WORLD GOLD COUNCIL

Gold and central bank reserve management during the Covid-19 pandemic

May 2020 www.centralbankgold.org | www.gold.org

- Gold has performed well as Covid-19 has impacted markets
- Higher allocations to gold have improved the performance of a typical central bank total reserve portfolio during this crisis period
- Gold is fulfilling its role as an indispensable central bank reserve asset

Introduction

Central bank reserves are typically constructed according to three guiding principles: safety, liquidity and return. The Covid-19 pandemic has reinforced the significance of these principles and, by extension, the importance of smart and sustainable reserve management.

But, in order to deliver effectively against this mandate, central bank reserve managers need to understand how different assets perform during stress periods. Only in this way, can they develop portfolios that are robust and resilient in the face of market stress, while aligning with the three core principles of reserve management.

Looking back over recent weeks, financial markets have deteriorated at an almost unprecedented rate and central banks have been forced to deploy their reserves to ensure both currency stability and financial system liquidity.

Traditionally, assets such as US Treasuries and G-10 sovereign bonds comprise the bulk of central bank reserve portfolios. But gold is widely held too, with one of the main reasons being that it tends to outperform other assets during periods of market stress.

Indeed, gold has generated strong returns this year, increasing in value by 10.91% from 1 January to 17 April. Some central banks have already put their gold into action: the Banco Central del Ecuador, for example, swapped US$300 million of its gold holdings to raise liquidity in March.

However, while nearly every central bank holds some gold, the majority maintain a relatively low allocation, particularly those from emerging economies. Recent market behaviour prompts a re-examination of gold's role compared to other traditional reserve assets.

To gain a better understanding of gold's role as a core central bank asset, we have reviewed gold's performance as a reserve asset during the recent financial strife. We have also assessed how different gold allocations would have affected the performance of total reserves in this crisis period.

Our analysis reveals that a typical[1] central bank total reserve portfolio would have performed better with higher allocations[2] to gold.

Reserve asset behaviour during the Covid-19 pandemic

Risk assets have moved rapidly out of favour in recent weeks. As the Covid-19 pandemic has prompted a widespread reassessment of global economic prospects, investors have rotated into safe-haven assets, including gold.

1 Through consultations with industry experts and advisors, the World Gold Council has identified a list of typical reserve assets held by central banks in recent times. Please refer to chart 4 for more information.

2 Please refer to chart 4 for more information.

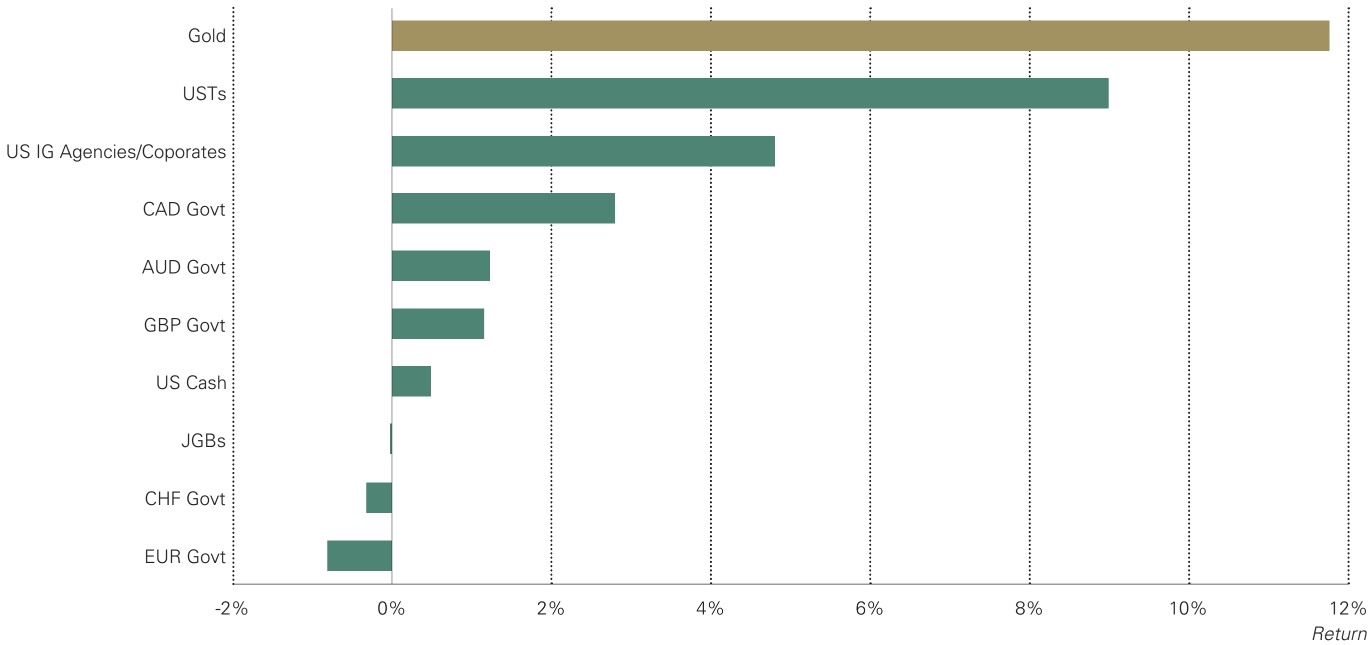
Some haven assets have delivered better returns than others, however. And gold has been one of the best performing safe-haven assets this year. Between 1 January and 17 April 2020, gold outperformed US treasury bonds and bills, USD-denominated investment grade agency and corporate debt, and Eurozone sovereign bonds (**Chart 1**).

