

THE SUITABILITY OF GOLD AS A HIGH QUALITY LIQUID ASSET

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Abstract

The 2008-2009 global financial crisis affirmed that most of the commercial banks do not have enough liquid assets to withstand liquidity risk associated with financial stress. Therefore, in December 2010 the Basel Committee of Banking Supervision (BCBS) introduced two new ratios, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) to ensure that banks have an adequate amount of High Quality Liquid Assets (HQLA) during times of financial turmoil. Gold, however, has so far not been included in the HQLA stock. This study examines each of the characteristics of HQLA and analyses how gold cope with them. Our results suggest that except of the one factor, which is low volatility, gold has no restrictions to be accepted as HQLA. Furthermore, the volatility of gold is an inverted asymmetric volatility to positive and negative shocks, such as positive shocks increase the volatility by more than negative shocks. Which means that the price of gold tends to rise during the times of financial distress thus making it an ideal hedge and safe haven asset which should be included in HQLA stock.

Keywords: Gold, HQLA, LCR, Basel III.

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Introduction

During the global financial crisis (GFC) many commercial banks struggled to maintain adequate amounts of liquid assets. In order to sustain the financial system, central banks and monetary authorities are forced to consider various programs to re-capitalize banks. In this regard, with purpose of restoring liquidity and confidence in the banking system, the U.S. Treasury implemented the Troubled Asset Relief Program (TARP) with the objective of acquiring troubled assets and equity (typically involving preference shares) from financial institutions in order to strengthen the financial sector. Nonetheless, this support was not sufficient to rescue some financial institutions from bankruptcy. The fact that liquidity risk exacerbated the GFC, increased concerns related to the valuation of assets and capital adequacy. Driven by this phenomenon, in December 2010, Basel Committee of Banking Supervision (BCBS) introduced the new Basel III accord, which was further updated in January 2013. Two new concepts Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), which represent the short term and long term liquidity buffers respectively, were introduced in Basel III. That was a

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consequence of the facts that as response to the crisis many assets, considered as investment grade, were abruptly and expeditiously downgraded and also that markets which were liquid during stable financial conditions turned to be illiquid as a result of “credit crunch”.

The objective of the LCR is to promote the short-term resilience of the liquidity risk profile of banks. It does this by ensuring that banks have an adequate stock of unencumbered high-quality liquid assets (HQLA) that can be converted easily and immediately in private markets into cash to meet their liquidity needs for a 30-calendar day liquidity stress scenario. The LCR will improve the banking sector’s ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy (BIS 2013). This study consists of four sections of which the first section is an introduction; section two provides the characteristics of high quality liquid assets; section three analyses the compliance of gold as high quality liquid asset, and section four provides some concluding remarks.

The Characteristics of HQLA

The BIS defines HQLA as comprising of Level 1 and Level 2 assets, where “Level 1 assets referred to as “Extremely high liquidity and credit quality assets” which generally include cash, central bank reserves, and certain marketable securities backed by sovereign and central banks, among others. These assets are typically of the highest quality and the most liquid, and there is no limit on the extent to which a bank can hold these assets to meet the LCR”³. Furthermore, Level 2 assets are further categorized into Level 2A and Level 2B assets. “Level 2A assets include, for example, certain government securities, covered bonds and corporate debt securities. Level 2B assets include lower rated corporate bonds, residential mortgage backed securities and equities that meet certain conditions. Level 2 assets may not in aggregate generate for more than 40% of a bank’s stock of HQLA and Level 2B assets may not generate for more than 15% of a bank’s total stock of HQLA”⁴.

The Fundamental characteristics of HQLA

According to the Basel Committee, to be considered HQLA an asset should meet four essential criteria⁵ (BIS-a, 2013) such as; i) low risk⁶, ii) ease and certainty of valuation, iii) low correlation with risky assets, and iv) be listed on developed and recognized exchange.

The first condition requires that an asset should have low risk, which increases chances of higher liquidity during times of turbulence. The second condition, ease and certainty of valuation, requires asset’s liquidity increases when market participants have a unanimous valuation approach. Therefore, assets are more fungible and henceforth liquid when they have simple,

³ BIS-b

⁴ Ibid.

