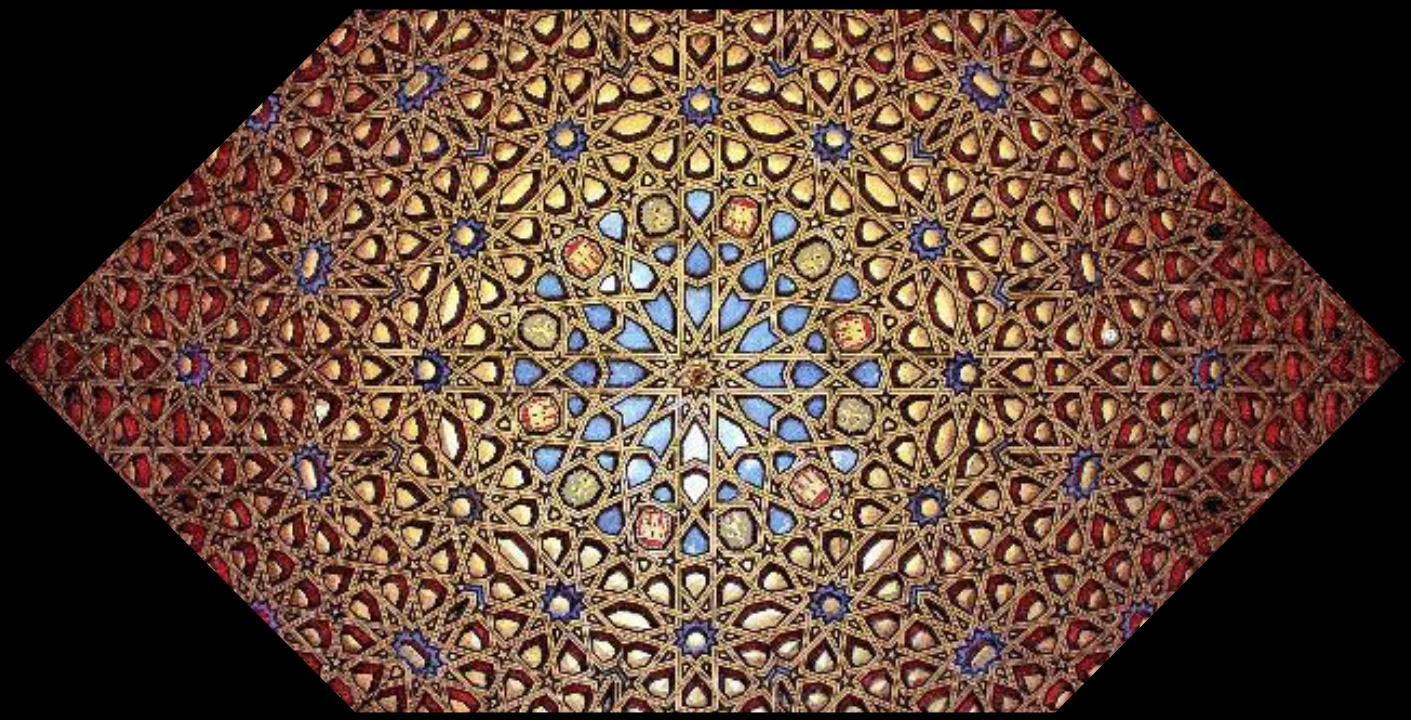
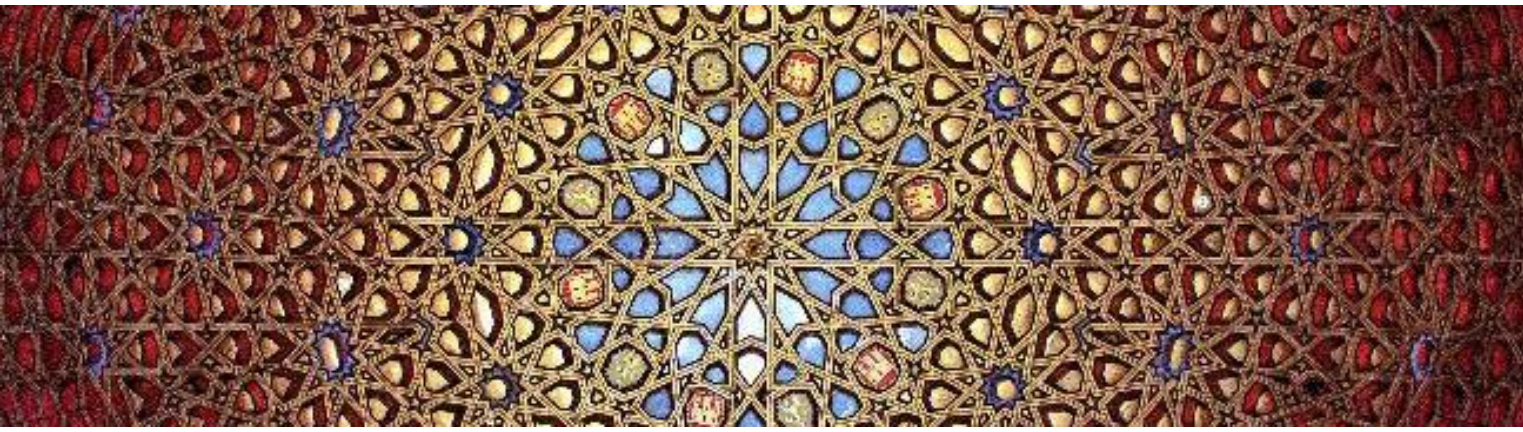
What is the risk-free asset for Islamic Investors?

HSBC Asset Management



HSBC Asset Management | Opening up a world of opportunity

Contents



HSBC Asset Management

Introduction

Islamic investment portfolios apply a set of restrictions to comply with Shariah principles. Most notably, these principles prohibit investment in interest-bearing assets.

An important consequence of this restriction for multi asset investors is the inability to hold traditional government bonds, and the resultant need to identify substitute asset classes.

From the perspective of an asset allocator, government bonds possess the following desirable characteristics for portfolio construction:

- Liquidity provision
- Hedging and safe haven properties
- Diversification
- De-risking

The simplest solution when switching from a conventional asset allocation approach to an Islamic one would be to **replace government bond allocations with Sukuk bonds**. However, our analysis demonstrates that Sukuk bonds have a markedly different return profile to traditional government bonds, and do not provide all of the desirable characteristics listed above.

Instead, **we demonstrate the importance of a diversified approach**; through the combination of several asset classes, we can achieve appropriate levels of portfolio diversification that have come to be expected from multi-asset investing.

