



GCC SUKUK: A PRIMER

**Investment Characteristics of US Dollar-Denominated Sukuk
Originating from the Gulf Cooperation Council**

2nd Edition

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Saturna Capital, manager of the Amana, Saturna Sustainable, Sextant, and Idaho Tax-Exempt Funds, uses years of investment experience to aid investors in navigating today's volatile markets. Founded in 1989 by professionals with extensive experience, Saturna has helped individuals and institutions build wealth, earn income, and preserve capital.

We are long-term, values-based, and socially responsible investors. We view consideration of environmental, social, and governance (ESG) factors as essential in forming portfolios of high-quality companies that are better positioned to reduce risk and identify opportunities. We believe that companies proactively managing business risks related to ESG issues make better contributions to the global economy and are more resilient.

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We are delighted to present the second edition of the GCC Sukuk Primer. This white paper describes the investment attributes and characteristics of the *sukuk* market for the period ended December 31, 2021.

This 2nd edition GCC Sukuk Primer provides an overview of the investment landscape and characteristics of Islamic-compliant investment certificates, commonly referred to as *sukuk*, a market niche that continues to evolve. We will cover the risk and return attributes of *sukuk* and explore their relationship to changes in the price of oil, since hydrocarbons largely drive *sukuk* issuers' economies. Our scope is limited to US dollar-denominated *sukuk*, primarily originating from members of the Gulf Cooperation Council (GCC), a collective coalition that comprises Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE).

We focus on the *sukuk* market in these six countries rather than on a global scale because there is limited research in this area, and the GCC has consistently led other regions in issuance of US dollar-denominated *sukuk*.

The GCC region's emerging market fixed-income communities are notable for their performance and relative stability, and for the development of the region's capital markets. Over 58 million people live in the GCC region, representing 0.8% of the world's population. While the region generates just 1.7% of global gross domestic product (GDP), it satisfies 31.3% the world's oil demand and has a significant influence on the world stage.¹



While this white paper focuses on *sukuk* issued from the GCC, we cannot overlook the region's equity markets, as their performance has humbled many developed world markets. The major equity indices in the region — the Abu Dhabi Securities Exchange Index, FTSE NASDAQ Dubai UAE 20 Price Return Index, and the Tadawul All Share Index — all outperformed, and in some cases doubled, the returns of key US equity benchmarks in 2021.

Total Issuance of US Dollar-Denominated GCC Sukuk (In \$ bn)

Index	Region	Symbol	2021 Performance
Abu Dhabi Securities Exchange	Abu Dhabi - UAE	ADSMI Index	75.09%
FTSE NASDAQ Dubai UAE 20 Price Return Index USD	Dubai - UAE	DUAED Index	61.75%
Tadawul All Share Index	Saudi Arabia	SASEIDX Index	33.19%
S&P 500 Index	United States	SPX Index	29.01%
NASDAQ Index	United States	CCMP Index	22.97%

Source: Bloomberg

It would make sense to credit the favorable equity and long-term *sukuk* performance in 2021 to high oil prices. But it would be naïve to ignore the underlying unique attributes of the region. There are remarkable social and economic changes influencing these markets that lie obscured and are often characterized by Western-based narratives and assumptions.

There are many factors motivating these structural changes, including the heightened priority to develop non-hydrocarbon industries to provide gainful employment for the region's young population. In Saudi Arabia, 66.5% of the population is under the age of 39, and 37.8% is under 29.² The country is also working to transition away from a social and business model that is dependent upon government subsidies. In March of 2021, Mohammad bin Salman, the crown prince of Saudi Arabia, announced the launch of Shareek, an ambitious program that will “enhance the contribution of local companies towards the country's economic growth, development and success.” The program will invest 27 trillion riyals (\$7.2 trillion) in the private sector over the next 10 years. This investment is worth 10.2 times the country's GDP in 2020. Shareek aims to create hundreds of thousands of new jobs and increase the private sector's contribution to GDP by 65% as part of the Vision 2030 program.³



Saudi Arabia isn't the only one using significant financial backing to move toward a low-carbon economy. In May of 2021, the government of the UAE announced their plan to build a \$1 billion facility in the Khalifa Industrial Zone to produce 200,000 metric tons of green ammonia per year.⁴

Despite being rich in energy sources, the GCC faces an energy shortage due in part to the region's extremely hot summers and population growth, which is projected to increase 20% over the next 10 years.⁵ About 70% of the overall electricity consumption in the UAE occurs during the summer months, primarily due to the use of air conditioning systems. Parts of the region have begun to use district cooling systems, which are estimated to save up to 50% of energy consumption.⁶ Operators include Tabreed, also known as the National Central Cooling Company PJSC. Tabreed and its peers provide large, industrial-scale cooling facilities that are also environmentally friendly. Tabreed reported that by year-end 2020, it had reduced 1.35 million tons of CO₂ emissions through its operations, equivalent to removing 293,000 automobiles from the road.⁷

The GCC region is growing its environmentally friendly capital markets through the development of green finance, such as green *sukuk* and bonds. On March 17, 2015, the National Bank of Abu Dhabi, now First Abu Dhabi Bank (FAB), issued the region's first US dollar-denominated green bond, raising \$587 million for its five-year note yielding 3%. Since then, the GCC's green bond market has evolved in many ways. Today, offerings include investment objectives that explicitly incorporate environmental, social, and governance (ESG) considerations in conjunction with the Islamic faith. At Saturna Capital we're proud to be among the first investment firms to analyze the investment attributes of the green *sukuk* market, which can be explored in our white paper "Green *Sukuk*: A New Legacy for Green Sprouts?" from November of 2019.

We see further developments in the greening of the GCC's financial markets. According to Fitch, green and sustainable *sukuk* volumes expanded by 17.2% year-over-year in 2021 to \$15 billion and are likely to remain prominent in 2022.⁸

Over the five years ended 2020, the GCC's market share for US dollar-denominated *sukuk* issuance has averaged 48.0%.⁹ While Malaysia remains the largest *sukuk* issuer, commanding 30.8% of 2020's global *sukuk* issuance,¹⁰ the country issued only 5.0% of US dollar-denominated *sukuk*.¹¹ At year-end 2020, US dollar-denominated *sukuk* represented 23.9% of all *sukuk* issued, exceeding the average yearly issuance of 22.5% from 2001 through 2020.^{12,13} As of December 31, 2020, the total value of all outstanding *sukuk* surpassed \$630.1 billion.¹⁴

At year-end 2021, total global US dollar-denominated *sukuk* issuance was \$48.8 billion, reflecting a 9.1% year-over-year increase, trailing its three-year compound annual growth rate (CAGR) of 12.7%. For the same period, the GCC region issued 43.3% of all US dollar-denominated *sukuk*, below a three-year average of 49.2%, while supranational issuers represented 37.7%, above a three-year average of 35.3%.

For maturities longer than one year, total global US dollar-denominated *sukuk* issuance at year-end 2021 was \$34.6 billion, reflecting an 8.5% year-over-year increase and below a three-year CAGR of 10.5%. For the same period, the GCC represented 61.0% of total issuance, below a three-year average of 67.4%, followed by supranational issuers at 12.4%.

What is the GCC?