⁵ BIS-a

⁶ Low risk means low legal risk, low inflation risk, low foreign exchange risk and low duration, where duration is the measurement of the price sensitivity of a fixed income security to variations in interest rates.

standardized, and homogeneous structure. Also to be included into the list of HQLA the asset should have simple pricing formula and must be easy to calculate without depending on heavy assumptions. The third fundamental characteristic of HQLA stipulates that there should not be a high positive correlation with risky assets reflecting an obvious co-movement in assets prices. And the final fundamental characteristic of HQLA is that it should be listed on a developed and recognized exchange. This feature assures the transparency of the asset.

The Market-Related Characteristics of HQLA

The market-related characteristics of HQLA are threefold. To be considered HQLA, an asset should first have an *active and sizable market*, second it should be subject to *low volatility* and third it should have a *'flight to quality'*⁷ feature. According to the first characteristic, at all times the asset must have an active wholesale and repo markets. Accordingly, there must be existing historical evidence of market breadth and depth that is justified by low bid-ask spreads, large trading volumes, and a broad and varied number of market participants. The diversity of participants is important since it scales down the market concentration and scales up the trustworthiness of the liquidity in the market. Also a prosperous market framework must be in place because the presence of numerous dedicated market makers increases liquidity due to availability of buying and selling quotes. The second feature, which is low volatility, implies that HQLA is an asset whose price does not fluctuate sharply over time. The proxy measure of market volatility is the volatility of market terms such as prices and haircuts and also volumes during stressed period must be available. And the final market-related characteristic of HQLA is flight to quality feature, which implies that the evidence that market tends to move into these types of assets during the times of systemic crisis.

Gold as HQLA

This section shall analyze how gold copes with abovementioned characteristics of HQLA. We shall look at each feature and suggest why we support gold to be accepted as HQLA.

In 2014, Amanie Advisors Sdn Bhd together with KFH Research Ltd conducted a study titled "Gold as high-quality liquid asset (HQLA) for the Islamic banking system". The study advocates the role of gold as HQLA and their results suggest that gold complies with most of characteristics of HQLA. The only parameter it does not meet was low volatility requirement. However, study conducted by Baur (2011) shows that gold has an inverted asymmetric reaction to positive and negative shocks, such as positive shocks increase the volatility by more than negative shocks, the price of gold tends always to rise during the periods of financial stress.

⁷ The drivers for flight to quality include, profitability, earnings quality, financial leverage, asset growth and corporate governance: thus, a flight to quality can reflect a re-balancing of less volatile investments through diversification. Typically, the term reflects the sale of high-risk investments in favor of safer investments, such as U.S. Treasuries or gold, although profitable commodity positions, including gold, might be sold to off-set less profitable financial assets. On the other hand, a liquidity crisis can involve counter-party risk, which allocated gold is not subjected to.

Figure 1. The changes in gold prices for the period from March 1915 to August 2015



Figure 1 presents the movement of gold prices for the last 100 years. From 1971 following the collapse of the Bretton Woods system the price of gold is increased during times of financial, political or natural turbulence. For example in 1979 the price of gold rose linked to the invasion of Afghanistan by Russia and the Iranian hostage crisis. The natural disaster such as Hurricane Katrina in 2005 also culminated in rise of the gold price. During the recent financial crisis in September 2008 the price of gold raised \$50 in one day, which represents the largest one-day increase since 1980, which is a clear evidence of the fact that gold has an inverted asymmetric volatility. Investors perceived gold as a high quality safe heaven asset and also high credit quality asset.

Low Risk feature is an important requisite for the liquidity purposes. Such as an asset, which has a low risk, remains liquid during times of financial turmoil. Gold’s safe haven asset feature implies its liquidity during times of financial distress. Justification comes from Figure 1 and Table 1. where one can see that gold has history of substantial price increase during stress periods and meanwhile, government securities, which are considered as Level 1 HQLA, are not necessarily always low risk assets.