Source: HSBC Asset Management

Authors

Kim Kooner
Portfolio Manager

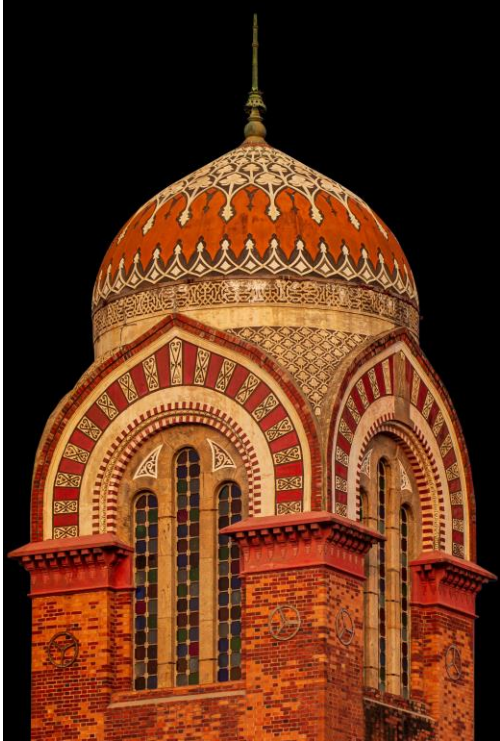
HSBC Asset Management

Yuanfang Ma
Portfolio Manager

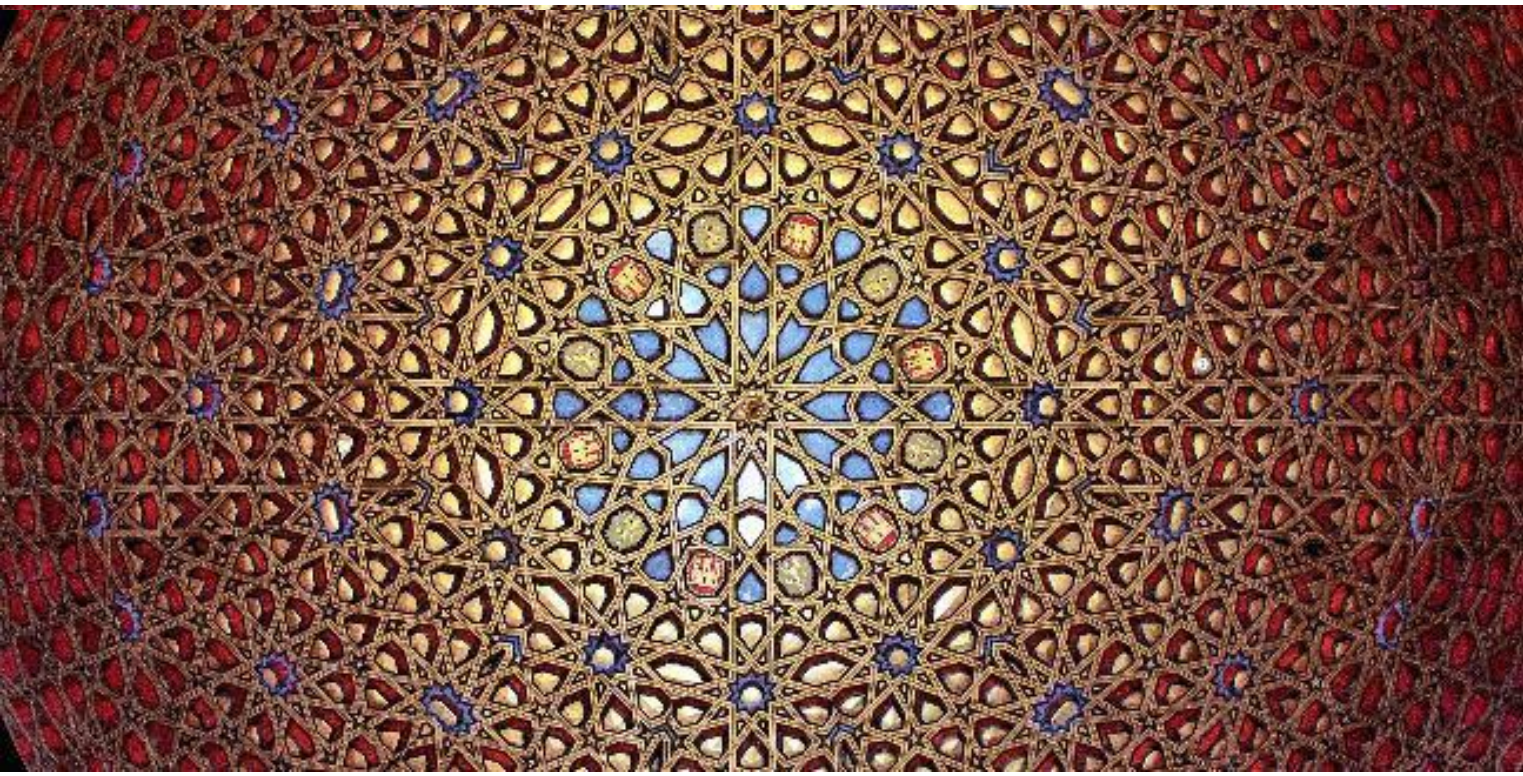
HSBC Asset Management

Nicholas McLoughlin
Head of Managed Solutions Funds

HSBC Asset Management



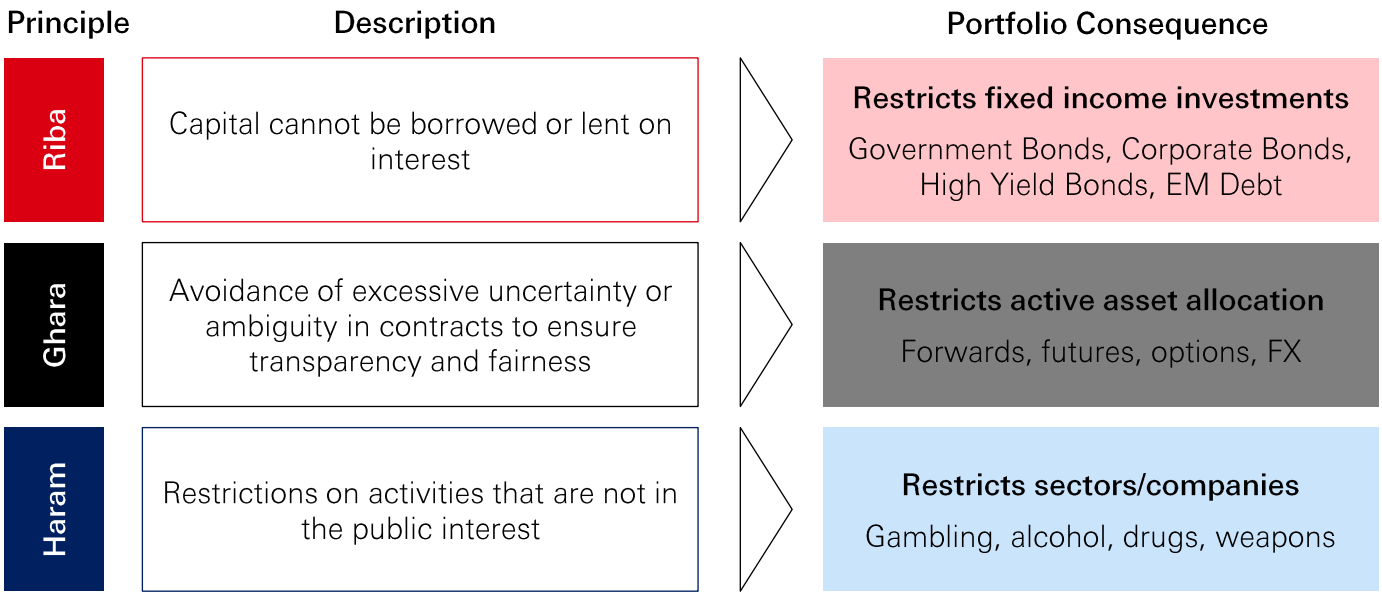
Part 1
What Shariah means for investment portfolios



HSBC Asset Management

What Shariah means for investment portfolios

Investment portfolios must adhere to three Islamic principles to be considered Shariah compliant. As outlined below, each of these principles has important implications from a multi asset portfolio construction standpoint.



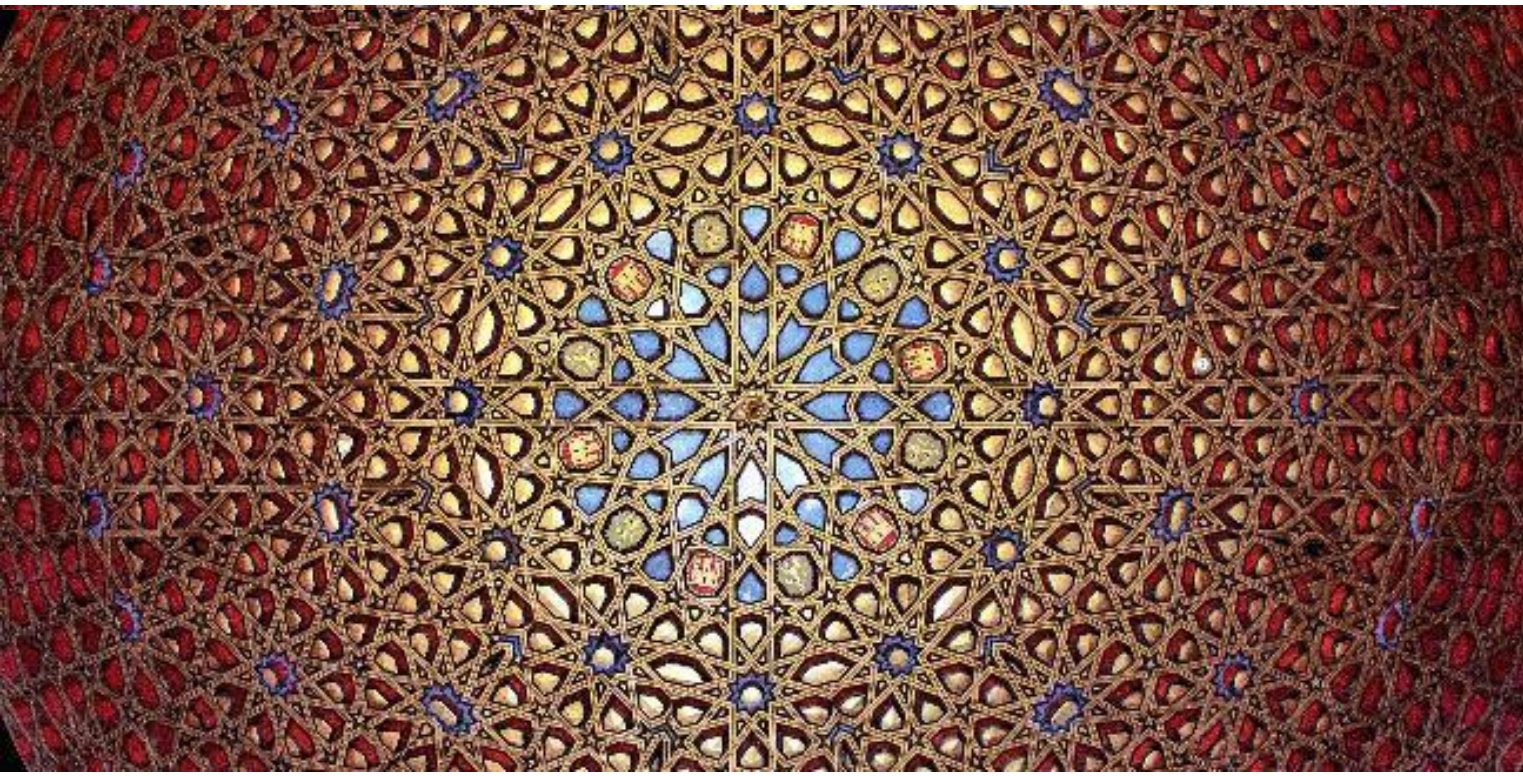
Incorporating the Haram and Ghara principles is not overly penalising from a top down portfolio construction standpoint. Screens can be applied to equity holdings to filter out Haram activities, asset classes that heavily employ leverage (such as hedge funds) are removed, and tactical portfolio trading frequency is reduced to avoid higher transaction costs from the lack of derivative instruments.

