higher than the adequate level with respect to import based criterion. Developing countries are main holders of reserves and especially Asian countries such as China, Russia and East Asia region are increasing their reserve levels.

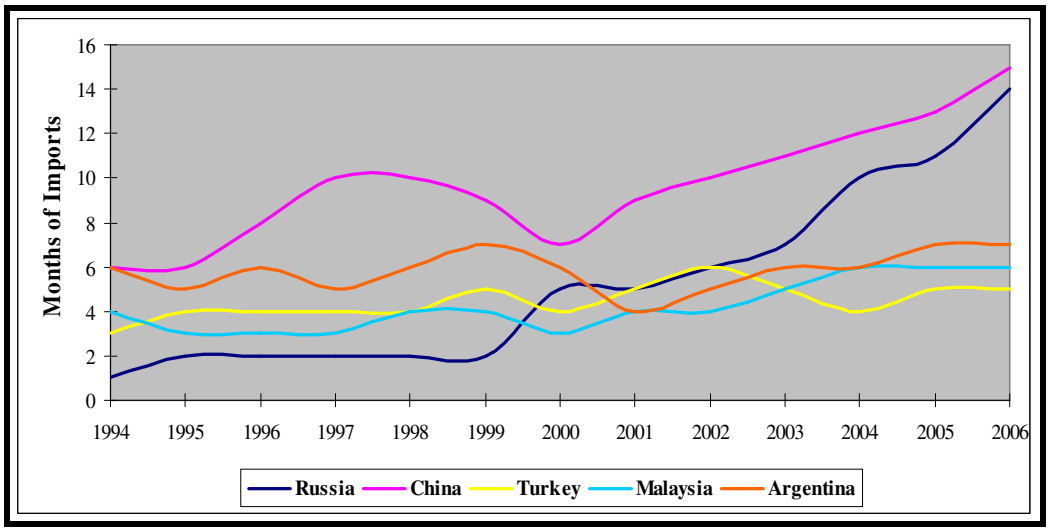

Figure 5.6 Reserves in Months of Imports (Selected Countries) (1994-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

5.2.3 Debt Based Criteria

With the financial liberalization all over the world, import based criteria for reserve adequacy became insufficient because recent financial crises generally occurred as a result of increase in the world's capital mobility. The financial crises of emerging markets revealed problems associated with volatile capital movements and sudden stops of international financing. Countries facing sudden stops became unable to borrow from capital markets to finance their current account deficits and they faced with sharp adjustments in current account and significant output contractions (IMF, 2004). As a result, a new criterion for reserve adequacy is suggested by Pablo Guidotti[19]. In one of his speeches Greenspan (1999) pointed the "Guidotti rule", a debt-based measure, which was proposed for policy makers in emerging market economies. Therefore, this criterion is also known as Guidotti- Greenspan rule and it states that "countries should manage their external assets and liabilities in such a way

[19] A former Deputy Finance Minister of Argentina.

that they are always able to live without new foreign borrowing for up to one year" (Greenspan, 1999). Namely, the ratio of international reserves to short-term foreign debt of a country should be equal to or higher than one. This level of reserves will be adequate for the country to pay its short term debt even if it cannot borrow from international markets and cannot attract capital inflows (Movchan, 2002, p.5).

Similarly, the Calvo[20] rule indicates that external debt repayments of the government due in the next 12 months should be lower than its foreign exchange reserves. This measure may an indicator of how long a country will be able to perform its external obligations without borrowing from abroad (Williams, 2005). According to IMF (2000), a smaller level of reserves to short-term debt ratio is positively related with the frequency and depth of crisis. The country with low levels of reserves may not be able to pay its debt and this may trigger a financial crisis in the country. Moreover, Fischer (2001) states that holding reserves equal to short-term debt is an appropriate measure and "holding reserves in excess of short-term debt reduces the depth of crises in emerging market economies during periods of international contagion".

There are several possible components of a short-term external debt that could be included in the ratio. According to the IMF (2000), "all categories of short-term debts like loans, securities, trade credits, and debt component of foreign direct investments should be included". Furthermore, short term debt to foreigners should be included and debt to residents should be excluded whatever the currency denomination (IMF, 2000).

Finally, there are mixed criteria suggested by the literature. IMF (2000) takes current account deficit as an additional component in the short-term debt formula since current account adjustments will be dependent on foreign exchange reserves. Current account inclusion of adequacy criterion had similar patterns with the original one (IMF, 2000). Moreover, Wijnholds and Kapteyn (2001) suggest a mixed criterion

[20] Guillerme Calvo, Professor of Economics in Columbia University, NBER Reseach Center.

which is composed of measures of money supply, short-term external debt and probability of a capital flight. The mixed criterion may be better measure for reserve adequacy since it covers various indicators of the economy.