Table 1. Sovereign risk

1932	UK	Most of the outstanding WWI debt was consolidated into a 3.5% perpetual annuity
1933	US	Abrogation of the gold clause. In effect, the U.S. refused to pay Panama the annuity in gold due to Panama according to a 1903 treaty
1946-1952	Japan	After inflation, exchange of all bank notes for new issue (1 to 1) limited to 100 yen per person
1948	Germany	Monetary reform limiting 40 Deutsche mark per

		person. Partial cancellation and blocking all accounts.
1950	Brazil	Abrogation of inflation-linked indices embedded in the original contracts. Largest default (US \$62 billion) in 1990
1998	Russia	Largest local currency default (US \$39 billion) since Brazil 1950
2012	Greece	Largest sovereign default in history (US \$130 billion of US \$450 billion written down)

Source: Reinhard & Rogoff 2010, WGC

Ease and Certainty of Valuation feature requires a unanimous valuation for the asset from all market participants. The price of gold is fixed twice a day, at 10.30AM and 3PM London time by the London Bullion Market Association (LBMA). The gold fix is conducted in USD, GBP and EUR. This evidence proves that there is no uncertainty in pricing of gold.

Low Correlation with Risky Assets implies that asset should have low or inverse correlation with risky assets. Gold has no correlation with the rest of reserve assets and negatively correlated with US dollar, which makes it perfect hedge against market risk and thusly improves performance of the portfolio. Justification comes immediately from Figures 2 and 3. One can see that unlike price of USD denominated price of gold dropped sharply aftermath the GFC whereas the same pattern is not observed in Turkish Lira denominated gold prices. Therefore, reserve asset managers which hold the prominent part of their portfolios in USD denominated assets can use gold to reduce risks attached to the portfolio and in wealth preservation. Individuals, on the other hand, commonly use gold as a hedge against long-term inflation.

Figure 2. The performance of USD denominated gold prices

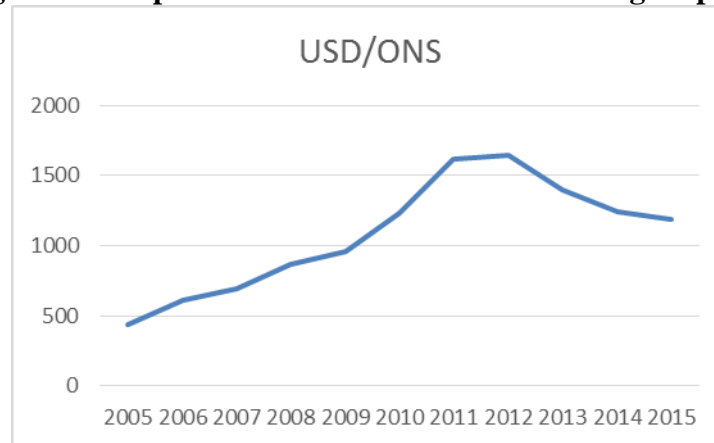
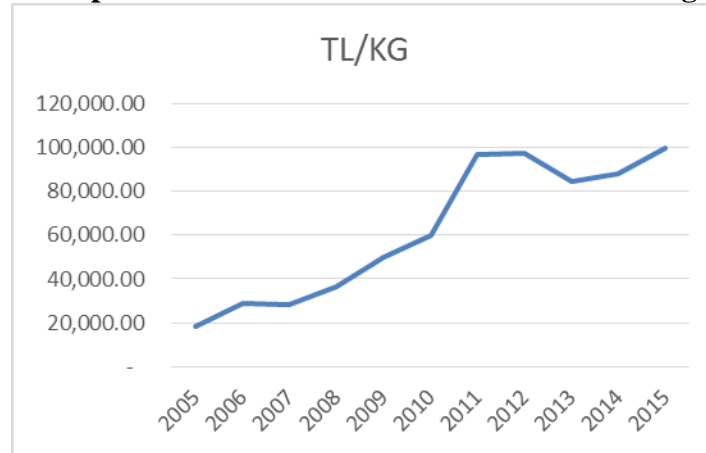