Adhering to Riba is more complex; it requires all traditional fixed income instruments to be removed from portfolios. Notably, government bonds - the 'go-to' risk-free asset in most investor portfolios - are uninvestable within Shariah portfolios. Government bonds play four important roles in portfolio construction:

- **Liquidity provision**: holds value during periods of turmoil which can then be monetised
- **Hedging/safe haven properties**: exhibiting a negative correlation with equities during normal times and particularly during periods of market stress
- **Diversification**: less than perfect correlation with other asset classes
- **De-risking:** lower volatility than equities

The result is that investors constructing Shariah compliant portfolios must find alternative ways to introduce these qualities into their asset allocations.

Part 2
Finding a Shariah compliant government bond substitute



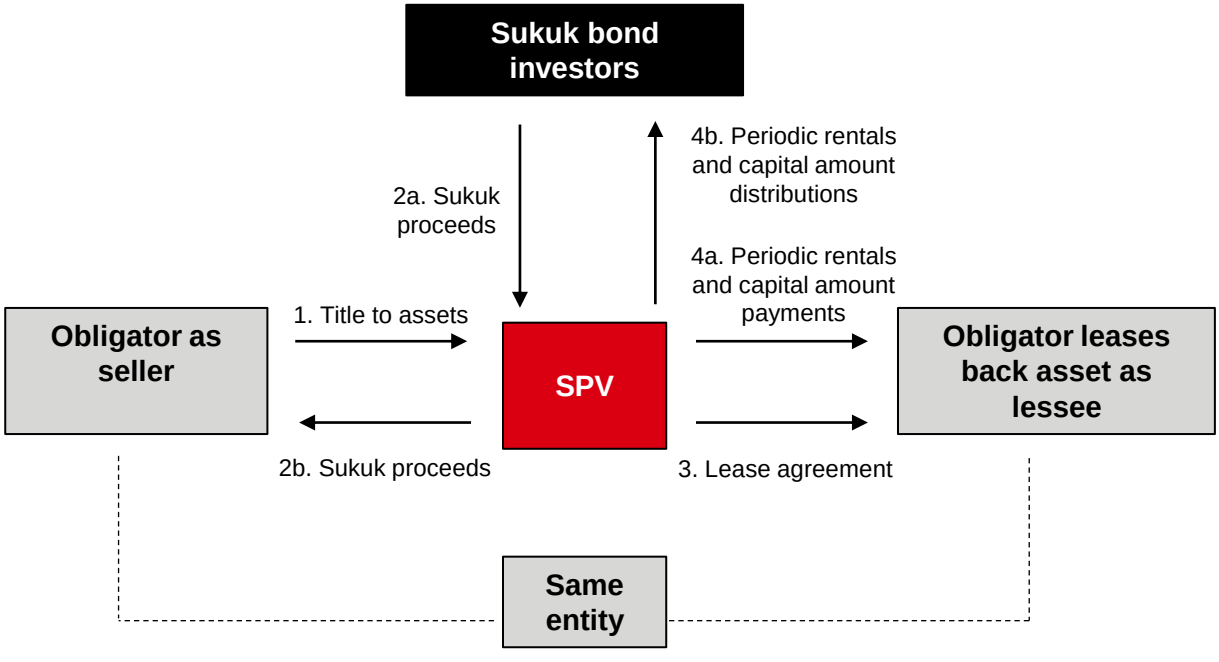
HSBC Asset Management

Understanding Sukuk bonds

The seemingly simple solution to this problem is Sukuk bonds, which comply with Riba as they represent an ownership in an underlying tangible asset or project, rather than a debt obligation. Sukuk bonds have several of the features of traditional bonds: they produce regular income, are issued by governments and corporations, and are credit rated by international rating agencies. However, they are two consequential differences between Sukuk and regular bonds. Firstly, they involve asset ownership and secondly, income is based on the profits generated by the underlying asset.

Different Sukuk structures have been emerging over the years amid increasing momentum. Most of the Sukuk issuance to date follows the structure outlined in Figure 1 which is based on undivided pro-rata ownership of the underlying leased asset.

Figure 1: Transaction structure of Sukuk Bonds[1]



As above, the steps involved in the structure are as follows:

(1) The issuer sells certain assets to the SPV at a pre-determined purchase price

(2a) The SPV raises financing by issuing Sukuk certificates equal to the purchase price

(2b) This is passed on to the obligator (as the seller)

(3) A lease agreement is signed between SPV and the obligator for a fixed period of time, where the obligator leases back the assets as lessee

(4a) SPV receives periodic rentals from the obligator; (4b) these are distributed to Sukuk holders

(5) At maturity/dissolution event, the SPV sells the assets back to the seller at a predetermined value equal to any amounts still owed under the terms of the Sukuk

1. Sukuk al-Ijara transaction structure, www.sukuk.com

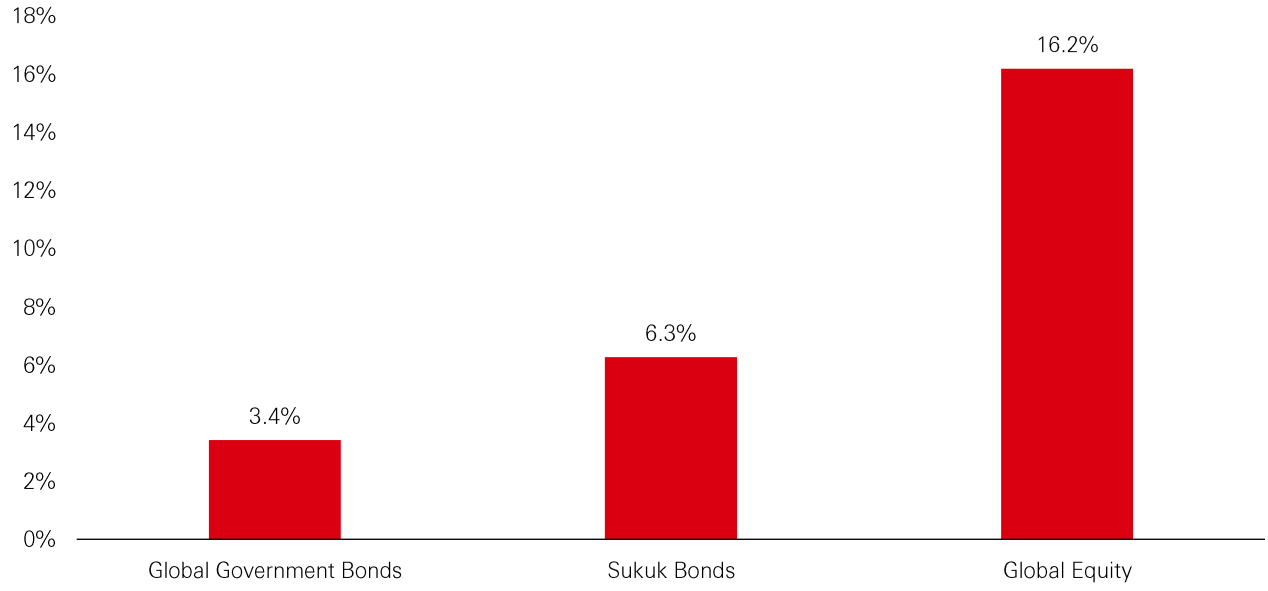
Use of Sukuk bonds

The appropriateness of Sukuk as a substitute for traditional Government bonds can be assessed by considering how well they fulfil the roles of traditional government bonds within portfolios.

