



The Case for Gold as a Reserve Asset in the GCC

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Table of Contents

Executive Summary	1
Introduction	2
A Brief History of the GMU	3
Optimal Composition of Reserves	5
The Role and Value of Gold	10
Role of gold as a reserve asset	12
Conclusions	19
References	20
Appendix 1 – Background Data	21
Appendix 2 -Timeline of the Gulf Monetary Union	23

Executive Summary

This paper focuses on some key aspects of the Gulf Monetary Union and specifically on the new central bank policy in the area of reserve management policy. It will address whether holding a substantial part of reserves in gold would enhance the stability of the new currency and in general how a reserve management policy which includes gold fares against the alternative strategy relying exclusively on holding assets denominated in fiat currencies.

The original deadline of January 2010 for the Gulf Monetary Union (GMU) has been missed and a new deadline has not been set. Despite this setback the process has not halted and actually, away from the limelight, technical committees are working, with the plans for the inception of the GCC Monetary Council expected to be finalized by Fall 2010. Once the forerunner of the Gulf Central Bank is in place with the appointment of the Governor, one can envisage steady progress both in the institutional framework and in the technical aspects.

Credibility will be the key issue for the new currency and therefore an important task for the Gulf Central Bank would be to set in place conditions that brace the trust of international markets. It is likely that the Gulf

currency will initially be pegged to the US dollar, but once the initial phase in which the technical aspects of monetary policy conduct will be tested it is logical to expect that the exchange rate rule will be more flexible with a peg to a currency basket, either similar in composition to the SDR, or reflecting trade shares.

A linked issue is whether the composition of reserves could help in conferring the new currency credibility and whether it is possible to demonstrate quantitatively that including gold would help to achieve better macro-economic stability. We conduct a series of simulations based on past data to calculate the return on a portfolio of reserves assets with and without gold.

Our results indicate that if a relatively conservative central bank should hold gold as an asset class, its potential returns for any given level of risk (i.e. at any threshold of standard deviation) increase by several points more per year than when excluding gold from its optimal portfolio. Similarly, a dollar invested (in January 1987) by a fictional conservative central bank in an international reserves portfolio with gold would have grown to \$6.6 by May 2010 – which is about 1.5 times more than an international reserves portfolio without gold.

Introduction

“The main thing we miss today is universal money. Gold fulfilled this role from the time of Augustus to 1914. The absence of gold as an intrinsic part of our monetary system makes our century, the one that has just past, unique in several thousand years... I firmly believe gold will be a part of the international monetary system sometime in the twenty first century.”

Robert Mundell, Nobel Laureate in Economics, Acceptance Speech—December 1999

The proposed Gulf Monetary Union has the potential of moving the GCC countries from a quasi-monetary union in which they did not enjoy any monetary autonomy to an arrangement in which monetary policy can be more readily tuned to countering inflation, addressing economic fluctuations, adapting to business cycle developments and reacting to changing global economic conditions.

It would represent a momentous development for a region that has risen to prominence over the past decade on the global stage and is embarked on an ambitious project to diversify their economies from dependence on energy commodities extraction.

The date of January 1st 2010 initially set for the inception of the Gulf Monetary Union (GMU) was not met due to weak political will and a controversy over the location of the Gulf Central Bank (GCB). The decision to withdraw from the GMU by the UAE has made the project less ambitious, but nevertheless it would be an important experiment. When launched, the GMU would represent a major event on the international scene. It will be the second most important supranational union in terms of GDP. It will also be a remarkable feat in a region, the Middle East, where economic and financial cooperation has not been a major feature of economic relations.

Wherever the location of the GCB, it would be important in the preparatory stages to move towards the set-up of the GCB, setting the framework of monetary and exchange rate policy and effective reserve management, which would be a core function of the GCB. It will be necessary to decide on the capital of the GCB, i.e. the endowment that each country will confer to the new institution, the amount of foreign currency reserves that the GCB would maintain under its control and the seignorage-sharing agreement¹.

On the first issue, a capital equivalent to, for example, one billion US dollars shared in proportion to the voting power of each country or, alternatively, in proportion to their GDP and population would be sufficient. By way of comparison, the ECB has a capital of EUR5.8bn, with the national central banks shares in this capital calculated using a key which reflects the respective Member States share in the total population and gross domestic product of the EU – in equal weightings².

On the second point, foreign reserves of about 150 billion US dollars equal to slightly more than five months of imports (according to 2009 data) should be sufficient³ especially if the Executive Board of the GCB could call on additional resources through swap and other arrangements from national central banks in case of emergency (similar to what has been envisaged for the Eurosystem).

This paper provides a discussion on the role of gold in a central bank's reserve holdings and by extension to the reserves of a GCB and discusses the case for holding gold in its portfolio for optimal reserve management through an exercise of portfolio optimization.

1 See Saidi and Scacciavillani (2009) for a discussion of the institutional set-up of the GCB.

2 See www.ecb.int/ecb/orga/capital/html/index.en.html. As of September the fully paid-up subscriptions of euro area national central banks amount to little more than EUR 4bn.

3 As the foreign reserves convergence criterion establishes a target equal to 4 months worth of imports, it is reasonable to set this as the normal level for the GCB.

A Brief History of the GMU

The process of the GMU started as way back as 1982, when the Gulf States' ratified an agreement 'to coordinate their financial, monetary and banking policies [...] including an endeavour to establish a joint currency'⁴. The process began rolling in earnest about twenty years later: starting in 2003, all members had pegged their currencies to the US dollar, a common external tariff was introduced, and the common market was launched on January 1, 2008. In parallel, a convergence process led by the private sector is underway in the form of cross-border bank consolidation, increased linkages of the financial markets and the emergence of a host of investment funds focusing on opportunities in the GCC countries and linked economies.

In December 2005, the Supreme Council of the GCC countries, at its 26th session held in Abu Dhabi, endorsed the performance criteria required to ensure convergence among GCC countries for the success of the monetary union. Table 1 shows that the convergence criteria, largely adapted from the Maastricht criteria, were met by the end of 2009 by most of the GCC countries, despite temporarily high inflation rates in some of the countries due to a surge in non-traded

goods & services price inflation⁵. But there have been some setbacks as well along the road to the GMU.

In October 2006, Oman withdrew from the proposed union and in May 2007 Kuwait announced the move away from a dollar peg to a currency basket, although it reaffirmed its commitment to join the union (the practical consequences in terms of currency fluctuations have been minimal). The GCC countries abandoned the 2010 target for issuing common notes and coins in March 2009. More recently, in May 2009, the UAE announced its withdrawal from the GMU as well. There also have been delays in establishing harmonized data and statistics and in institution building.

At the first meeting of the Gulf Monetary Council⁶ (GMC) in March 2010, with the four central bank governors of the participating GCC countries (barring UAE & Oman, that opted out), it was decided that the head of the Saudi Arabian Monetary Agency Dr. Muhammad Al-Jasser would be the first chairman of the council and Rasheed al-Maraj, Bahrain's central bank governor, his deputy – for a term of one year.

Table 1: GCC Economic Convergence Criteria, end- 2009

	Inflation less than 2% deviation from GCC average	Interest rates not higher than 2% above GCC average	Budget deficit lower than 3% of GDP, or 5% with weak oil prices	Public debt-to-GDP ratio lower than 60%	Official reserves at a minimum of 4 months of imports ¹
Bahrain	X	X	X	X	
Kuwait	X	X	X	X	X
Oman	X	X	X	X	X
Qatar	X	X	X	X	X
Saudi Arabia		X	X	X	X
UAE	X	X	X	X	X

¹ Including sovereign wealth funds.

Source: *Institute of International Finance*

⁴ Refer to Appendix 2 for a Timeline of the Gulf Monetary Union.

⁵ See the discussion in Saidi, Scacciavillani and Ali (2008)

⁶ The Gulf Monetary Council is the precursor to the Gulf Central Bank.

A joint monetary policy framework would be drawn up until the common central bank is established and the Council is expected to enable the monetary union partners to align their monetary policies in terms of currency, payment and settlement systems, reserves and budgetary procedures. It was also stressed after the first meeting that the GMC would announce new dates for the single currency and central bank launch only after the other technical steps had been completed. The common currency launch seems even more remote now after the GCC Secretary General Abdulrahman al-Attiyah stated in May 2010 that the single currency was unlikely to be launched by 2015. While no clarification has been provided by the officials if the currency would be pegged to the dollar or a currency basket, it is expected that the option would be a dollar peg to begin with and a gradual transition towards a currency basket later on.

Some degree of skepticism concerning the date of implementation of the GMU is warranted, given the recent developments in the EU, the Greek crisis which has led to the questioning of the sustainability of monetary union in the absence of fiscal union or binding and enforceable fiscal rules. In this context it is important to note that given the extensive natural resource wealth and the young population demographics of the GCC countries, their fiscal fundamentals are substantially sounder than that of the EU and the OECD countries. Further, the argument that needs to be emphasized is that an unofficial, quasi-GMU with free capital mobility and unrestricted payments has been in place for more than 20 years now – the countries are still pegged to the dollar (with the exception of Kuwait, which is pegged to a basket – though widely assumed a high proportion of dollar). This *de facto* –if not *de jure*- Gulf monetary union has been through the highs and lows of US dollar volatility, major oil price cycles, structural changes in the world economy and the recent on-going global financial crisis and Great Recession without any major troubles or crisis.