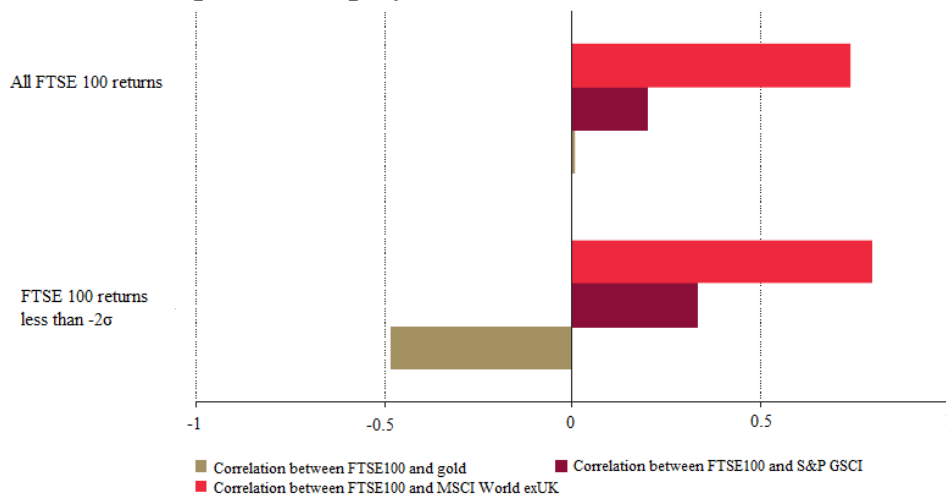
Figure 3. The performance of Turkish Lira denominated gold prices



Source: Borsa Istanbul

World Gold Council (2013) suggests that for a comprehensive range of sterling-based investment strategies, from risk-averse to risk-seeking, gold is significant contributor to portfolio efficiency by increasing risk-adjusted returns and reducing expected losses. Their findings suggest that even relatively small allocations to gold, ranging from 2.6% to 9.5% can have a positive impact on the long-term performance of a portfolio. Figure 4 illustrates that the correlation between UK equities and gold since January 1987 during periods when UK equities dropped by more than two standard deviations is significantly negative at -0.48 . Meanwhile, for the same period the correlation between commodities and international equities is positive. The results make apparent that gold has low and even significantly negative correlation with risky assets especially during times of financial distress.

Figure 4. Correlation between equities, gold and commodities over the long-run and when equities drop by more than two standard deviations*



*Computations based on weekly returns from January 1987 to December 2011
 Source: World Gold Council

Active and Sizable Market Gold has a deep and transparent market. The historical prices for gold are available starting from 1833, which provides a historical evidence for investors. Gold trade takes place through over-the-counter (OTC) transactions, bids on shares in exchange-traded funds (ETFs), and purchases of gold futures and options contracts. The major markets being London, New York and Zurich. Without a formal structure or open-outcry meeting place, LBMA acts as the leading point of contract for OTC transactions. The gold market is dominated by large institutional players and high-net-worth individuals who conduct business with bullion banks via telephone or computer dealing systems. Abdullah and Abu Bakar (2015), conducted qualitative analysis to understand gold market's concentration and manipulation of gold's price. Their results suggest that gold price is actively manipulated by the BIS, the BOE and the FED making it more deterministic rather than stochastic. Driven by the parallel expedience between central banks and commercial banks, predominantly J.P Morgan. Only 2.3% of the gold market is backed by gold and, on average, sell of 45 ozs of gold is backed by 1 oz of physical gold. Which means that, if one would not take into account the unallocated gold, the actual price of gold, according to the given figures, should be USD 54,000/oz (and in the presence of paper trades, the price of gold is USD 1,200/oz). In another words, the value of the USD is overvalued 45 times, which is the byproduct of the 'strong dollar policy'.

Authors argued that the price of gold artificially suppressed by the U.S. government with objective to keep the dollar strong and prevent its collapse. To achieve this objective the two mechanisms are applied: (1) the sale of physical gold by central banks and the sale of borrowed from central banks physical gold by private commercial bullion banks, and (2) the sale of gold derivatives such as futures contracts on exchanges. The later was in monopoly of very few U.S. banks leading by J.P. Morgan and HSBC USA such as in December 2008 they were accounted for 68% of all net positions in deliverable gold at COMEX.

