A GOLD STANDARD INTERNATIONAL PAYMENTS SYSTEM ANCHORED IN ISLAMIC FINANCE

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Abstract

Historically, gold was the natural money chosen by markets for domestic and international payments. Conventional banking and financial crises led to the abandonment of gold. The post-Bretton-Woods inconvertible paper system was quickly marked by inflation and economic disorders. The 2007-2008 financial crisis, its bailout cost, and ensuing economic stagnation have demonstrated the unsustainability of the current financial system. This paper explores a restoration of a gold standard based on premises of Islamic finance and a subdivision of banking into two subsystems: (i) 100-percent depository banking; and (ii) equity-based, risk-sharing investment banking. These same conditions have been deemed by many writers as necessary for the stability of the gold system.

Keywords: Gold standard, Islamic finance, inconvertible paper, reserve currency, inflation, international payments, credit, financial crises

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I. INTRODUCTION

The international payments system of inconvertible paper currencies (with a number of different exchange rate arrangements adopted by countries), the fractional reserve banking system, leveraging, and uncontrolled monetary expansion have been important factors promoting global financial uncertainties and instability as illustrated by the 2008 financial crisis and its aftermath.[1] In fact, cheap money policy of the US Federal Reserve (the Fed) pushed excessive credit to subprime markets, which by definition can repay neither interest nor loans (Minsky, 1986), and fired up asset bubbles. The collapse of credit and asset prices triggered general bankruptcies.

Since 2008, reserve currency central banks have been inflating their paper monies and thus engaging in currency wars with increasing financial, exchange rate and trade instability. In part because of its inflationary bias, this system is supported by governments, bankers, speculators and debtors and also by academics (Keynes, 1936) who maintain that debt and interest are essential for the financial system.[2] Most governments (e.g., the US, Japan, and the European Union) strongly believe in Keynesian macroeconomics, which holds that "big government" and deficit financing are the way to restore full-employment and prosperity when countries find themselves in a deep recession. A number of central bankers (e.g., the Fed) maintain that their mandate is full-employment while keeping inflation within a certain range and that in the short run some inflation can be tolerated as a trade-off for full-employment, as suggested by the Phillips curve.[3] Present day policymakers in leading industrial countries firmly believe that expansionary fiscal and money policies are the way to restore employment and prosperity. Moreover, some economists are even saying that inflation may be good, as stated in a New York Times

1 Many authors in the past (e.g., Bastiat (2011), Carroll (1965), Walker (1873), Von Mises (1953), Rothbard (1994)) predicted the failure of the paper money system.

2 A founder of inflationism was John Law (1720), who pushed France into financial chaos following unrestricted money printing that quadrupled prices and created the illusion of prosperity.

3 The Phillips curve was named after William Phillips, an economist born in New Zealand, who observed in 1958 an inverse relationship between nominal wage changes and unemployment in the British economy over the period 1861-1957.

article titled "In Fed and Out, Many Now Think Inflation Helps". The article elaborated that the Fed has worked for decades to suppress inflation, but economists have long argued that a little inflation is particularly valuable when the economy is weak. Rising prices help companies increase profits; rising wages help borrowers repay debts. Inflation also encourages people and businesses to borrow money and spend it more quickly. Nonetheless, as reserve currencies lose value with inflation, economic agents will hedge against inflation and turn to gold and other real assets as a preferred form of holding wealth.

Proponents of gold have called for restoring the position of gold in domestic and international payments systems and oppose money and fiscal policies that previously led to an exit from the gold standard. They have criticized previous gold-exchange standards, such as the Genoa and Bretton Woods systems (Rueff, 1964), and are adamantly opposed to today's paper money (Rist, 1938; Rothbard, 2008; and Paul, 2009). They maintain that fictitious credit and un-backed printing are legal counterfeiting, insidious swindle, and redistributive;[4] and that the setting of interest rates at near zero through money printing does not increase real saving but only induces financial booms and busts. Their recommended reforms called for abolishing the fractional banking system (de Soto, 2012; Rothbard, 1994), replacing it with 100%-reserve money and abolishing central banking (Rothbard, 1994; Paul, 2008).

In this paper, we suggest that an international gold standard based on the principles of Islamic finance has important benefits. Islamic finance is based on the Qur'ān and the Sunnah; it forbids interest-based credit and, therefore, pre-empts the conflict between

4 Bastiat (1877) deplored the redistributive injustice of paper money inflation. It steals wealth from the losers and showers it for free on the gainers. He wrote: "I must inform you that this depreciation, which, with paper, might go on till it came to nothing, is effected by continually making dupes; and of these, poor people, simple persons, workmen and countrymen are the chief. Sharp men, brokers, and men of business will not suffer by it; for it is their trade to watch the fluctuations of prices, to observe the cause, and even to speculate upon it. But little tradesmen, countrymen, and workmen will bear the whole weight of it." In the same vein, Carroll (1965) severely condemned the redistributive function of fictive money and credit; he noted, "[O]f all the contrivances for cheating mankind, none has been more effectual than that which deludes them with paper money. This is the most effectual of inventions to fertilize the rich man's field with the sweat of the poor man's brow."

creditors and debtors; and precludes inflationary financing by the state.[5] More specifically, it forbids credit multiplication as in the fractional banking system where banks essentially create money; and in multiplying credit, banks lend saving that does not exist and earn interest income. Islamic finance has two components: (i) a 100%-reserve banking system where banks do not create money; and (ii) risk-sharing equity finance. As strongly advocated by the authors of the Chicago Reform Plan (1933) (See Phillips, 1994),[6] a combination of 100%-reserve money and risk-sharing equity finance is the only system that prevents money expansion and contraction by the fractional banking system and, most importantly, is conducive to financial stability. Carroll (1965), Walker (1873), and Rothbard (1994) noted that a gold standard with interest-based debt suffered repeated financial crises resulting from excessive credit creation. They strongly advocated a gold standard with 100%-reserve money as a viable international payments system.

Islamic finance is inherently stable and free of interest-based debt and inflation, all factors that were deemed to have contributed to the demise of the gold standard. Although Islamic finance may operate in a system of 100% reserve and risk-sharing equity investment with paper money as prescribed under the Chicago Reform Plan, we argue that Islamic finance with gold is more immune to government inflationary policy and more consistent with exchange rate stability. Although paper money has a number of convenient facets, it was found by the state as a means to tax without limit and by bankers as a mean to issue fictitious credit without limit and earn income on non-existent capital (Carroll, 1965). Gold provides a safeguard against politicians who recklessly issue paper money for deficit financing. Gold is akin to a single world currency and is conducive to trade expansion and exchange rates stability. Under inconvertible paper monies, exchange rates are highly unstable and adjustment of balance

5 Islam rejects present-day "big government" ideology. The state has no absolute powers but to address failures in society.

6 The authors of the Chicago Plan were Henry Simons, Frank Knight, Aaron Director, Garfield Cox, Lloyd Mints, Henry Schultz, Paul Douglas and A. G. Hart. Professor Irving Fisher of Yale University, arguably one of America's three greatest economists, was a strong supporter of the Plan. His book, *100 Percent Money* (1936), was an attempt to win support for the plan among academics and policy makers.

of payments relies on currency depreciation instead of the classical price-specie flow mechanism.[7]

The 2008 financial crisis and its aftermath show that the financial system—with paper money and fractional reserve banking—has become unsustainable.[8] We describe the gold standard, its merits and its role in balance of payments adjustment, and examine the gold standard in the context of Islamic finance. The main elements of instability, namely interest-based credit that undermined the gold standard, are non-existent in Islamic finance. Consequently, reforms of the international payment system could restore a gold standard based on Islamic finance principles that strictly removes interest-debt contracts and preserve a one-to-one mapping between the monetary and real sectors. We believe that such a system is inherently stable and conducive to strong economic growth.

II. THE POST-BRETTON-WOODS INTERNATIONAL PAYMENTS SYSTEM: AN ARTIFICIAL PAPER MONEY SYSTEM

Jacques Rueff (1964), a fervent supporter of the gold standard, argued that any payments system not based on gold was doomed to fail. He noted that the gold-exchange standard promoted by the Genoa Conference in 1922 to economize on gold[9] and increase the use of reserve currencies culminated in the Great Depression (1929), the exit of the United Kingdom from the gold standard (1931), and a

7 We should note that another factor limiting the smooth functioning of the gold standard was increasing downward price and wage inflexibility.

8 Maurice Allais (1999) called un-backed money creation money counterfeiting. Carroll (1965) characterised fictitious credit as counterfeiting and redistribution of wealth.

9 The idea of economizing on gold was rooted in the writings of Adam Smith (1776) and David Ricardo (1810); it led to the collapse of the gold standard. Critical of Adam Smith's view that the substitution of gold would be beneficial by saving the use and cost of gold and silver in the currency, Carroll (1965) noted that "the truth is, an expanded and consequently cheap currency is the most costly and wasteful machinery a nation can possess; the history of the world shows it to be uniformly unprofitable or disastrous….There was never a greater mistake in any science, and never one so fatal to the stability of property and the well-being of society."

period of deep instability (1929-1939) leading to a devastating world war. He predicted the collapse of the Bretton Woods system of fixed parities, which was a gold exchange arrangement similar to the Genoa arrangement, for the same reason that undermined the Genoa system, namely excessive liabilities of reserve central banks in relation to their gold reserves.[10] The period following the collapse of Bretton Woods in 1971 has been marked by severe instability. Not surprisingly, high inflation, exchange rate instability and financial crises, recession and rising unemployment followed the establishment of the paper money system in 1971 and became permanent features of this system.[11]

In the post-Bretton-Woods system, each country or each money zone, has inconvertible paper and credit money. Each country has independent fiscal and monetary policies. Floating exchange rates measure how far currencies have depreciated with respect to each other. In contrast to the classical gold system, exchange rate devaluation or depreciation became the main instrument of adjusting balance of payments. All currencies keep losing purchasing power over the years. In 2012, as measured by the US consumer price index, the dollar has the purchasing power of 2 cents in 1913 and has depreciated considerably in relation to gold. The price of gold rose from $35/ounce in 1971 to over $1,800/ounce in 2011, reflecting the considerable depreciation of the dollar. As the reserve currencies keep depreciating under expansionary monetary and fiscal policies, gold (and other commodities)[12] will regain preeminence as a reserve asset. Countries with current account surpluses, as well as other asset holders, will be tempted to convert their foreign exchange into gold at prevailing market prices.