Given the structural changes occurring in the GCC economies, their increasing economic, investment

and financial links with emerging economies and Asia, their economic diversification, and the transmission of the global financial crisis, it is desirable for the GCC countries to regain a degree of monetary independence. The strong dollar peg and the related absence of local currency markets and monetary independence prevented an adequate monetary & financial policy response to external shocks. The anchor represented by the dollar peg is losing its *raison d'être* and a more flexible arrangement needs to be envisaged.

For GCC policy-makers, the choice of exchange rate regime revolves around the prevalence of types of shocks to the economy and the degree of capital mobility. A strong case can be made that, real disturbances are more prevalent than nominal or monetary disturbances (amply illustrated by the volatility of oil prices and geo-political shocks) in the GCC and, policymakers should opt in favour of more flexible exchange rate regimes – which would facilitate the smoothing of real aggregate (and sector) output to real external shocks. Exchange rate flexibility would provide the GCC countries with a degree of monetary independence and help insulate their economies from real shocks.

Furthermore the international role of the dollar as a vehicle currency and international reserve asset has come under strain during the financial crisis of 2007-2009. The Triffin dilemma is strongly resurgent: the large balance of payments deficits that the US has been running over the past decade and therefore the piling up external liabilities that have gone to finance the swelling size of international trade and financial markets, has undermined confidence in the US dollar as a reserve asset. Second, the US has been running large fiscal deficits since 2001, leading to a large buildup of public debt, with more than 60% being foreign held. The debt service is becoming a burden which puts the country at risk of negative repercussions when global interest rates will be on the rise again. Over the years and decades to come, the dominant role of the dollar is likely to give way to a multi-currency arrangement as has been typical of historical phases where three or more economies in the world had roughly the same size and none was clearly dominant.

Optimal Composition of Reserves

The size and composition of reserves depends on the choice of exchange rate regime, mandate of the central bank and its policy objectives. Obviously if the national currency is pegged to a foreign currency, say the US dollar, the reserves will be predominantly kept in US dollar denominated liquid assets. The choice concerning the specific assets suitable to be included in international reserves is usually referred to a reserve management committee.

Overwhelmingly they include government securities and bank deposits held either with the Fed in New York or the large US\$ clearing banks. Optimal reserve levels and optimal reserve portfolio need to be identified, but the larger the amount of reserves, the more diversified the portfolio needs to be in order to avoid liquidity and asset concentration risks when resources are called upon in a crisis. Reserves are often also supported by currency swap agreements between central banks which give immediate access to liquidity.

A strand of the international reserves management literature attempts to determine the optimal currency composition of emerging market central banks' reserve portfolios which are mostly invested in low-yielding dollar-denominated assets. To the extent that reserve accumulation is driven by precautionary motives, safe assets (low credit and default risk, highly liquid) represent the bulk of the portfolio irrespective of the currency (Box 1 on page 6 examines reserve adequacy in GCC countries).

However, reserve accumulation which is unrelated to precautionary motives calls for more eclectic asset management with a more diversified portfolio of assets. Some GCC central banks, in particular SAMA, have managed oil revenues beyond what would be strictly needed for assuring currency stability – with foreign exchange market intervention in order to ensure exchange rate stability and stable market conditions.

In March 2009, the Chinese Central Bank Governor in a speech titled "Reform the International Monetary System" put forward some strong arguments for the reform of the international monetary system, reminiscent of the Triffin dilemma⁷. "Issuing countries of reserve currencies are constantly confronted with the dilemma between achieving their domestic monetary policy goals and meeting other countries' demand for reserve currencies," he said. "They may either fail to adequately meet the demand of a growing global economy for liquidity as they try to ease inflation pressures at home, or create excess liquidity in the global markets by overly stimulating domestic demand."

Given the above statement in the light of the global financial crisis, is there evidence of a move away from the dollar as a reserve currency? Data from IMF's Currency Composition of Official Foreign Exchange Reserves (COFER) indicates that while central banks have been diversifying their portfolios recently, the US dollar remains the predominant currency. Global central banks managed close to USD 8.3 trillion in reserves at the end of Q1 2010, but have been gradually diversifying their portfolios, with the share of the US dollar inching downwards since 2000 to around two-thirds of total holdings⁸.

The appreciation of the dollar and central bank participation in the global flight to safety slightly boosted the dollar share in 2008. Furthermore in 2009, central bank interventions to avoid appreciation against the dollar went in the same direction. This is well illustrated in USD holdings of GCC central banks. Despite the desire to diversify away from dollar assets, many Central Banks have been constrained in their asset allocation by their exchange rate policies. Additionally, in spite of their concerns about the EUR and USD, central bankers lack alternatives: US financial markets have the depth, breadth and liquidity allowing effective management of reserves and short-term liquidity.

⁷ Xiaochuan, Zhou, "Reform of the International Monetary System", People's Bank of China, 3 March 2009.

⁸ The dollar share of reserve in countries that report the currency composition remained at about 62% in Q1 2010, below the crisis peak of 65% in Q1 2009. However, 40% of global reserves are held by countries, like China, that do not report the composition of their reserve portfolio. The share of reserves held in currencies other than the dollar, yen, pound and Swiss franc also rose sharply.

Box1: International Reserve Adequacy in the GCC

Highlighted during the Asian financial crisis, international reserve adequacy helps countries to maintain liquidity, allowing time to absorb shocks in situations where access to borrowing is curtailed or very costly. In addition, reserves provide confidence in the authorities' commitment to the timely discharge of external obligations and to supporting the value of the domestic currency.

What is an adequate level of international reserves? The three major benchmarks highlighted by the literature and guided by practice include:

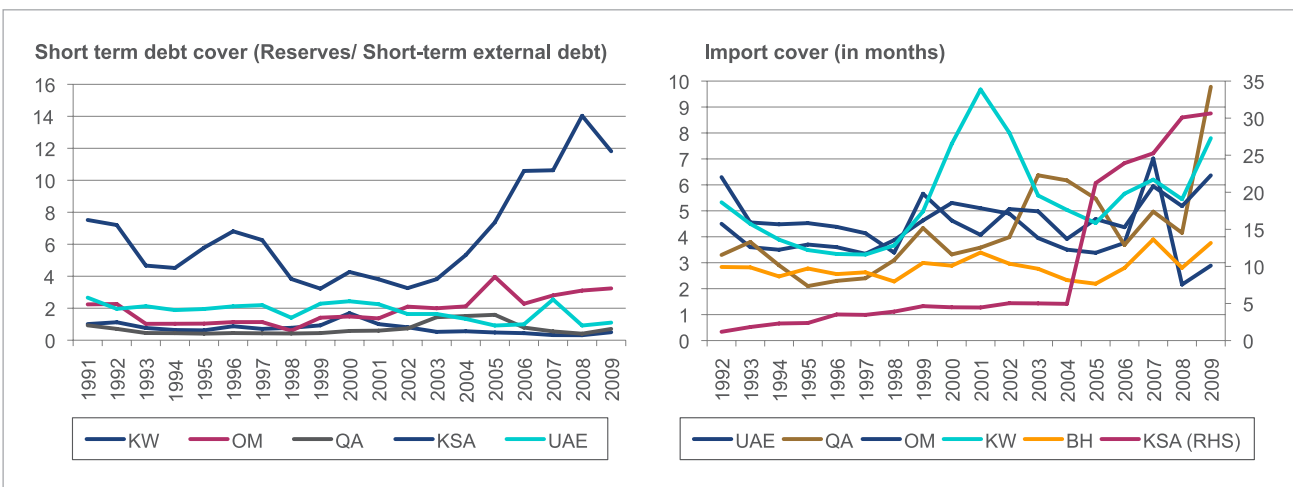
- Reserves sufficient to cover external debt coming due within 12 months: This benchmark is the most preferred measure for measuring risk of a capital account crisis or sudden capital stop. During a financial crisis countries generally become unable to rollover short-term debt. An adequate level of international reserves would allow them to offset, until such time as orderly market conditions are restored, the loss of international capital flows.
- Reserves equal to 5-20% of M2: Reserves in this range are considered adequate to support confidence in the value of local currency,

conversion of domestic into foreign currency and reduce the risk of capital flight. This benchmark is most relevant to countries with managed exchange rates.

- Reserves sufficient to cover 3 to 4 months of imports: The reserves to imports ratio is considered most relevant to low income countries exposed to current account shocks and lacking significant access to capital markets.

Reserve adequacy data for the GCC have to be interpreted cautiously as the reserves are not the best indicators for total reserves accumulated as a large proportion of foreign assets are consolidated in the Sovereign Wealth Funds (SWF). For example, the SWF Institute's latest data estimates that the Abu Dhabi Investment Authority holds about USD 627bn in total assets, not captured in reported total international reserves. According to the UAE's latest Article IV (2010) issued by the IMF, it was also noted that the country had a net external creditor position of around 132% percent of GDP, among the largest in the IMF's membership. Indeed the GCC countries have strong net foreign asset positions resulting from the region's accumulated oil and gas revenues.