According to Figure 5.7, different regions of the world, given by World Bank classification, had enough levels of reserves with respect to debt based criterion. All regions have reserves more than amount of short term debt on average since Reserves/Short-term Debt ratio is higher than one for all given regions. Reserves/Short-term Debt ratio has upward trend in all given regions. Especially, Middle East and North Africa countries have the highest levels in this criterion since most of the OPEC countries are in this region. The higher levels are probably resulted from low levels of short term debt and high levels of accumulated reserves of those countries. Moreover, East Asia and Pacific countries have high levels of Reserves/Short-term Debt ratio. Namely, reserve accumulating countries are mostly, OPEC members and Asian countries.

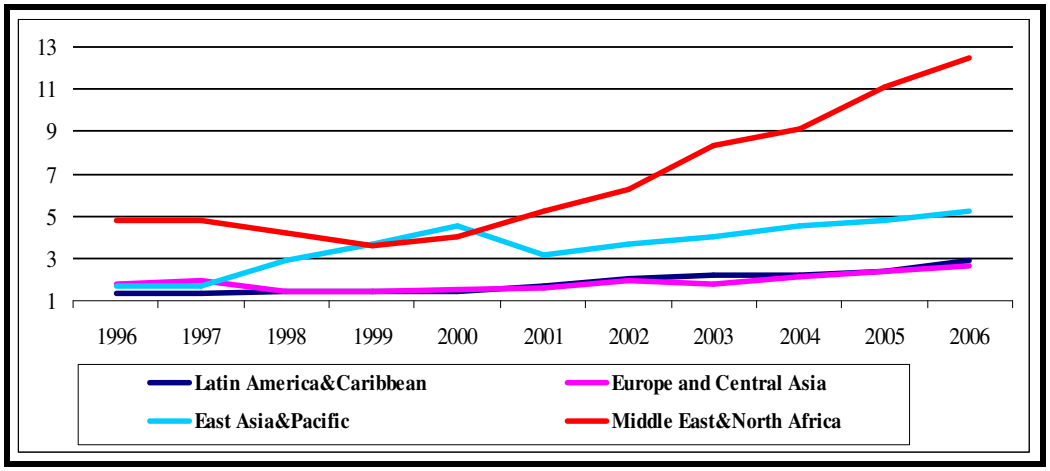

Figure 5.7 Reserves/Short-Term Debt Ratios (Regions) (1996-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

According to Figure 5.8 and Figure 5.9, emerging markets such as Turkey, Argentina, Brazil, and Chile have lower Reserves/Short-term Debt ratio than the Asian economies. For example, Argentina did not have adequate level of reserves since 1996 according to debt based criterion.

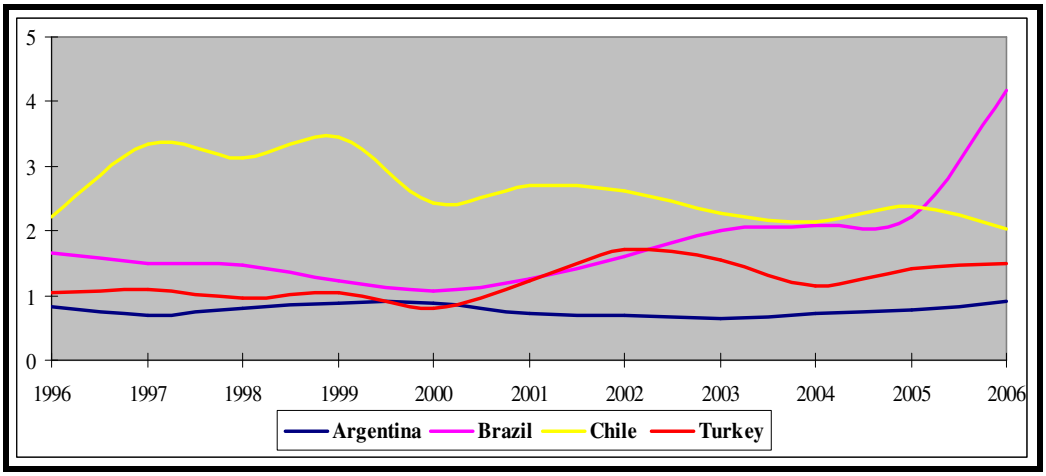

Figure 5.8 Reserves/Short-Term Debt Ratios (Emerging Economies) (1996-2006)
Source: Derived from (WDI, 2007).
*Total Reserves of the country including gold reserves.