Over the past four decades, the dominance of a few reserve central banks and financial instability have been features of the

10 Only the US redeemed gold at $35/ounce, and that for central banks only. All other currencies were pegged at fixed rates to the US dollar and none was redeemable in gold.

11 A number of economists (e.g., Rueff, 1964) argued that the problems associated with the fall of the Bretton Woods system could have been avoided if politicians had thought about restoring the gold standard in 1971. But the world community did not seriously reconsider the gold standard despite the financial disorders caused by inconvertible monies.

12 Modigliani and Askari (1971) recommended an international payments system that had as its reserve asset a diversified basket of internationally traded commodities.

current system.[13] The 2008 financial crisis is a culmination of financial disorders ignored by reserve central banks, unlimited credit money creation, debt buildup and intense speculation. Critics see the prevailing system as counterfeiting and silent taxation (from inflation), and a system that will collapse beyond any repair due to its inherent self-destructive forces.[14]

Yet, despite its inherent defects and the free flows of real resources it confers to reserve currency countries and to debtors, there have been no official initiatives for reforms of the international payments system.[15] While deep concern has been expressed by leading trade partners about unorthodox fiscal and monetary policies in reserve currency countries and exchange rate instability, no official and concrete reform plan has been proposed. Reform initiatives are highly unlikely to come from reserve currency countries as they enjoy abundant transfer of wealth from the rest of the world conferred by their reserve currency status (or seigniorage). As with most change, reforms will come under forced conditions when wealth-holders turn to safe, real, and natural money, which historically has been gold. Gold has historically been the world's single currency; it has no nationality; it was chosen as sound money and remained so throughout ages (Menger, 1892).

A stable monetary system can only be based on a real asset that preserves its purchasing power. Gold is one such asset that

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13 Many prominent writers have denounced the tyranny of the US Fed. Milton Friedman (1972) stated, "There is inflation because the US Fed has decreed so." He called for a constitutional rule that limits the power of the US Fed. Murray Rothbard (1994) and Ron Paul (2009) considered that the US Fed was formed by interest groups to bail out financial institutions and called for its abolishment. Many writers in the free-banking school consider a central bank as totally unnecessary for sound money and call for its elimination.

14 Carroll (1965) deplored the devastating effects of paper money. He stated,"The value of money is regulated to disorder, to the impairing of contracts, and to the confusion of all just ideas regarding the rights of property, as effectually by the powers exercised by the States in granting bank charters with authority to issue 'bills of credit'."

15 Adherence to gold remained strong in the Austrian School. However, most of the academic profession and press were hostile to gold and called gold barbarous and its proponents as gold fools that would like to bring the world back to pre-historic times. A basic reason for their hostility was the irreconcilability of gold with Keynesianism. In Islamic countries, many prominent writers have derided the initiative of former Malaysian Prime Minister Dr. Mahathir bin Mohamad for a gold dinar as a chimera.

was historically used (although a basket of internationally traded commodities is a conceivable alternative). A stable monetary system cannot be built artificially on inconvertible paper since paper has no inherent value and no reserve currency central bank can resist the temptation of printing more and more paper money when it runs into financial difficulties.[16] The inconvertible paper and credit system is inherently unstable. It expands freely via money printing and fictitious credit multiplication until it reaches hyperinflation or total bankruptcy when debtors simply default on their loans (Thornton, 1802; Carroll, 1965; Rothbard, 2008; and de Soto, 2012). Banks gain wealth and interest income by expanding credit by a stroke of the pen; they emit credit until they reach either insolvency or debtors' default.[17] Examples of credit collapses are many; we may cite the Great Depression and earlier crises throughout the 19th century in Europe and in the United States.

Money fulfills four basic functions: unit of account, medium of exchange, standard of value, and a store of value. When money is no longer a standard of value and a store of value it is impaired. The reason for the ineligibility of paper money as sound money resides simply in value theory, or in the law of supply and demand. Commodities that incorporate value (e.g., corn) are exchanged against commodities that incorporate value (e.g., cloth). Value may originate from labor incorporated in a commodity. Value of a commodity is its capacity to be exchanged for another commodity; its price is its capacity to be exchanged for money only.[18] Menger (1892) stated that commodities could be classified according to their salability or liquidity in a barter

16 In classical theory, value is measured by the amount of labor embodied in the commodity or the scarcity of the commodity (e.g., diamonds). A piece of paper has negligible or no intrinsic value in it.

17 Minsky (1986) argued that, as credit expands, Ponzi borrowers who simply cannot pay either the principal or the interest of the loan will dominate it. Labordere (1907) maintained that speculation intensifies during a credit boom, prices of commodities and assets rise rapidly, and optimism reaches a peak. Banks lend freely. Apparent capital (loans) multiplies in relation to real available capital (saving). The shortage of saving becomes severe, leading to the suspension of many long-term projects. There is also mal-investment in the form of over-sized projects and non-profitable investment due to the abundance and cheapness of loans. Expected cash flows and profits do not materialize. Bankers suffer losses on their loans and investment in equity shares.

18 Carroll (1965) described the notion of "price without value"; namely, currency generated by bank lending pours forth only to drive up prices without creating additional value.

economy. The most marketable, i.e. liquid, is selected as money. Intrinsically, paper has no value and could not be chosen by the market as sound money. Governments decree it to be legal tender. A small piece of paper has a negligible cost; hence, its supply can be almost unlimited, and the demand for it could be very low, driving its value to almost zero. Moreover, paper can be consumed by fire or destroyed; it can be counterfeited; it cannot serve as a store of value since it has no intrinsic value.[19]

A natural form of money has to be selected by the market to be liquid, scarce and costly to produce, with its value determined by the law of demand and supply. For instance, a country endowed with gold mines cannot produce gold as the US Federal Reserve (US Fed) produces trillions of dollars electronically. Gold from the mines is not as instant and free for injection in the economy as the Fed's multi-trillion dollar quantitative easing program. For gold to be produced from mines the producer has to undertake investment in machinery and installations, employ labor, and incur significant cost to produce a few kilos of gold. He produces gold only if the price of gold exceeds its marginal cost.[20] Counterfeiters cannot counterfeit gold.

Under the inconvertible paper system and with floating exchange rates, each country pursues its domestic policies independently. It inflates to any extent necessary to overcome structural rigidities in its

19 In the Qur'ān in the Sūrah al-Kahf, verse 82: "As to the wall, it belonged to two orphan boys in the town and there was under it a treasure belonging to them". The treasure here is gold. If buried in the ground, paper money would be damaged.

20 Among the early fallacies about paper money was that paper was inexpensive to produce and could thus be used to economize on the costly production of gold and silver (Adam Smith, 1776). The argument was, and is, that the world is better off using labor and capital to produce other commodities such as food instead of gold and silver, which can be replaced by costless paper. This fallacy has been rejected on many counts. It omits that gold has an intrinsic value and will be produced because it is a valuable commodity and was so prior to being money. In the same manner, diamonds will be produced even if they have no monetary use. Hence, gold has continued to be produced, even though its use as money has ceased. Non-monetary demand for gold is very high. The monetary function can be fulfilled by the existing stock of gold, which has been accumulated over thousands of years. New production of gold is very small compared to the existing world stock of gold. The latter can accomplish a monetary role today without a need for further gold production. Gold can also be drawn from non-monetary uses into monetary uses. The fallacy is comparable to advising that a house or a bridge be built with paper since it has a negligible cost compared to the high cost of steel and concrete.

price and wage system, monetizes fiscal deficits, or prevents deflation that ensues from the classical balance of payments adjustment mechanism. It also inflates to prevent any deflation that follows from the collapse of a financial boom. For its external balance, it depreciates its currency to the extent required for correcting an external deficit. Countries do not accept an appreciation of their currencies and a loss of exports of goods and services. Under the present system, exchange rates fluctuate widely and give rise to significant exchange rate risks and destabilizing short-term capital movements.

III. SELF-MULTIPLYING MONEY CREATION: THE AGE OF INFLATION

Unlike the gold standard, the reserve currency country by definition (the US in the Bretton Woods system, as long as countries held its currency and did not insist on conversion) is free of any foreign exchange constraint. It may import any quantity of goods without exporting any goods. It only needs to print paper or emit credit to import without any need for any exports' proceeds.[21] Its importers need no foreign currency to import. Its consumers can even remain idle and enjoy imported goods through bank credit or government transfers financed through deficits![22]

Consider the reserve currency country and the rest of the world with no reserve currency. Let us assume that in the rest of the world there are 100 bushels of wheat and that there is local money in circulation converted to $100. Assume the reserve currency country wants to import a quantity of wheat from the rest of the world for $50.[23] It prints $50. Hence, the total amount of money to be offered

21 A reserve country is in the same position as a gold producer. The latter can buy anything he wishes as long as he keeps producing gold. While the gold producer has a limit to his gold output such as high production cost or exhaustion of the gold mine, a reserve currency has no cost, and there is no limit to printing reserve currency.

22 If a reserve country pays for its imports with exports, say of food products, real capital in the rest of the world increases; economic growth and employment are in turn spurred.

23 Wheat is chosen only as an illustration. Residents of a reserve currency country may buy real and financial assets in the rest of the world; for instance, they may buy foreign corporations with reserve currency.

for wheat is now $150. The clearing price of wheat is now $1.5/bushel instead of $1/bushel. The rest of the world now buys 66.7 bushels and the reserve country buys 33.3 bushels of wheat. The rest of the world has been compelled to export 33.3 bushels of wheat, a forced saving, a curtailment of investment and growth. The reserve country acts in the same way as the government deficit in one country model where the government buys goods with new printed money. The result of this action is an inflation tax, an increase in the price level and a decline in the real consumption of the private sector.

