

Dancing With Correlation

In this white paper, we explore the correlation between Islamic investment certificates, including *sukuk*, and other investment asset classes as a means of better understanding the risk and return characteristics of this unique and distinct asset class.



Amana Mutual Funds Trust



About Amana Mutual Funds Trust

At the Amana Mutual Funds Trust and Saturna Capital, we endeavor to align our investments with our principles.

The Amana Funds favor companies with low price-to-earnings multiples, strong balance sheets, and proven businesses. They follow a value-oriented approach consistent with Islamic finance principles. Generally, these principles require that investors avoid interest and investments in businesses such as liquor, pornography, gambling, and banks. The Funds avoid bonds and other conventional fixed-income securities.

Please consider an investment's objectives, risks, charges, and expenses carefully before investing. To obtain this and other important information about the Amana Mutual Funds in a current prospectus or summary prospectus, please visit www.amanafunds.com or call toll free 1-800-728-8762. Please read the prospectus or summary prospectus carefully before investing.

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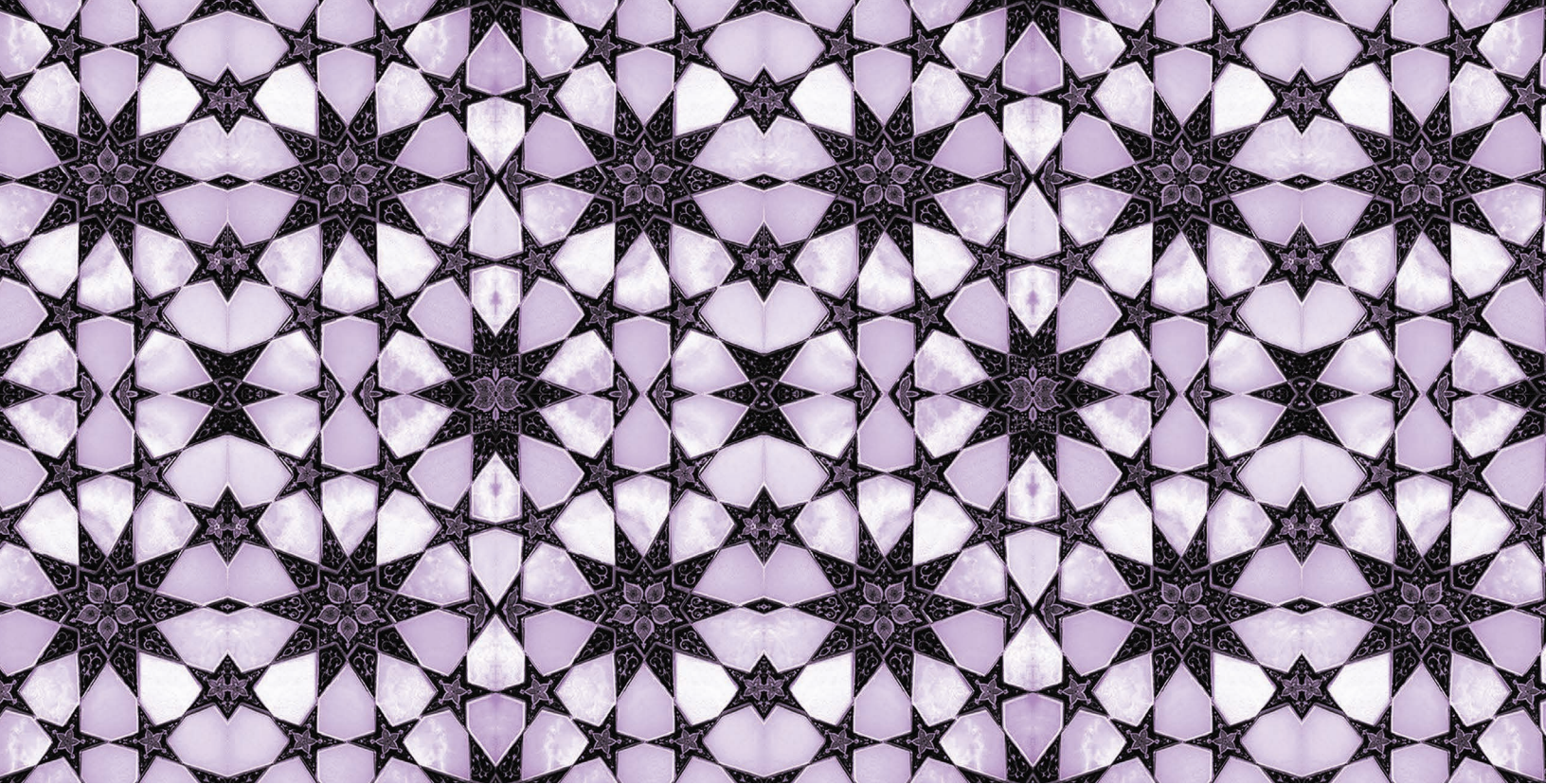
Dancing With Correlation