Figure B1 - Reserve Adequacy Indicators: 1990-2009



Source: EIU, IIF, DIFC Economics

Table 2: Share of USD in Central Banks' Reported Allocated Reserves

	1995	2000	2005	Q1 08	Q2 08	Q3 08	Q4 08	Q1 09	Q2 09	Q3 09	Q4 09	Q1 10
World	59.0%	71.1%	66.9%	63.2%	62.9%	62.9%	64.5%	64.1%	65.2%	62.8%	61.5%	62.2%
Advanced Economies	53.9%	69.8%	69.3%	64.5%	64.7%	64.7%	66.9%	67.2%	68.8%	65.9%	64.9%	65.4%
Emerging & Dev. Eco	73.7%	74.8%	62.7%	61.8%	61.0%	61.0%	62.2%	60.7%	61.1%	59.3%	57.7%	58.5%
MENA	73.4%	76.8%	61.6%	67.1%	63.3%	63.8%	62.6%	60.5%	60.5%	60.8%	62.7%	62.7%
GCC	73.4%	86.6%	88.4%	76.9%	66.6%	64.2%	75.3%	85.8%	86.4%	86.9%	86.8%	86.2%

Source: IMF COFER database

Empirical studies have found that central banks have tended to pursue portfolio rebalancing in which they buy (sell) falling (rising) currencies rather than market trend strategies in which one would buy (sell) rising (falling) currencies. Lim (2007) concludes that these findings are consistent with relatively stable currency shares in the COFER database. Papaioannou et al. (2006) finds that the choice of reference currency, currency pegs, and currencies of foreign exchange market intervention strongly influence the composition of reserves. In addition, rising prices for oil and raw materials have increased foreign reserves in commodity exporting countries. These reserves are financed primarily from US current account deficits. Even a limited shift out of dollar assets could result in significant exchange rate movements - in particular, sizable dollar depreciation. Swapping dollars for gold, rather than other currencies, can also sidestep, albeit temporarily, undesirable exchange-rate shifts. Given its characteristics, gold is an effective alternative to dollars in a major financial crisis.

The GCC currencies have been pegged to the dollar, with the argument mostly being that since their oil exports are priced in US dollars, it is natural that they continue pegging their currencies to the US dollar. The argument is that fluctuations of the domestic currency exchange rate would result in destabilizing governments' oil export revenues measured in local

currencies. Since oil is priced in US dollars and oil contributes significantly to GCC countries' government revenues and gross domestic product, governments have preferred to fix the domestic currency against the US dollar. While this has provided an anchor, the obverse is that Gulf currencies have been volatile against the euro, the Yen and other currencies, while trade and investment patterns have been shifting eastward, with Asian countries being the main trade (and increasingly investment) partner of the GCC.

In terms of the planned GCC common currency, no clarifications have been provided by officials if the currency would be pegged to the dollar or a currency basket. While various options have been advanced, it is likely that the GCC would opt for an initial dollar peg, followed by a smooth transition towards a currency basket later on.

In fact it was already evident before the crisis that macroeconomic stability and in particular the inflation rate was jeopardized by the lack of monetary independence and need to track the US Fed interest rate moves. But after the crisis erupted, the anchor to the US dollar has severely limited the options of Central Banks in countering the spillover effects and contagion effects in the banking and financial sector as well as in addressing the real effects of the Great Recession.

Optimal Currency Basket

Alesina, Barro and Tenreyro (2003) provide a methodology for a country that would seek to anchor or adopt a foreign currency. They examine three important criteria for judging the benefits of an anchor: (i) the expansion of international trade that could result from a currency area; (ii) the effect on the degree of co-movement of prices and output; and (iii) the reduction of inflation resulting from linking to a low-inflation anchor currency. Clearly, the more closely the country is integrated with the anchor country through trade, co-variability of inflation and similarity of real shocks revealed by the extent of output co-movement, and the greater the reduction in inflation, the greater the benefits of a currency union or of adopting a low inflation currency. Saidi (2002) reviews the application of these criteria and empirical results for the GCC and Arab countries for the choice of exchange rate anchor. The main points are:

- If trade were the only criterion, the Euro would be chosen as the better anchor currency, for the Arab countries of North Africa as well as the countries of the Middle East and the Gulf.
- The choice between the Euro and the Yen is unclear for Oman and the UAE, given the importance of trade with Japan.
- The Euro would also be chosen if the criterion were the extent of output co-movements by all the Arab countries, with the exception of Oman (the Yen) and Saudi Arabia (unclear choice between the Euro and the \$).
- However, on a price inflation basis, the US\$ would be preferred choice of the countries of the Middle East and the Gulf, whereas the North African countries would prefer the Euro. However, this result may be biased by the existing and long-standing (de facto and de jure) exchange rate peg to the US\$, resulting in a high degree of co-movements of domestic inflation rates with the US.

These empirical results suggest that for the GCC (and Arab countries more generally) an optimal anchor policy would call for linking to the Euro and not the US\$, given the importance of trade and output linkages. Alternatively, the GCC should consider a currency basket anchor, including the US\$, the Euro and the Yen.

In a later paper, Saidi, Scacciavillani and Ali (2008) provide an analysis of the optimal currency basket for the GCB, following the methodology of the Special Drawing Rights, the IMF's international reserve asset. The composition of the basket of currencies was based on a set of three criteria: (i) the average share of trade over the previous five years (ii) the average currency composition in total official reserves held by all central banks in the world during the last five years and (iii) the average share of transaction in each currency as a fraction of total transactions during the last five years.

Based on these criteria, the paper provides empirical estimates of a GCC currency basket using the trade, output and inflation inter-linkages of the GCC economies. The empirical results suggest that a common GCC currency—called the “Khaliji”—should be based on managing a basket of currencies comprising the US Dollar (45%), the Euro (30%), the Japanese Yen (20%) and potentially the British Pound (5%).

The “synthetic Khaliji” (ARK) was calculated as a weighted average (with weights proportional to 2006 GDP size) of the exchange rates of each currency of the GCC states, i.e. the official parity to the USD⁹ as calculated on the 3rd of January 2007. The quantity of dollars in the basket was calculated to be

$$X_s = \frac{0.45 \frac{ARK}{USD}}{1} = 0.45 \frac{ARK}{USD}$$

⁹ The value of 1 unit of the “synthetic Khaliji” is equal to 0.87 USD.

Similarly, the amount of euro in the basket would be calculated as

$$X_{\text{€}} = \frac{0.30 \frac{ARK}{USD}}{\frac{EUR}{USD_{bp}}} = 0.30 \frac{ARK}{EUR}$$

An analogous formula holds for the Yen and British pound. The value of the currency basket (BC) in US dollar, using the exchange rates at the 3rd of January of 2007 turned out to be

$$BC = Y_{\$} + Y_{\text{€}} + Y_{\text{£}} + Y_{\text{¥}}, \text{ where } Y_i = X_i * \frac{i}{USD_{3Jan}}$$

(i = \$, €, £, ¥)

As a policy recommendation, it is suggested to maintain the peg to the USD until the adoption of a unified currency and then, at the inception of the Gulf Monetary Union, to peg the single currency to a basket, possibly with a bilateral band of 5% around the central parity, which could be progressively widened - as the "Al Khaliji"¹⁰ gains credibility in international markets and the monetary policy framework of the GCB is well understood by the public and tested in its daily operation mechanisms.

Table 3 simulates the value of the "Khaliji" had it been pegged over the recent past to the basket described above. Obviously being a weighted average it would have been more stable than the individual currency comprised in the basket.

Whatever the choice might turn out to be, the next section will describe how a central bank reserve portfolio would have fared in the post Bretton Woods period if it had included gold in its assets.

Table 3: Value of the Currency Basket vis-à-vis at 3rd of Jan of each year

	2007	2008	2009	2010
Currency basket	0.8783	0.9271	0.9314	0.9453
% variation	/	5.60%	0.50%	1.50%
Euro-Yen (% change)	3.7084	-21.4069	4.2580	-16.1092
Euro (% change)	10.7829	-5.2814	2.8734	-9.0474
Dollar Index (% change)	-0.0861	7.1407	-4.8620	4.7159

Source: Bloomberg, DIFC Economics

10 A GCC common currency, the Khaliji, could emerge as a global currency alongside the US Dollar, the Euro and the Yen. It could be used as an international reserve asset by central banks, by investors seeking a natural hedge.

The Role and Value of Gold

Gold as an asset has a hybrid nature: it is a commodity used in many industries but also it has maintained throughout history a unique function as a means of exchange and a store of value, which makes it akin to money. The reasons for this function cannot be explained rigorously in terms of conventional asset pricing models. This has prompted, even recently, some economists to quote Keynes who famously described the gold standard as “a barbarous relic of the past” in order to cast doubts on the usefulness of gold in financial markets. Nevertheless, this function, which seems at times to be waning, resurfaces powerfully in periods of unusual tensions or heightened risks.