In the next period, assume the reserve currency country decides to buy wheat for another $50. It prints $50; the quantity of money is now $200. The supply of wheat is fixed at 100 bushels in the rest of the world. The price of wheat is $2/bushel. The reserve currency country imports 25 bushels of wheat at this price. If the reserve currency country wants to increase its real share (tax) of wheat, it has to print more money. Let us assume that the reserve country wants to import 50 bushels. Knowing that there is available money of $150 in the rest of the world that will be spent for wheat, it has to match this money by printing $150. It will be able to buy 50 bushels at $3/bushel. If the reserve country wants to import 60 bushels, this means that the rest of the world can acquire only 40 bushels for an amount of $150. The price is therefore $3.75/bushel. The reserve currency country has to print an amount of money equal to: 60x$3.75=$225. The reserve currency country can, therefore, go on importing wheat with printed money. It determines the exports of the rest of the world in the same way a government determines how much tax it wants to extract by money printing. The consequence is a higher price of wheat in each consecutive period, with the rest of the world consuming less wheat, investing less, and holding more dollars.

Often the recipients of the reserve currency redeposit it in the banking system of the reserve currency country, or use it to buy goods or securities from the reserve currency country or make transfer payments to the reserve currency country. The residents of the reserve currency country who receive dollars in payments will deposit these dollars with the reserve currency country's banking system. The bank that receives the check sees its reserves rise by an equivalent amount. The bank will expand credit. If the reserve ratio is 10%, then the credit multiplier is 10. If $100 is deposited, there will be an expansion

of credit money by $1,000. This expansion will feed into imports since there is no foreign exchange constraint and the reserve money is automatically accepted in payments. In other words, importers in the reserve currency country can import without constraint.

The demand for imports of the reserve currency country seems, therefore, to be increasing without limit as long as its currency is widely accepted throughout the world as a settlement currency in international payments. All repatriated money flows are deposited in the banking system of the reserve currency country, in turn expanding its credit base and the demand for imports. The ability of a reserve currency country to emit currency without any restriction on foreign exchange pushes its fictitious credit and domestic debt to excessive levels.[24] Since the reserve country has the ability to print money and keep its domestic credit expanding, demand for imports also keeps expanding; necessarily, the non-reserve currency countries have to be net exporters to meet this demand. In other words, the expanding demand of the reserve currency country financed through credit or money printing has to crowd out the demand of the non-reserve currency countries by increasing forced savings (i.e., reducing consumption) in the form of net exports. Even if there is a small supply of wheat in the rest of the world, the wheat demand of the reserve currency country will crowd out part of the wheat demand in the rest of the world and, therefore, force net exports.

Hence, for instance, the reserve currency country will buy crude oil, raw materials, industrial products, even though demand in the non-reserve currency countries could absorb these products. Thus there will be a structural imbalance, with a persistent external deficit in the reserve currency country and a persistent forced surplus in the rest of the world. With no foreign exchange constraint, the credit in the reserve country keeps expanding far above what the economy is able to pay as debt service. Furthermore, a large component of the debt may be in the form of subprime debt and government debt that has little or no capital base to generate real output for debt servicing. The credit structure is, therefore, eventually bound to collapse and

24 Without the creation of fictitious credit, aggregate demand remains within the incomes generated in the economy as postulated by Say's law of the markets, and will not lead, over the long run, to external trade deficits.

break out into a debt crisis as happened in 2008 in the two principal reserve currency areas—the US and the Eurozone.

Below we illustrate the simple model of money creation in the reserve and non-reserve currency countries using balance sheets of each country. We assume that the reserve currency country does not require foreign exchange (currency backing) to issue reserve currency (denoted by X). We assume also that the non-reserve currency country can issue currency (denoted by Y) only against foreign exchange (backing). Assume that the reserve currency country has emitted X100 in reserve money. The initial balance sheets of the banking system of each country are represented in Table 1.

Table 1: ***Initial Monetary Position***

The Reserve Country Banking (in reserve currency)				The Non-Reserve Country Banking (in local currency)			
Assets		Liabilities		Assets		Liabilities	
Loans	X100	Money	X100	Foreign exchange	Y0	Money	Y0
Total	X100	Total	X100	Total	Y0	Total	Y0

Let the exchange rate be X=2Y. Assume the residents of the reserve currency country import goods for X100 from the non-reserve currency country. The reserves in the non-reserve currency country rise by Y50 (Table 2). The check for X100 is re-deposited in the reserve currency country's banking system. Thus its reserves are again built up to X100. We assume the money multiplier in each country is 10. The change in monetary positions can be presented as in Table 3.

Table 2: ***Monetary Position Following the Import Transaction***

The Reserve Country Banking (in reserve currency)				The Non-Reserve Country Banking (in local currency)			
Assets		Liabilities		Assets		Liabilities	
Loans	X100	Money	X100	Foreign exchange	Y50	Money	Y50
Total	X0	Total	X0	Total	Y50	Total	Y50

Table 3: ***Monetary Position Following Credit Multiplier Effect***

The Reserve Country Banking (in reserve currency)				The Non-Reserve Country Banking (in local currency)			
Assets		Liabilities		Assets		Liabilities	
Reserves	X100	Money	X100	Foreign exchange	Y50	Money	Y50
Loans	X100	Deposits	X1,100	Credit	Y500	Deposit	Y500
Credit	X1,000						
Total	X1,200	Total	X1,200	Total	Y550	Total	Y550

The inconvertible paper system is highly inflationary.[25] We observe that the gain in foreign exchange of the non-reserve currency country generates a double money creation: it creates local money (Y) in the non-reserve currency country and expands credit in the reserve currency country (X). The expansion of credit will, in turn, lead to higher imports from the non-reserve country. The process is self-multiplying and explosive. The more the non-reserve currency country gains in foreign exchange, the faster credit expansion becomes in the reserve currency country. The reserve currency country has practically no market mechanism for preventing an abnormal expansion of its credit and a continuing deterioration of its trade balance as long as its currency remains a reserve currency. Barring mandatory ceilings of credit or strict import prohibitions, the reserve currency country has only the option of reverting to a commodity standard to maintain financial stability and balance in its external trade.

25 The previous gold-exchange standards (Genoa and Bretton Woods) were equally highly inflationary (Mlynarski, 1929; Rueff, 1964). Foreign exchange (in sterling or dollars) was re-deposited in the respective issuing country and led to abnormal credit expansion and eventually an exit from gold by the United Kingdom (1931) and the United States (1971).

IV. FACTS ABOUT THE INFLATIONARY AND DISTORTIVE EFFECTS OF INCONVERTIBLE PAPER MONEY

The inconvertible paper money system of the post-Bretton-Woods era has lasted for over four decades. We provide in this section empirical evidence of its inherent inflationary, distortive, and crisis-inducing effects. We show that all constraints on reserve currency countries to inflate and expand their money supply, manipulate interest and exchange rates and run large fiscal deficits have been removed with attendant consequences on inflation, real growth, unemployment and real income distribution in the reserve currency country and in the rest of the world. A reserve currency central bank can decide on any amount of quantitative easing without facing a balance of payments constraint (e.g., the Fed and the European Central Bank after 2009). The present system has led to structural changes and financial upheavals rarely seen in the history of international trade and payments. The new system has been characterized by unchecked money and credit expansion in most of the countries. Interest rates are no longer market-determined. They are directly set by the central banks that keep credit expanding and fuel speculation to propel commodity and asset prices to higher levels. Central banks have acquired powers that they could not have gotten under the gold standard.[26]

A natural consequence of unbounded money expansion is high price inflation of assets and goods, excessive instability of interest and exchange rates, intense speculation in assets, foreign exchange, and commodities markets and intense speculative hot money flowing across borders (Kindleberger and Aliber, 2005; Rueff, 1964). The paper money system has led to the financialization of the economy (Askari et al., 2011), meaning a superfluous increase in the relative size of the financial sector (relative to the real sector), particularly a substantial rise in the number of finance companies and speculative funds. Unrestrained credit expansion has led to a sequence of severe financial crises in many countries, including Japan, Southeast Asia,

26 Central banks during the 19th century had pure monetary functions such as issuing bank notes, discounting bills, and settling foreign payments. They never concerned themselves with price level stability, full employment, or counter-cyclical policies (See Gilbart, 1919).

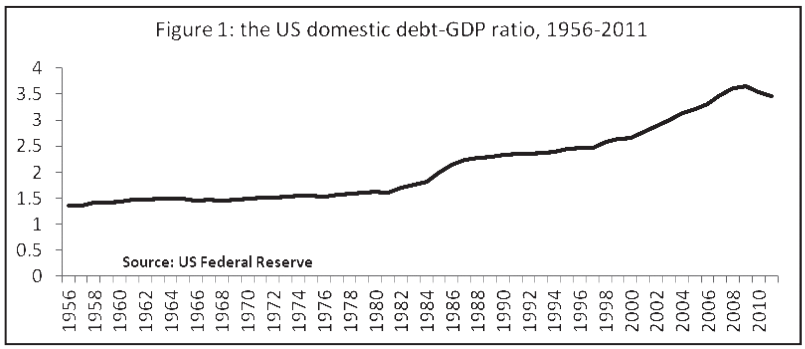
and recently, the US, the UK, and the Eurozone countries. The US dollar is the main pillar of the new system and has conferred on the US the privilege to run perennial external trade deficits and enjoy high living standards far above its real national output.

A. Unlimited Credit Expansion

There is no balance of payments constraint on credit expansion in the reserve currency country (Rueff, 1964). Credit can expand without limit. Subprime markets are the main recipients of credit; they use it mainly for consumption and, therefore, they have little capital base to service loans. Even general bankruptcy, as in 2008, becomes ineffective to check credit expansion. Since the central bank has no constraint on money printing, it buys all toxic assets from financial institutions in exchange for fresh printed money under massive bailouts.[27] Moreover, to push credit to even higher levels beyond the general failure point, the central bank pushes interest rates to near-zero levels and undertakes quantitative easing programs with the aim of injecting more cheap money into the economy. In addition to efforts by the central bank to flood borrowers with cheap money, financial institutions have resorted to securitization, a device invented in the 1970s to transform loans into marketable securities to be sold to investors in order to absorb ever-increasing liquidity and issue more loans. The risk of loans is transferred from the issuing institution to investors. A derivative called a credit default swap (CDS) may be purchased from an insurer to protect against default of the securitized loans.

27 The central bank promotes moral hazard; it disregards all prudential ratios and Basel guidelines in its drive to force credit on borrowers. In the face of bank reluctance, the central bank lends directly to subprime borrowers. In fact, US corporations are flooded with cash; US banks holds amazing amounts of excess reserves which they could not loan safely. To push loans to subprime markets, the central bank decided to buy mortgages and consumer loans.