De-Risking Portfolios

In Figure 2 we first assess the risk properties by analysing monthly returns across Global Government Bonds, Sukuk Bonds and Global Equities since 2006.

Figure 2: Asset class annualised monthly volatility (2006-2024)



As demonstrated in the chart above, Sukuk bonds have a materially lower volatility than Global equities, and therefore can indeed function as a de-risking asset class within portfolios. It is however notable that Sukuk bonds are almost twice as volatile as Global Government bonds, so the de-risking impact is materially less.

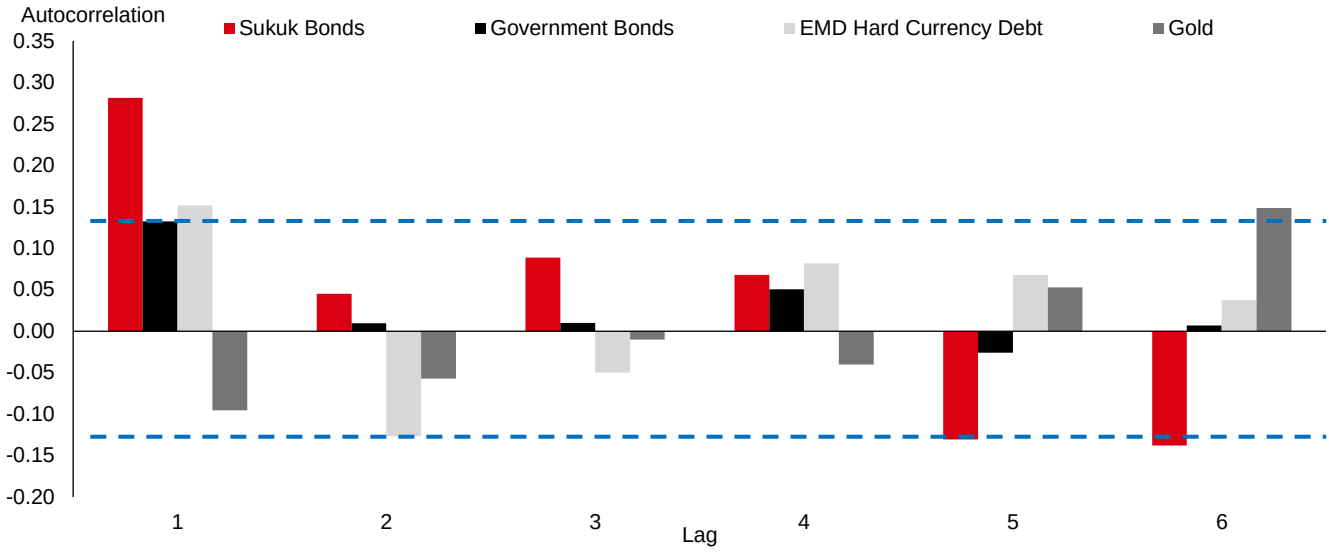
Liquidity Provision

Another consideration is asset class liquidity. This can be difficult to quantify and is heavily time varying, being sensitive to external market conditions outside of an individual asset class' specific characteristics. One way to assess liquidity is via autocorrelation analysis[2]. The more an asset's returns are serially correlated: that is to say, the current period return is related to the prior period returns, the more likely the asset embeds a degree of illiquidity which influences the price persistency.

2. See Avramov et al (2006) "Liquidity and Autocorrelations in Individual Stock Returns", The Journal of Finance Vol. 61 No. 5

Use of Sukuk bonds

Figure 3: Autocorrelation analysis (2006-2024)

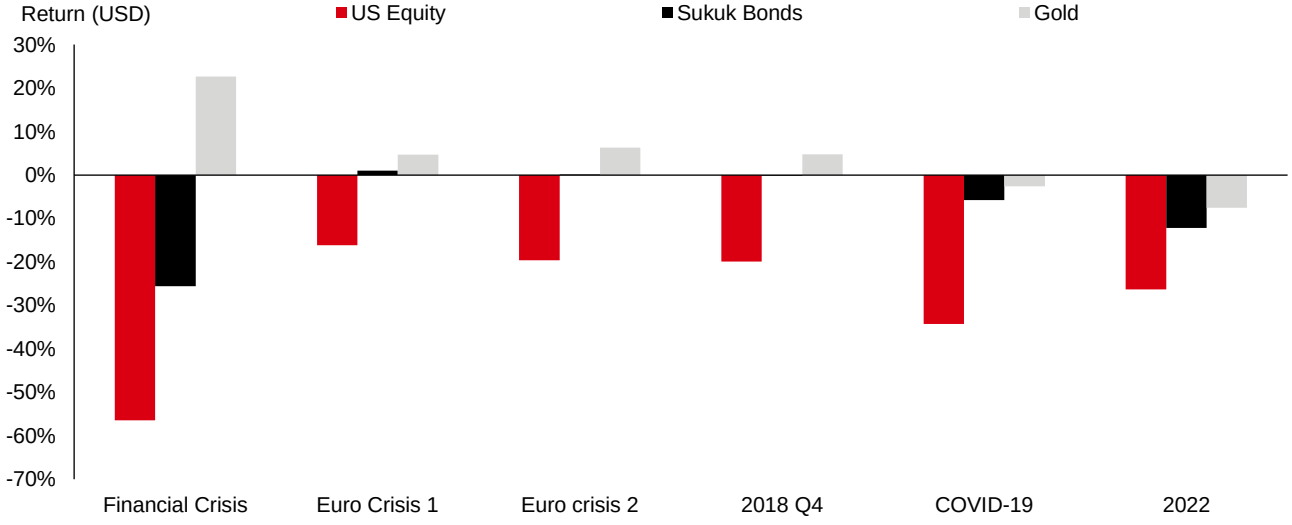


The chart above computes the monthly autocorrelation across various asset classes. The blue dotted line marks the threshold for significance. Sukuk bonds show significant autocorrelation over one month, and materially more so than other asset classes.

Hedging/safe haven properties

In the chart below we isolate specific US equity drawdown periods and find that Sukuk bonds were resilient during the Euro Crisis and in the 2018 drawdown. However, for other periods, Sukuk bonds also posted negative returns. At best this shows mixed results in providing a hedge to equity risk. Looking at other assets such as gold, we can see more effective safe haven characteristics. This motivates us to do a deeper dive into gold in Part 3.

Figure 4: Sukuk Bonds and Gold performance during equity drawdown events



Use of Sukuk bonds

To conduct a deeper analysis into hedging properties, we follow the approach outlined in Gomes et al (2023)[3], using daily data from 2005. Specifically, we run a linear regression of Sukuk bond returns onto US equity returns against four types of beta, which measure sensitivity to equity market returns during different severities of drawdown.