There have, however, been times when the gold price fell in recent months, especially during heavy risk-off sessions. This has prompted concerns about gold's haven status: it is supposed to move in the opposite direction from risk so why did it lose ground as financial market turmoil intensified?

Such behaviour may seem counterintuitive but it is not without precedent. During the darkest days of the 2008 financial crisis, gold also declined alongside risk assets on sharp sell-off days. The key to this phenomenon lies in gold's liquidity. As investors faced margin calls and needed urgently to raise cash for redemptions, liquid assets such as gold were first in line to be sold. US Treasuries also fell victim to this trend, selling off alongside equities and gold on some of the sharpest risk-off days. Ultimately, however, gold was one of the few asset classes to deliver positive results that year. Based on the LBMA gold price, gold generated an annual return of 4.3% in 2008 to end the year at US$869.75 year per ounce.

Chart 1: YTD performance of typical reserve holdings

YTD performance of typical safe haven assets



*As of 17 April 2020. Returns based on the LBMA Gold Price, Bloomberg Barclays US Treasury Index and US Aggregate Index, S&P US Treasury Bills 0-3 Month Index, S&P Eurozone Sovereign Bond 1-3Yr Index, Bloomberg Barclays JGB 1-10YR Index, On-the-run 2Yr sovereign bonds from Australia, Canada, Switzerland and the UK. All returns are denominated in domestic currencies.