Figure 1: ***The US Domestic Debt-GDP ratio, 1956-2011***



The ratio of the US total domestic credit to GDP exhibited an unprecedented path. It has kept rising without limit. The ratio was steady at about 140% of GDP during 1956-1971 (Figure 1). Under the new system, the domestic credit ratio reached 366% in 2009.[28] A healthy progression of credit is to be roughly in line with GDP; it contributes to fixed capital formation and real economic growth, and to enhance price stability through faster economic growth. Figure 1 shows that the opening of the money floodgates has inundated the US economy with massive liquidity and credit creation. Evidently, credit expansion has a very weak relation with real saving in the US. It is sustained by the balance of payments surplus of the rest of world deposited in the US banking system. Credit has been pushed to subprime borrowers whose ability to repay is chancy at best. If the debt service is 10% of the amount of the loan, this means that 37% of US GDP has to be devoted to debt service every year. Consequently, consumption will have to be squeezed to bare minimum and unreasonable levels.

28 This ratio does not include write-offs and toxic assets bought by the US Fed. Since credit at this level can never be repaid, the usefulness of the ratio is to measure the extent of free wealth transferred through banks to borrowers and through the fiscal deficit to beneficiaries of government transfers.

As the credit ratio kept racing upward, the likelihood of a general default became imminent.[29] The debt crisis of 2008 led to increased debt for the US government; its debt ratio increased from 46% in 2006 to 110% in 2011.[30] The immense volume of outstanding credit cannot be serviced in an orderly manner. Without massive bailouts from the central bank, the debt will be self-liquidating and will entail the disappearance of thousands of financial institutions as happened during the Great Depression and prior financial crises. The central banks of reserve currency countries will force inflation as a way out of debt. If the central bank increases interest rates rapidly or reduces liquidity significantly, the whole credit pyramid will collapse into default, with home foreclosures and bank liquidation. The credit structure is artificially maintained by the central bank and cannot stand on its own.[31]

B. Central Banks Force Cheap Money with Near-Zero Interest Rates

Reserve currency countries face no international reserves constraints. Despite its large external deficits, the US has faced little pressure in lowering interest rates to the lowest levels in its history. Under the gold standard, a country facing external drains on its gold would increase its interest rates; when it has large inflows of gold, it would decrease its interest rates. The Fed, free of any constraint on balance of payments, lowered its interest rates during 2001-2004 to stimulate credit and reflate asset prices (Figure 2). This interest rate policy

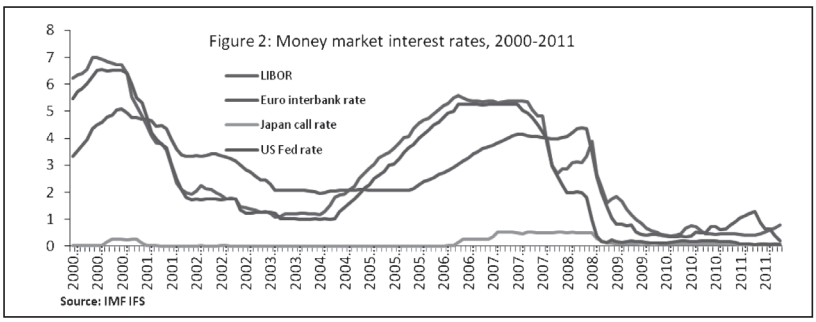
29 Rueff (1964) argued that credit expansion may cause impoverishment or starvation. For instance, as prices rise, peasants become more impoverished; they consume their grain seeds and livestock. They no longer have seeds or livestock for generating necessary farm output. The result is starvation. Labordere (1907) claimed that credit expansion exhausts working capital (saving) and stalls the economy. Hayek (1933) and Von Mises (1953) claimed that credit expansion caused mal-investment and distortions in the productive structure. Governments cannot generate a surplus for debt payment and often default on debt through inflating the price level. Governments also frequently default on their foreign debt.

30 US Federal Reserve. This figure does not include the debt of government agencies and guaranteed debt.

31 Most of the credit was based on lending fictive capital that never existed in real savings. Fictive capital cannot be repaid with real capital.

pushed loans to high levels and encouraged massive lending to subprime markets in the form of home and consumer loans. It sent housing, equities, and commodities prices racing to record levels. Food and energy prices rose to levels that stalled real economic activity. The level of indebtedness severed the connection with the real economy. To increase debt further, banks and finance companies resorted to securitization of loans in order to absorb ever flowing dollar liquidity. Very low interest rates in advanced industrial countries have caused high speculation in assets and speculative movements of hot money to emerging countries such as Malaysia, Korea and Indonesia. The yen-carry trade was an example of borrowing in a cheap money country, i.e., Japan, and lending in higher interest rates markets. Such arbitrage has led to massive destabilizing capital flows that have perturbed exchange rates.

Figure 2: ***Money Market Interest Rates, 2000-2011***



The objective of the reserve currency central banks is to re-inflate all asset and commodity prices and reduce the real burden of debt. Hyperinflation, as happened in Germany during 1922-23 and many other countries, would be one approach to extricate debtors from debt. Such a policy would wipe out all the financial wealth of savers. Interest rates may be maintained at these depressed levels for decades. Savers will be denied any return. Near-zero interest rate policy will progressively reduce real capital, i.e., consumption of capital, and redistribute wealth in favor of borrowers at the expense of creditors and those on fixed incomes. To some observers, central banks want to prevent liquidation of mal-investment, make non-profitable investment profitable, and re-establish the prices that prevailed at the

peak of the boom, even though these prices were inflated prices and were not sustainable (Hayek, 1931).[32] This is reflation; central banks try to force loans for speculation, consumption and other uses, even though the borrowers are sub-prime customers who cannot repay the loans. Since money is not hard money and is simply printed, there is little reason to deprive borrowers. Creditors lose their capital. The state steps in to bail out the banking system; yet, real capital has been destroyed or consumed, and the bailout forces the innocent to pay for the wealth enjoyed by borrowers.[33]

C. High Volatility of Exchange Rates

Under the system, each country, or each monetary zone, follows an independent exchange rate policy in line with its external or fiscal objectives. Exchange rate depreciation improves external competitiveness, ignites domestic price inflation, reduces real costs, and may enhance fiscal revenues. Exchange rates displayed wide gyrations under the new system (Figure 3). They were manipulated through interest rates, direct interventions by central banks as under the 1985 Plaza Accord, whereby central banks would sell their dollar holdings or borrowed dollars against their currencies and the Fed would buy foreign currencies in order to halt the appreciation of the US dollar. As shown in Figure 4, the period 1971-2011 was marked by high exchange rate volatility, resulting in speculation, loss of capital, high foreign exchange risk and price distortions. Countries were striving to maintain depreciated exchange rates with a view to safeguard their exports and obviate pressure for protective tariffs. Rarely will a country accept an appreciation of its currency that reduces its export competitiveness. It may be noted that the Japanese yen has appreciated considerably in relation to the US dollar since 1985.[34]

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32 The government also subsidizes homeowners in their mortgage payments to prevent a fall of home prices.

33 If Mr. Joe loses his money in gambling, the government forces Mr. Sam to pay Mr. Joe for his gambling loss. The government is said to socialize losses and keep gains private.

34 The yen's sharp appreciation in 1986-88 mistakenly led the Bank of Japan to dramatically lower its interest rate and expand credit. Speculation in assets became too virulent, causing a financial collapse in 1992 and an enduring economic crisis in the following decade, called "the lost decade".

Japan's exports have lost their momentum; nevertheless, the yen's real exchange rate has depreciated owing to slower growth of wages and faster productivity gains in Japan. Figure 3 shows that exchange rates were fixed prior to 1971, but thereafter exchange rates exhibited wide gyrations, influenced by interest rate movements, changes in money aggregates, and external current and capital account balances. Figure 4 displays another manifestation of exchange rate instability, namely the behavior of the dollar-euro rates during 2000-2011. The dollar depreciated significantly in relation to the euro until 2008; thereafter, the exchange rate kept gyrating under attempts of the US Fed and the European Central Bank to maintain near-zero interest rates and inject massive liquidities under quantitative easing programs. This instability increases foreign exchange risk and speculation and is detrimental to trade.

Figure 3: ***Instability of Exchange Rates Under Paper Money, 1960-2011***

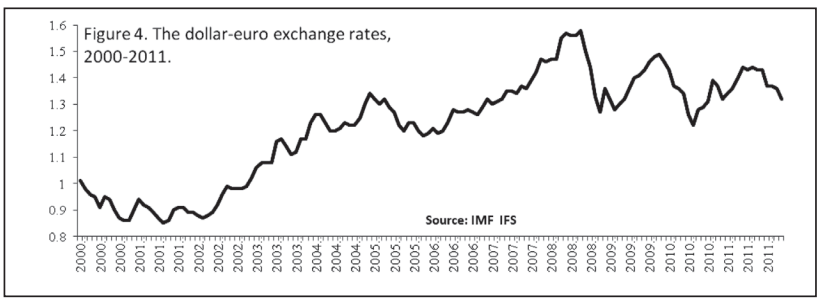
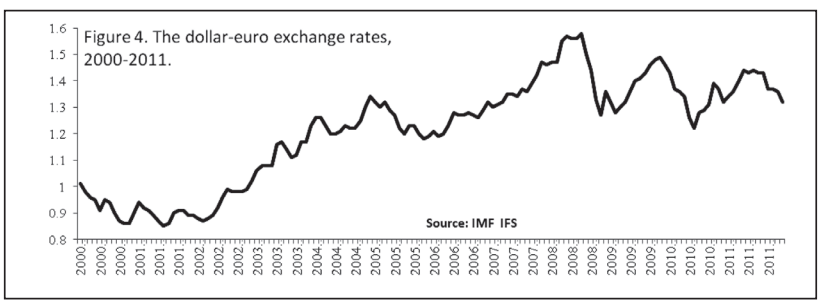


Figure 4: ***The Dollar-Euro Exchange Rates, 2000-2011***



D. Unabating Price Inflation under the Inconvertible Paper Money System

i. Consumer Price Inflation

As predicted by the quantity theory of money, the inevitable effect of ever-rising credit and currency is a corresponding ever-increasing price level. All prices, including gold, commodities, real estate, durable goods, equities, and consumer goods prices were rapidly rising during periods of rapid credit expansion. Inflation accelerated immediately after the collapse of the Bretton Woods system. US consumer price inflation rose to double-digit level, as shown in Figure 5, with no episode of price deflation (only alternating between acceleration and deceleration), whereas under the gold standard, inflation was followed by a period of price decline and vigorous economic growth (Figure 6).