The dollar and gold have always been competitors as a monetary store of value. It can even be argued, that it was the commitment of US to maintain a fixed gold price that made the US dollar the dominant monetary asset. The dollar is presently the world’s main reserve currency - a role once held by gold. Despite having ceased to be the cornerstone of the monetary systems almost 40 years ago, gold has never been priced purely as a commodity by virtue of its non-fiat money function. Particularly when trust in fiduciary paper dims gold price surges: gold acts as a safe haven in times of financial panics, uncertainty or bouts of inflation.

A less touted fact is that gold’s price is currency-specific because by convention it is quoted in US dollars. In reality, gold has simultaneously many prices, which can move in different directions. As Sjaastad

and Scacciavillani (1996) explain the gold price is influenced by exchange rates, in the sense that when the dollar depreciates against the German mark (and now the euro) its price expressed in dollars tends to rise. A very liquid asset like gold has traditionally been seen as a hedge against dollar depreciation against other major currencies. This regularity compounds the “safe haven” effect.

Harmston (1998) while analysing gold as a store of value finds that gold has maintained its value in real purchasing power in the US, Britain, France Germany and Japan. Additionally, he concluded that gold’s liquidity, acceptability and portability were important in times of crisis, increasing its safe haven properties. Baur and Lucey (2006) in their examination of whether gold has safe haven properties define safe haven as “a security that is uncorrelated with stocks and bonds in case of a market crash”. In a later paper examining gold’s properties as a hedge against sudden changes in stock and bond returns, Baur and Lucey (2009) find that “gold is a hedge against stocks on average and a safe haven in extreme stock market conditions.” Evidence between macroeconomic news, USD and commodity prices are being increasingly examined empirically. Roache and Rossi (2009) find that some commodities (e.g. gold) are more sensitive to a few key U.S. indicators - like inflation, GDP, and employment statistics - than others (e.g. energy prices) highlighting gold’s importance as a safe haven asset.

Fig. 1 - Barrels of Oil per Troy Ounce of Gold (end-of-month data)

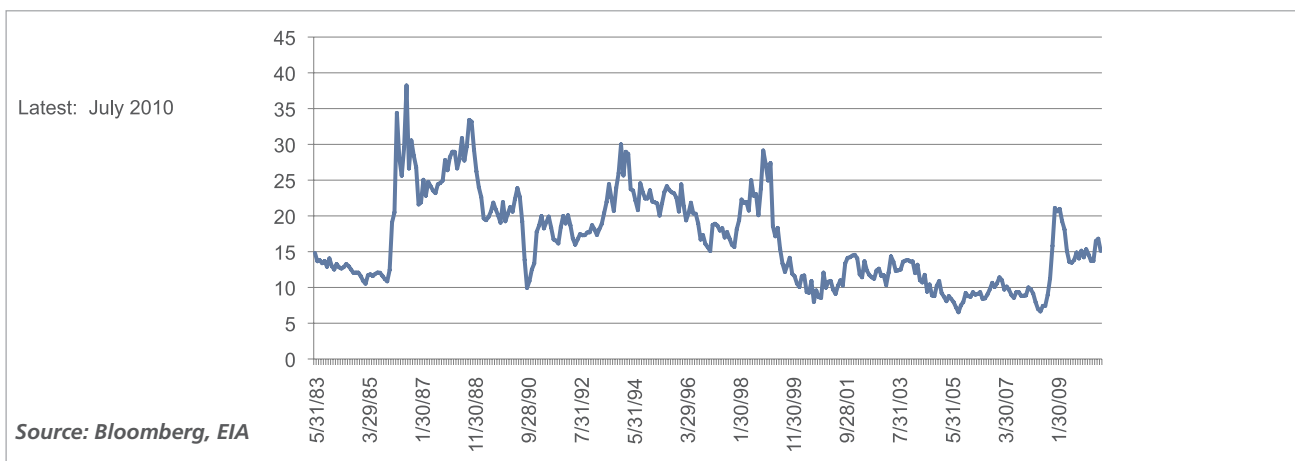
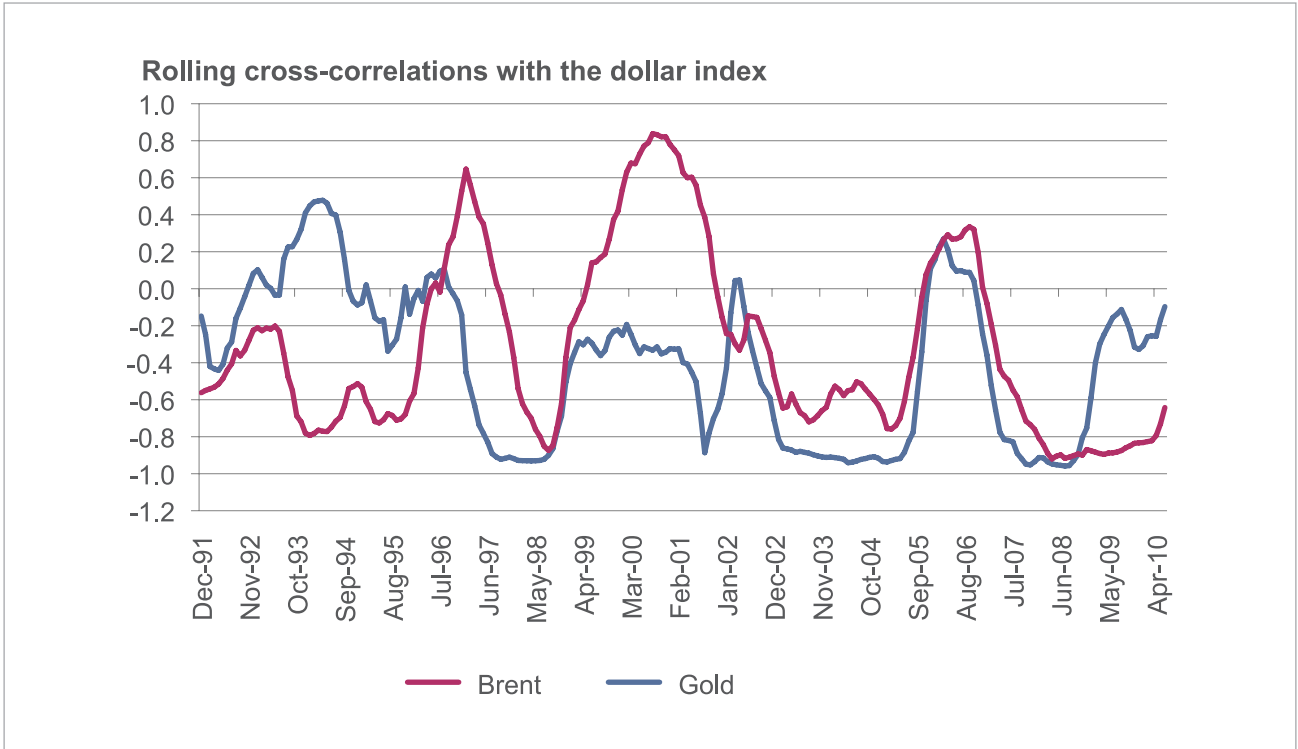
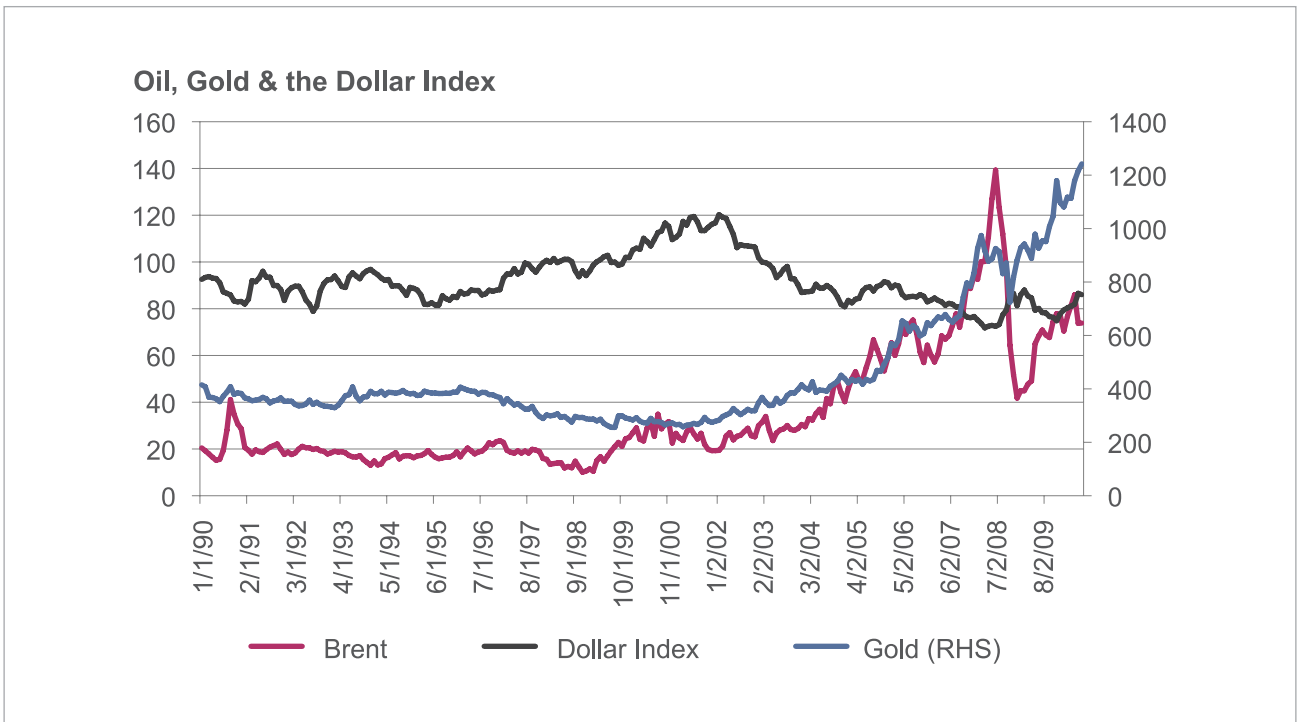