The GCC is an acronym for the Gulf Cooperation Council, a political and economic alliance of six countries in the Arabian Peninsula. Its members include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). The GCC was established in 1981 to promote security and stability for its members¹⁵ and has an estimated population of 54 million.¹⁶ Based upon IMF's projections for year-end of 2020, the estimated total GDP of the GCC nations was about \$1.38 trillion, about 6.7% of the United States's GDP by comparison.¹⁷

From January 2001 through December 2020, the Malaysian ringgit (MYR) was the top currency for *sukuk* issuance, representing 50.55% followed by US dollar-denominated *sukuk* representing 22.51% of total issuance, according to the International Islamic Financial Market.¹⁸ For 2020, Malaysian ringgit represented 30.78% of total *sukuk* issuance and the US dollar-denominated *sukuk* market represented 23.97%.¹⁹

Total Issuance of US Dollar-Denominated GCC Sukuk (In \$ bn)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
All Maturities	18,450	27,560	21,593	32,435	38,708	34,096	38,499	44,741	48,834
Maturities > 1-yr	17,470	21,760	15,193	24,475	28,858	25,668	29,406	31,954	34,674
Duration > 1-yr	94.7%	79.0%	70.4%	75.5%	74.6%	75.3%	76.4%	71.4%	71.0%
Duration < 1-yr	5.3%	21.0%	29.6%	24.5%	25.4%	24.7%	23.6%	28.6%	29.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Distribution of US Dollar-Denominated GCC Sukuk Issuance of All Maturities

	2013	2014	2015	2016	2017	2018	2019	2020	2021
GCC	61.0%	38.0%	28.3%	35.1%	49.6%	51.0%	54.9%	49.5%	43.3%
Supranational	14.5%	37.7%	37.5%	35.3%	33.8%	32.9%	32.0%	36.1%	37.7%
Pakistan	0.0%	3.6%	0.0%	3.1%	2.6%	0.0%	0.0%	0.0%	0.0%
Turkey	11.9%	8.5%	1.2%	5.7%	3.5%	1.5%	5.8%	5.5%	6.3%
Europe	0.1%	0.1%	0.0%	0.3%	0.0%	2.3%	0.5%	2.2%	0.6%
Hong Kong	0.0%	3.6%	4.6%	1.2%	2.6%	0.0%	0.0%	0.0%	0.0%
Indonesia	8.1%	5.4%	11.6%	7.7%	7.8%	9.1%	5.5%	5.6%	6.1%
Malaysia	4.3%	2.9%	16.8%	11.5%	0.1%	3.1%	1.3%	1.1%	5.0%
Maldives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Distribution of US Dollar-Denominated GCC Sukuk Issuance with Maturities > 1-year

	2013	2014	2015	2016	2017	2018	2019	2020	2021
GCC	64.4%	48.1%	40.2%	46.5%	66.6%	67.7%	71.9%	69.3%	61.0%
Supranational	9.7%	21.1%	11.2%	14.3%	11.2%	12.2%	11.2%	13.1%	12.4%
Pakistan	0.0%	4.6%	0.0%	4.1%	3.5%	0.0%	0.0%	0.0%	0.0%
Turkey	12.6%	10.8%	1.6%	7.6%	4.7%	0.8%	7.6%	5.2%	8.9%
Europe	0.1%	0.2%	0.0%	0.4%	0.0%	3.1%	0.4%	3.0%	0.7%
Hong Kong	0.0%	4.6%	6.6%	1.6%	3.5%	0.0%	0.0%	0.0%	0.0%
Indonesia	8.6%	6.9%	16.5%	10.2%	10.4%	12.1%	7.1%	7.8%	8.7%
Malaysia	4.6%	3.7%	23.9%	15.2%	0.2%	4.2%	1.7%	1.6%	7.0%
Maldives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Bloomberg, Saturna Capital research

Access to the Markets

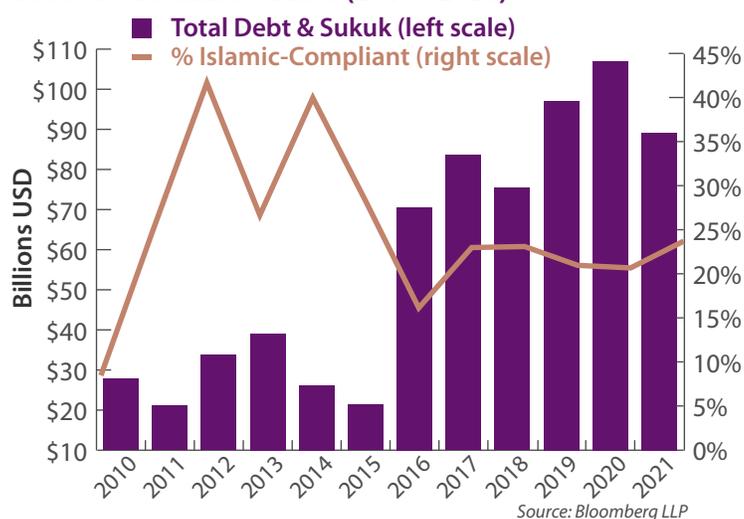
Broadly speaking, GCC members were not active issuers of debt nor *sukuk* before 2016.

Following the collapse of oil prices from 2014 to 2016, GCC members turned to capital markets to supplement government funding gaps. During that time, the price of oil dropped from a high of \$107.26 per barrel on June 20, 2014, to a low of \$26.21 on February 11, 2015 — a 75.6% decrease. For the next 15 months until October 6, 2016, the GCC members would not see the price of oil rise above \$50.00 per barrel.

Oil's rapid and pronounced decline placed each of the GCC members in a difficult fiscal position. To offset the decline in hydrocarbon revenues, they began drawing down their regional pools of savings, including sovereign wealth funds, to offset fiscal shortfalls. When it became clear that this drawdown wasn't going to offer a long-term solution, government leaders knew they needed an alternative. In 2015 Saudi Arabia consumed an estimated \$115 billion of its sovereign wealth fund's reserves, leaving them with a projected balance of \$600 billion in early 2016.²⁰ At that time, analyst forecasts saw Saudi Arabia drawing down another \$150 to \$200 billion if oil remained below \$40 per barrel in 2017.²¹ It was entirely plausible that Saudi Arabia could burn through its entire sovereign wealth fund in a matter of years.

In April of 2016, Abu Dhabi issued a \$5 billion bond to help offset a projected \$10 billion deficit. It was the UAE's first bond sale in seven years since selling \$1.5 billion in April 2009.^{22,23} Strong demand for Abu Dhabi's high investment-grade bond caused it to be oversubscribed. Investors placed over 600 orders exceeding \$17 billion²⁴ and other GCC members took notice of Abu Dhabi's success. This marked the onset of a new era as the region looked to external investors to help offset budgetary shortfalls. Later, GCC members looked to these investors as a primary source to fund other capital development and infrastructure projects. Not long thereafter, regional banks and nonfinancial corporate issuers came to the market for funding.

GCC Debt & Sukuk Issuance (2010 - 2021)

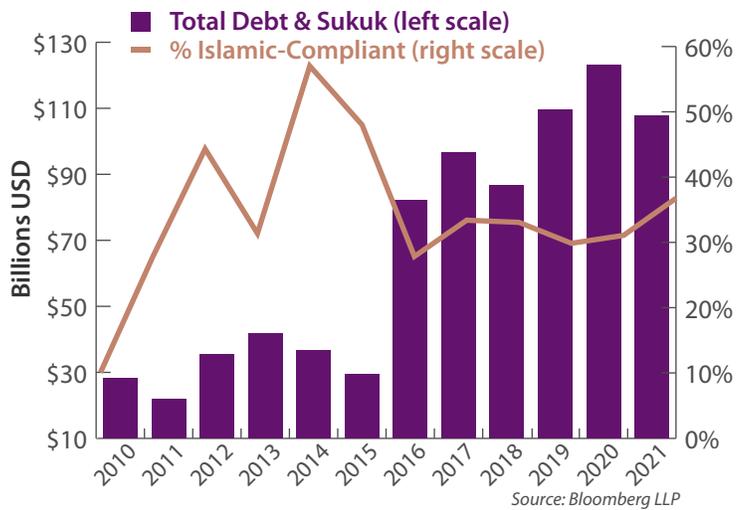


The GCC region has evolved to become an active issuer of both conventional debt and *sukuk*. As of year-end 2021, the GCC region issued \$107.6 billion in conventional debt and *sukuk* investment securities, a decrease of -12.6% from the prior year's issuance of \$123.1 billion and reflecting a three-year CAGR of 7.5%. As of year-end 2021, Islamic-compliant securities represented 36.8% of total security