Figure 5: ***US Consumer Price inflation 1960-2011***

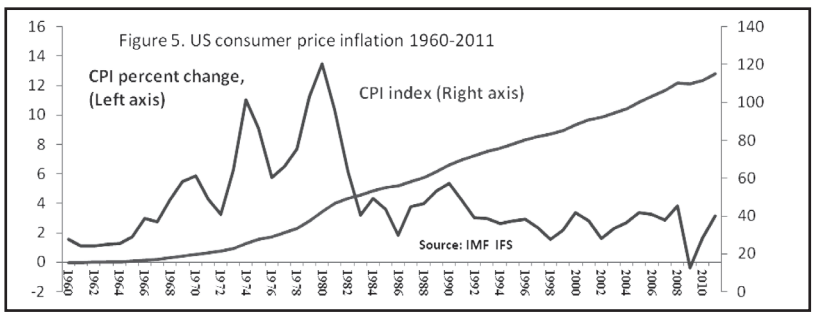
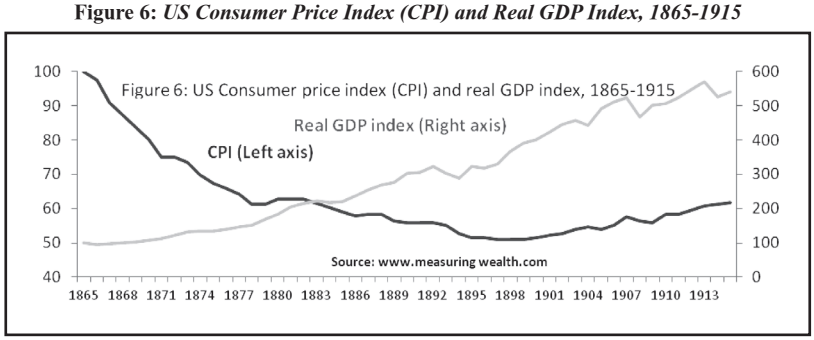


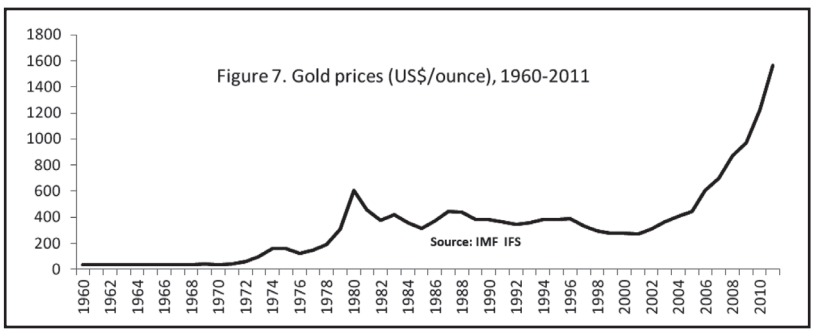
Figure 6: ***US Consumer Price Index (CPI) and Real GDP Index, 1865-1915***



ii. Gold Prices

The rapid depreciation of paper money in relation to gold shows the nature of paper money. Its value in the long run tends to be equal to the intrinsic value of the paper that embodies it. The price of gold rose from $35/ounce in 1971 to over $1,800/ounce in 2011, a 51-fold increase.[35] No commodity has appreciated or depreciated in relation to gold by a significant percent. For instance, crude oil has appreciated relative to gold by about 25% during 1971-2011. The fast depreciation of paper in relation to gold shows a number of important facts. First, there are no constraints on the supply of paper money and credit; they keep rising at a high rate because central banks and governments have not always resisted increasing the money supply for diverse reasons, including deficit financing or re-establishing full employment. Second, after four decades of fast increase of dollar liquidities, wealth holders no longer saw paper money as a good store of value and took refuge in assets that afforded a hedge against inflation. Third, reserve currency central banks have impaired the value of paper currency through unprecedented monetary expansion. The faster the dollar depreciates in relation to gold, the less inclined are wealth holders to keep dollars as a reserve asset. The rise in gold prices was exponential during 2002-2010 (Figure 7).

Figure 7: ***Gold Prices (US$/Ounce), 1960-2011***

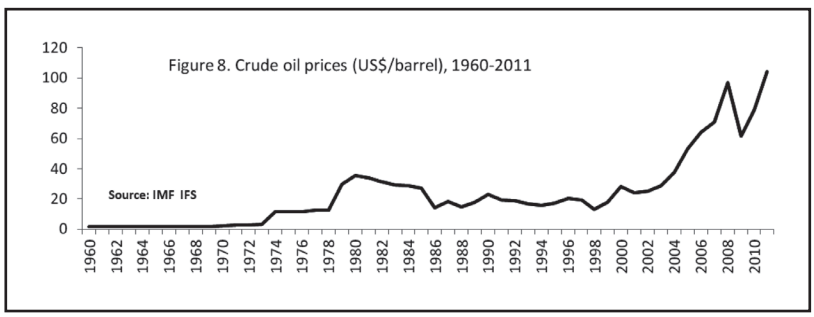


35 Commodity prices, including gold, are prices set, in part, in futures markets. Very low interest rates and cheap money enable speculators to finance large positions and send these prices skyrocketing.

iii. Crude Oil Prices

The inflationary effect of paper money on oil prices is depicted in Figure 8. Oil prices exploded immediately after 1971. During 2001-2011 oil prices raced upward exponentially, reaching $147/barrel in 2008 and have remained under rising pressure with quantitative easing and near zero-interest rates. The inflationary episodes of 1973-1982 showed that oil prices would remain in upward mode as long as money and credit keep expanding and the US dollar keeps depreciating. The rapid increase in oil prices has an inflationary effect on costs and has usually had a depressing effect on real economic activity.

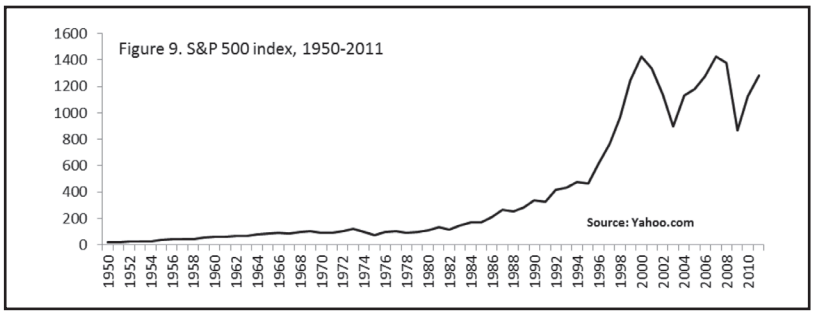
Figure 8: ***Crude Oil Prices (US$/Barrel), 1960-2011***



iv. Equity Prices

The impact of paper money on equity prices is depicted in Figure 9. As equities are in part financed through credit, capital markets lost their efficiency and became increasingly speculative. Equity prices kept rising under the impact of abundant liquidity. Equity prices in 2011 were fourteen fold their level in 1971. The dividend rate fell to less than 1% while gains were in the form of speculative capital gains paid by purchasers of equities. The Fed kept on inflating asset prices. It re-inflated these prices when they crashed in 2001 by injecting liquidities and lowering interest rates, irrespective of the impact on commodity and housing prices, balance of payments and employment. Very low interest rates forced investors away from bonds into higher yield equities and commodities.

Figure 9: S&P 500 Index, 1950 -2011



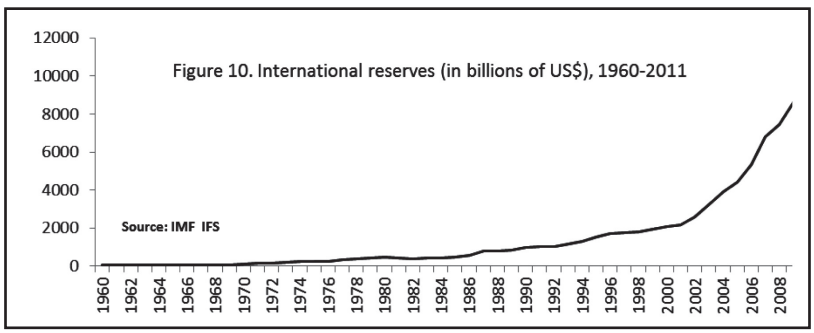
All prices appear to show no tendency to stabilize. Wages usually lag price increases. There is, therefore, constant erosion of real purchasing power for workers and fixed-income recipients. The higher prices are, the smaller are the quantities of food and other necessities consumed.[36] This is an inherent injustice of the paper money as it taxes, through inflation, creditors and workers. Trends in prices illustrate clearly the long-run quantity theory of money. An increase in the quantity of money (credit and currency) induces a general increase in prices. The removal of money brakes in the paper money system that followed the collapse of the Bretton Woods system has inflated all prices. Although short-term changes in prices are volatile, the longer-term price trends have been strongly inflationary. The price trends for the future will be a mere extrapolation of the past. The monetary authorities of the reserve currency countries are likely to reward debtors, be they governments or private debtors, by inflating to reduce the real debt burden. The inherent inflationary attribute of paper money illustrates its serious inefficiencies: it does not possess the classic properties of money and is an indirect instrument for government taxation and wealth redistribution.

36 In 2012, 48 million people were beneficiaries of food stamps in the US. In many countries food price inflation has badly hurt the food consumption of poor people. The US Fed is fuelling food price inflation and squeezing the food consumption of millions of people. In fact, food riots erupted in many poor countries in 2007-2008.

E. Rapid Expansion of International Reserves

International reserves held by central banks expanded at the rapid rate of about 18% per year during 1970-1980, in contrast to 2.9% per year during 1960-1969 (Figure 10). International reserves more than doubled between 1970 and 1973 as soon as the US exited the gold standard. The fast expansion of international reserves in the early 1970s flooded US banks with dollar reserves of surplus countries; these banks decided to recycle a large part to foreign borrowers. A debt crisis of middle-income countries erupted in the early 1980s, inflicting large losses on lending institutions.