Asset classes often interact in predictable ways. We know, for example, that when equities perform well, bonds tend to perform poorly. While this is not always the case, investors can benefit from awareness of basic underlying assumptions when formulating an asset allocation strategy. But what happens when we are faced with a relatively new and unfamiliar asset class? How will we expect that asset class to behave under certain circumstances? This scenario is not unlike learning a new style of dance or becoming familiar with the idiosyncrasies of a new dance partner. Here we explore the market behavior of *sukuk* and how they move and interact with — or correlate to — other asset classes.

You are probably familiar with the various characteristics of different dance styles. For instance, the tango involves elongated, dramatic, almost exaggerated movements as each partner interacts with an amorous flair. Meanwhile, *dabke al-shamaliyya* expresses an entirely different dance style, often performed at weddings and other joyous occasions, that requires the dancers to form a line, jumping and stomping while arm in arm. Mevlana dervishes perform the *Sema*, whirling and saluting, representing a mystical journey of spiritual ascent.

With investments, we anticipate certain asset classes to interact with broad market indices in predictable patterns, like expecting a dance partner to engage a specific way. Investment professionals refer to this interaction as correlation. As an example, under favorable economic conditions, characterized by steady economic growth, low inflation, healthy job creation, and modest overall debt metrics, we would expect broad equity markets, as reflected in the S&P 500 Index, to perform well. On the flip side, if we anticipate a deep recessionary environment, we would expect the S&P 500 Index to underperform.

The question of how Islamic investment certificates would move or behave in relation to other investment classes is worth exploring, particularly when you consider that Islamic investment certificates, such as *sukuk*, are distinct from equities, conventional debt, and cash.



Defining Correlation

**Correlation —
a mutual
relationship or
connection between
two or more things.**

We look to correlation as a means of measuring how two investments interact with one another. Correlation can help you predict whether investments may zig or zag and can also help you anticipate the degree of movement. As such, if two assets are perfectly correlated, meaning they move synchronously like a chorus line of Rockettes at Radio City Music Hall, then their correlation would equal one. On the other end of the spectrum, two investments that move exactly in opposite directions would have a correlation equal to negative one. Lastly, if we find no measurable relationship between two investments, their correlation would be zero.

What are *Sukuk*?

Sukuk is the plural of *sak*, an Arabic word translated as deed, instrument, or legal document. *Sukuk* are financial certificates having characteristics similar to conventional bonds. Generally *sukuk*:

- have a stated maturity date;
- offer a stated annual investment income rate, similar to a coupon offered by a conventional bond; and
- may obtain a credit rating from well recognized credit rating agencies, such as Moody's and Standard & Poor's.

It is important to note that while *sukuk* may share similar features with conventional bonds, unlike conventional bonds, they typically reflect an undivided beneficial ownership interest in an underlying asset, similar to a stock. The returns of the underlying asset provide the investment return, and *sukuk* holders share in the underlying asset's profits as well as potential losses.