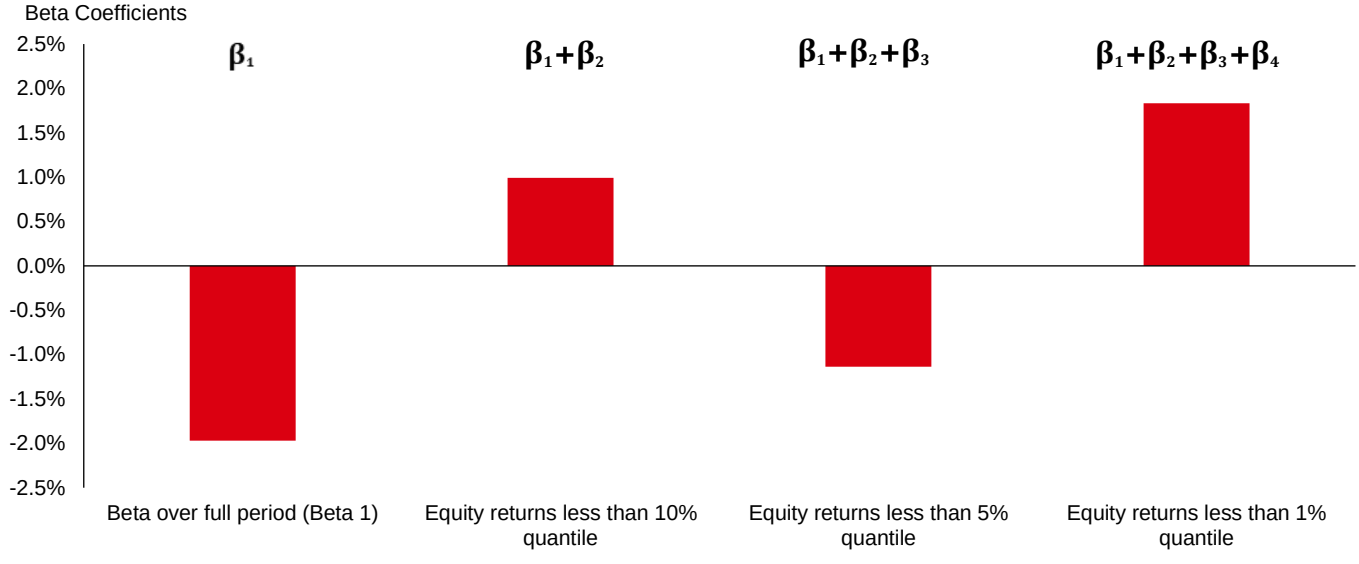
$$r_{\text{sukuk},t} = \alpha + \beta_1 \cdot r_{stock,t} + \beta_2 \cdot r_{stock,t} \cdot D(q_{10\%}) + \beta_3 \cdot r_{stock,t} \cdot D(q_{5\%}) + \beta_4 \cdot r_{stock,t} \cdot D(q_{1\%}) + \varepsilon_t$$

The regression coefficient β_1 (Beta 1) indicates the **average effect of equity returns on Sukuk bonds**. If **$\beta_1 < 0$ and significantly different from zero**, it indicates **hedging** properties i.e. Sukuk bond returns rise on average when equity returns drop

We also assess specific periods where equity returns are below the 10%, 5% and 1% quantiles (labelled as $\beta_{2,3,4,}$respectively). If the **sum of betas up to a given quantile are negative and significantly different from zero**, Sukuk bonds are a **safe haven** during these phases of equity drawdown.

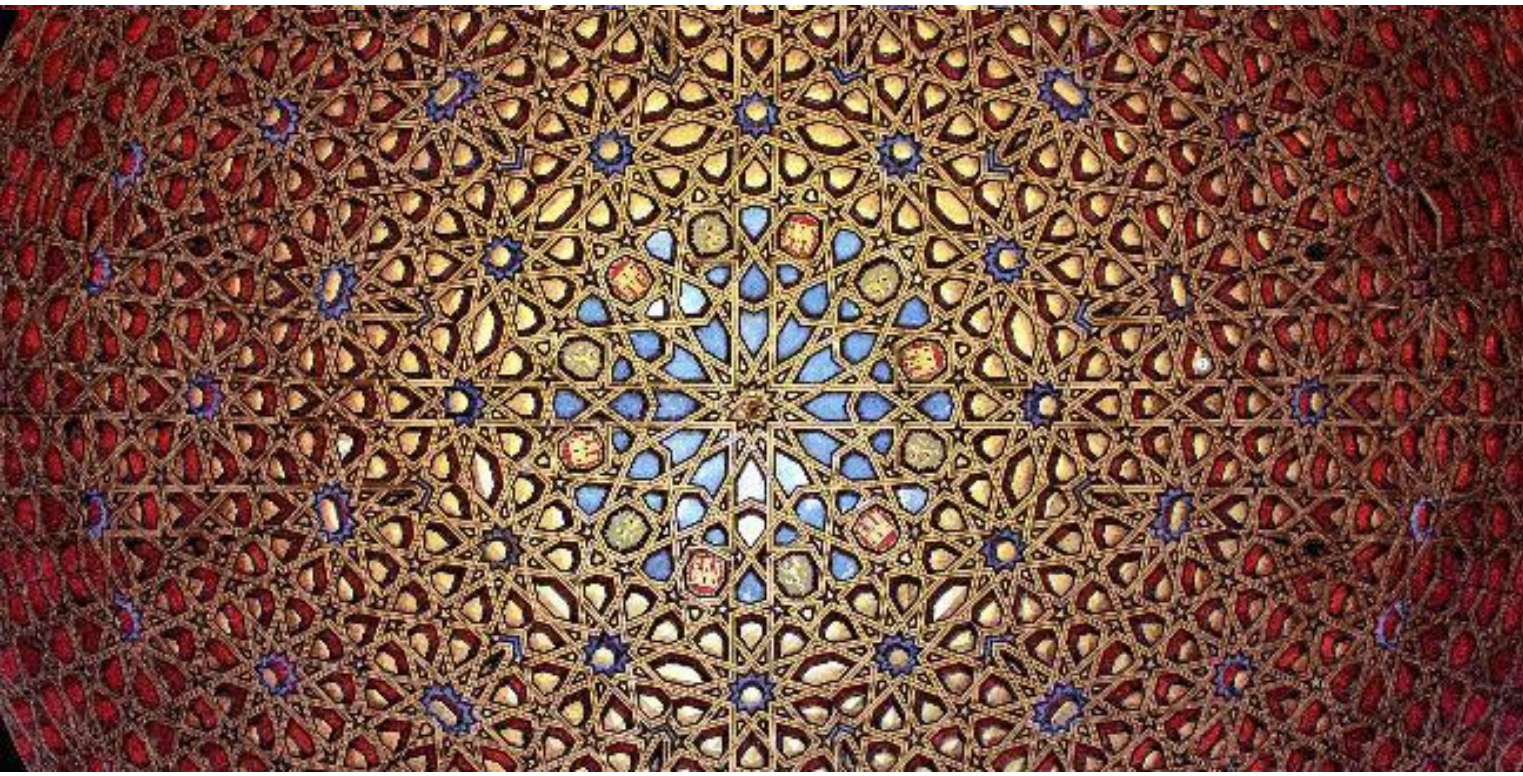
Our analysis (Figure 5 below) shows that for the full period (2005-2024) **Sukuk bonds have hedging properties** versus US equities on average (i.e. **$\beta_1 < 0$**). However, when we introduce more extreme equity returns, the co-movement with equities starts to become positive. This is consistent with the findings in Figure 4 during equity market drawdowns. Sukuk bonds therefore generally **don't have safe haven properties** in times of equity market stress.

Figure 5: Sukuk Bond Betas to US equity during various degrees of equity returns



3. Gomes et al (2023) "Gold in A Portfolio: Why, When, and Where?" Journal of Investing, 2023, Vol 32, Issue 2, p108

Part 3
Alternative solutions



HSBC Asset Management

Diversification via Gold

Looking at gold more closely as a potential candidate to replace government bonds, this asset class became part of the eligible investment universe after the creation of the AAOIFI Shariah Standard on Gold in 2016. Below we take a simple cut of a correlation matrix to assess diversification properties:

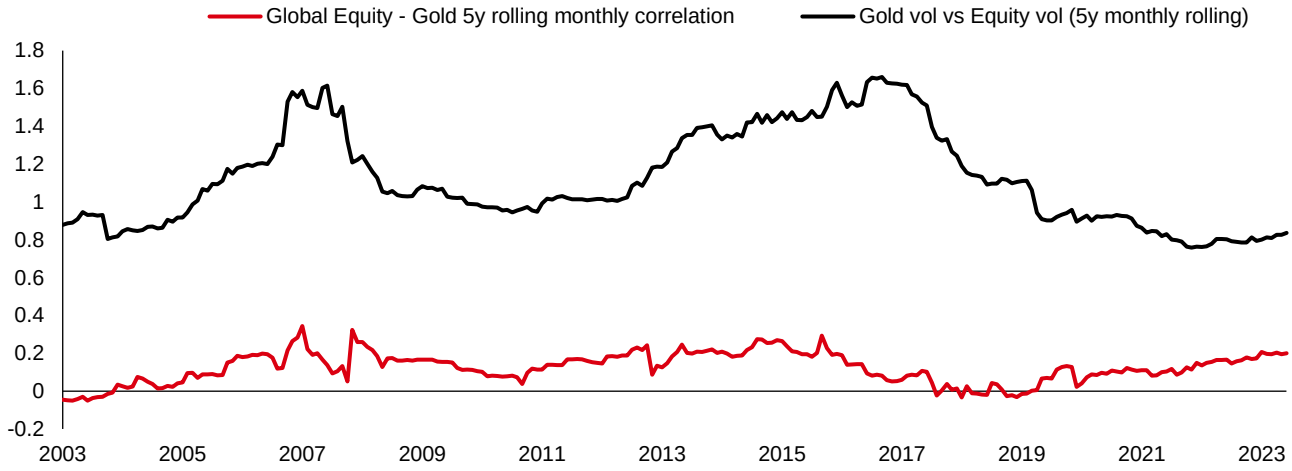
Diversifying properties of various asset classes