Fig. 2 – Co-movements of Commodity Prices and Exchange Rates



Source: Bloomberg, DIFC Economics



Source: Bloomberg, DIFC Economics

Role of gold as a reserve asset

The emergence of the large economies in Asia, primarily China and India, as well as Russia and Brazil, (the BRIC countries) is reshaping the balance of global economic power. However, despite the emergence of a multi-polar economic landscape, the dollar is used in nine out of ten transactions, serves as a currency peg for 89 nations, and makes up nearly two-thirds of global reserves (see Table 2 above)¹¹. In contrast, only a quarter of global reserves are in euro, and slightly less than 5% in each of the two other stalwart currencies, yen and sterling¹². Additionally, the dollar is still the dominant currency for issuers in the global debt market. Goldberg¹³ finds that 39% of all debt securities issued anywhere in the world are denominated in dollars – it is the favorite among Middle East, Latin America, and Asia-Pacific issuers - compared to 32% euro-denominated issues.

What is the rationale for central banks to hold gold? Nugée (2000) listed the traditional reasons for central banks holding gold as:

- “War chest” argument – gold is seen as the ultimate asset to hold in an emergency and in the past has often appreciated in value in times of financial instability or uncertainty;
- Ultimate store of value, inflation hedge and medium of exchanges – gold has traditionally kept its value against inflation and has always been accepted as a medium of exchange between countries;
- No default risk – gold is “nobody’s liability” and so cannot be frozen, repudiated or defaulted on;
- Legacy effects resulting from gold’s historical role in the international monetary system as the ultimate backing for domestic paper money.

The weakening of the gold standard in the aftermath of World War I with the buildup of large public debts,

and its official abandonment in 1971 has whittled down gold’s share in global official reserves to about 10%, though it still is the third largest asset by value.

Furthermore, the sharp increase in foreign exchange reserve accumulation by emerging market central banks which have lower gold holdings than advanced economy central banks, contributed to reducing the global share of gold in central bank reserves. Most evident among these are China, Russia and India’s central banks that have added to their existing gold reserves - gold as a percentage of total reserves stood at 1.5%, 5.3% and 7.1% respectively at end of Q1 2010 (Table A1 in Appendix).

Recently however, central banks in emerging markets have shown renewed interest in holding gold to diversify their reserves while central banks in Europe have slowed their sales of gold. The bottom line is that for two decades, central banks were net sellers of gold, but this trend has reversed recently. The Euro System (i.e. the ECB and the national central banks) share of gold reserves is around 25% in 2009 (up from 15% in the early 1990s thanks to the revaluation of gold price). If the Gulf Central Bank were to mirror this share of gold in international reserves, the GCC Central Banks would need to significantly increase their gold holdings.

Table 4 shows the additional gold holdings required by the GCC Central Banks, for which data are available. Since the GCC countries have maintained less than 5% of total reserves in gold, the increase in gold holdings to hit the 25% mark maintained by the ECB, there would have to be increase between a doubling (Kuwait) to a tenfold increase (Saudi Arabia, Qatar). Kuwait, with the largest proportion of gold in total reserves has to raise holdings by the smallest proportion.

11 See IMF: Currency Composition of Official Foreign Exchange Reserves (COFER) and Annual Reports on Exchange Arrangements and Exchange Restrictions.

12 Quoted from “The dollar question: Where are we?” <http://www.voxeu.org/index.php?q=node/5283>

13 “What Is the Status of the International Roles of the Dollar?” in VoxEU, 2010

Table 4: Change in Gold Holdings to increase proportion of gold to 25%

	Current Gold holdings (tonnes)	Value of gold reserves (\$ mn)	Total Reserves (\$ mn)	Gold as % in total reserves	Simulated increase in gold holdings to reach 25% (tonnes)
Kuwait	79.00	2760.62	23028.03	12.0	164.75
Qatar	12.40	434.02	18803.74	2.3	134.31
Saudi Arabia	322.90	11290.10	420983.93	2.7	3010.11

Source: World Gold Council, DIFC Economics

An annual poll conducted by UBS¹⁴ underscores this trend - it was revealed that nearly a quarter of central banks believe gold will become the most important reserve asset in the next 25 years. Bullion was the second most popular response, well above others such as Asian currencies or the euro.

In the GCC this trend is less evident. The only major news from the region regarded the Saudi Monetary Authority whose gold reserve holdings more than doubled compared to what reported. However, it appears that the change was due to an accounting revaluation of gold holdings, rather than the result of additional purchases. Gold holdings in the GCC and the MENA have been largely confined to small amounts. The initial responses of MENA region's central banks to a survey conducted by the DIFC regarding their future plans on gold holdings are given in Appendix 3.

Including gold in reserve assets: monetary policy stability vs. asset management

Central banks are conservative, highly risk-averse investors in general, investing in low-risk, highly liquid securities. Returns maximization is not a priority as much as liquidity and safety of assets considerations. Investments in short-dated securities such as T-bills, time deposits and highly rated investment grade government bonds stem from the need to protect the value of reserves, leading to extremely conservative investment choices¹⁵. This approach can be justified

for central banks with relatively low reserve levels and whose main concern is to maintain sufficient liquidity to cover import costs, debt service obligations and foreign exchange market intervention requirements. Such constraints should be less cogent for GCC nations – which have an accumulated a reserve base from years of rising oil revenues well in excess of the usual precautionary motives. Given this backdrop, we assume a fictional US dollar-based Central Bank conservatively managing its reserves, hence limiting its holdings to the following assets – US Treasury Bills, US Agencies, US Government Intermediate bonds, US\$ 3-month deposits and G7 Government Bonds (excluding US). The objective is to analyze whether the introduction of gold to this portfolio enhances its risk-return profile and what is the optimal share of gold in such a portfolio as a function of target volatility or Sharpe Ratio¹⁶.

The period of analysis is January 1973 to May 2010 in order to cover a diverse period with major changes in exchange rate regimes, business cycles and financial crises. Simple descriptive statistics (Table 5 & 6) for the period reveals that gold is the asset with highest returns and volatility during the period. Other asset classes follow the expected pattern – longer-term assets are relatively more volatile while cash holdings earn lower returns. The cross-correlation matrix reveals the expected results, with gold showing a very low or statistically insignificant correlation to each asset.

14 UBS surveyed more than 80 central bank reserve managers, sovereign wealth funds and multilateral institutions with over \$8,000bn in assets at its annual seminar for sovereign institutions last week. The results were not weighted for assets under management.

15 "The objective of official reserves management should be to maximize return, subject to the maintenance of sufficient security of the assets and adequate liquidity for meeting the calls on the reserves" in "Foreign Exchange Reserves Management" by Nugée (2000).

16 Sharpe ratio is used to compare the desirability of any portfolio, which is directly related to its excess return-to-beta ratio given by: $\frac{R_i - R_f}{\beta_i}$ where R_i = expected return of portfolio i ; R_f = risk-free rate of return; β_i = beta of portfolio i .

Table 5: Descriptive Statistics for Asset Classes

	Returns	Standard Deviation
US Treasury Bills	5.60	0.89
US Intermediate Bonds	7.78	4.56
Gold	10.36	22.87
LIBOR	4.86	0.72
G7 Government Bonds ex. US	7.71	9.99
US Agencies	5.09	1.69

Source: Morningstar EnCorr

Table 6: Cross-correlation Matrix

	US T-Bills	US Intermediate Bonds	Gold	LIBOR	G7 Gov't Bonds ex. US	US Agencies
US T-Bills	1.00	0.08	-0.06	0.94	-0.04	0.21
US Intermediate Bonds	0.08	1.00	0.04	0.11	0.43	0.91
Gold	-0.06	0.04	1.00	-0.15	0.29	0.14
LIBOR	0.94	0.11	-0.15	1.00	-0.03	0.24
G7 Govt. Bonds ex. US	-0.04	0.43	0.29	-0.03	1.00	0.44
US Agencies	0.21	0.91	0.14	0.24	0.44	1.00

Source: Morningstar EnCorr

The asset allocation portfolio optimization was run with the following asset allocation constraints: the US asset classes are clubbed together with a weight ranging between 30-65%; LIBOR is constrained at a maximum of 15% while the G7 Government Bonds (excluding US) are kept at a maximum 30% of the optimal portfolio. Gold, when included, is kept at a maximum of 25% of the total portfolio of diverse asset classes.