Sukuk are a distinct asset class.¹

Sukuk vs. Conventional Bonds

	Sukuk	Conventional Bonds
Underlying Asset	Proof of ownership in an asset	Debt obligation
Legal Structure	Holders each hold an undivided beneficial ownership in underlying assets	Issuer has a contractual obligation to pay bond holders interest and principal on certain specified dates
Halal considerations	The underlying assets are <i>halal</i>	n/a
Pricing	Pricing based upon value of underlying assets	Pricing based on credit rating of issue and issuer
Valuation	Buyers purchase assets that have value	Buyers act as creditors in implicit loan agreement
Investment rewards and risks	Holders receive a share of profits from the underlying assets (and accept a share of any loss incurred)	Holders receive regularly scheduled interest payment for the life of the bond, and the principal is returned at the bond's maturity date

Sukuk are structured according to Islamic principles, which prohibit contracts that provide for the payment of interest, otherwise known as *riba*. Though *sukuk* differ from conventional debt securities, it is important to note that they are subject to both interest rate and credit risk.



Dispelling False Assumptions

All investments have risks that should be carefully considered, and Islamic investment certificates are no different. Based on their bond-like characteristics, *sukuk* face some of the same risks familiar to bond investors. Other presumed risks may be based on false assumptions. Correlation helps us better understand these risks while we also acknowledge that it is only one metric of many used to assess and measure risk and return potential.

Islamic investment certificates tend to originate from Islamic issuers domiciled in the Middle East, such as Bahrain, Kuwait, Oman, Saudi Arabia, United Arab Emirates, Qatar, and Yemen, or from Southeast Asian countries, such as Malaysia and Indonesia. These geographic regions tend to have economies dependent on commodity-based industries, such as oil and natural gas. As a result, many investors may assume that Islamic investment certificates' performance is highly dependent on and correlated to the price of oil or other commodities.

In fact, the price movement of oil has little correlation to the investment performance of Islamic investment certificates. Based on three-year correlation data, calculated using monthly return frequency intervals of the Citi Sukuk Index,² the correlation of *sukuk* securities to Brent crude, the generic West Texas Intermediate Crude price, is an extremely low 0.14.

While the low correlation may surprise you, this relationship can be attributed to several factors, though predominantly explained by one. Islamic investment certificates are structured so that investors become owners of income-generating assets. A small percentage of *sukuk* issues structured to rely on oil or natural gas assets would be expected to exhibit greater commodity price sensitivity.

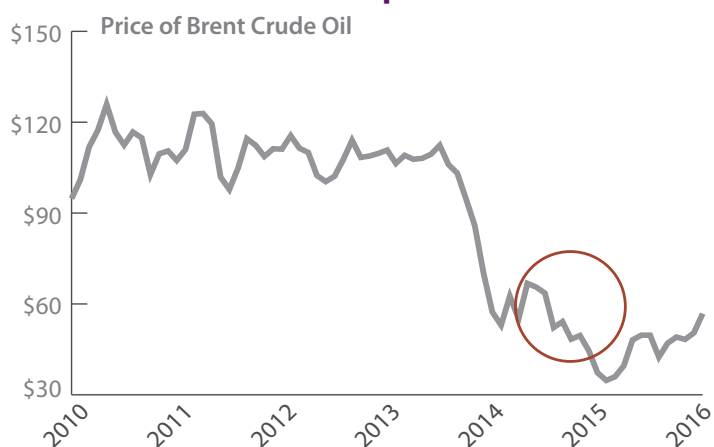
To meet the requirements of Islamic principles, *sukuk* must represent ownership or beneficial ownership interest in assets or a commercial enterprise.³ That the security itself must include some minimum underlying tangible asset component to generate its investment return is a key differentiator from conventional bonds, which generate income from interest on debt rather than income from productive use of assets.



Islamic investment certificates' underlying tangible assets — and the expectation of steady income from them — can help reduce short-term price volatility relative to the broader equity and bond markets. Some Islamic scholars are comfortable with a face value threshold of at least 33% physical assets underlying *sukuk* structures; other scholars require between 51% and 70%.⁴ The result is that Islamic-compliant investment certificates typically have a significant asset-backed component as part of their underlying investment structure. The assets could be equipment, real estate, infrastructure, or other operating assets, such as a dock. *Sukuk al-ijara*, for example, are typically structured as an asset-backed lease.