Figure 6: Asset class correlations (2005-2025)

	DM Equity	EM equity	Property	Global Sukuk Bonds	Global Government Bonds	Gold
DM Equity	1.00					
EM equity	0.81	1.00				
Property	0.84	0.72	1.00			
Global Sukuk Bonds	0.05	0.00	0.11	1.00		
Global Government Bonds	-0.10	-0.09	0.06	0.25	1.00	
Gold	0.15	0.27	0.21	0.06	0.16	1.00

Gold exhibits low positive correlations to equities suggesting that whilst it doesn't necessarily qualify as a strong hedging asset on average, it nevertheless offers important diversification benefits. What's more, this low correlation holds over time (Figure 7), providing continued portfolio diversification and potentially improved risk-adjusted returns.

Figure 7: 5y rolling monthly equity-gold relative volatility and correlation

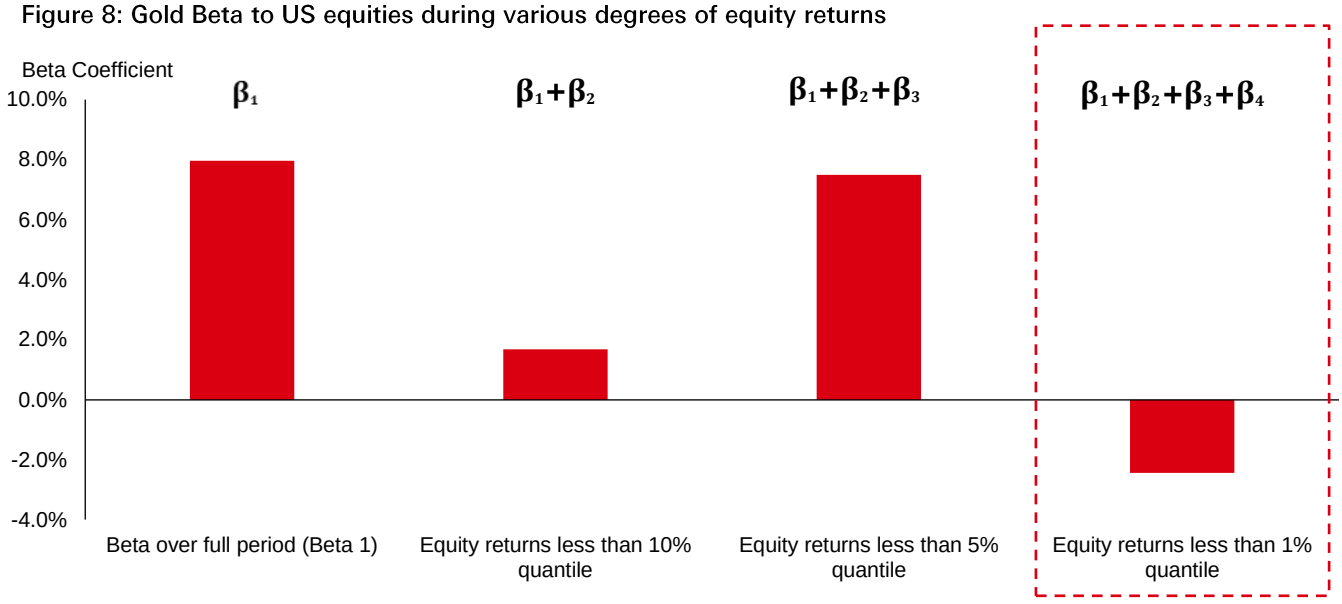


When considering the de-risking role, gold doesn't look as attractive; relative volatility is as high as, or at times, higher than equities, suggesting gold isn't as effective as government bonds in de-risking portfolios.

Diversification via Gold

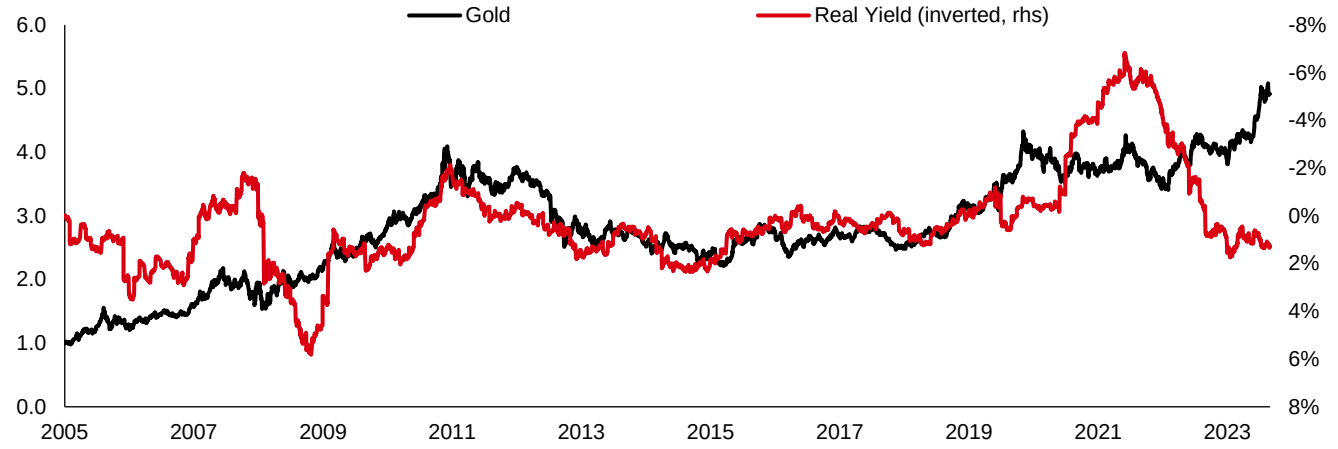
Following the approach of Gomes et al (2023), we look at the regression of gold returns onto US equity returns. In comparison to Sukuk bonds, **Gold looks to be a more effective safe haven to equity risk**. In particular, Gold shows safe haven properties in the worst equity return periods (less than 1% quantile).