Figure 10: ***International Reserves (in Billions of US$), 1960-2011***



International reserves expanded at about 17% per year during 2001-2011. Some of these reserves were recycled to sub-prime markets and contributed to credit expansion in the US. Their expansion is directly related to the credit structure in reserve currency countries. The more reserve currency countries expand credit, the more international reserves expand. Under a paper system, international reserves have a double money creation effect. When reserve currencies, i.e., foreign exchange, are bought in the recipient countries there is corresponding money creation of local currencies against this foreign exchange. The foreign exchange in reserve currencies is re-deposited in the reserve countries in which the reserve currencies originated. The reserves of the banks are increased, which leads to a renewed credit expansion in the reserve country (Table 3 above). For instance, a surplus central bank may purchase securities in the US using its US dollar foreign

exchange. The proceeds of security sales are deposited by the seller in the US banks, and US banks, in turn, seeing their reserves rise, expand credit.

F. Eternal Structural Trade Deficits

Credit and monetary expansion increase imports and reduce exports; otherwise, the situation would become too inflationary, as available domestic supplies would not be enough to meet expanding domestic aggregate demand. There is no market mechanism in reserve currency countries that curtails money and credit expansion. In fact, paradoxically, every external deficit brings back money and constitutes a new basis for renewed credit expansion and further expansion of imports and deficits. Figure 11 describes the structural change in US international trade that took place with the inception of the paper system. In contrast to its history before 1971, when the US had trade surpluses as well as deficits, it became a net importer of goods under the paper system. Its trade deficit is self-perpetuating as foreign exchange in dollars of surplus countries is re-deposited in the US banks and constitutes a renewed basis for credit expansion and higher import demand. There is a close relationship between new credit and import expansion. This relationship has been meticulously elaborated by Carroll (1965) and Walker (1873); they showed that additional credit entailed an increase in cheaper imports and a deterioration of the balance of trade. Figure 11 shows that US trade worsened during 2001-2011, which corresponded to a strong credit boom. The depreciation of the US dollar during 2001-2011 mitigated the effect of credit expansion on the trade deficit; however, it could not prevent a worsening of this deficit.

Figure 11: US Trade Balance (in % GDP), 1960-2011

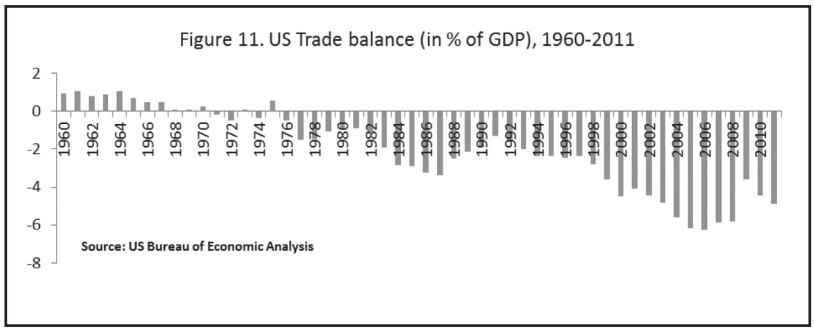
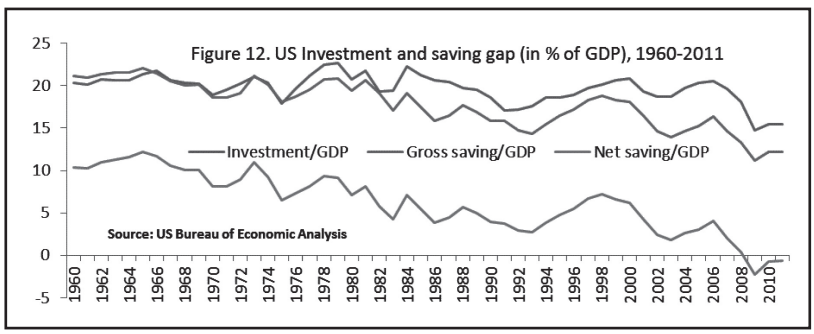


Figure 12: US Investment and Savings Gap (in % of GDP), 1960-2011



The position of the dollar as a reserve asset has conferred a privileged position on the US, enabling it to live indefinitely beyond its means. It draws considerable flows of real resources against printed paper and enables the US government to run large fiscal deficits and US consumers to enjoy high living standards of living on credit, which may never be repaid. This external trade deficit will end in the event of a dollar collapse. The persistent trade deficits attest that a reserve currency country has no reason to propose a reform of the system that affords it a considerable amount of real resources and higher living standards.

The US trade deficit has contributed to keeping core inflation in the US at a moderate rate as abundant industrial product imports enabled the US to adequately extend supplies and satisfy growing credit-fuelled domestic demand. However, for food and energy products,

worldwide supplies are inelastic, and expanding demand contributed to very high price inflation for these products. The US trade deficit constituted a saving-investment gap, implying that domestic demand could not be met by domestic output. Figure 12 shows that under the international paper system the saving-investment gap has become persistent since 1971 and that it deteriorated during the credit boom of 2002-2008.

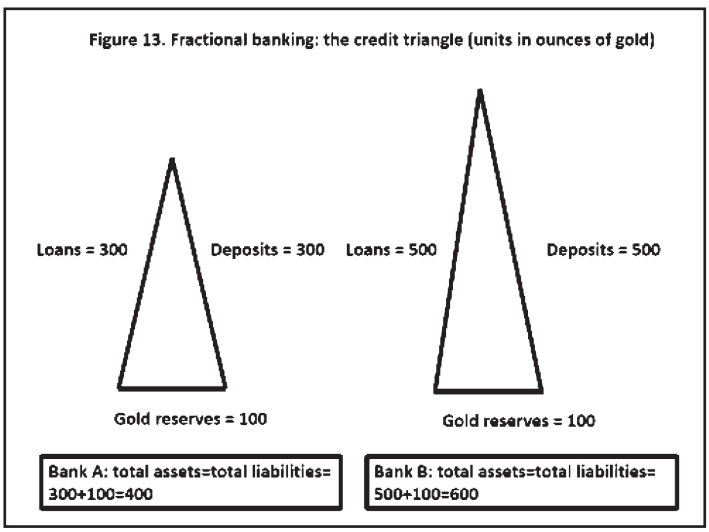
In sum, in this section we have examined some features of the US economy, which has been the main reserve currency on which the post-Bretton-Woods system has been founded, since 1971. Under the post-Bretton-Woods system, there has been little or no constraint on the creation of money by the US; the US banking system has no constraint to expanding credit, which has risen to levels never seen in US monetary history. Contrary to a gold standard, a reserve currency country's trade deficit does not cause loss of money. Paradoxically, it reconstitutes the money base and provides for a further money and credit expansion. The system set off financial crises in the 1970s, 1980s, 1990s, and in 2008; it has fueled inflation, significant instability in exchange rates, high credit in the main reserve countries, competitive devaluations and persistent trade deficits for the US. The banking system has become an intermediary for shoveling cheap loans to consumers. Most of the loans cannot be repaid since they have little capital basis for their servicing, including government loans, which are used to finance current government expenditures. If the Fed had to quickly increase interest rates and withdraw liquidity, the credit pyramid would crumble into general default and bank liquidation.

V. THE INTERNATIONAL GOLD SYSTEM

Gold money was the foundation for the international payments system over a number of centuries. Gold was used for settling domestic and international transactions. The mint office assayed the gold metal brought to it by private agents and issued, usually for a small fee (seigniorage), standard gold coins to be used as money. Gold in circulation increased from balance of payments surplus, gold discoveries, or diversion from non-monetary gold. The gold money

operated as a single world currency and measured the value or prices of commodities among all countries. Since there was a single world money, there was no convertibility issue or suspension of the gold money. However, there was still a default issue when a borrower defaulted on his loan. Moreover, there were also instances of debasing gold coins by reducing weight or adding metal alloys when the government needed money to finance wars or high spending.

Figure 13: ***Fractional Banking: The Credit Triangle (Units in Ounces of Gold)***



Source: Holden (1907)

But importantly, to the extent that fractional depository banking may exist under a pure gold system, credit may be over-issued when depository banks find out that actual withdrawing of deposited gold is only a small fraction of the deposits. Hence, if they receive 100 ounces of gold, and determine that only 10% is actually withdrawn during a given period of time, they may be tempted to issue credit on their books of up to 1,000 ounces, payable in gold, against a reserve of 100 ounces. Figure 13 is an isosceles triangle borrowed from Holden (1907); the two sides are equal, one side represents assets and the other liabilities and the base represents gold reserves. It shows that banks can emit loans, payable in gold, in multiples of their gold reserves. On the same base (gold reserves), one triangle

may be taller than another, reflecting the possibility that some banks may emit more loans than others. If there is a bank run, there will be insolvency of banks but no suspension of the gold system. There will be necessarily a contraction of money to the true gold reserve base and ensuing price deflation since the price structure has been artificially inflated through credit.

Gains or losses of gold from a balance of payments surplus or deficit affect the quantity of money in the country and entail an adjustment known as the price-specie flow mechanism (Hume, 1752). If the balance of payments is in favor of a region or a country, there is a gain of gold, an increase in money in circulation in the surplus country with a corresponding loss of gold and decrease in money in circulation in the deficit country. Money income rises in the surplus country and contracts in the deficit country. Demand and prices rise in the surplus country and decline in the deficit country.[37] Imports and exports adjust, with the imports of the surplus country rising and its export falling. The opposite happens in the deficit country.[38] In the longer run, the balance of trade adjusts and reverses the surplus or the deficit.

An international credit system existed under a pure gold system. Merchant banks operated in the main European trade centers. Gold depository institutions (e.g., goldsmith houses) provided loans payable in gold. In such a system, capital flows may migrate between countries in relation to yield differentials. Under these conditions, the combined balance of trade and capital accounts determines changes in the amount of money in circulation in a country. The adjustment mechanism, although not instantaneous, is not perturbed by a central bank, which is the only institution capable of disturbing the gold mechanism by its neutralizing credit and interest rate money policies (Palyi, 1972).

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37 For the specie flow mechanism to work smoothly, price flexibility up and down is essential. There are reasons to believe that over the last century prices have become stickier, in part because of increased government intervention and regulations.

38 If prices are sticky, the income-absorption approach to the balance of payments adjustment still applies. Incomes contract and so does demand. The trade deficit is thus reduced or eliminated. In a flexible price-wage economy, the price and income channels operate simultaneously and rapidly correct a trade imbalance.