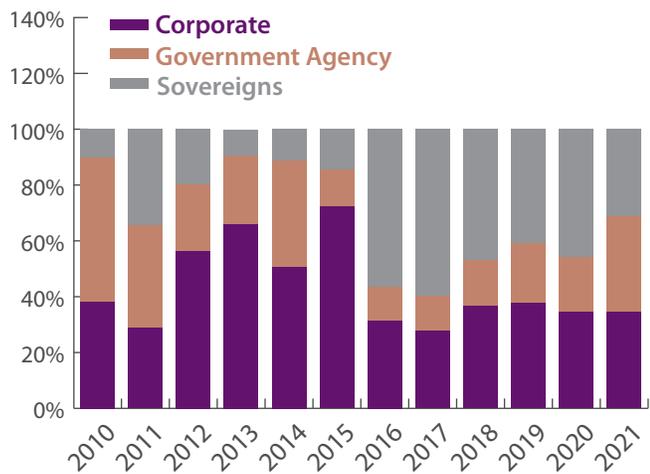
issuance, above its three-year average of 32.6%. In excluding Islamic-compliant supranationals, such as the Islamic Development Bank, *sukuk* represented 23.7% of security issuance in 2021, also above its three-year average, of 21.8%.²⁵

Regarding the US dollar-denominated *sukuk* market in the GCC, corporate issuers represented high *sukuk* issuance in both 2020 and 2021, representing 34.4% and 34.5%, respectively. Government agency-related issuers saw significant growth in *sukuk* issuance, originally representing 19.5% in 2020 and ending 2021 at 34.4%. Notably, sovereign issuance fell; in 2020, sovereigns represented 46.0%, but represented only 31.1% in 2021. This steep decline can be attributed to higher oil prices and the improvement of fiscal affairs in the GCC, after having to offset widening deficits and financial constraints caused by the pandemic in 2020.

All GCC & Supranational Debt & Sukuk Issuance (2010 - 2021)



GCC Issuer Type (2010 - 2021)



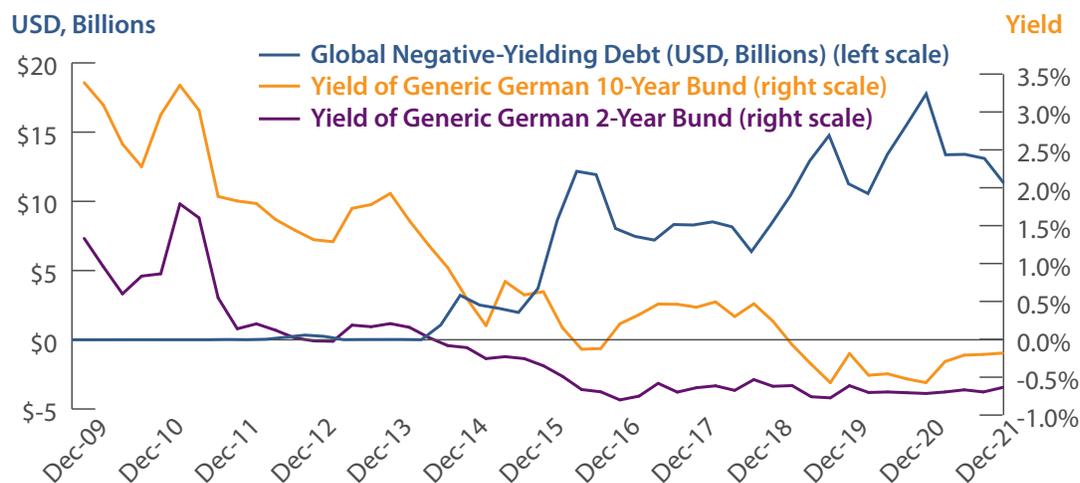
What's the Appeal for Investors?

GCC-issued debt and *sukuk* have several important and appealing attributes that attract investors. One of the alluring characteristics of the region is the potential yield enhancement, or profit rate, of GCC sovereign debt and *sukuk* relative to government-guaranteed debt of developed countries. Additionally, foreign investors find a compelling investment case in GCC members' high credit ratings, large pools of capital savings (sovereign wealth funds), and relatively low debt-to-GDP profiles in conjunction with their enormous hydrocarbon reserves. Essentially, during the oil crisis of 2014-2016, the GCC was facing a cash flow timing issue, not a capacity-to-pay issue.

What made foreign investors interested in GCC-issued debt and *sukuk*? After the Global Financial Crisis (GFC), investors faced historically low interest rates following extraordinary measures taken by central banks to stimulate economic growth and stabilize the worlds' economies. Negative-yielding interest rates emerged as a byproduct of these central bank measures; for example, as of December 31, 2021, the 10-year and two-year German government bond yields were -0.18% and -0.64%, respectively. At year-end 2021, negative-yielding debt exceeded \$11.3 trillion, down from an apex of \$18.4 trillion on December 11, 2020. However, leading into 2021, the stock of negative-yielding debt had expanded, partially due to inflation remaining largely benign at the onset of the extraordinary fiscal and monetary measures to promote economic stability following the onset of the coronavirus pandemic.

For large institutional, pension, insurance, and sovereign wealth investors, the knock-on effect of low interest rates has put them in a difficult position to find investments amid a "yield famine." However, central bank policy actions have created other dislocations in the market. In some instances, these global yield dislocations have distorted traditional risk and return rationales. It's not uncommon to see US Treasury yields above yields from other developed nations with lower credit ratings — even well over a decade after the GFC.

Total Stock of Negative-Yielding Debt, German 2- and 10-Year Bund Yield

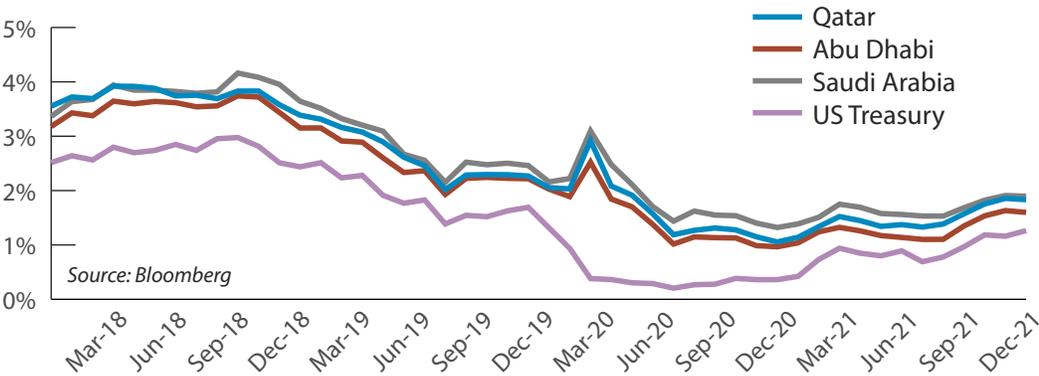


At year-end 2021, the yield of Greece’s 10-year debt was 1.32%, 19 basis points (bps) below the US Treasury yield of 1.51%.²⁶ It wasn’t that long ago that the Greek debt crisis threatened the very stability of the EU. Greece’s credit rating has since improved but remains in high-yield, junk bond status. S&P rates Greece’s credit at “BB” while the US retains a credit rating of “AA+”.

From February 2018 through December 2021, the average yield of Saudi Arabian five-year sovereign debt and *sukuk* was 106 bps above the five-year US Treasury note. For the same period, the average yield of Qatar and Abu Dhabi’s five-year sovereign debt and *sukuk* were 90 bps and 71 bps, respectively, above the five-year US Treasury note. Furthermore, many of the GCC members retain credit ratings that typically are only found among developed countries. For example, S&P rates Abu Dhabi sovereign debt and *sukuk* credit at “AA”, followed by Qatar at “AA-”, and Saudi Arabia at “A”. In comparison, S&P rates the US and the United Kingdom at “AA”, with China earning an “A+”.