Source: Bloomberg, World Gold Council

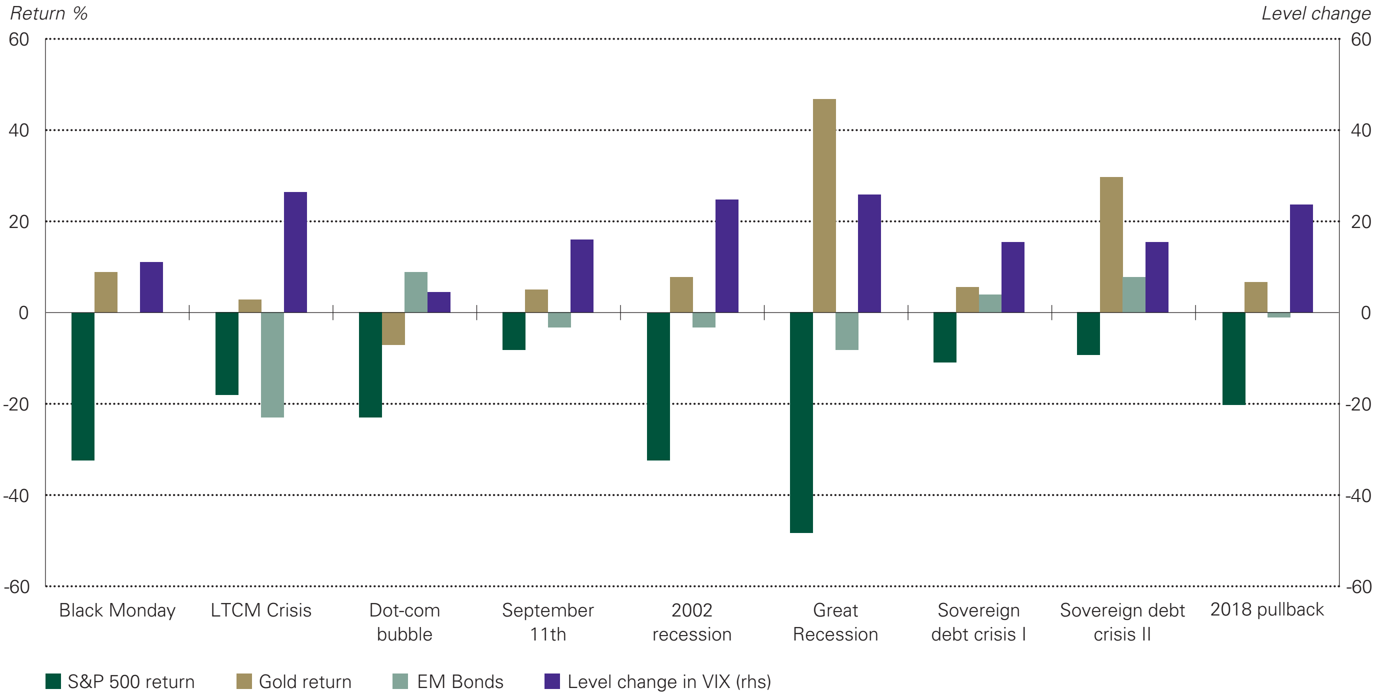
This outperformance underlines gold's long history of resilience in times of turmoil. During the past three decades, gold has outperformed risk assets in nearly every single major market downturn (**Chart 2**). And that outperformance has continued during the Covid-19 pandemic, reinforcing gold's role as a counter-cyclical asset during periods of market stress.

Analysis of a hypothetical central bank total reserve portfolio during the current crisis

Given gold's impressive performance during the Covid-19 outbreak, it would seem timely to review how gold can affect the returns generated by a total reserve portfolio. According to the 2019 World Gold Council Survey on Gold Reserve Management, 91% of central banks manage gold separately from their other reserve assets. We have therefore evaluated gold's impact on total reserve asset performance rather than focusing on a specific tranche or a single currency portfolio.

Chart 2: Gold's performance during historic financial stress events

Performance in Periods of Systematic Risk – S&P 500 and Gold return vs change in VIX level.

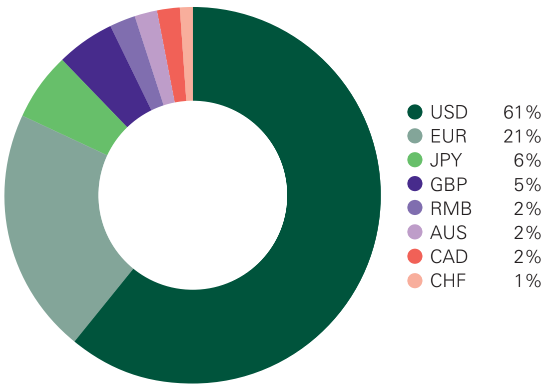


The VIX is available only after January 1990. For events occurring prior to that date annualised 30-day S&P 500 volatility is used as a proxy.
Dates used: Black Monday: 9/1987–11/1987; LTCM: 8/1998; Dot-com: 3/2000–3/2001; September 11: 9/2001; 2002 recession: 3/2002–7/2002; Great Recession: 10/2007–2/2009; Sovereign debt crisis I: 1/2010–6/2010; Sovereign debt crisis II: 2/2011–10/2011; 2018 pullback: 10/2018-12/2018.