In contrast, gold futures and options contracts are traded on regulated commodity exchanges around the world. The most significant gold futures exchanges are the COMEX – now part of the NYMEX's metals division and part of CME Group, and the Tokyo Commodity Exchange (TOCOM), which has been trading gold futures since 1982. Like the COMEX and TOCOM, many futures exchanges operate through a central clearing system, allowing the exchange to act as the counterparty in the trade. Trading futures and options contracts on exchanges is also based on fixed delivery dates and transaction sizes. Although trading costs are generally higher than OTC transactions, they are negotiable. As a matter of practice, only a small percentage of futures market turnovers ever come to physical delivery of the gold represented by the contracts traded. Physical gold exchanges take place in London (LBMA), Turkey (Precious Metal Markets Borsa Istanbul) and UAE (Dubai Multi Commodities Centre) and Shanghai Gold Exchange (SGE). Meanwhile the commodity futures exchanges take place in USA (CME Group), Japan (Tokyo Commodity Exchange), China (Shanghai Gold Exchange and The Chinese Gold & Silver Exchange Society), Dubai (Dubai Gold & Commodities Exchange), India (Multi Commodity Exchange of India, National Commodity and Derivatives Exchange), Brazil (BM&F Bovespa), Taiwan (Taiwan Futures Exchange), Indonesia (Jakarta Futures Exchange), Turkey (Turkish Derivatives Exchange), and Russia (RTS Exchange).

Flight to Quality The feature of gold as a safe haven asset increased its attractiveness in terms of portfolio allocation of official investors, i.e. central bank managers. Ciner (2001) suggested that

adding gold into the portfolio would reduce its volatility, thus leading to a more balanced portfolio.

Baur and Lucey (2009) presented the evidence of the potential for gold to act as a safe haven asset. According to their findings gold tends to hold its value when stock markets experience extreme negative returns. Furthermore, in their paper the authors determine between the *safe haven* and *hedge* assets. Thus according to them, hedge asset is defined as an asset which is uncorrelated or negatively correlated with another asset or portfolios on average for example sovereign bonds in normal times, while a safe haven asset is defined as an asset that is uncorrelated or negatively correlated with another asset or portfolio during the times of market stress or turmoil only.

McCown and Zimmerman (2006) find evidence that gold is an excellent hedge against inflation. Moreover, their findings suggest that gold shows the characteristics of “*zero beta asset*”, bearing no market risk. Capie et al. (2005) find evidence of potential of gold as an exchange-rate hedging. Baur and McDermott (2009) pointed out that the presence of a strong safe haven in the market suggests the potential for gold to act as a stabilizing force for financial markets by reducing losses when it is most needed, i.e. during times of economic turmoil.

Low Volatility feature implies that prices of HQLA should remain relatively stable and be less prone to sharp price declines over time which lowers probability of triggering forced sales to meet liquidity requirements. Volatility of traded prices and spreads are simple proxy measures of market volatility. There should be historical evidence of relative stability of market terms (for example, prices and haircuts) and volumes during stressed periods (BIS 2013).

Asymmetric volatility phenomenon implies that due to some factors such as the effects of leverage in the markets, volatility feedback and psychological investment factors, there are higher market volatility levels in market downswings than in market upswings.

Despite the fact gold is an important hedge and safe haven asset there are very limited number of studies investigating the volatility of gold. For example, Tully and Lucey (2007) estimate an asymmetric power GARCH model and Batten and Lucey (2010) modeled the volatility of gold futures market. However, these studies do not provide analysis of gold’s volatility asymmetry. The gap was covered by Baur (2011), who studied the volatility of gold and demonstrated that there is an inverted asymmetric reaction to positive and negative shocks, such as positive shocks increase the volatility by more than negative shocks. The author suggested that this effect is due to the safe haven property of gold, since investors interpret positive gold price changes as an indicator of future adverse conditions and uncertainty in other markets. According to his results, inverted volatility feature of gold can lower the aggregate risk of a portfolio for specific correlation levels.