Since the onset of the pandemic nearly two years ago, the yield enhancements offered by the selected GCC members have remained relatively consistent, along with their respective credit ratings. In our first edition of this white paper, for the period of February 2018 through February 2020, the average yield of Saudi Arabian five-year sovereign debt and *sukuk* was 103 bps above the five-year US Treasury note. For the same period, the average yield of Qatar and Abu Dhabi’s five-year sovereign debt and *sukuk* were 85 bps and 69 bps, respectively, above the five-year US Treasury note. Saudi Arabia’s composite credit rating improved from “A-” to “A” for that period while the UK’s rating fell from “AA+” to “AA”.

Selected 5-Year Yields Compared to US Treasury



Plenty in the Bank and Plenty in the Tank

Even though each member state in the GCC retains its own local currency, the region is characterized as a US dollar-based economy. Since hydrocarbon exports and imports are primarily paid in US dollars, the GCC members have pegged their local currency to the US dollar. Retaining a US dollar-pegged currency usually requires the governments of the region to adjust their interest rate policies in tandem with the Federal Reserve's interest rate policies. GCC liabilities, fiscal budgets, government receipts, and assets become US dollar-denominated proxies, which helps them avoid currency mismatches — a situation where a country's assets are denominated in their local currency while having their liabilities and obligations payable in another currency. Foreign investors find this attractive as it helps them to potentially sidestep adverse currency devaluations on their investments.

Ranking of Sovereign Wealth Funds			
Rank	Sovereign Wealth Fund	(\$ billions)	Country
1	Norway Government Pension Fund Global	\$1,339.28	Norway
2	China Investment Corporation	\$1,222.31	China
3	Kuwait Investment Authority	\$737.94	Kuwait
4	Abu Dhabi Investment Authority	\$697.86	UAE
5	Hong Kong Monetary Authority Investment Portfolio	\$585.73	Hong Kong
6	GIC Private Limited	\$578.00	Singapore
7	Temasek Holdings	\$484.44	Singapore
8	Public Investment Fund	\$480.00	Saudi Arabia
9	National Council for Social Security Fund	\$447.36	China
10	Qatar Investment Authority	\$366.74	Qatar
11	Investment Corporation of Dubai	\$302.33	UAE
12	Turkey Wealth Fund: Sovereign Wealth Fund	\$294.09	Turkey
13	Mubadala	\$243.00	Dubai
14	Korea Investment Corporation (KIC)	\$201.00	Korea
15	National Welfare Fund	\$183.36	Russia
Total		\$8,163.45	
Middle East Representation		\$2,827.87	34.6%

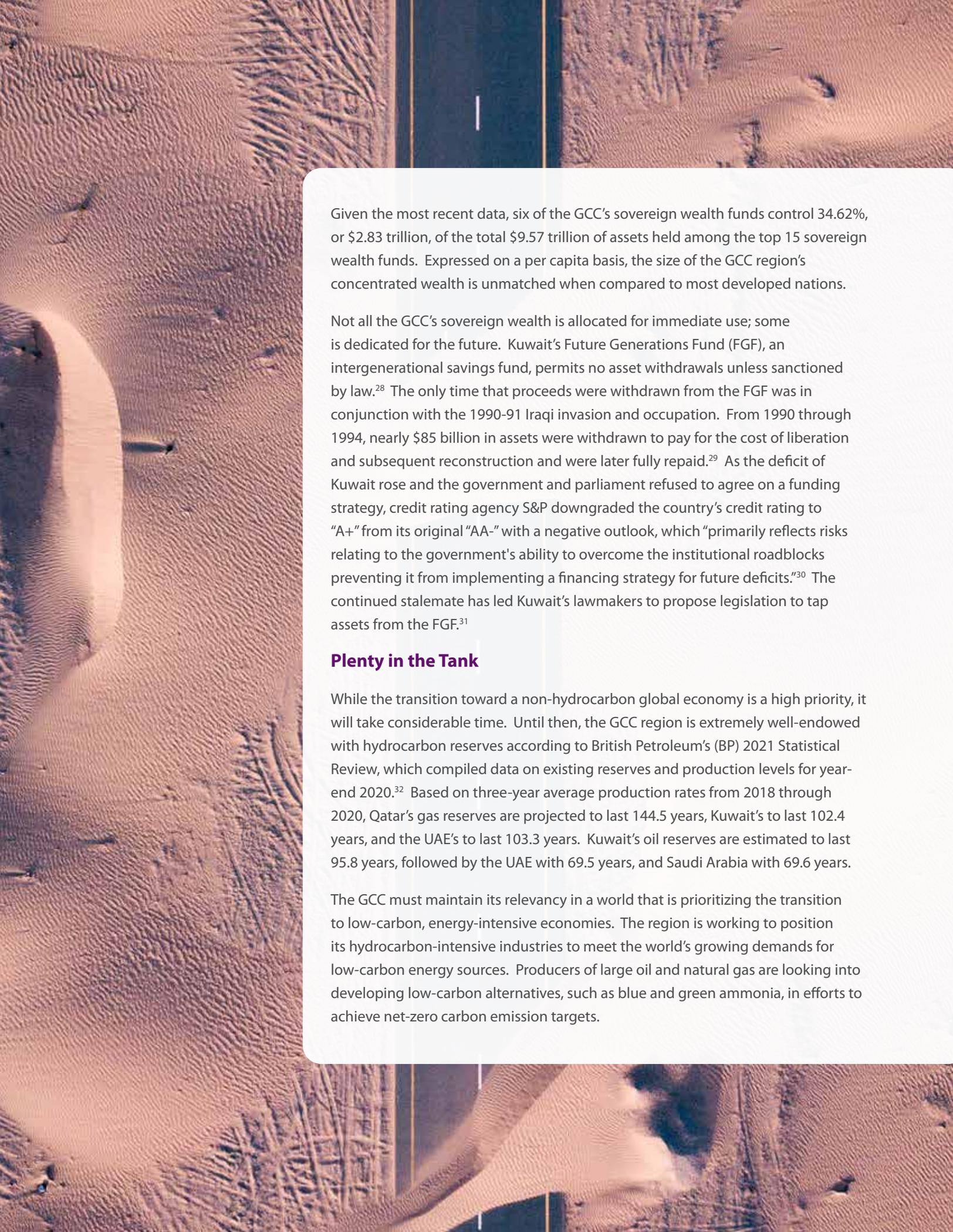
Source: Bloomberg

Plenty in the Bank

In 1938, Saudi Arabia began commercial production from its first oil well, Damman No. 7, aptly nicknamed the "Prosperity Well."²⁷ Over the next eight decades, Saudi Arabia and its fellow GCC members became major suppliers of the world's insatiable energy needs. In 2020, GCC members satisfied 31.3% of the world's oil demand, with Saudi Arabia representing 12.5%, the UAE at 4.21% and Kuwait at 3.13%. The GCC region has amassed enormous wealth since that first oil well. "Prosperity Well" indeed.

	Ratio (\$ / person)	Population (Exclude Expts)
Qatar	\$1,032,617.91	355,159
UAE	\$622,217.13	1,998,000
Kuwait	\$563,868.34	1,308,707
Singapore	\$252,688.54	4,204,548
Norway	\$246,119.20	5,441,591
Hong Kong	\$85,836.55	6,823,830
Saudi Arabia	\$21,589.93	22,232,591
S. Korea	\$3,915.22	51,338,136
Turkey	\$3,428.19	85,786,695
Russia	\$1,255.61	146,032,162
China	\$1,154.09	1,446,741,127

Source: Bloomberg

An aerial photograph of a desert landscape, showing sand dunes and a road. The image is used as a background for the text.