Finally, Figure 5.9 indicates that Asian economies are accumulating excess reserves since their reserve levels are more than enough with respect to debt based criterion. All countries have similar Reserves/Short-term Debt ratio trends after 2001. According to WDI (2007) China experienced a sharp increase in its short term debt due to the fact that China had changed its debt measurement system. Moreover, reserves of China had an increasing trend. These facts imply that the sudden decline in Reserves/Short-term Debt ratio of China in 2001. It is observed that Asian countries have been accumulating more reserves after financial crises of 1998.

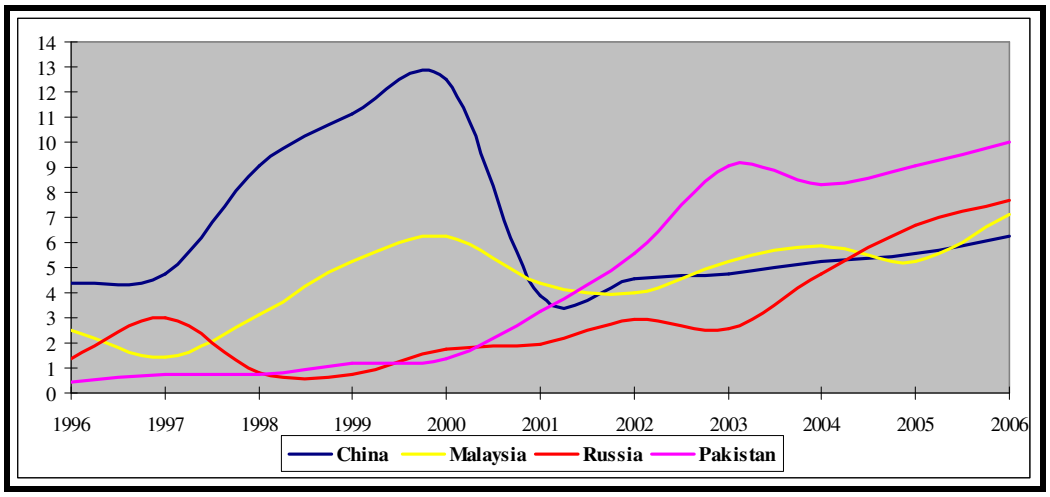

Figure 5.9 Reserves/Short-Term Debt Ratios (Asian Countries) (1996-2006)

Source: Derived from (WDI, 2007).

*Total Reserves of the country including gold reserves.

Some of the emerging markets had Reserves/Short-term Debt ratios which were below one by 1990s. Then, by 2004 all the given countries except Argentina had enough reserves according to Guidotti rule. According to Figures 5.2, 5.3, 5.4, 5.6, 5.8 and 5.9, developing countries have been holding excess reserves especially starting from 1998 with respect to different reserve adequacy criteria.

In brief, the reserve adequacy criteria have been modified as the economic policies changed over time. The choice of appropriate criteria and sufficient level of reserves will vary across countries depending on the economic policies and indicators of the country. It is observed that countries are holding and still accumulating reserves more than adequate levels. Fischer (2001) indicates the fact that depending on different variables such as "macroeconomic fundamentals; the exchange rate regime; the quality of private risk management and financial sector supervision; and the size and currency composition of the external debt", countries may need to have reserves more than debt based adequacy level.

5.2.4 Cost of Holding Reserves

A country can accumulate as much foreign exchange reserves as it wants, however there are costs of holding reserves and the country should take into account the cost of the reserves while deciding accumulation level of reserves. The main focus of literature is opportunity costs of reserves. The central banks mainly hold reserves in the form of liquid and low-yielding foreign assets. Generally, central banks hold their reserve assets as US treasury bills and the expected real returns on reserves are quite low. However, reserves may be used for investments that have higher returns for the society. The opportunity costs of reserves are difference between the return on alternative investments and return on foreign assets which reserves are denominated in.

For countries which can use reserves for investing in exporting sectors, cost of reserves may be the difference between marginal products of capital minus the yield obtained on reserve assets. However, it is difficult to measure marginal productivity of the capital. On the other hand, if reserves are financed by foreign borrowing the actual cost of reserve accumulation will be difference between foreign debt interest rate and the yield obtained on the reserve assets (Yaman, 2003, pp.48-49). According to Hauner (2005), international reserves may be used to pay external debt and this will reduce interest payments of the country. Alternatively, reserves can be devoted for public investments inducing social returns (Hauner, 2005, p.3).