Table 2. Performance of highly liquid assets during stress periods (in %)

Event	Date	Gold	Bunds	OATs	Italian	UK Gilt	US Treasuries	Euro Agency	Euro Supra	Covered	Cash
Lehman bankruptcy	2008	13.47	2.19	2.01	1.78	4.03	3.87	1.27	1.72	0.41	0.23
Greece fiscal problems discovered	2009	3.08	-0.19	-0.43	-0.12	-0.87	1.14	0.01	0.19	-0.21	0.12
EFSR launch	2010	6.50	1.38	0.94	-2.11	1.69	6.27	0.14	0.58	-0.57	0.01
Irish bailout	2010	2.42	-0.50	-0.61	-1.12	0.50	1.45	-0.39	-0.65	-0.63	0.03
Greece bailout restructured	2011	-2.49	0.54	-2.38	-4.17	4.55	0.96	-0.24	-0.69	0.7	0.27
Greece elections	2012	-0.19	-0.67	1.38	0.20	1.15	1.66	0.79	0.46	-0.54	0.12
Average		4.25	0.51	0.24	-0.73	1.46	2.16	0.30	0.32	-0.04	0.12

Adopted from WGC 2012

Table 2 presents the return of certain, considered to be safe, assets during times of financial instability. One can clearly observe the out-performance of gold against the other asset classes.

Conclusion

The article in hand studied the characteristics of HQLA and compliance of gold as HQLA. There are in total seven characteristics of HQLA which are categorized into two groups: fundamental characteristics and market-related characteristics. Fundamental characteristics are four fold; i) low risk, ii) ease and certainty in valuation, iii) low correlation with risky assets, and iv) being listed on developed and recognized exchange. The market-related characteristics are threefold; i) active and sizable market, ii) low volatility, and iii) flight to the quality. We analyzed how gold comply with each of the above-mentioned features of HQLA defined by Basel committee. Our results suggest that except of only one factor, which is low volatility, gold has no restrictions to be accepted as HQLA. However, the volatility of gold is an inverted asymmetric volatility to positive and negative shocks, such as positive shocks increase the volatility by more than

negative shocks. Which means that price of gold tends to rise during the times of financial distress thusly making it perfect hedge and safe haven asset, which should be included in HQLA stock.

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References

- Abdullah, A. and Abu Bakar, M. J. (Feb., 2015). “The Gold Market and the Value of the U.S. Dollar”, *International Business Research*, 8(3), 190-207
- Amanie Advisors Sdn Bhd and KFH Research Ltd. (26 March 2014). Gold as a High Quality Liquid Asset (HQLA) for the Islamic banking System.
- BIS-a, Bank for International Settlements (January 2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tool*. Available at <http://www.bis.org/publ/bcbs238.htm>
- BIS-b, Bank for International Settlements (January 2013). *Annex 1, A summary description of the LCR*. Available at <http://www.bis.org/press/p130106a.pdf>
- Baur, D. (2011) “Asymmetric Volatility in the Gold Market”
- Baur, D., and Lucey, B.M. (2009). “Flights and contagion – An empirical analyses of stock-bond correlations”, *Journal of Financial Stability*. 5(4), 339-352.
- Baur, D. and McDermott, T. (2010). “Is gold a safe haven? International evidence,” *Journal of Banking and Finance* 34. Capie, F., Mills, T. C., and Wood, G. (2005). “Gold as a hedge against the dollar”, *Journal of International Financial Markets, Institutions and Money* 15(4), 339-352.
- Ciner, C. (2001). “On the long run relationship between gold and silver prices a note”. *Global Finance Journal*. 12, 299 – 303
- Europe Economics (20 March 2015). *The liquidity of gold under proposed EBA liquidity tests: An analysis for the World Gold Council*. Available at: https://www.eba.europa.eu/documents/10180/42030/World-Gold-Council_1.pdf
- McCown, J. R., and Zimmerman, J. R. (2006). “Is Gold a Zero-Beta Asset? Analysis of the Investment Potential of Precious Metals” Available at SSRN: <http://dx.doi.org/10.2139/ssrn.920496>
- World Gold Council (2013). *Gold as a strategic asset for UK investors: Portfolio risk management and capital preservation*. Available at [https://www.gold.org/sites/default/files/documents/gold-investment-research/Gold as a strategic asset for UK investors.pdf](https://www.gold.org/sites/default/files/documents/gold-investment-research/Gold%20as%20a%20strategic%20asset%20for%20UK%20investors.pdf)