Given the most recent data, six of the GCC's sovereign wealth funds control 34.62%, or \$2.83 trillion, of the total \$9.57 trillion of assets held among the top 15 sovereign wealth funds. Expressed on a per capita basis, the size of the GCC region's concentrated wealth is unmatched when compared to most developed nations.

Not all the GCC's sovereign wealth is allocated for immediate use; some is dedicated for the future. Kuwait's Future Generations Fund (FGF), an intergenerational savings fund, permits no asset withdrawals unless sanctioned by law.²⁸ The only time that proceeds were withdrawn from the FGF was in conjunction with the 1990-91 Iraqi invasion and occupation. From 1990 through 1994, nearly \$85 billion in assets were withdrawn to pay for the cost of liberation and subsequent reconstruction and were later fully repaid.²⁹ As the deficit of Kuwait rose and the government and parliament refused to agree on a funding strategy, credit rating agency S&P downgraded the country's credit rating to "A+" from its original "AA-" with a negative outlook, which "primarily reflects risks relating to the government's ability to overcome the institutional roadblocks preventing it from implementing a financing strategy for future deficits."³⁰ The continued stalemate has led Kuwait's lawmakers to propose legislation to tap assets from the FGF.³¹

Plenty in the Tank

While the transition toward a non-hydrocarbon global economy is a high priority, it will take considerable time. Until then, the GCC region is extremely well-endowed with hydrocarbon reserves according to British Petroleum's (BP) 2021 Statistical Review, which compiled data on existing reserves and production levels for year-end 2020.³² Based on three-year average production rates from 2018 through 2020, Qatar's gas reserves are projected to last 144.5 years, Kuwait's to last 102.4 years, and the UAE's to last 103.3 years. Kuwait's oil reserves are estimated to last 95.8 years, followed by the UAE with 69.5 years, and Saudi Arabia with 69.6 years.

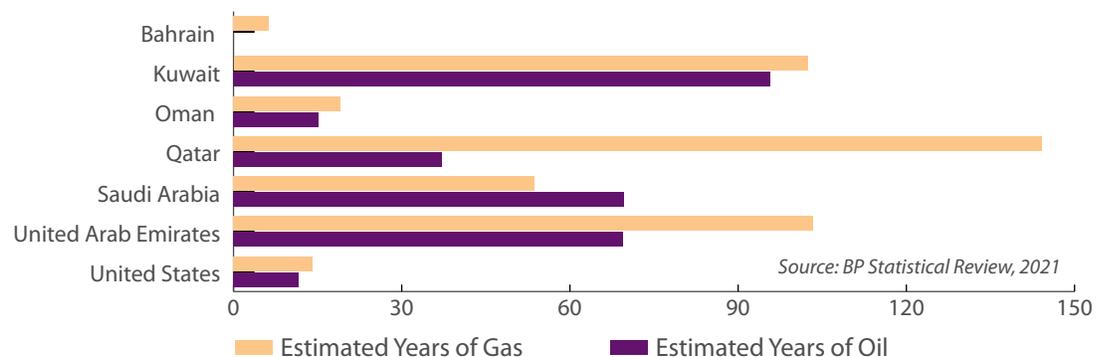
The GCC must maintain its relevancy in a world that is prioritizing the transition to low-carbon, energy-intensive economies. The region is working to position its hydrocarbon-intensive industries to meet the world's growing demands for low-carbon energy sources. Producers of large oil and natural gas are looking into developing low-carbon alternatives, such as blue and green ammonia, in efforts to achieve net-zero carbon emission targets.

The ammonia market, which is responsible for 1% of global emissions, accounts for 17% of all chemical and petrochemicals energy.³³ Hydrogen is essential for the creation of ammonia. When burned, hydrogen emits no harmful greenhouse gases. In an interview with Bloomberg Television, oil firm Saudi Aramco’s chief technology officer, Ahmad Al-Khowaiter, said “we’re going to have a large share” of the market for blue hydrogen. Blue hydrogen is made from natural gases for the creation of blue ammonia; the carbon emissions created in the process are captured, “then used in various industrial applications — from use as a feedstock to injection into hydrocarbon reservoirs for enhanced oil recovery.”³⁴ Green hydrogen, for the creation of green ammonia, can be produced by either wind or solar energy. The process is 100% renewable and carbon-free but is five times more expensive to produce than blue hydrogen.³⁵

The Abu Dhabi National Oil Company, also known as ADNOC, is a state-owned energy company that has joined other large energy producers in the region by announcing their plans to produce blue hydrogen. ADNOC also joined the Hydrogen Council, an international body intent on accelerating the use of clean fuel. Dr. Sultan Al Jaber, Minister of Industry and Advanced Technology and managing director and group chief executive at ADNOC, said:

“...energy demand continues to increase as global populations expand and economic development accelerates. With an energy transition taking place, this means that more energy is needed with fewer emissions... ADNOC is an early pioneer in the emerging market for hydrogen and its carrier fuels such as blue ammonia, driving the UAE’s leadership in creating international hydrogen value chains and a local hydrogen ecosystem.”³⁶

Estimated Remaining Years of Proven Hydrocarbon Reserves (3-year average production levels from 2018-2020)



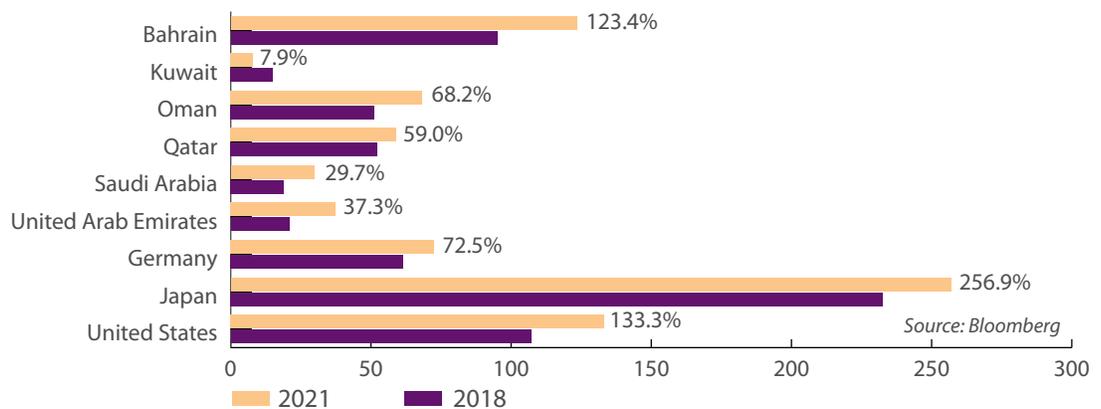
In addition to their hydrocarbon reserves, the region is still discovering vast energy deposits. On December 12, 2021, ADNOC announced that there had been “significant” conventional oil, condensate and gas discoveries of up to 1 billion barrels of oil equivalent (BOE) from an exploration well in Onshore Block 4 concession.³⁷ This occurred just before ADNOC announced its plan on December 1, 2021, to invest \$127 billion in capital over 2022-2026 to develop its hydrocarbon projects.³⁸

GCC's Indebtedness versus the Developed World

When Abu Dhabi issued debt in April 2016, it wasn't just the attractive yields and favorable "AA" credit ratings that tantalized investors; it was also the emirate's low outstanding debt. Except for Bahrain and Oman, which retain below investment-grade credit statuses, the GCC members' debt-to-GDP ratio is extremely low. Low debt affords a country greater financial flexibility than a highly leveraged country to meet its ongoing financial debt and *sukuk* obligations.