Table 7 provides the initial results of an optimization exercise using a standard Capital Asset Pricing Model framework. Position 0 is the point on the efficient frontier with minimum return-risk while position 100 is the maximum return-risk combination. Given the restricted choice of assets, the efficient frontier is relatively flat, with expected returns ranging between 5.9% and 7.6%, while expected risk for the portfolio set remains between 2.0% and 5.0%, a realistic reflection of a typical central bank management strategy.

Table 7: Comparison of Optimal Portfolios

(A is the basket with no gold; B is the basket including gold)

	Position 0 (A)	Position 100 (A)	Position 0 (B)	Position 100 (B)
US Treasury Bills	65.0	0.0	65.0	0.0
US Intermediate Bonds	0.0	65.0	0.0	65.0
Gold	0.0	0.0	1.6	25.0
LIBOR	15.0	5.0	15.0	0.0
G7 Gov't Bonds ex. US	20.0	30.0	18.5	10.0
US Agencies	0.0	0.0	0.0	0.0
Expected Return	5.91	7.62	5.96	8.42
Standard Deviation	2.09	5.04	2.06	7.04
Sharpe Ratio	2.84	1.51	2.89	1.20

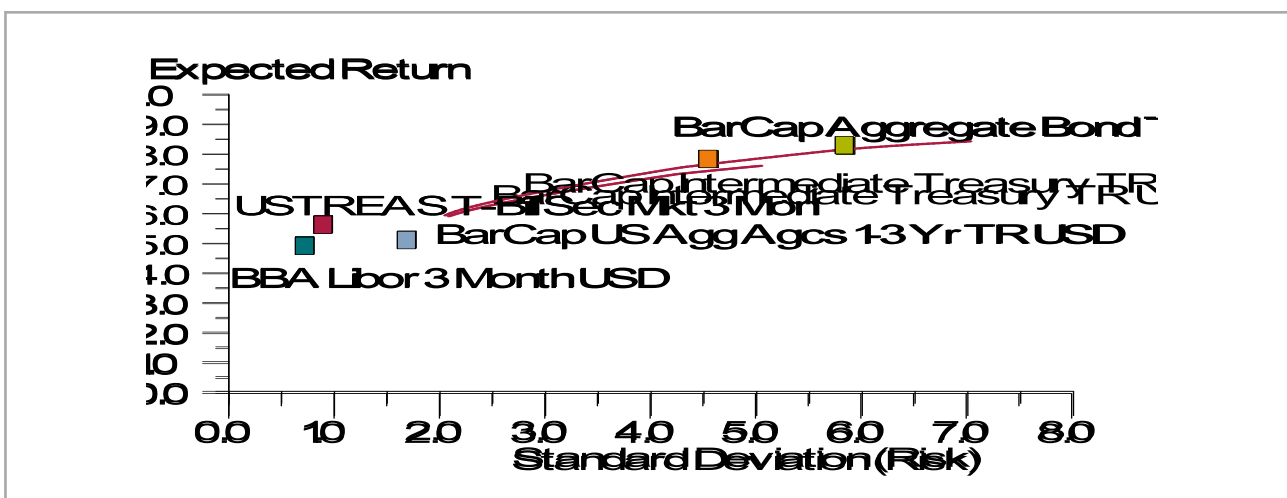
Source: Morningstar EnCorr

Note: US Agencies are not part of the optimal portfolio in both extremes, but are included in other points on the efficient frontier.

Adding Gold to the optimal portfolio allocation gives a range for gold in the basket of between a minimum 1.6% (low risk-return) to a maximum of 25% (as constrained). While the maximum returns increases by more than 200bps to 8.4, the maximum weight of gold in the basket (25%) takes the volatility higher up by more than 3 times to a maximum 7.0. The results of the portfolio adjusted for inflation are provided in Table A2 in the Appendix.

From the chart below it is evident that the efficient frontier of the portfolio with gold is clearly above that without gold (also has a higher risk horizon). This means that if a relatively conservative central bank (that has a threshold of standard deviation at 3.5) should hold gold as an asset class, its potential returns could be a few basis points higher than without any gold in its optimal portfolio.

Figure 3 - Optimal Efficiency Frontier – Including & Excluding Gold



Source: Morningstar EnCorr

The table below simplifies the above chart into a tabular format. It holds the standard deviation constant at 3.5 – an invisible vertical line drawn at this point on the X-axis would cut through two different

points on the efficiency frontiers above. The inclusion of gold reduces the weight given to G7 bonds and transfers it, increasing returns by 15bps to 7.1 at the given level of risk (3.5).

Table 8: Comparison of Optimal Portfolios for Volatility = 3.5
(A is the basket with no gold; B is the basket including gold)

	Without gold	With gold
US Treasury Bills	18.5	18.7
US Intermediate Bonds	46.5	46.3
Gold	0.0	6.1
LIBOR	15.0	15.0
G7 Gov't Bonds ex. US	20.0	13.9
US Agencies	0.0	0.0
Expected Return	6.93	7.08
Sharpe Ratio	1.98	2.02

Source: Morningstar EnCorr

Judging from historical experience the inclusion of gold in the asset portfolio of a central bank would not increase much the total riskiness if the holdings remain in the order of 5% or below. For example, this implies that if there are concerns over the long term sustainability of public debt it would be appropriate to substitute long term government bond holdings with gold. Generally a portfolio with gold has a better risk-return ratio than one without. However, sharply increasing the amount of gold in the reserves to levels greater than 14% (and thereby reducing bond holdings and cash), while still increasing expected returns, also increases the overall riskiness of the portfolio.

Looking ahead a major concern is the buildup of government liabilities in major economies and the fiscal sustainability of peripheral European countries. Unless growth rates rebound quickly and

global interest rates remain low a rescheduling of government debt is a distinct possibility. Furthermore fiscal discipline to control a fiscal hangover requires political will that is in short supply and might become even rarer after the mid-tem elections in the US. The path of least political resistance might well turn out to be a prolonged inflationary period as historical experience demonstrates. In short, concerns over the long-term sustainability of high budget deficits and growing public debt would suggest substituting long-term government bond holdings with gold.

Box 2. Islamic Finance, Central Banks & Gold

There is growing demand and awareness of Islamic finance and globally major financial centres are turning their attention to Islamic Finance, the greatest demand being driven in those countries with important Muslim populations. A report from the Pew Forum on Religion and Public Life last year estimated that 1.57 billion Muslims populate the world (about 24% of the world's population), with 60% in Asia. The report took three years to compile, with census data from 232 countries and territories, and showed that 60% are based in Asia and 20% of Muslims lived in the Middle East and North Africa.

The Islamic banking sector worldwide has grown at more than 10% annually over the past 10 years, from about USD 150bn in the mid-1990s to about USD 1 trillion by end-2009. However, the sector was not completely immune to the financial crisis as it was earlier expected, despite the low prevalence of complex structured products and regulatory and prudential rules discouraging exposure to sub-investment grade investments, to name a few.

The global market for Islamic financial services, as measured by Shari'a-compliant assets, is estimated by International Financial Services London to have reached USD 951bn at end-2008, 25% up from USD 758bn in 2007 and three quarters up on the 2006 total (with dividend ranging between 15% to 20% in 2008). By end-2009 it is estimated that total Shari'a compliant assets are in the order of USD 1 trillion. However, this represents only 1% of global total financial assets.

Given the sector's potential, governments and central banks should contribute a more active role – one of the initiatives could be by expanding the Islamic securities market by developing the legal & regulatory framework as well as by developing issuance programmes. Central banks need to become more active in addressing systemic risk and financial vulnerability and risk management in the IF sector.

In particular they need to address liquidity issues and the lender of last resort functions.

The Central Banks can facilitate liquidity management (open market operations) through the creation of an Islamic Interbank Money market. Malaysia has an active interbank money market and an Islamic cheque clearing system operated by the central bank. Securitization of a pool of lease portfolios could also help develop to the interbank market, but the volume of transactions may not be sufficient to meet the demand. Additionally, the setting up of a liquidity management house to internationalize this system could ultimately develop into a lender of last resort.

Gold could definitely play an important role in Islamic Finance. The tenets of Shari'a emphasize financial intermediation hinging on equity stakes and transactions backed by real assets. The emergence of sizable Islamic banks has raised the issue of access to liquidity facilities at the central bank and the conduct of open market operations. Gold reserves could provide an answer. Islamic banks could maintain part of their capital in gold and the central bank would commit to conduct a weekly repo operation collateralized by gold holdings. Similarly, Central Banks could issue tradeable Central Bank Gold deposit receipts facilitating the lender of last resort and liquidity management.