Below we illustrate the effect of the balance of payments on the monetary condition of each country. Assuming that two countries use the same gold coins, we describe two cases: a case where there is no fractional banking system and a case where there is a fractional banking system. In the first case (Table 4), the money circulation of the surplus country rises by 100 coins. Necessarily, the money circulation in the deficit country is reduced by 100 coins. In the second case, let the credit multiplier be of the order of ten. The gold reserves of the surplus country's banks increase by 100 coins; credit increases by 1,000 coins (Table 5). Total liabilities of banks rise by 1,100 coins. The gold reserves of the deficit country are reduced by 100 coins; its credit by 1,000 coins. Total liabilities of deficit country banks are reduced by 1,100 coins.

Table 4: ***Change in the Monetary Position When There Are No Fractional Depository Banks***

Trade Surplus Country				Trade Deficit Country			
Assets		Liabilities		Assets		Liabilities	
Gold (balance of payments surplus) (in ounces)	100	Coins in circulation (in ounces)	100	Gold (balance of payments deficit) (in ounces)	-100	Coins in circulation (in ounces)	-100
Total	100	Total	100	Total	-100	Total	-100

Table 5: ***Change in the Monetary Position When There Are Fractional Depository Banks***

Trade Surplus Country				Trade Deficit Country			
Assets		Liabilities		Assets		Liabilities	
Gold reserves (balance of payments surplus) (in ounces) Loans (in ounces)	100 1,000	Demand deposits (in ounces)	1,100	Gold reserves (balance of payments deficit) (in ounces) Loans (in ounces)	-100 -1,100	Demand deposits (in ounces)	-1,100
Total	1,100	Total	1,100	Total	-1,100	Total	-1,100

A main difference between the two cases is the magnitude of money change. Under a credit system, money changes are more accentuated and may lead to a proportionally higher movement in output,

employment, and prices. There is clearly a greater risk of default. For instance, the balance of payments deficit may be 500 coins, but the deficit country banks may have only 150 coins as gold reserves.

In the gold system of the nineteenth century, each country had paper currency defined in terms of gold by weight, and that currency was convertible on demand into gold by its respective issuer. It combined the advantages of gold with the convenience of paper. Gold represented the foundation of the country's money; paper money was backed by gold and was convenient in small transactions while gold was still used in large transactions and in international payments.[39] A bank (e.g., Bank of England) issued banknotes and stood ready to convert its banknotes into gold or to buy any amount of gold against its currency.[40] Since each country on the gold standard had its currency defined in terms of gold weight, it followed that the exchange rate between the currencies of two countries on the gold standard was fixed. There was a foreign exchange market for paper currencies. Any two countries on the gold standard might settle their deficits by shipping currencies instead of gold. The exchange rate between the dollar and sterling pound was fixed at $4.866/£. If the trade balance was in favor of the United Kingdom, there was a higher demand for pounds in the New York foreign exchange market; the exchange rate might rise above the export point of $4.892, making it cheaper for US traders to export gold to England. In contrast, if the balance of trade was in favor of the US, the exchange rate appreciated below the import point. It would be beneficial to import gold and

39 Paper offers similar convenience as silver, which is also used in small transactions instead of gold; the latter is used in large payments.

40 In 1834, one US dollar was defined to be equal to the value of 23.22 grains of pure gold (1 troy ounce = 480 grains of gold). Equivalently, the price of gold was $20.67/ounce. Any holder of US banknotes could exchange them for gold at a US bank. The gold content of the United Kingdom's pound sterling was fixed in 1816 at 113 grains of pure gold. Thus the par exchange rate between the dollar and the pound was 113/23.22 = $4.866/£. The cost of shipping gold from London to New York was $0.026 per pound. So the exchange rate was allowed to fluctuate within the limits of $4.866 ± 0.026. Thus, $4.892 = gold import point for United Kingdom; $4.840 = gold export point for United Kingdom. If the spot price of the pound fell below the gold export point, it became cheaper for Britons to convert pounds into gold, export gold, convert gold into dollars and make dollar payments. In times of war, transportation and insurance costs increased and the band widened, essentially destroying the fixed rates.

exchange it for dollars at the dollar fixed rate. The export of currency or gold reduced currency in circulation in the deficit country. The import of gold or currency increased currency in circulation in the surplus country.

VI. A PROPOSED GOLD STANDARD UNDER AN ISLAMIC FINANCIAL SYSTEM

Islamic finance is based on the teachings of the Qur'ān and Sunnah (the traditions of the Prophet Muḥammad, pbuh), which strictly prohibit interest (*ribā*). No economic entity, be it an individual, an enterprise, the state, a bank, or the central bank, is allowed to contract interest-based debt. Interest-free lending, called *qarḍ ḥasan*, is permitted.[41] However, since this form of lending has no pecuniary reward for investors, it may be negligible. Thus, in contrast to conventional finance, interest-based credit plays no role in Islamic finance. Because credit is almost absent in Islamic finance, there is no credit expansion or contraction and no fixing of the interest rate by the state. Islamic finance can be defined as a two-tier financial system:

1. A 100-percent reserve depository and safekeeping banking system for domestic and international payments.
2. A profit-loss sharing investment banking (mutual fund) system that places real savings (domestic or foreign) directly in private or public projects (domestic or foreign) or indirectly via the stock market.

The first component above keeps money deposits (e.g., cash, gold, silver, etc.) and settles payments via clearing, withdrawals, and other forms of payments. The second system has no monetary role and no impact on monetary aggregates. It receives domestic and foreign savings, which it invests in productive projects or in more liquid investments such as mutual funds or stocks. Depositors receive transferable or marketable shares that enable them to liquidate their

41 For details, see Askari et al., 2011.

investment if they chose to do so. The nominal value of equity shares is not guaranteed. Depositors share in the profits and losses as well as in capital gains and losses. Islamic capital markets only intermediate between saving units and investing units in a way that precludes interest. They do not issue money or debt. They include investment banking, stock markets, mutual funds, exchange-traded funds, and other forms of intermediary risk-sharing institutions. An important category of investments includes asset-linked investments with direct access to the underlying asset in case of bankruptcy.

Interest-based credit in the form of money against money plus interest from money, or oil against oil plus interest from oil cannot exist in Islamic finance. In conventional finance, credit plays a major role in commerce, production, and investment. It is self-liquidating. For instance, cotton is financed through loans for the production process, from the cultivation of land until crop collection; for its export; for the manufacturing process that turns it into cloth; for its sale to clothiers, and even to consumers who would buy cotton cloth on credit. The receipts at the end of each step pay the bank loan and the interest contracted at the beginning of that step. In Islamic finance, this type of self-liquidating credit chain cannot exist. No money is exchanged against money plus interest. It is replaced by Islamic financing modes such as the *salam* sale, *istiṣnāʿ*, *murābaḥah*, *muḍārabah*, or risk-sharing financing *(mushārakah)*. In a *salam* sale for instance, there is cash-in-advance at the beginning of each step and delivery of a commodity at the end of the step; a farmer sells his future cotton crop against immediate payment with delivery at the fixed date of the cotton harvest. In a risk-sharing scheme, the bank and the farmer are partners. The farmer owns the land and labor; the bank owns the working capital. Farmers and the bank share in profits and losses of cotton operations from planting till export. In Islamic finance, money cannot be expanded via credit. Hence, the gold money supply is determined by the balance of payments, gold discovery, or transforming some non-money gold into money. When there is a balance of payments surplus, the gold money supply expands by an equal amount; when there is a deficit, gold money supply contracts by an equal amount. Table 6 and 7 describe the balance sheet of the Islamic depository and investment banking, respectively.

Table 6: ***Balance Sheet of Islamic Depository Banking***

Assets		Liabilities	
Gold reserves	$1,000	Currency in circulation outside banks	$300
		Deposits	$700
Total	$1,000	Total	$1,000

Table 7: ***Balance Sheet of Islamic Investment Banking***

Assets		Liabilities	
Reserves in cash	$30	Saving deposits (investment accounts)	$5,000
Reserves in deposits at depository banks	$70		
Investment (equities, *ṣukūk*, *salam* sales, *istiṣnā'*, *murābaḥah*, *muḍārabah*, leasing, and other risk-sharing modes)	$4,900		
Total	$5,000	Total	$5,000

The total money supply is $1,000, with $700 at the depository system and $300 in circulation. We observe that the cash reserves of investment banking ($30) are part of the money in circulation, implying that $270=($300-$30) in cash is held by the non-financial private sector. The reserves in deposits are part of the deposits held at the depository banks. These cash and deposit reserves are working balances that emanate from the closing of some operations and serve to finance new operations. The depositors in the investment-banking component are investors. They share state-contingent profits or losses. Their deposits are not secured in nominal terms and are marked to market. They may be withdrawn according to an agreed maturity or may be liquidated in a secondary market if they are in form of equity shares, *ṣukūk*, or shares in funds.[42]

Assume the investment banks acquire foreign equities for $70, which they pay out of their deposits at banks. This operation creates a balance of payments deficit of $70, the money supply is reduced

42 Mirakhor (1988) studied the real demand for money and financial assets in an Islamic economy in the context of both a closed and open economy. Savings rises with the rate of return. He showed the existence of an equilibrium rate of return that establishes equilibrium in money and assets markets as well as the goods markets.

by the same amount and gold reserves are depleted also in the same amount. The balance of payments adjustment operates according to the traditional price-specie flow mechanism. Prices of goods and shares decline in the deficit country; they rise in the surplus country. Exports of the deficit country rise; its shares have higher yields; the combination of higher exports and foreign direct investment reduces or eliminates the balance of payments deficit and re-establishes the initial amount of money in the country.[43]

A property of Islamic finance is that it operates according to Say's law of markets—supply creates its own demand. Demand is generated from incomes in the economy and not from fictitious credit. Investment cannot exceed saving and there is no price inflation. There is one-to-one mapping between currency and gold reserves. Hence, the risk of gold convertibility suspension or exit from gold is not a factor. Moreover, Islamic finance is free from the economic financial disorders resulting from unchecked credit expansion in conventional banking. Hence, a gold standard in an Islamic economy would risk no over-issue of currency. If gold reserves fall, prices and wages will fall also. The exchange rate defined in terms of gold is fixed and is not altered by the over-issue of paper currency.