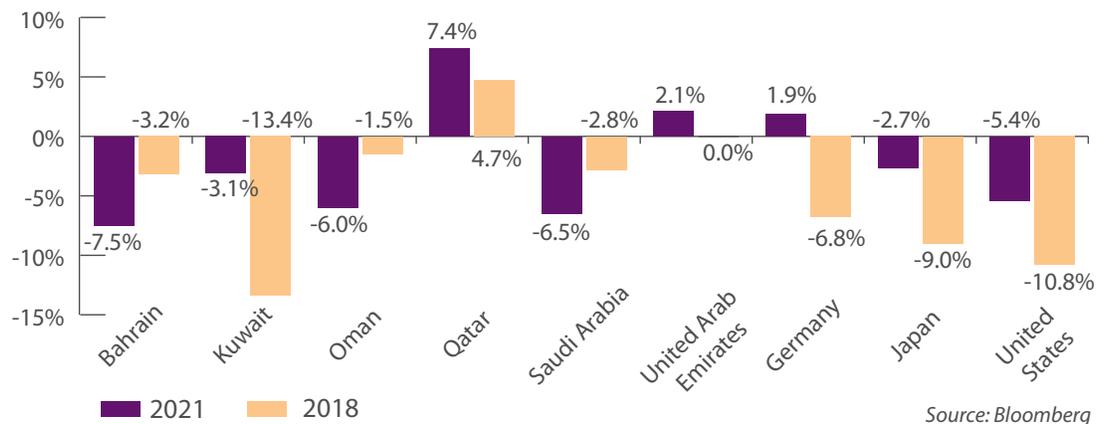
Some of the GCC members retain high credit ratings in addition to extremely low levels of debt as compared to substantially leveraged developed countries, such as Japan, whose year-end debt-to-GDP was 232.5% in 2018 and projected to be 256.8% by year-end 2021, according to the International Monetary Fund (IMF).³⁹ On August 11, 2021, Fitch rated Japan's credit "A," with a negative outlook.⁴⁰

Government Debt-to-GDP in 2018 & 2021



When their deficits are measured as a percentage of GDP, the GCC member states are even more notable compared to some developed countries. Qatar was able to retain a fiscal surplus throughout the pandemic, while very few nations were able to do so; many countries unleashed large fiscal packages to stabilize their economies following the onset of the coronavirus. At year-end 2018, Qatar posted a budget surplus of 7.4%, which then declined to a low of 3.6% in 2020 with projections of obtaining a surplus of 4.7% by year-end 2021, according to the IMF. The GCC members' lower indebtedness, in conjunction with favorable yield enhancements and strong credit ratings, are among some of the many attributes that are attracting investors to the region.

Government Deficit-to-GDP in 2018 & 2021





The Price of Oil and the Sukuk Market: Understanding the Relationship

Often, there are questions and misconceptions about the risk and return relationships of *sukuk* originating from hydrocarbon-dependent economies. While the performance of *sukuk* issued by hydrocarbon-dependent economies does not have a strong relationship to hydrocarbon commodity prices, it nevertheless is not entirely insulated from oil price movements. However, there are several characteristics of *sukuk* that can help insulate investors from short-term oil price shocks. These include the type of *sukuk* structure, the behavior of *sukuk* relative to other asset classes, the issuer's underlying credit quality, and the *sukuk*'s industry exposures. Over the intermediate term to the longer-term period, the price of oil can adversely affect an issuer's credit profile, particularly with those issues directly tied to the Energy sector.

The Importance of Structure

To be considered *halal*, *sukuk* must conform to Islamic investing principles. The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) specifies that the investment certificate itself must represent "undivided shares in ownership of tangible assets, usufruct and services or (in the ownership of) the assets of [a] particular project or special investment activity."⁴¹ This requires the certificate's structure to reflect a legal transfer of ownership of the underlying assets from the issuer to the investor, or in some cases a beneficial ownership is transferred.⁴² Payments to the certificate holders are based on the net profits of the underlying assets. The issuer cannot guarantee the security's investment return, such as a coupon rate (often referred to as the Islamic-compliant profit rate), or establish a predetermined price, such as a principal value, at the end of the investment certificate's tenure; hence establishing a true risk-return relationship.

Islamic investment certificates' underlying tangible assets — and the expectation of steady income from them — can help reduce short-term price volatility relative to energy commodities and other asset classes, such as 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%.⁴³ 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.

In contrast, conventional bondholders receive cash flows that are independent of the amount of profit or loss earned from the funds raised through issuing bonds. Unlike shareholders, bondholders receive income that has been determined and agreed upon in advance. As a result, creditors avoid direct exposure to the uncertainties, or risks, of the underlying assets or business enterprise. Rather, their risk is tied to the creditworthiness of the issuer. In other words, creditors do not directly share the risks faced by the enterprise they finance. It is for this reason that interest-based bonds are “risk-transferring” rather than “risk-sharing” contracts.⁴⁴ Furthermore, *sukuk* investors may obtain a higher value at the end of the investment certificate’s tenure if the market value of the security’s underlying asset or business enterprise appreciates. Bondholders receive only the return of their original principal, or par value, upon the security’s maturity.

What makes sukuk halal?

	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

Correlation

As a result of their structure, *sukuk* form a separate and distinct asset class while retaining many of the same attributes observed in conventional fixed income. For example, *sukuk* typically offer a stated profit rate akin to a coupon rate, a maturity, and typically obtain a credit rating from the major credit rating agencies. Similar to conventional fixed income, *sukuk* have attributes to promote liquidity and to encourage their adoption among the global investment community, particularly among the secular community.

How *sukuk* correlate with other asset classes contributes to understanding their risk and return characteristics. As of December 31, 2021, the FTSE Sukuk Index's five-year price correlation to crude oil as represented by the West Texas Intermediate (WTI), one of the main global oil benchmarks, is 0.293. Stated differently, 29.3% of the price movement of the FTSE Sukuk Index can be explained by crude oil prices, down from the 36.7% from the prior five-year period ended March 31, 2020. Conventional fixed-income benchmarks can be meaningfully compared to the FTSE Sukuk Index in terms of risk and return characteristics. The JP Morgan Emerging Market Bond Index (EMBI)⁴⁵ provides the highest correlation at 0.834, or 83.4%, down slightly from our previous report at 0.856. The next close correlation comes from Bloomberg Barclays US Aggregate Total Return Unhedged USD Index⁴⁶ at 0.72, up from our previous report of 0.704. All three indices are entirely composed of US dollar-denominated securities.

5-Year Correlation Matrix (December 31, 2016 - December 31, 2021; Weekly Data)						
Asset Class	Crude Oil (WTI)	FTSE Sukuk	Bloomberg Barclays US Aggregate	JP Morgan EMBI Global Core	MSCI ACWI	S&P 500
Crude Oil (WTI)	1.000	0.293	0.036	0.399	0.383	0.350
FTSE Sukuk	0.293	1.000	0.720	0.834	0.437	0.400
Bloomberg Barclays US Aggregate	0.036	0.720	1.000	0.608	0.156	0.130
JP Morgan EMBI Global Core	0.399	0.834	0.608	1.000	0.694	0.635
MSCI ACWI Index	0.383	0.437	0.156	0.694	1.000	0.968
S&P 500	0.350	0.400	0.130	0.635	0.968	1.000

Source: Bloomberg

This relationship makes sense as *sukuk* are structured similarly to conventional debt. Correlation between these three indices has drifted higher over the past two years. Essentially, this means that the FTSE Sukuk Index's performance characteristics can be explained by the movements of either of the other benchmarks.