Sterilization costs of reserves are also discussed in the recent literature. In order to accumulate foreign exchange reserves central banks increase the supply of domestic money. Central banks exchange domestic money for foreign exchange reserves. By open market operations, central banks decrease domestic money supply to the previous level. Sterilization prevents potential inflationary effects of reserve accumulation by neutralizing increases in money supply through domestic debt instruments. The central bank will have to pay interest for the domestic debt issued

for sterilization. These costs of reserves are measured as the difference between return on reserves and payments for domestic debt used for sterilization. However, this cost may be negative for countries China, Japan and Singapore whose domestic interest rates are lower than those paid on the foreign exchange reserves. Additionally, the central banks indirectly affect real exchange rates through sterilization which will prevent current account adjustments. Finally, accumulation of foreign exchange reserves run risks for significant losses for the central banks in case of large fluctuations in the exchange rates (Green and Torgerson, 2007, pp.7-11).

Rodrik (2006) uses short-term U.S. Treasury securities and different levels such as 3%, 5% and 7% for social rate of return of an investment in the economy to estimate social cost of holding reserves-the spread between return on reserves and return on domestic investment-. For 5% level, annual costs of excess reserves, above Guidotti-Greenspan rule, are close to 1% of GDP for developing countries. Since levels of reserves are sharply rising, estimated costs of holding reserves have been rising recently.

5.3 Currency Composition of Foreign Exchange Reserves

The reserve levels of developing countries have an increasing trend and most of the developing countries hold more reserves than adequate levels. The currency composition of international reserves has significant effects on the value and uses of reserve currencies of the world economy such as euro and dollar. Figure 5.10 indicates that dollar denominated reserves and euro denominated reserves are both rising. In 2007, dollar denominated reserves had a value above 2500 billions of U.S. dollars whereas euro denominated reserves sum up to 1000 billions of dollars. Yen and sterling have relatively smaller shares in denomination of reserves. Total value of yen and sterling denominated reserves was around 300 billions of dollars in 2007. The central banks most widely prefer holding dollar denominated reserves. Euro denominated reserves take the second position in the portfolios of central banks.

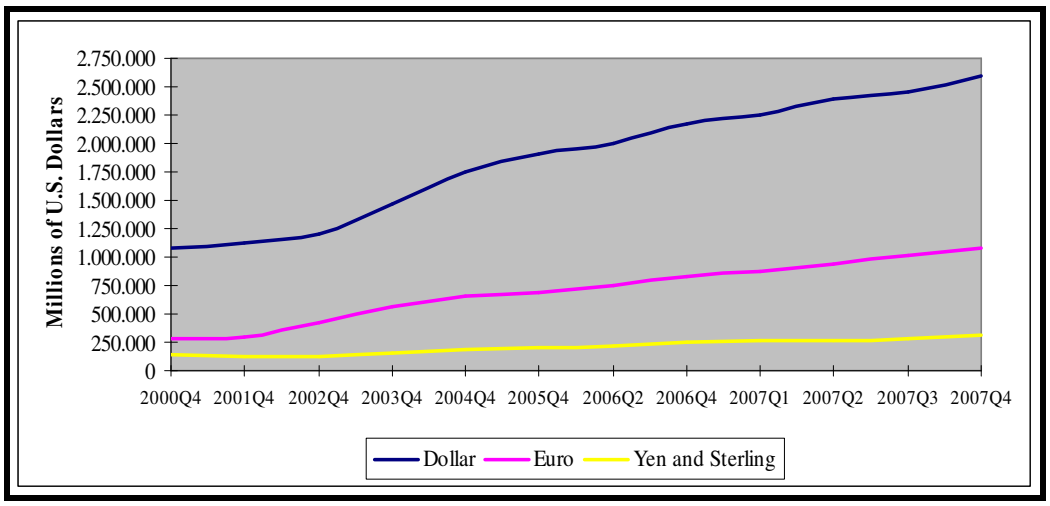

Figure 5.10 Currency Composition of Total Allocated Reserves (Millions of Dollars) (2000-2007)

Source: Derived from (IMF, 2008c).

The recent fluctuations in value of the U.S. dollar have been another important factor that affects the cost of holding reserves. The more a country holds dollar denominated reserves the more costs it will have as the dollar depreciates. Therefore, many central banks have been considering changing currency composition of their reserves. However, especially leading reserve holders such as China and Japan are facing a dilemma in deciding diversification of their reserves. Since those countries hold large amount of dollar denominated reserves, their diversification away from the dollar will stimulate further depreciation of the dollar, which will lead to further losses. On the other hand, when they still accumulate dollars, fluctuations in the value of dollar will create instability in the value of accumulated reserves.