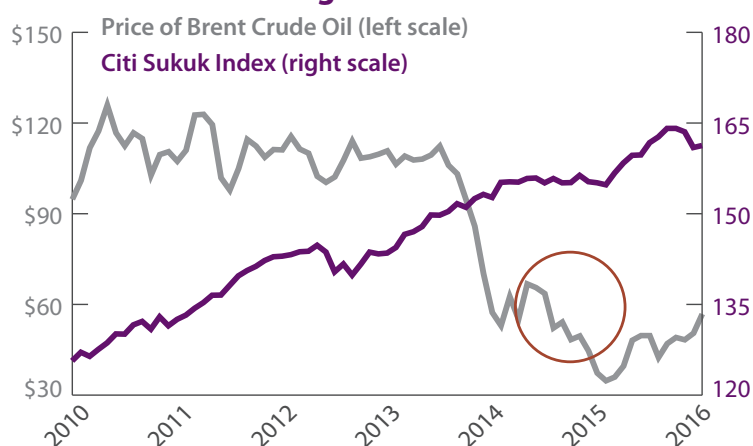
Sukuk that originate from sovereign economies heavily dependent on the export of crude oil are not entirely insulated from oil price movements. However, rather than directly affecting the investment's underlying income-generating assets, oil price sensitivity can affect the issuer's credit rating or demand for the products or services the assets may deliver. For example, over the last few years we have seen that oil experienced a pronounced drop in price following Saudi oil minister Ali al-Naimi's decision in 2015 to "stick by its policy of unconstrained output for another six months."⁵ Saudi Arabia's announcement swiftly affected investors' sentiment regarding securities that originate from oil-producing countries. Saudi Arabia later was downgraded by S&P Global Ratings from AA- to A+, with a "negative outlook," citing a pronounced swing in the country's fiscal balance.⁶ This explains, in part, Saudi Electric Company's subsequent poor security performance. The accompanying illustration provides a history of oil's price with a notation highlighting oil's rapid price change in June of 2015.

Oil — Unconstrained Output?





Oil and Sukuk — Tango Fantasia?



We also observed the opposing price movement of the Citi Sukuk Index versus the price of oil during the same period.

The second common misconception regarding *sukuk* is that they exhibit characteristics of global debt since they originate from emerging or frontier countries. In fact, we find that *sukuk* markets correlate more closely with US debt markets than with global fixed-income markets. The Citi Sukuk Index has a relatively lower correlation of 0.71 to the Bank of America Merrill Global Fixed Income Index that broadly represents global fixed-income markets compared to

the correlation of 0.76 between the Citi Sukuk Index and Bloomberg Barclays US Aggregate Index that represents US fixed-income markets.

While the high correlation may come as a surprise, we point out that the Citi Sukuk Index is US dollar-denominated, and that *sukuk* securities share a number of similarities with conventional debt.

Correlation Results

The three-year correlation characteristics (as of 12/31/2016) of the Citi Sukuk Index by asset class suggest diversification benefits associated with *sukuk* securities:

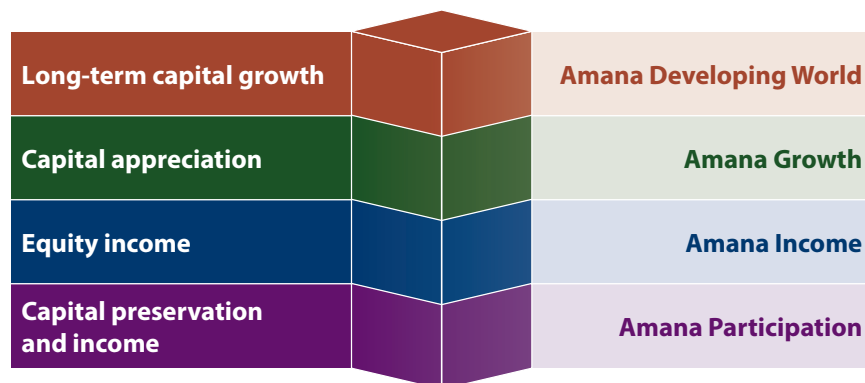
Citi Sukuk Index: Correlation to Selected Benchmarks	Asset Category	Correlation
Bloomberg Barclays US Aggregate	US Fixed Income	0.756
BofA Merrill Global Fixed Income	Global Fixed Income	0.709
MSCI All World Index	Global Equities	0.396
S&P 500 Index	US Equities	0.263
Rogers International Commodity Ex-Energy Index	Broad Commodities	0.211
Brent Crude Active Contract	Oil	0.140

The Amana Participation Fund Helps Diversify Risk

We recognize that Muslim investors who follow Islamic principles traditionally have found their asset allocation options limited to equities and cash to meet their financial planning needs. To help investors diversify, we created the **Amana Participation Fund**, the first dedicated *sukuk*, *halal* income fund offered in the US. The Amana Participation Fund presents an opportunity to gain access to a third asset class: a non-equity, income-producing asset with historically lower volatility compared to equities.