Source: Bloomberg, World Gold Council

Our analysis considers three hypothetical total reserve portfolios – one with no allocation to gold, one with a 5% allocation and one with a 10% allocation.[3] The no-gold portfolio was constructed based on the latest currency weightings from IMF COFER data (**Chart 3**). Specific asset classes and instrument allocations were selected to replicate a typical emerging market reserve portfolio (**Table 1**). The two test portfolios included 5% and 10% allocations to gold, while proportionally decreasing the weightings of the other portfolio components. The analysis reflects the period from 1 January to 17 April 2020, including the initial reports of the virus in Wuhan, China's nationwide lockdown, the sharp financial reaction, and the subsequent global spread of Covid-19. We have focused on emerging market central banks, as they tend to maintain a relatively low exposure to gold.

Chart 3: Currency allocations of base portfolio with 0% gold, based on IMF COFER data



Source: IMF Currency Composition of Official Foreign Exchange Reserve (COFER) as of Q4 2019

Table 1: Asset class allocations of base portfolio with 0% gold, and hypothetical test portfolios of 5% and 10% gold

Instrument	Total Reserves Base Portfolio (0% Gold Allocation)	Total Reserves Test Portfolio 1 (5% Gold Allocation)	Total Reserves Test Portfolio 2 (10% Gold Allocation)
US Treasuries	30.00%	28.50%	27.00%
US Agencies / MBS / IG Corporates	15.00%	14.25%	13.50%
EUR Govt	11.00%	10.45%	9.90%
US T Bills	10.00%	9.50%	9.00%
Supranational Bonds (EUR)	10.00%	9.50%	9.00%
Supranational Bonds (USD)	6.00%	5.70%	5.40%
JPY Govt	6.00%	5.70%	5.40%
GBP Govt	5.00%	4.75%	4.50%
AUD Govt	2.00%	1.90%	1.80%
CAD Govt	2.00%	1.90%	1.80%
RMB Govt	2.00%	1.90%	1.80%
CHF Govt	1.00%	0.95%	0.90%
Gold	0.00%	5.00%	10.00%

Source: World Gold Council

3 Any hypothetical or simulated performance shown herein may not reflect actual investment results and does not guarantee any future results. Diversification does not guarantee investment returns and does not eliminate the risk of loss. See nformation and disclosures at the end of this report.

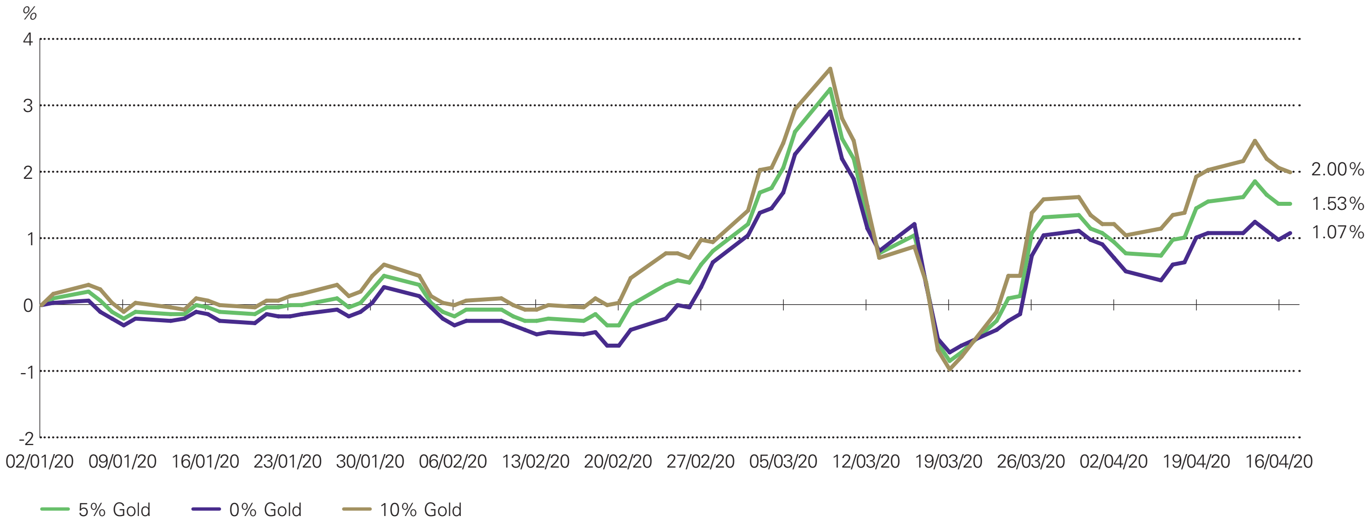
The results of the analysis are illuminating. They show that both hypothetical test portfolios outperformed the base portfolio with no gold allocation. The base portfolio – with no allocation to gold - produced a return of 1.07%. The hypothetical test portfolio with a 5% gold allocation returned 1.53%. And the hypothetical test portfolio with a 10% gold allocation returned 2.00% over the analysis period.