Papaioannou et al. (2006) estimated that euro already has a higher share than the estimated optimum level in portfolios of central banks. They suggested that the move away from dollar towards euro has started in Eastern Europe and Russia. If this movement continues towards Asian countries such as China and Japan, this will

heavily influence the currency composition of foreign exchange reserves in the world economy.

China is the leading reserve holder of the world economy. Nearly 22% of world reserves are held by China. Reserve management strategy of China will have significant effects on the international monetary system. Most of the reserves of China are denominated in dollars. This strategy is not likely to change in the short term due to existing trade and financial flows between China and the United States. Yi (2007) suggests that reserve currency choice of China should be determined by exchange rate peg, denomination of foreign debt and international trade of the country. Simulations of Yi (2007) indicate that the optimal share of U.S. dollar should be between 47% and 58% in the reserves of China. Moreover, yen should have a share between 13% and 18% whereas the euro should get share between 8% and 10%.

East Asian economies and particularly Japan also have existing economic links with the United States, which are similar to the case of China. Therefore, there will not be sharp change in the currency composition of reserves of these countries in the short term although some slight changes may be possible.

Figure 5.11 reveals information about the currency composition of foreign exchange reserves of developing countries for the period between 1999 and 2007. According to Figure 5.11, developing countries were holding 70% of their reserves in dollar denominated assets in 1999, when the euro emerged. The euro got a share of 20% in reserves of developing countries in 1999. After 2001, the euro denominated reserves of developing countries had a share of 30% whereas the dollar denominated reserves had a share of 60%. Those shares became stable after 2003. Moreover, 10% of developing country reserves are denominated in sterling and yen together.

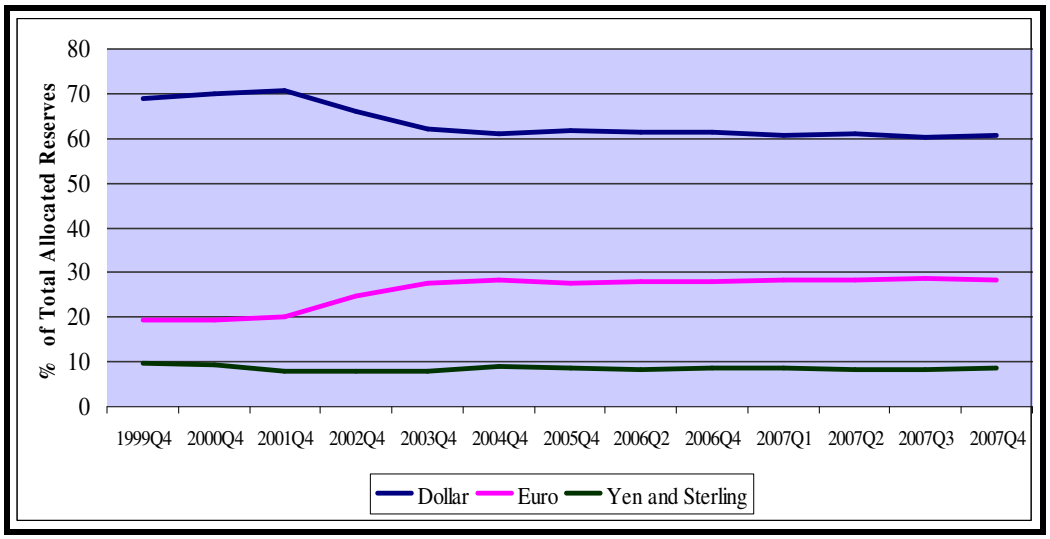

Figure 5.11 Currency Composition of Total Allocated Reserves (Developing Countries) (% of Total Allocated Reserves) (2000-2007)
Source: Derived from (IMF, 2008c).

Eichengreen and Mathieson (2000) conclude that currency composition of foreign exchange reserves do not radically change. Instead, there are slow changes in currency denomination of international reserves. Similarly, Figure 5.11 indicates stable trends for currency breakdown of international reserves of developing countries. Moreover, reserve currency choices of developing countries are dependent on exchange rate regime, financial links, trade flows and existing economic policies of the countries (Eichengreen and Mathieson, 2000). Papaioannou et al. (2006) determines that the most effective factor in the choice of reserve currency is the currency peg exchange rate policy for the countries. Currency denomination of debt and trade has smaller weight in the choice of reserve currency.