The Amana Participation Fund's investment objectives are preservation of principal and current income. The Fund seeks to offer non-equity income and aims for lower volatility than equities. The Fund is neither a cash alternative nor a deposit account and is best suited for investors with an investment time horizon of at least two years. Please carefully review the Fund's prospectus regarding risks and disclosures before investing or seek the advice of a professional adviser.

The Amana Mutual Fund Family



Whether you are dancing the tango, dabka, or waltz, knowing the first step can help you ease into making proper and educated investment decisions. Knowing the correlation of your investments and asset classes is like knowing the dancing style of your partner. Both can help you prepare for sudden moves in the future and anticipate what steps to take next.

About The Author



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Amana Participation Fund Portfolio Manager

Patrick T. Drum, Research Analyst and Portfolio Manager, joined Saturna Capital in October 2014.

He is a select member of the United Nations Principles for Responsible Investment (UNPRI) Fixed Income Outreach Subcommittee and an adjunct professor of finance at Pinchot University, formerly known as Bainbridge Graduate Institute (BGI). Mr. Drum has nearly 10 years of experience integrating ESG considerations into fixed income portfolio management.

He holds a BA in economics from Western Washington University and an MBA from Seattle University Albers School of Business. He is a Chartered Financial Analyst Charterholder (CFA) and a Certified Financial Planner®. Mr. Drum has more than 20 years of investment experience in serving institutions and private clients.

Footnotes

¹ International Monetary Fund (IMF), *The IMF and Islamic Finance*, March 2015.

² Saturna research using Bloomberg data October 2005 to December 2016.

³ Sukuk Shari'ah Standards, Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), February 2008.

https://islamicbankers.files.wordpress.com/2008/09/aaofi_sb_sukuk_feb2008_eng.pdf

⁴ *The Sukuk Handbook: A Guide To Structuring Sukuk*. Latham & Watkins LLP.

<https://www.lw.com/thoughtLeadership/guide-to-structurings-sukuk-2015>

⁵ Lawler, A., El Gamal, R. OPEC agrees to keep pumping as oil glut fears persist, Reuters, June 5, 2015

<http://www.reuters.com/article/us-opec-meeting-idUSKBN0OK2KL20150605>

⁶ Research Update: Ratings On Saudi Arabia Lowered To 'A+/A-1'; Outlook Remains Negative. S&P Global Ratings, October 30, 2015.

http://www.standardandpoors.com/en_US/web/guest/article/-/view/sourcelid/20015252



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Investing involves risk, including possible loss of principal. Generally, an investment that offers a higher potential return will have a higher risk of loss. Stock prices fluctuate, sometimes quickly and significantly, for a broad range of reasons that may affect individual companies, industries, or sectors. When interest rates rise, bond prices fall. When interest rates fall, bond prices go up. A bond fund's price will typically follow the same pattern. Investments in high-yield securities can be speculative in nature. High-yield bonds may have low or no ratings, and may be considered "junk bonds." Investing in foreign securities involves risks not typically associated directly with investing in US securities. These risks include currency and market fluctuations, and political or social instability. The risks of foreign investing are generally magnified in the smaller and more volatile securities markets of the developing world.

In addition to the fixed-income market risks above, the Amana Participation Fund entails risks specific to investing in sukuk. Sukuk structures may be significantly more complicated than conventional bonds and often include a series of entities created specifically to support the sukuk structure. In addition, sukuk are largely created in or otherwise subject to the risks of developing economies, many of which have weak or inconsistent accounting, legal, and financial infrastructure. The structural complexity of sukuk, along with the weak infrastructure of the sukuk market, increases risks of investing in sukuk, including operational, legal, and investment risks.

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