In June of 2018, JP Morgan began to consult with GCC members about potential plans to include GCC bonds and *sukuk* in its emerging market indices.⁴⁷ The inclusion of GCC members presented JP Morgan with challenges. Typically, benchmarks employ various formulaic criteria to create a basket of similar securities to generate a desired exposure. Gross income per capita for GCC members (excluding Oman) was well above the \$20,000 limit of JP Morgan’s emerging market indices income criterion. For comparison, per capita income in 2018 was about \$40,000 in the UAE, about \$10,000 in Brazil, and about \$50,000 in the US.^{48,49}

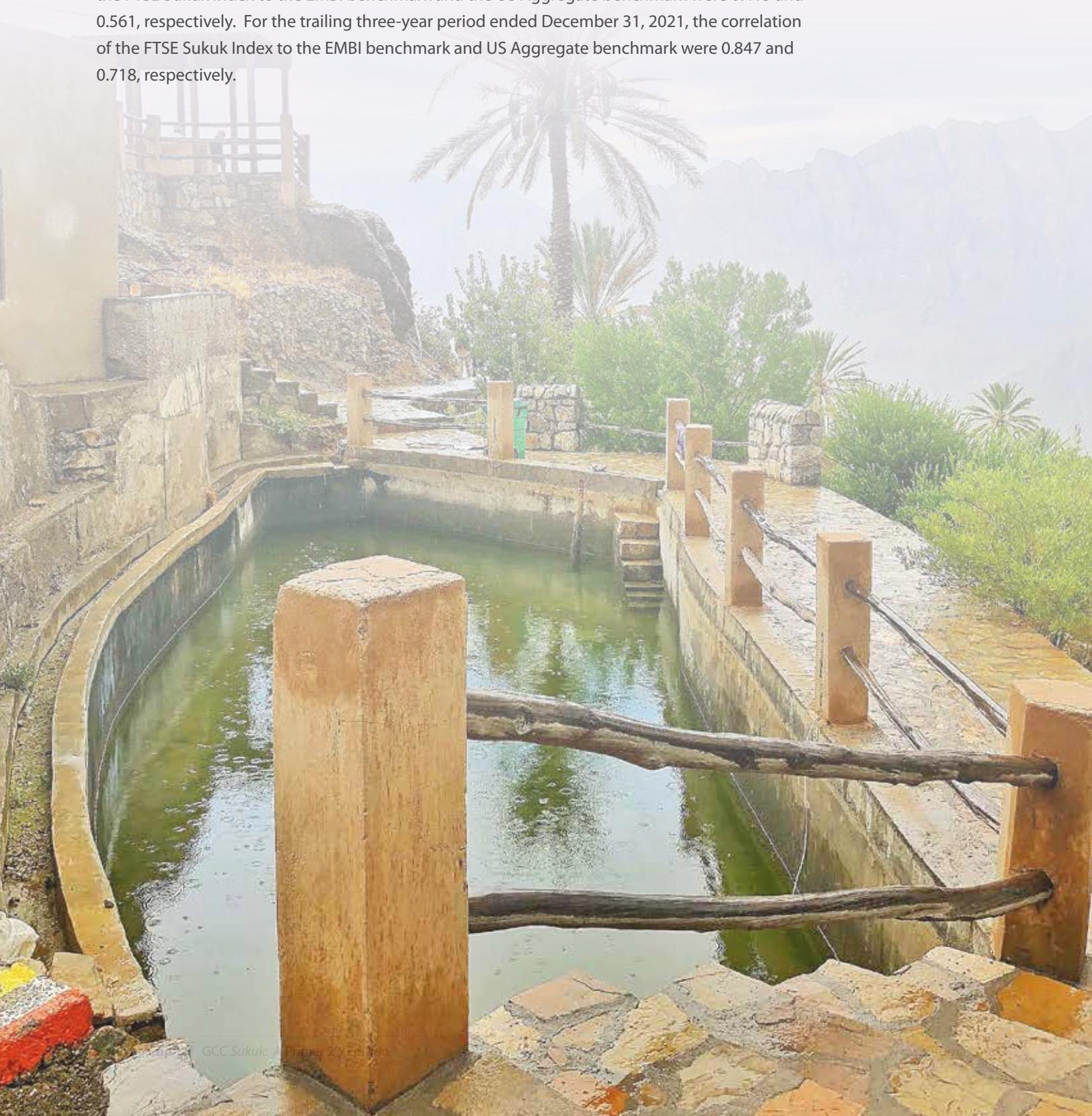
In September of 2018, JP Morgan formally announced its plans to include GCC bonds and *sukuk* in its Emerging Market Bond Index, as well as a few other emerging market indices, to be implemented in phases between January and September 2019.^{50,51} As of October 2018, GCC debt and *sukuk* represented 11.2% of the EMBI benchmark.⁵² At the time of JP Morgan’s announcement, market analysts anticipated that the GCC region could see upwards of \$60 billion in new investor flows, causing spreads to tighten by 10-15 bps.⁵³ This meant that increased demand would most likely bid up the price of the securities, causing the yield (profit) spread to narrow.

Over time, JP Morgan increased its exposure of GCC issues for both the EMBI and JP Morgan EMBI Global Diversified Index.

GCC Inclusion in Selected JP Morgan Emerging Market Fixed-Income Benchmarks			
	2018	2019	2020
EMBI Global Index	2.1%	18.2%	20.7%
EMBI Global Diversified Index	6.2%	16.0%	16.9%

Source: First Abu Dhabi Bank, GCC Fixed Income Chart Book, January 21, 2021

The byproduct of such a large increase in demand for GCC debt and *sukuk* means that *sukuk* benchmarks, such as the FTSE Sukuk Index, will begin to exhibit greater correlation with that of broadly held emerging market benchmarks that are denominated in US dollars. Prior to their inclusion of GCC securities, for the five-year period ended March 31, 2018, the correlations of the FTSE Sukuk Index to the EMBI benchmark and the US Aggregate benchmark were 0.413 and 0.561, respectively. For the trailing three-year period ended December 31, 2021, the correlation of the FTSE Sukuk Index to the EMBI benchmark and US Aggregate benchmark were 0.847 and 0.718, respectively.



3-Year Correlation Matrix (December 31, 2018 - December 31, 2021. Weekly Data)						
Asset Class	Crude Oil (WTI)	FTSE Sukuk	Bloomberg Barclays US Aggregate	JP Morgan EMBI Global Core	MSCI ACWI	S&P 500
Crude Oil (WTI)	1.000	0.328	0.039	0.438	0.399	0.369
FTSE Sukuk	0.328	1.000	0.718	0.847	0.481	0.452
Bloomberg Barclays US Aggregate	0.039	0.718	1.000	0.634	0.220	0.203
JP Morgan EMBI Global Core	0.438	0.847	0.634	1.000	0.748	0.702
MSCI ACWI Index	0.399	0.481	0.220	0.748	1.000	0.973
S&P 500	0.369	0.452	0.203	0.702	0.973	1.000

Source: Bloomberg, Saturna Capital research

Changes in Correlation (Comparing 5-year and 3-year period ended December 31, 2021)						
Asset Class	Crude Oil (WTI)	FTSE Sukuk	Bloomberg Barclays US Aggregate	JP Morgan EMBI Global Core	MSCI ACWI	S&P 500
Crude Oil (WTI)	0.000	0.035	0.003	0.039	0.016	0.019
FTSE Sukuk	0.035	0.000	-0.002	0.013	0.044	0.052
Bloomberg Barclays US Aggregate	0.003	-0.002	0.000	0.026	0.064	0.073
JP Morgan EMBI Global Core	0.039	0.013	0.026	0.000	0.054	0.067
MSCI ACWI Index	0.016	0.044	0.064	0.054	0.000	0.005
S&P 500	0.019	0.052	0.073	0.067	0.005	0.000

Source: Bloomberg, Saturna Capital research

The correlation between the FTSE Sukuk Index and the WTI declined over the five-year trailing period ended December 31, 2021. On that date, the correlation between the FTSE Sukuk Index and the WTI was 0.293, a 20.2% decline since the five-year period ended March 31, 2020, at 0.367. There are a variety of reasons that may help explain this decline in correlation. One reflects idiosyncratic factors, such as the fallout from failed OPEC+ negotiations on April 20, 2020, when the oil future's price fell to -\$38.45 per barrel — the first time ever that oil was at a negative.⁵⁴ Other factors may also reflect the broader development of the *sukuk* market and its increased inclusion in the JP Morgan EMBI.