Latin American, Central and Eastern Europe countries accumulate reserves for self-insurance against financial crises. The East Asian countries mainly have mercantilist motives. They want to keep pegged exchange rate regimes in order to promote exports. For example, China keeps pegged exchange rate regime and due to its weak

financial system the country needs to hold more international reserves. Finally, rising energy prices allowed energy exporting countries, mainly OPEC members, to accumulate reserves through current account surpluses (Wijnholds and Søndergaard, 2007).

Having strong economic links with the United States, most of the Asian countries, OPEC countries and Latin American countries prefers holding dollar denominated reserves. The Central and Eastern European countries mainly accumulate euro denominated reserves. Additionally, African countries which have economic links with European countries prefer euro denominated reserves. Determining oil prices in terms of euro, Iran leads the dollar skeptic countries such as Russia and Venezuela. If Russia and Venezuela decide to set oil prices in terms of euro, they will accumulate euro reserves. That will influence the reserve accumulation of oil importing countries as well since they will need euro reserves in order to import oil from those countries. However, other OPEC members most probably will not change their strategy of dollar pricing for oil. This will restrict the effects of decision of Russia and Venezuela.

In addition to the economic factors such as trade invoicing and exchange rate policy, Papaioannou and Portes (2007) indicates the fact that choice of reserve currency will also be affected from the political issues as it is observed in the cases of Iran, Venezuela and Russia. The United States is the political leader of the world recently. Therefore, given the inertia of the dollar, existing economic policies and interdependence of the U.S. economy with developing country economies will not allow a sudden shift in reserve currency choice for developing countries. However, the dollar will face a significant challenge as a reserve currency due to existence of euro as a powerful alternative currency for developing countries.

CHAPTER 6

CONCLUSION

This thesis analyzes and evaluates the sustainability of the dominance of the dollar as an international currency in the international monetary system. The determinants of the dominance of the dollar are analyzed through a comprehensive review of literature and by the use of statistical data. The U.S. dollar has been the dominant international currency of the international monetary system for most of the 20th century. The economic and political dominance of the U.S., the existence of dollar pegged exchange rate regimes, the linkage with gold, trade invoicing and reserve currency use of the dollar and finally absence of a challenging alternative currency reinforced the dominance of the dollar in the second half of the century. However, recently, the introduction and internationalization of the euro, the current account deficit problem of the U.S. economy and the reserve accumulation and diversification decision of foreign central banks are threatening the dominant role of the dollar in the international monetary system. Since the U.S. is the leading economy of the world, the conditions of the U.S. economy and the changes in the dollar's use in the world markets are likely to have significant impacts on other economies of the world. Thus, this study firstly analyzes the emergence of the dollar as a dominant international currency in Chapter 2 and then focuses on the current and potential challenges which are likely to erode the dominance of the dollar in the international monetary system in Chapters 3-5.

Focusing on the evolution of international monetary system, Chapter 2 provides historical background for this study and analyzes the rise of the dollar as an international currency. The world economy experienced different monetary systems with various features. Firstly, the Gold Standard consisted of gold based currencies and fixed exchange rate regimes and it lasted until World War I. The leading economy of the Gold Standard period of 1880-1914 was Great Britain and the

leading international currency was the pound sterling. The outbreak of the World War I ended the period of Gold Standard and the dollar emerged as an international currency with the outbreak of the war. The war led to changes in the political and economic power of the countries. After the war, the role of Britain started to decline in the world whereas the U.S. was the rising country both politically and economically. The rise of the U.S. as an international creditor and instability of the European currencies contributed to the emergence of the dollar as an international currency. Hyperinflation, the Great Depression, strictly fixed exchange rates, protectionist policies were the main problems of the inter-war period. The effects of World War I, the instability of the interwar period and the repercussions of the Great Depression contributed to the rise of the dollar as an international currency since the dollar was the most stable currency of the inter-war period.

Secondly, the Bretton Woods System, in which the dollar dominated the international markets, was on the scene between 1945 and 1971. The pegged exchange rate regimes, the International Monetary Fund, the World Bank and capital account restrictions were the main elements of the Bretton Woods System. The dollar, backed by gold, was the leader currency of the international monetary system and all other currencies were pegged to the dollar. The United States was the leader economy of the world and New York was the financial center of the world in this period. The gold convertibility of the dollar increased the degree of dominance of the dollar in the world economy. The Bretton Woods System ended in 1971 with the breakdown of the link between the dollar and gold. The external adjustment problems, capital account liberalizations, effects of Vietnam War and the increasing supply of dollar in the world economy are the main reasons for the breakdown of Bretton Woods System. The increasing supply of dollar in the world markets and limited gold reserves of the U.S. created doubts and speculation about the gold convertibility of the dollar. The capital movements and external adjustment problems made the maintenance of pegged exchange rate regimes difficult for countries. The Bretton Woods System did not have a solution for those problems and naturally ended in

early 1970s. The dollar had a significant dominance in the Bretton Woods System since it was backed by gold. The anchor currency role and dominance of the U.S. in the world economy reinforced the dominance of the dollar as an international currency. Moreover, the dollar pricing of oil contributed substantially to increasing the dominance of the dollar in 1970s. Although there were alternative international currencies such as mark, sterling and yen, the special case of the dollar did not leave room for those currencies to challenge its role in the international monetary system.