Malaysia last year introduced an electronic trading platform that enables banks and companies to buy and sell commodities such as palm oil which are used as assets to back Islamic loans to better manage short-term liquidity. This same idea can be extended to other Central Banks with the option to use gold as the main commodity. The UAE central bank recently announced that it expects to raise as much as AED 10bn within a year of offering its first Islamic certificate of deposits in an effort to develop a money market. The Shari'a-compliant CDs will be in addition to the conventional ones.

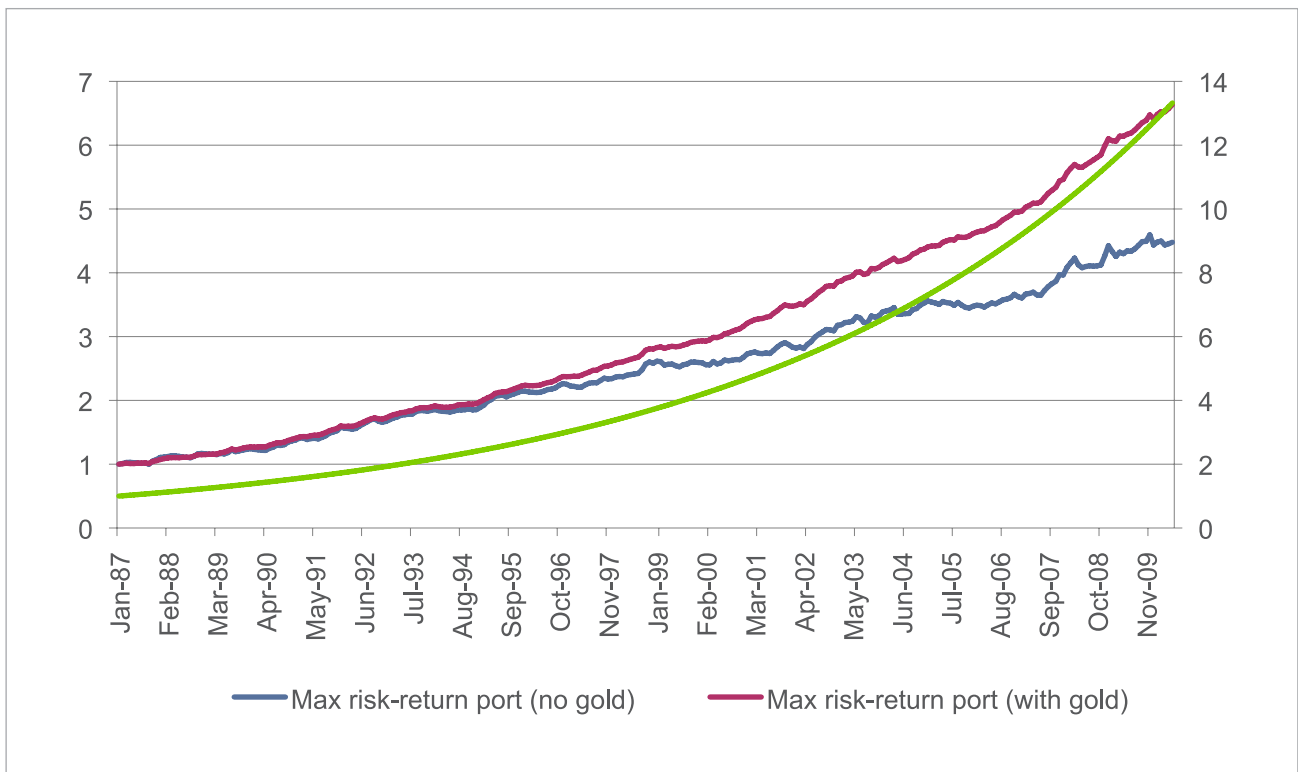
Initial results from our survey of central banks in the region show that majority are still on the conservative end of the efficiency frontier, with larger proportion parked in low-risk, low-return US T-bills. This raises an important issue in terms of the value of wealth in the region.

To make this argument stronger, the optimal portfolio basket that was previously calculated is used to estimate the value of wealth. The value of wealth, calculated in nominal terms, is shown below using the maximum risk-return portfolio with and without gold, also plotted against oil.

The chart shows how much one dollar invested more than 20 years ago would be worth now if a fictional central bank had invested it in a maximum risk-return portfolio (one with and one without gold).

A dollar invested in a portfolio with gold would have earned the fictional central bank \$6.6 in May 2010 – which is almost 1.5 times more than an investment portfolio with no gold! This only strengthens the case for a central bank to hold gold – especially regional central banks, given the abundance of oil wealth too.

Figure 4 - Value of Wealth



Source: Bloomberg, DIFC Economics

Conclusions

The Gulf Currency Union is a project launched almost twenty years ago and that despite some setbacks and delays is being pursued by 4 countries in the Arabian Peninsula. This currency union will pave the way for an independent monetary policy in the GCC to replace the current strictures imposed by the peg to the US dollar. This fixed exchange rate regime is proving inadequate for economies which are diversifying their economic structure and their trade relationships and whose business cycle is not synchronized with the US. In addition the international role of the dollar is likely to wane as the global economy evolves towards a multi-polar arrangement where a single economy will not hold anymore a dominant position.

The Middle East is home to almost two-thirds of the proven oil reserves in the world, with the GCC countries accounting for 21% of total oil production in the world. The recent increase in oil prices has led to a large transfer from oil-consuming to oil-producing countries, raising the issue of "petrodollar recycling". If not used to finance domestic consumption, these are saved in foreign assets held abroad, resulting in a capital account outflow. These assets are often held by central banks as part of their international reserves. Had there been a local GCC currency, the "Khaliji", underpinned by well developed local currency financial markets there would be no further need to recycle petrodollars.

A currency union in the GCC would be one of the crucial factors helping member countries face up to the challenges posed by globalization and current international financial turmoil. It would also help them gain a stronger role and voice in the new international economic environment. We have argued that for a GCC common currency to emerge as a global currency with a credible international standing, it is necessary to have an effective decision making process and continuous interaction with market participants, investors and the public at large.

The main challenge for the new currency will be to gain credibility through a transparent monetary

policy stance and a foreign exchange policy aimed at maintaining its external stability. The new currency will be progressively delinked from a peg to a single currency and will probably be tied to a basket of currencies.

While the allocation of assets would depend on central banks' risk-return expectations and constraints, our findings indicate that including gold in the reserves of a central bank would enhance the returns and in general provide an anchor for the central bank's assets. A dollar invested (in January 1987) by a fictional conservative central bank in an international reserves portfolio with gold would have grown to \$6.6 by May 2010 – which is about 1.5 times more than an international reserves portfolio without gold. In addition, we have argued that the spread of Islamic banking calls for money market instruments that are backed by a physical commodity and it would be desirable to provide an alternative to standard repo operations through the development of Islamic short term securities.

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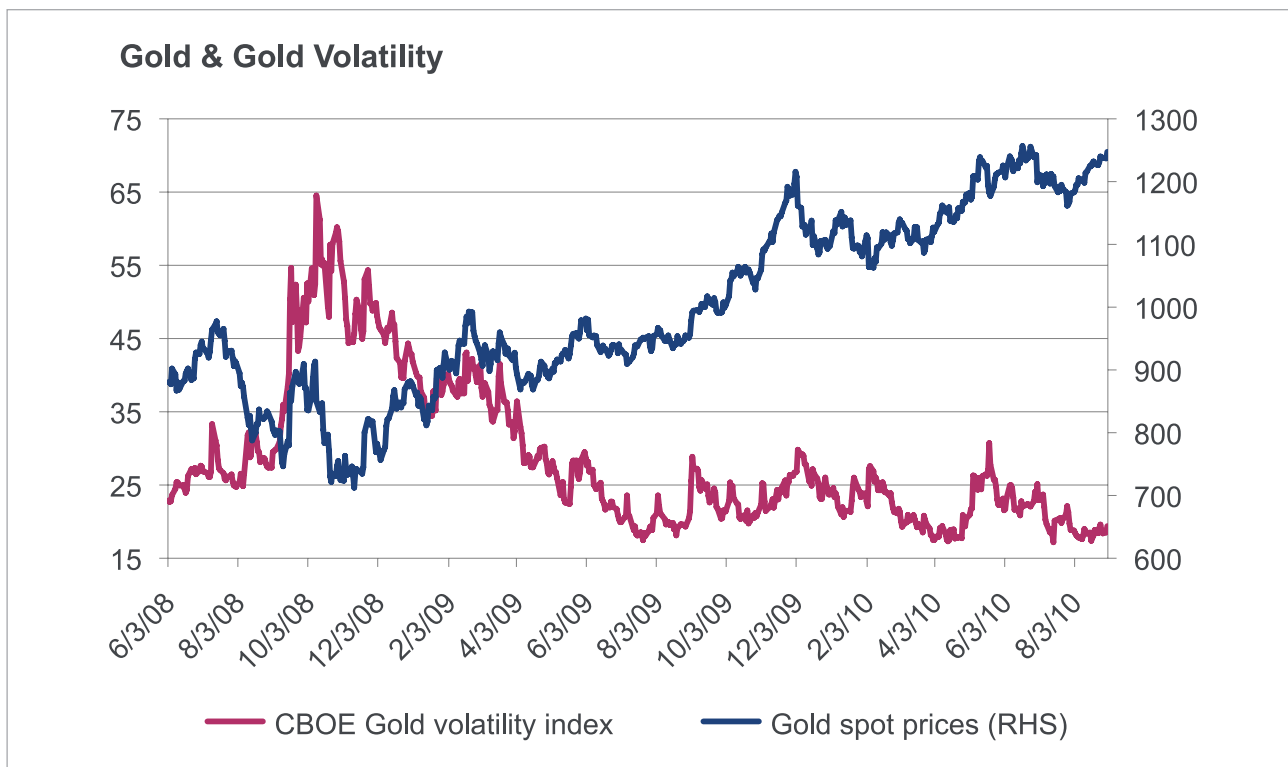
Appendix 1 – Background Data