A main criticism leveled against gold standard is that gold does not keep pace with real economic growth in an expanding economy and is therefore deflationary; as real GDP rises, the general price level has to decline because gold supply grows at a slower pace. This view ignores the fact that money is only a medium of exchange; it is not a factor of production, such as capital or labor, which constrains production; it is not a consumption good, such as corn, affecting human welfare. In essence, commodities are exchanged against commodities. This argument has been used by opponents of the gold standard in favor of paper money—to free the economy from what they call the "shackles of gold." Under the gold standard, there may be over-expansion of credit by the fractional banking system and

43 This natural gold mechanism of price and wage adjustment has been strongly combated in the United Kingdom and the United States. For instance, after 2008, the US Fed forced a re-inflation policy to jerk up asset prices based on near-zero interest rates and unlimited money supply. The strong opposition to the price mechanism was a major cause for the United Kingdom's abolishment of the gold system in 1931 and the United States' abolishment of it in 1971.

consequently high price inflation (Holden 1907). When the credit boom reaches imminent bank insolvency, or debtors' default turns into a financial crisis, the result is the same, whether under a gold standard or fiat money. Debtors default; banks are bankrupted; and prices collapse. The only difference between gold and paper money is that, under gold, banks cannot be rescued and depositors lose their capital to debtors. Under paper money, applying Bagehot's (1873) last resort theory, the central bank prints as much money as required to save banks. The loss is transferred, via inflation, to workers, pensioners, and creditors.

Under gold money, the economy developed structural flexibility for prices and wages. Under paper money, the economy has developed structural rigidities for prices and wages and has not been able to clear markets for assets, products, and labor. Unemployment has become high. Moreover, the optimum money supply in a growing economy has been extensively discussed with no consensus. Milton Friedman (1969) suggested that money supply has to increase in line with real GDP growth. Likewise, Gustav Cassel (1921) maintained that gold output ought to increase at 3% per year to allow an adequate supply of money. Bastiat (2011) noted "it is a very unimportant circumstance whether there be much or little money in the world. If there is much, much is required; if there is little, little is wanted, for each transaction: that is all."

Mises (1953) and Rothbard (1994) maintained that once a commodity has been established as money and considered to be in sufficient supply to be so, there is no social benefit from increasing its quantity. Hence, there is a benefit to increase the supply of wheat, oil, fruits, etc., since every addition of these goods enhances consumers' living standard; an increase in money has no benefit since no consumer consumes money; it only dilutes the purchasing power of money. The issue of the optimal quantity of money is dismissed as the economy adjusts to any nominal quantity of money, as illustrated by Hume

(1752). The latter claimed that if four-fifths of the United Kingdom's money were destroyed overnight, the economy would simply adjust to a new money supply equal to one-fifth of the initial stock.[44] Moreover, under high inflation or hyperinflation, the economy adjusts to an ever-rising money supply and develops deep-rooted inflationary expectations. The real quantity of money is an endogenous variable. If prices adjust freely, they instantly clear the markets for labor and goods. However, if the central bank wants to obstruct the market mechanism and inflate prices, it has available traditional channels in the form of larger fiscal deficits or higher credits. For instance, the central bank pushes credit upward through near-zero interest rates and bond-buying programs. Both channels are distortive, inefficient, and inequitable.[45] As the 2008 financial crisis and its aftermath have shown, the credit channel has systematically ended in economic disintegration, intense speculation and high unemployment.

In the context of Islamic finance, the most important factor for money instability, *viz.*, interest-based credit, does not exist.[46] The money supply tends to be stable, implying the stability of the price level.[47] Asset prices are not exposed to speculation and high volatility as in conventional finance.[48] There are no loans for leveraging large positions in securities or in futures markets. Moreover, the quantity of gold has never ceased to grow, although at a slow pace. It should be stressed that deflation under the gold standard was never as harmful

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44 What matters for the economy is real money balances. The nominal money is determined by the central bank. However, market participants determine real money by way of changes in the price level. In fact, if prices and wages adjust downward, the economy is able to create larger real money balances for its needs. In contrast, inflation creates a money shortage; real money was in dire shortage during the German hyperinflation (1922-23).

45 The first recipients of money gain since prices have not yet been stirred up. Those who receive their incomes after prices have been fully inflated are losers.

46 In essence, interest led to fictive debt and to the necessity of inconvertible paper; it creates a fictive loan that cannot be paid in a real commodity (e.g., gold); it can be paid only in inconvertible paper that can be expanded to the same extent as fictive debt.

47 The issue of price stability is irrelevant in Islamic finance; there are no debtors who will fight for inflation or creditors who will benefit from deflation.

48 In Islamic finance, futures markets have to make actual delivery of commodities and have to operate according to Islamic modes such as *salam*, *istisnāʿ*, *murābaḥah* and others.

or disruptive as the deflations that occurred following debt deflation and collapse of the credit pyramid (Fisher 1933). Lord Farrer (1898) showed that deflation was generated by productivity gains and technical progress and a channel for transmitting economic growth to consumers.[49] Price deflation inflates quantities produced; price inflation deflates quantities produced.

A reform of an international payments system along Islamic lines could require gold, even though the Chicago reform plan stressed 100%-reserve money and equity-based banking without specific reference to gold. The authors of the Chicago Plan might have stressed a return to gold had they experienced a pure paper system as prevailed after 1971. A removal of interest-based debt is essential for stability under a paper or a gold system. Nonetheless, inconvertible paper is not a natural form of money and did not emanate from market forces. It is so only by the fiat of the state and is also a non-redeemable debt. As a result, the state has found paper money convenient to finance deficits. Since each country is part of the world economy and benefits from international trade, multiplication of paper currencies makes it necessary to identify a small number of currencies as reserve currencies. Once these currencies are selected, the system becomes similar to the present-day paper system. Moreover, in a multiple-currency system, exchange rates fluctuate, but with gold there is no reserve money, and exchange rate instability is avoided.

49 There is a dilemma regarding the definition of inflation and deflation. Some writers prefer to define inflation (deflation) as an increase (decrease) in the quantity of money. Other writers define inflation as an increase in the price level. Assume the money stock is $100 and the wheat crop is 100 bushels. The price per bushel is $1/bushel. Assume that the wheat crop in the next season has become 200 bushels. The price becomes $0.5 per bushel. Assume the central bank wants to maintain price stability and keep wheat price at $1/bushel. It pushes money supply to $200. Money incomes rise, but prices are maintained constant. If the rate of inflation is measured by the increase of money supply, it is 100%. If it is measured by the price index, it is 0%. While the deflation mechanism corresponds to a simple clearing of the markets, the inflationary mechanism is highly inefficient and distortive. The central bank has to monetize fiscal deficit or expand credit to bring money supply to $200.

VII. CONCLUSION

In the four decades since the demise of the Bretton Woods system, the toll of the inconvertible paper money system has periodically culminated in a number of widespread financial crises that have include sovereign debt crises, intractable fiscal deficits, inflated asset prices and the most serious recession since the Great Depression. The dominance of the major reserve currency banks, excessive speculation, exchange rate instability and steady inflation demonstrate the great inefficiencies of the system. The system is inequitable as it enables reserve countries to run perpetual external deficits without suffering the consequences. A reserve currency country can continue to import without limit year after year just by printing costless paper and exchanging it for commodities, in contrast to a system under gold or a gold standard where a country cannot go on an import spree without running out of gold. Gold reserves operate as an indicator—when they run low, a country increases its exports and contracts its imports. When a country absorbs commodities without an exchange of commodities, overall world saving is reduced with lower growth and employment.

A major reason for the instability of the gold system was unchecked credit expansion and fiscal deficit financing. It was not due to the genuine functioning of the gold system itself. The deflationary aspect of the gold standard has never been the harmful deflation caused by debt deflation; it was a necessary temporary adjustment to a balance of payment deficit. Moreover, the benefits of economic growth were transmitted to domestic and foreign populations. Deflation operates in an economy that has price and wage flexibility and does not distort the profit-wage structure. An economy that has developed powerful unions and interest groups cannot adjust except through inflation and sharp exchange rate depreciation; both harm economic growth and employment.

Islamic finance offers an inherently stable framework for a gold standard system. Interest-based credit does not exist in Islamic finance, and Islam forbids actions that interfere with the market mechanism to make unlawful gains.[50] Real savings determines economic growth in Islamic finance. Since saving finances only investment and not consumer loans, the economy grows at a higher rate. Proposals for reforming the international payment system along principles that happen to be Islamic are not a novelty. Although the attraction of Islamic finance has intensified after the 2008 financial crisis, authors contemporaneous to financial crises during the 19th century and early 20th century proposed financial reforms along the lines of Islamic finance and sought to abolish fractional banking and interest-based credit. Carroll (1965) proposed 100%-reserve money to abolish fictive credit. Amasa Walker (1873), a strong supporter of gold money, proposed 100%-reserve banking and an investment banking system, along the line of joint stock companies.[51] Perhaps the most famous proposal akin to Islamic finance was the 1933 Chicago Plan initiative, which called for 100%-reserve money, the establishment of equity investment banking and elimination of interest-based debt contracts (Fisher, 1936; Phillips, 1994).

An international Islamic gold standard uses gold as the natural foundation of money and safeguards against governments' debasement of money and inflationary deficits. It removes the major source of instability, which is interest-based credit. Risks of major cycles are removed, but risks and uncertainty remain as they are a part of nature, enterprise and investment (e.g., new products and technologies that make existing products obsolete). Nonetheless, Islamic finance will be able to enhance economic growth, employment, and social equity. Savings will be enhanced and directed to productive investment. Genuine stock market investors are no longer deterred by intense

50 The destruction of the people of Shu'ayb (Madyan) was, in part, retribution for their unlawful trade practices (Qur'ān, Sūrahs 7, 11, 26, 29, and 83). It is very well-known that the Prophet (peace be upon him) prohibited price fixing and considered it a form of injustice. Prices and wages have to be freely determined by the market.

51 The failure of the currency principle in the UK (Peel's Act, 1844) in 1847, 1857, 1866, etc. was attributed to unchecked credit expansion (Gilbart 1919, Mises 1953). Consequently, Mises and many other authors concluded that the currency principle would not prevent financial crises without a 100%-depository system.

speculation and the risk of crashes. Distortions in the economy and instability in exchange rates and external balances will be reduced and consequently, international trade and investment will be enhanced.

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