Finally, Chapter 2 elaborates on the features of the current international monetary system. The current international monetary system consists of various exchange rate policies, global current account imbalances, volatile capital movements, and the IMF as a regulator of economic policies. The increasing capital mobility, more exchange rate flexibility and impossible trinity are emphasized as the features of the current international monetary system. Although the value of the dollar experienced fluctuations in the last three decades, the absence of an alternative and significance of the U.S. in the world economy and world politics ensured the dominance of the dollar after Bretton Woods era.

Unlike the Bretton Woods System, the current system has a significant rival currency for the dollar nearly for a decade. The challenge of the euro is likely to erode the dominance of the dollar in the international markets and the competition of euro and the dollar are analyzed in Chapter 3.

Chapter 3 firstly elaborates on the determinants and functions of an international currency. The use of a country's currency as an international currency is determined by the size and openness of its economy and financial markets as well as its macroeconomic stability and the inertia of the currency. In the Bretton Woods time, these factors have favored the use of the U.S. dollar as an international currency. Following the collapse of the Bretton Woods, the dollar was again dominant in international markets. The Deutsche Mark, British Pound and Japanese Yen were the

other currency choices of international markets. The creation of the euro as the single currency for the EMU had effects on international markets. Recent statistics indicate that the size of the economy of the euro area and the U.S. economy are nearly the same. The U.S. and euro area are the leading traders of the world economy. However, the U.S. has better financial markets whereas the euro seems to be more stable. With a European Central Bank committed to maintaining a low inflation environment, the euro becomes attractive as an international currency. On the other hand, the dollar has been running risks for depreciation due to widening current account deficit and growth oriented monetary policy of the U.S.

Findings and statistical analysis of Chapter 3 imply that the dollar is still the most important international currency in the global monetary system and the international use of the euro has not yet changed uses of currencies. The inertia of the currency use is still favoring the use of the US dollar. Statistical data reveals that euro, yen, dollar and pound are widely used in their respective domestic economies and neighboring regions. However, the dollar and euro have been used in all regions of the world whereas other currencies lose their effect other than their corresponding domestic economies. The euro has a strong position in European neighboring regions and this implies that the euro is more powerful as a regional currency. The U.S. dollar has the dominant position in international trade, finance and the activities of the central banks. Namely, the U.S. dollar is still the leading currency of the world economy used internationally by public and private sector. Finally, statistical analyses of Chapter 3 states that the euro is increasing its role as an international currency and the degree of dominance of the dollar is decreasing in the international monetary system.

As indicated in Chapter 2, the global current account imbalances is a significant feature of the current international monetary system and analysis of Chapter 3 implies that the risks associated with the sustainability of the U.S. current account deficit put pressures on dollar to sustain its dominance. Chapter 4 provides a review

of the vast literature on the sustainability of the current account deficit of the U.S. There are different arguments for sustainability and adjustment of the current account deficit of the U.S. A group of economists suggests that the levels of current account deficit are sustainable for the U.S. economy. A number of economists suggest that these deficits are not sustainable and the adjustment process will lead to depreciation of the dollar. Some of the economists expect a hard landing for the dollar whereas some are suggesting a soft landing. The hard landing is like to be harmful for the world economy as a whole and the soft landing process may not be possible without policy supports. Therefore, findings of Chapter 4 imply that a policy coordination of the EU, the U.S., OPEC and Asian countries to solve the problem of global imbalances may be optimal for all sides. Whatever the case, the decline in the value of the dollar is likely to affect its role as a store of value in international markets as many authors estimate a depreciation of the dollar for the current account adjustment of the U.S. Thus, the current account deficit and additionally budget deficit of the U.S. are creating risks for the dominance of the dollar in the international monetary system.