A higher allocation to gold did introduce more volatility to the test portfolios but the Sharpe ratios of both hypothetical test portfolios were improved with the addition of gold. The base portfolio sported a Sharpe ratio of 0.96, while the Sharpe ratio was 1.19 for the hypothetical test portfolio with a 5% gold allocation, rising to 1.33 for the hypothetical test portfolio with a 10% gold allocation (**Chart 4** and **Table 2**).

Our analysis shows that total reserve portfolios with higher gold allocations would have outperformed a hypothetical central bank total reserve portfolio with no gold during the recent Covid-19 crisis period.

Chart 4: Change in hypothetical reserve portfolio performance (YTD through 17 April 2020)

Total Returns of 3 Different Portfolios.



Portfolios were rebalanced monthly or when a new bond was issued to ensure portfolios only have on-the-run bonds.
Coupons were reinvested at prevailing yield. All portfolios are denominated in USD.

Source: Bloomberg, World Gold Council

Table 2: Performance metrics of base and hypothetical test portfolios (YTD through 17 April 2020)

Metric	Base Portfolio (0% Gold Allocation)	Test Portfolio (5% Gold Allocation)	Test Portfolio (10% Gold Allocation)
Total Return	1.07%	1.53%	2.00%
Mean Return (Annualised)	7.87%	9.93%	12.06%
Standard Deviation (Annualised)	4.94	5.21	5.75
VAR 95% (ex-post)	-0.63	-0.68	-0.69
Sharpe Ratio	0.96	1.19	1.33

Source: World Gold Council

Conclusion

The economic, social, and financial fallout from the Covid-19 pandemic will almost certainly continue for a prolonged period. It is impossible to predict the exact course that financial markets will take as the pandemic continues, but gold has certainly reacted in a predictable way to date – preserving value and providing financial safety as risk assets sell off. During this crisis period, a typical central bank total reserve portfolio would have performed better with higher allocations to gold than a portfolio without gold, preserving more financial firepower to support currency stability and market liquidity.

Central bank reserve managers are already aware of gold's strategic value and resilience. Its performance in recent times highlights the benefits of these attributes. Looking ahead, the financial turmoil unleashed by Covid-19 is yet another test of reserve managers' ability to strike the right balance between safety, liquidity, and return in their portfolios. Now, as in previous crises, gold remains an indispensable central bank reserve asset.

About the World Gold Council

The World Gold Council is the market development organisation for the gold industry. Our purpose is to stimulate and sustain demand for gold, provide industry leadership, and be the global authority on the gold market.

We develop gold-backed solutions, services and products, based on authoritative market insight and we work with a range of partners to put our ideas into action. As a result, we create structural shifts in demand for gold across key market sectors.

We provide insights into the international gold markets, helping people to understand the wealth preservation qualities of gold and its role in meeting the social and environmental needs of society.

Based in the UK, with operations in India, China, Singapore and the USA, the World Gold Council is an association whose members comprise the world's leading and most forward thinking gold mining companies.

World Gold Council
7th Floor, 15 Fetter Lane, London EC4A 1BW
United Kingdom

T +44 20 7826 4700
F +44 20 7826 4799
W www.gold.org

For more information

Please contact:

Shaokai Fan
Head of Central Banks Relationships
shaokai.fan@gold.org
+65 6823 1510

Kurtulus Taskale Diamondopoulos
Director, Central Banks and Public Policy
kurtulus.taskale@gold.org
+44 20 7826 4723

Qixiu Tay
Manager, Central Banks and Public Policy
qixiu.tay@gold.org
+65 6823 1507