Figure 8: Gold Beta to US equities during various degrees of equity returns

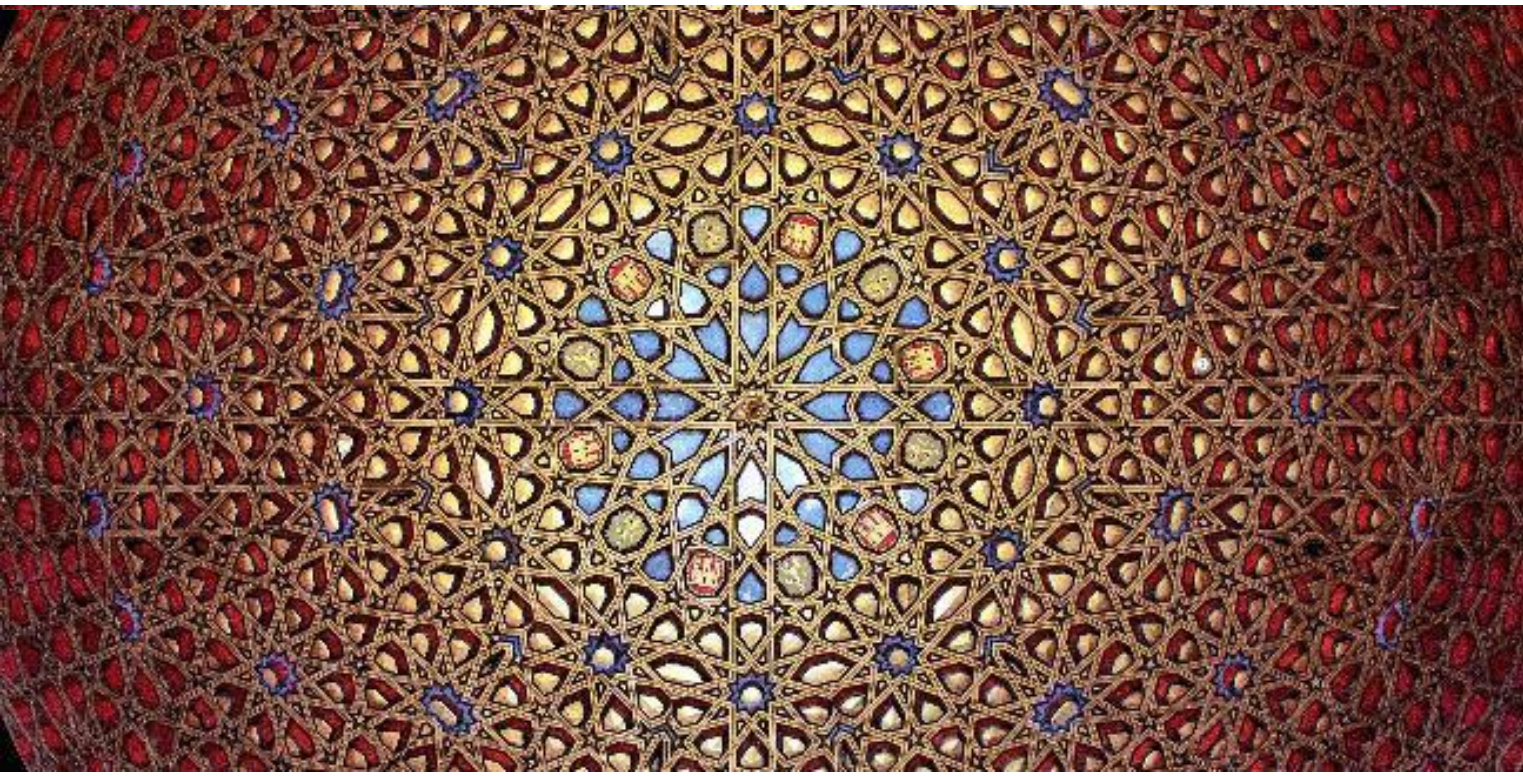


Gold has also tended to be a reliable inverse proxy to real rates, with rising (falling) real yields leading to weaker (stronger) gold performance given the increase (fall) in the opportunity cost of holding gold. Recently, we have seen some decoupling in this relationship recently due to rising central bank demand for gold; this tailwind is expected to continue as central banks diversify foreign reserves away from US dollars and other DM currencies.

Figure 9: Gold prices have an inverse relationship with US real yields



Conclusion



HSBC Asset Management

Conclusion

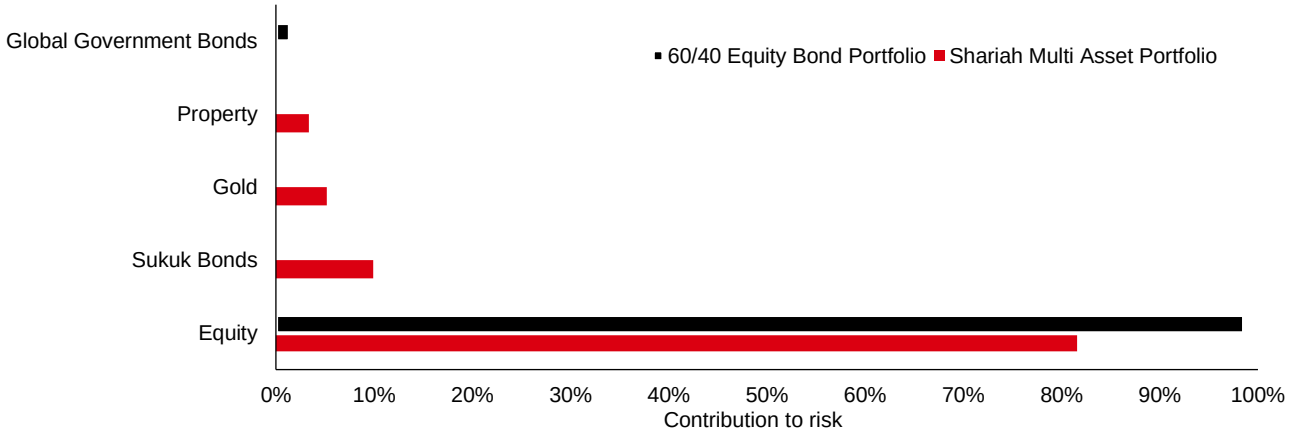
Our analysis shows that **no single asset class exhibits all the risk free asset characteristics of conventional government bonds**. Gold doesn't have the same hedging or de-risking status, but offers good liquidity and safe haven characteristics. Sukuk bonds do not offer the same liquidity or safe haven properties, but could serve to de-risk in a multi-asset portfolio given lower volatilities compared to equities. They also present some hedging qualities, although not as strong as conventional government bonds. These two assets are very complimentary in these regards; w**e therefore seek to use a combination of gold and Sukuk bonds to provide a reasonable government bond proxy in Shariah multi-asset portfolios.**

Asset Class	Diversifier	Liquidity	De-risking	Safe Haven	Hedging
Gold	✓✓	✓✓	✗	✓✓	✗
Sukuk bonds	✓✓	✗	✓	✗	✓

To help decide the relative sizes for these positions in a portfolio, we look at the expected risk and return of each asset class, alongside their contributions to risk. Given the higher volatility in gold versus Sukuk bonds, it makes sense to have lower allocations in gold relative to Sukuk bonds in order to retain reasonable contribution to overall portfolio risk.

For a balanced portfolio we look to achieve overall portfolio volatility of 10%. To get to this, it means holding a gold allocation at 10%, Sukuk bonds at around 30%, and 60% in equities. The overall risk is driven by equities accounting for around 85% of portfolio volatility, whilst Sukuk bonds contribute 10% and gold 5% respectively. This differs from a conventional 60/40 balanced portfolio where nearly all of the risk is driven by the equity portion (Figure 10).

Figure 10: Contribution to risk in a balanced Shariah multi-asset portfolio vs conventional 60/40 portfolio

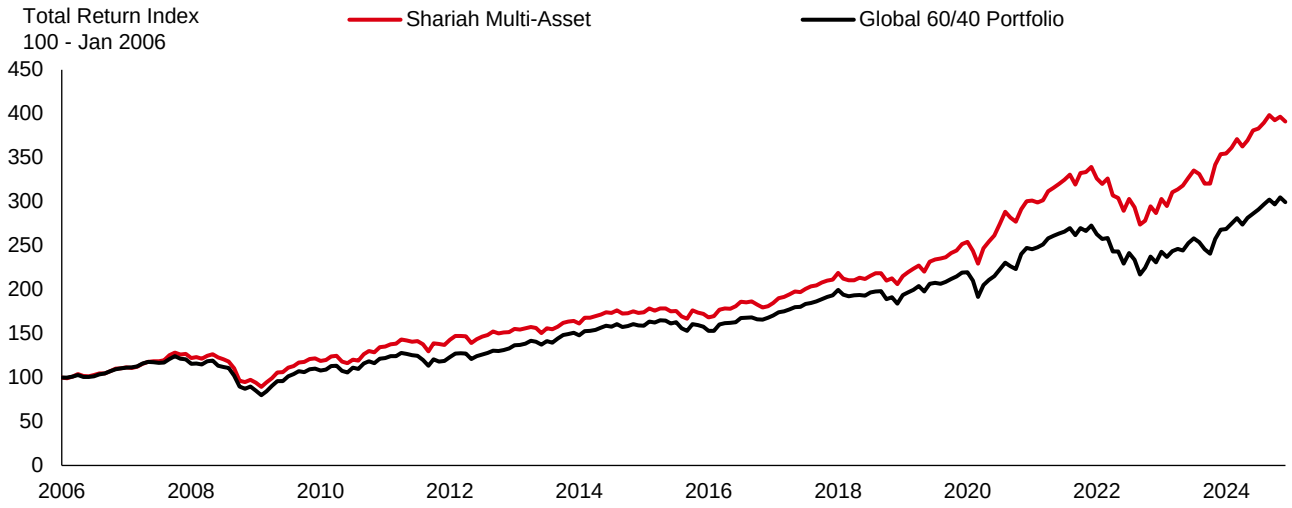


*Shariah Multi Asset portfolio weights: 57.5% Equity, 27.5% Sukuk Bonds, 10% Gold and 5% Cash
60/40 portfolio weights: 60% DM equity, 40% Global Government Bonds