Literature survey of Chapter 4 indicated that the twin deficit of the U.S. are mostly financed by developing countries, mostly Asian, through the accumulation of dollar denominated international reserves. Chapter 5 reveals the fact that although the world reserves are increasing, the developing countries have been accumulating large amount of international reserves. Buffer stock models, precautionary motives, mercantilist motives, exchange rate policies and capital inflows are the main reasons for accumulation of reserves in developing countries. Different reserve adequacy criteria such as monetary based criteria, import based criteria and debt based criteria indicated that most of the countries are holding more than adequate level of international reserves. Moreover, as the amount of reserves increases, the costs of holding reserves are also increasing for the reserve holders. When the costs of reserve accumulation exceed the benefits of reserves for those countries, their reserve

management may have significant effects on the value of reserve currencies, most importantly the dollar.

According to results of Chapter 5 and Chapter 3, the world reserves are mostly denominated in dollars. The share of dollar in world reserves is more than 60% and share of euro is around 30%. Findings of Chapter 4 and Chapter 5 indicated that China and Japan are the leading reserve holders. Especially, the East Asian central banks, including China, have accumulated a large amount of dollar reserves by intervening into the foreign exchange market with the aim of stabilization and export stimulation. The trade pattern of two regions resulted in current surpluses in East Asian countries whereas the U.S. had a huge current account deficit. The central banks of surplus countries have invested a large amount funds in debt-denominated dollar assets, financing a substantial part of the U.S. twin deficits- the budget deficit and the current account deficit.

Chapter 5 indicates that the asset management problem and portfolio diversification of central banks will have a significant effect on the role of the dollar and euro in the international monetary system. The foreign central banks, especially China and East Asia, are facing a dilemma- on the one side they may continue to accumulate dollar reserves by "putting all the eggs into one basket", which creates a high risk of capital losses and on the other side they may get into diversification, which will trigger the depreciation of the dollar and create huge losses for them due to their existing stock of dollar reserves (Walter and Becker, 2005, p.11). Although, the U.S. may influence the policies of those countries by its political and economic power in the current world system, this may not be sufficient to prevent the storm– the case of speculative movements and herding behavior resulting from the policies of foreign central banks. Especially, risk of deepening recession in the U.S. economy and fluctuations in the value of the dollar increase the probability that developing countries will not continue to finance the U.S. twin deficits by buying dollar denominated assets. The

future of the dollar and the euro will be affected also by the policies of the central banks of the different countries.

The determinants of the continued use of the dollar as an international currency are the economic policies and conditions in the United States and the policies of the developing country central banks on diversification of their foreign exchange reserves. Political developments in the Euro area and the state of the US economy will have important repercussions on the international role of the euro and the dollar. The change of government in the U.S. may lead to changes in economic policies of the country. With the expansion of the European Union, more countries will start to use the euro. The European Central Bank will have some problems with monetary policy since the new entrants will have different economic conditions. Moreover, if the budget deficit and current account deficit of the U.S. do not decline and continue to expand, the dollar will have increasing risks for depreciation and losing its dominance as an international currency. In such a case, the euro is likely to be the currency to increase its role as an international currency.

The use of the euro as an international currency will also be affected by the decision of the United Kingdom to join the monetary union. The international role of the pound sterling has diminished especially after the World War II but it is still a key currency in private financial market transactions. Furthermore, the role of London as a major financial center will provide benefits for the euro. The inclusion of the U.K. in a monetary union will increase the international presence of the euro. Moreover, although it is less likely for most of OPEC members, euro-pricing of energy inputs such as oil will have significant contributions to international use of the euro.

As an overall conclusion, the historical process indicates that there has been only one dominant international currency in the world economy and transition from one currency to another takes a long time. The British pound was dominating the 19th century and the dollar dominated the 20th century. Thus, 21st century may witness the rise of another currency as a dominant international currency according to historical

trends. The most powerful candidate to rise as a new dominant international currency is the euro of EMU nowadays. The recent data about the use of international currencies exhibit that although the euro has been increasingly used as an international currency, the dollar is still the dominant currency of the international monetary system. However, the widening of the current account deficit of the U.S. and reserve diversification of the foreign central banks constitute the risks associated with the depreciation of the dollar. Specifically, the reserve management strategy of Asian countries will significantly affect the dominance of the dollar in the international monetary system. Moreover, possible euro pricing of energy products will stimulate the rise of the euro as an international currency.

The analysis provided in this thesis by bringing together and examining the relevant data and literature indicate that although the euro has some potential to surpass the dollar as an international currency, this will take much time and will not be possible in the short term due to the existing structure of the world economy. Given the size and importance of the U.S. economy, it is less likely that the dollar will lose its significance in the world economy and it is more likely that the international monetary system will consist of multiple international currencies in the 21st century and the degree of the dominance of the dollar will be declining in the international markets.

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