Table A1: Gold as a percentage of total reserves 2001-Q1 2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	Q1 2010
US	55.7	57.2	59.2	60.0	71.3	75.1	78.6	77.3	70.4	71.5
Germany	37.4	42.9	47.6	49.6	55.6	62.5	67.4	68.9	66.5	67.0
Venezuela	24.7	30.2	22.9	21.4	19.7	19.8	28.3	23.1	36.8	46.1
China	2.0	2.2	1.9	1.3	1.2	1.1	1.0	0.9	1.5	1.5
Russia	10.4	8.9	6.7	4.3	3.5	2.7	2.5	3.4	5.1	5.3
India	6.5	5.6	4.6	3.8	4.3	4.1	3.5	3.9	6.9	7.1
ECB	15.7	17.8	21.8	22.3	24.2	24.7	25.8	22.6	25.6	25.8
MENA Region										
KSA	6.7	7.2	7.8	6.8	1.5	1.3	1.2	2.0	2.7	2.7
Lebanon	33.7	30.7	23.5	25.5	28.5	30.3	37.3	28.4	25.6	25.0
Algeria	7.9	7.7	6.6	5.3	4.8	4.3	4.0	3.3	3.9	4.0
Philippines	14.1	18.5	20.0	19.1	13.8	12.7	10.5	11.5	12.3	13.0
Jordan	3.3	3.5	3.2	3.3	3.9	3.7	4.8	4.0	3.7	3.7
Qatar	6.6	8.7	12.2	11.8	12.8	11.3	11.3	11.4	12.0	n.a.
Kuwait	4.9	6.0	6.9	6.9	5.7	5.9	6.3	6.2	7.6	7.7
Egypt	1.1	1.2	1.1	0.8	0.9	0.9	1.0	1.1	1.3	1.4
Malaysia	2.3	2.4	2.1	1.9	2.2	2.2	2.4	2.7	3.3	3.6
Morocco	3.9	2.3	2.4	2.1	1.9	2.2	2.4	2.7	3.3	3.6
Libya	8.0	10.1	8.9	7.3	5.7	4.7	4.6	4.2	4.8	5.0
Yemen	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.9	n.a.
Tunisia	2.9	3.2	3.0	2.4	2.5	2.0	2.3	2.1	2.1	2.5

Source: World Gold Council, June 2010

Figure A1 - Gold & Gold Volatility Index (end of month data)



Source: Bloomberg, CBOE, DIFC Economics

Table A2: Inflation-adjusted Portfolio Allocations

(A is the basket with no gold; B is the basket including gold)

	Position 0 (A)	Position 100 (A)	Position 0 (B)	Position 100 (B)
US Treasury Bills	0.0	0.0	0.0	0.0
US Intermediate Bonds	0.0	65.0	0.0	45.0
Gold	0.0	0.0	2.2	25.0
LIBOR	15.0	5.0	15.0	0.0
G7 Govt Bonds exclu. US	20.0	30.0	17.8	30.0
US Agencies	65.0	0.0	65.0	0.0
Expected Return	2.868	3.558	2.890	4.227
Standard Deviation	3.016	5.148	2.979	7.637
Sharpe Ratio	0.951	0.691	0.970	0.554

Source: Morningstar EnCorr

Appendix 2 -Timeline of the Gulf Monetary Union

Year	Month	
1982		Gulf states ratify an agreement “to coordinate their financial, monetary and banking policies ... including an endeavour to establish a joint currency”.
2001	Dec	Gulf rulers agree to draw up legislation for monetary union by 2005 and launch a single currency by 2010. The states agree to peg their currencies to the dollar until achieving monetary union.
2002	Jan	Gulf agrees to reduce customs tariffs to 5% on all imported goods by Jan. 1, 2003 as part of customs union.
	Oct	Gulf states say they are seeking advice from the European Central Bank on their monetary union programme.
	Dec	Gulf rulers agree to complete a common market by the end of 2007.
2003	Jan	Kuwait re-pegs its dinar to the dollar from a basket of currencies in preparation for monetary union.
	April	UAE finance minister says a single Gulf currency is likely in 2007, three years ahead of schedule.
2004	Aug	Gulf states should agree on the name of the single currency, its specifications and the mechanisms to put it into circulation by 2007, the GCC General Secretariat says.
	Aug	GCC Supreme Council is studying the possibility of setting up a common central bank by mid-2006, Secretariat says.
2005	May	Gulf states have made only “modest progress” toward the single currency, says Kuwait’s central bank governor.
2006	Feb	Gulf states are expected to agree on a joint monetary council by the end of the year to help harmonise monetary and fiscal policies, says the GCC General Secretariat.
	Sept	UAE central bank governor says single currency should be free-floating by 2015.
	Nov	Saudi central bank governor says there were “reservations” about the 2010 deadline but too early to modify.
	Dec	Oman decides not to join monetary union by 2010 deadline, leaves door open for joining later.
2007	Apr	Saudi central bank governor calls 2010 deadline “very ambitious”.
	May	Kuwait drops dollar peg, dealing blow to union plan.
	Sept	Gulf central bankers agree to develop separate policies to tackle inflation after failing to inject momentum into a plan for monetary union. The 2010 deadline would be “difficult” to meet, the Saudi central bank governor says.
	Dec	Gulf Arab rulers try to close ranks on currency policy and remain committed to a 2010 target date for monetary union, urging states to get it back on track.
2008	Feb	Oman’s central bank governor says Oman has decided not to join the monetary union indefinitely.
	Apr	Gulf central bankers agree on fresh impetus for efforts to create a single currency and resist pressure to revalue their currencies unilaterally.
	June	Gulf central bankers finalise the draft monetary union deal and plans to set up a monetary council that will form the first leg of a common central bank. Qatar’s central bank governor says the 2010 deadline does not refer to the currency.
	June	The Saudi central bank governor calls 2010 deadline “a big challenge” and says it will reconsider it in the autumn.
	July	Bahrain central bank governor calls 2010 deadline “difficult” but says it is unlikely to be revised until 2009.
	Aug	UAE central bank says monetary union will be implemented in stages; the first two could be completed by 2010. The final stage --implementing similar laws in all Gulf states -- would be the “most difficult”.
	Sept	GCC deputy secretary-general says Gulf states are to decide on location of regional central bank this year.
	Nov	UAE central bank governor says global financial crisis has made the monetary union more urgent.
	Nov	Final monetary union draft says Gulf central bank will be independent from governments of member states.
	Dec	Gulf Arab leaders sign monetary union deal and a charter for the monetary council.

2009	Mar	Bahrain central bank governor says Gulf must revisit 2010 deadline.
	Mar	The 2010 deadline for single currency will be extended and a new timetable set once the Gulf monetary council starts operations, senior Gulf officials say, in the first official recognition that monetary union plans would be delayed.
	May	Gulf Arab leaders choose Saudi capital Riyadh as the base for a joint monetary council that will evolve into a Gulf central bank.
	May	The UAE withdraws from Gulf Arab plans for monetary union, leaving only four states - Saudi Arabia, Kuwait, Bahrain and Qatar - in the proposed union.
	Aug	Saudi Arabia's cabinet ratifies the monetary union pact.
	Oct	GCC Secretary General Abdulrahman Al Attiyah confirms 2010 deadline for the single currency
	Nov	Kuwait's parliament delays the ratification of the monetary union pact until Dec. 8
	Nov	Bahrain's council of representatives ratifies the monetary union project.
	Nov	Shaikh Hamad Al-Thani, Emir of Qatar, ratified the bill of GCC monetary agreement.
	Nov	King Hamad Al-Khalifa, King of Bahrain, ratified the bill of the GCC monetary agreement.
	Dec	Kuwait parliament ratified the bill of the GCC monetary agreement.
	Dec	GCC supreme committee, comprising the head of GCC States, launch GCC monetary project
2010	Mar	GCC Monetary Council held their first meeting and SAMA's Governor was elected as chairman and the Central Bank of Bahrain's Governor as vice president
	May	Governors of the GCC Central Banks and Monetary Institutions and members of the Board of Directors of the GCC Monetary Council held their second meeting



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