Conclusion

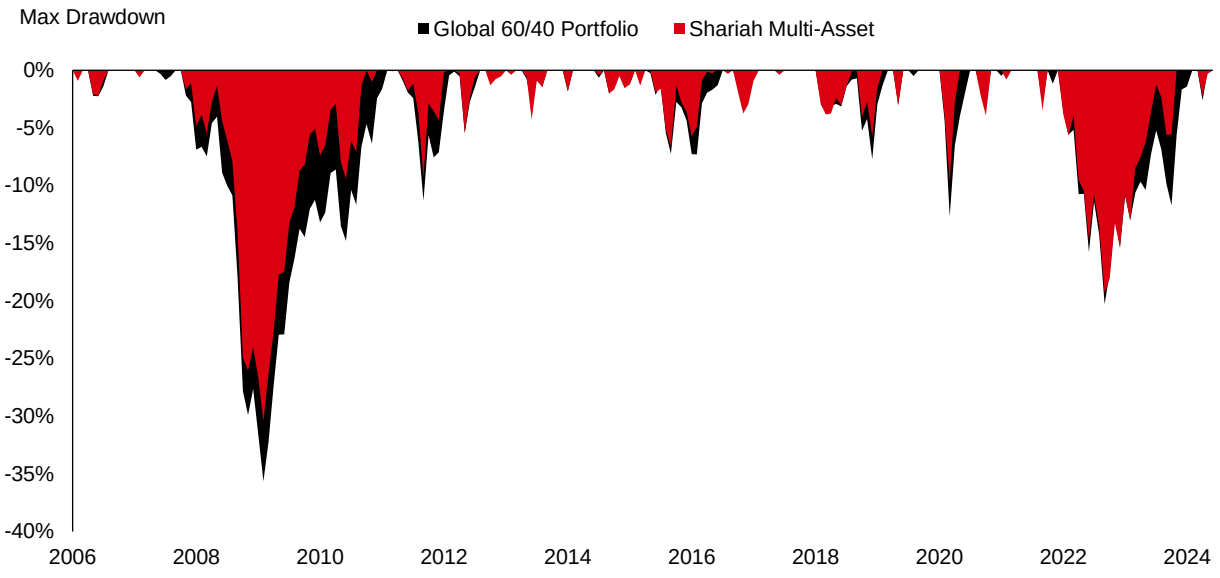
When combined in this way, the Shariah portfolio with a combination of Sukuk bonds and gold offer a more diversified source of risk contributors versus a conventional balanced portfolio. Moreover, long run performance also shows the **Shariah portfolio has consistently outperformed a traditional 60/40 portfolio** (Figure 11). This is also true in terms of risk-adjusted returns.

Figure 11: Performance of a Shariah Multi Asset portfolio versus conventional 60/40 portfolio (2006-2024)

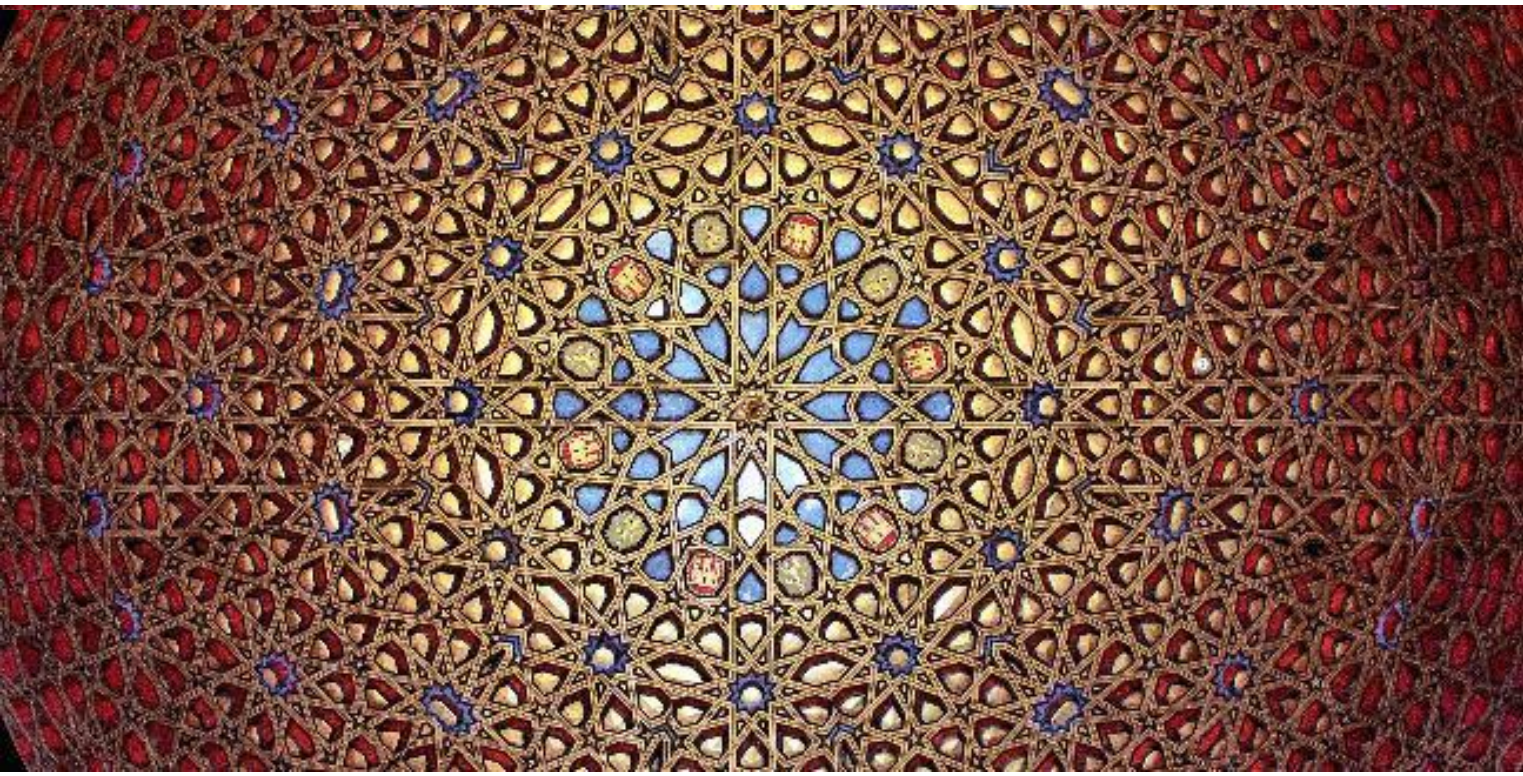


Finally, we analyse maximum drawdowns to get a sense of the degree of negative total returns investors would have experienced over 2006-2024. We find that on this metric, the Shariah portfolio also outperforms a conventional 60/40 portfolio (Figure 12).

Figure 12: Max drawdown analysis of Shariah Multi Asset portfolio versus conventional 60/40 portfolio



Appendix



HSBC Asset Management

Gomes et al (2023) analysis

Gomes et al (2023) assess the safe-haven and hedging properties of gold under various economic scenarios. We follow this approach to investigate the specific link for both gold and Sukuk bonds versus US equities. The below set up details the analysis between gold ($r_{gold,t}$) and US equity returns ($r_{stock,t}$) in normal conditions as well as in times of financial turmoil. The analysis for Sukuk bonds follows the same set up with $r_{gold,t}$ replaced with $r_{\text{sukuk},t}$:

$$r_{gold,t} = \alpha + \beta_1 \cdot r_{stock,t} + \beta_2 \cdot r_{stock,t} \cdot D(q_{10\%}) + \beta_3 \cdot r_{stock,t} \cdot D(q_{5\%}) + \beta_4 \cdot r_{stock,t} \cdot D(q_{1\%}) + \varepsilon_t$$

$D(q_{X\%})$ are dummy variables which are added to investigate the relationship between gold and stock returns in times of financial turmoil. $D(q_{X\%})$ will be one when stock returns are smaller than the X% quantile of the return distribution, and zero otherwise.

β_1 measures the average effect of global equity returns on gold returns. If $\beta_1$is negative and significantly different from zero, it indicates the role of gold as a potential hedge.

$\beta_{2,3,4,}$ measure the sensitivity of global stock returns and gold returns in times of market stress. In falling markets, the total effect is computed as the sum of the coefficients up to the given quantile. For example, the total effect of stocks on gold to the 5% quantile would be $\beta_1 + \beta_2 + \beta_3$. If this value is negative and significantly different from zero, it indicates the role of gold as safe haven for a certain level of equity drawdown.

Our dataset consists of the daily total returns of US equity index, Gold and Sukuk Bonds from October 2005 to December 2024.