A Look Back in History: Oil's Previous Price Decline and the FTSE Sukuk Index

Price of Oil is Not Correlated to Sukuk

Crude Oil (WTI) USD (left scale)

FTSE Sukuk USD (right scale)



From January 4, 2014, to December 31, 2021, WTI's total return was -69.61% compared to the FTSE Sukuk Index's 43.47% total return, representing annualized returns of -12.40% and 4.09%, respectively. We note that past performance does not indicate any assurance of future performance. However, the objective here is to show that *sukuk* performance has not followed the return characteristics of oil in a lockstep manner, but that a more complex relationship exists.

Exposure and Portfolio Management

Unlike the FTSE Sukuk Index, which embodies the broad characteristics of the US dollar-denominated global *sukuk* market, active portfolio management can permit greater flexibility than passive investing in static benchmarks. Active portfolio management can further insulate investors from direct exposure to the hydrocarbon industry. This can be done by either outright avoiding or reducing exposures to *sukuk* issuers whose primary business activities are tied to hydrocarbon sectors. Portfolio managers can take further steps to reduce volatility by limiting exposures to procyclical sectors that can be expected to experience greater financial strain in an economic downturn, including real estate development, real estate operating companies, luxury industries, and tourism. These periods of financial stress call for a greater emphasis on countercyclical industries that can help protect investors through allocations to industries better positioned to weather the storm including utilities, telecommunications, and consumer staples such as the food industry.

Putting a Pin in Relative Risk and Return

While the GCC *sukuk* market has grown rapidly in recent years, it remains a nascent market subject to multiple externalities such as oil price shocks, regional tensions, fickle foreign institutional flows, and a host of other factors. Despite some of these characteristics, the GCC debt and *sukuk* markets have demonstrated favorable enough risk and return attributes to warrant long-term investors' consideration. When comparing various regional and broad-based fixed-income benchmarks, the Bloomberg Barclays GCC Credit Total Index Unhedged USD and the FTSE Sukuk Index have demonstrated competitive performance over five-year, three-year, and one-year trailing periods, all ended December 31, 2021.

Benchmarks	5-Year Trailing Return (12/30/16-12/31/21)		3-Year Trailing Return (12/31/18-12/31/21)		1-Year Return (12/31/20-12/31/21)
	Total Return	Annualized	Total Return	Annualized	Annualized
Bloomberg Barclays GCC Credit Total Return Index Value Unhedged USD	31.46%	5.62%	25.54%	7.87%	0.31%
Bloomberg Barclays EM Asia USD Total Return Index Value Unhedged	21.22%	3.92%	15.79%	5.00%	-2.78%
Bloomberg Barclays EM Hard Currency Agg TR Index Value Unhedged USD	24.39%	4.46%	17.02%	5.37%	-2.57%
JP Morgan EMBI Global Core	25.98%	4.72%	20.27%	6.34%	-2.05%
FTSE Sukuk	27.44%	4.96%	21.85%	6.80%	1.09%
Bloomberg Barclays US Treasury Index	16.32%	3.07%	18.51%	5.82%	-2.32%
Bloomberg Barclays Global Agg Treasurys Total Return Index	15.42%	2.91%	12.08%	3.87%	-6.60%
Bloomberg Barclays US Agg Total Return	19.16%	3.57%	15.10%	4.82%	-1.54%
S&P 500	133.28%	18.44%	100.29%	26.03%	28.68%
MSCI Emerging Markets Index	62.58%	10.20%	37.66%	11.23%	-2.47%
Crude Oil (WTI)	20.20%	3.74%	49.20%	14.25%	57.07%

Source: Bloomberg

While returns are an important part of an investor's equation, risk should also be considered. Equities can demonstrate favorable return characteristics over the long-term, yet this asset class can experience pronounced volatility in pursuit of realizing its return potential. As the adage goes, it's time in the market that is important, rather than timing the market. If an investor missed the best five days of being fully invested in the S&P 500 from 1980 through 2018, their overall return would be reduced by 35%. The results only get worse the more "good" market days that are missed. Missing the best 10 days would have cut an investor's long-term results by more than half.⁵⁵

Standard deviation measures the amount of variation, or dispersion, of a set of values and is commonly used to measure investment risk. In this case, the set of values comprises investment returns over a period of time. The higher the standard deviation, the greater the dispersion of returns — both positive and negative. Greater return dispersion implies greater risk, while conversely, the lower the dispersion, the lower the risk. Standard deviation is best used in a relative framework to compare returns to other asset classes and therefore gain a sense of return variability.

Examining the five-year standard deviation among a broad range of asset class benchmarks, can help position us better to estimate risk. As of December 31, 2021, WTI has the highest standard deviation among all the asset classes, at 43.7% (up from 37.1% in 2020), followed by the MSCI Emerging Market Equity Index at 17.7% (down from 18.1%), and the S&P 500 Index at 18.0% (up from 16.4%). The standard deviation of the FTSE Sukuk Index over the five-year and three-year period is the lowest among all the benchmarks, coming in at 2.9% and 3.5%, respectively.

Benchmarks	5-Year Time Period (12/31/16 - 12/31/21)		3-Year Time Period (12/31/18 - 12/31/21)	
	Standard Deviation	Risk Factor Relative to FTSE Sukuk	Standard Deviation	Risk Factor Relative to FTSE Sukuk
Bloomberg Barclays GCC Credit Total Return Index Value Unhedged USD	5.5%	1.9	6.8%	1.9
Bloomberg Barclays EM Asia USD Total Return Index Value Unhedged	4.0%	1.4	4.9%	1.4
Bloomberg Barclays EM Hard Currency Agg TR Index Value Unhedged USD	6.3%	2.1	7.7%	2.2
JP Morgan EMBI Global Core	9.0%	3.1	10.9%	3.1
FTSE Sukuk	2.9%	1.0	3.5%	1.0
Bloomberg Barclays US Treasury Index measures	4.0%	1.4	4.6%	1.3
Bloomberg Barclays Global Agg Treasuries Total Return Index	5.4%	1.8	5.7%	1.6
Bloomberg Barclays US Agg Total Return	3.7%	1.3	4.3%	1.2
S&P 500	18.0%	6.1	20.4%	5.8
MSCI Emerging Markets Index	17.7%	6.0	19.3%	5.5
Crude Oil (WTI)	43.7%	14.9	51.4%	14.7

Source: Bloomberg, Saturna Capital research

Further expanding the context of risk, we may be in a better position to ascertain the variability of one benchmark relative to another. If we express the FTSE Sukuk Index as a single unit of risk relative to each of the accompanying benchmarks, we begin to see the others' variability relative to this Index. Using five-year data for the period ended 2021, the JP Morgan EMBI Index, as a more conservative proxy, has a standard deviation of 9.0%, or 3.1 times more variable than the FTSE Sukuk. The US Aggregate five-year standard deviation is 4.0%, or 1.4 times more variable than the FTSE Sukuk Index. Over the same five-year period, the S&P 500 Index is 6.1 times more volatile than the FTSE Sukuk Index, oil is 14.9 times more volatile, and the Bloomberg Barclays US Treasury Index is 1.4 times more volatile. The data is relatively consistent over the five-year and three-year periods.

Annual Benchmark Performance (2009 - 2021)	Minimum	Maximum
MSCI Emerging Markets Index	-18.20%	78.92%
Bloomberg Barclays Emerging Markets Hard Currency Aggregate: Corporate	-3.15%	56.03%
Bloomberg Barclays Emerging Markets Local Currency Government 10% Country Capped	-11.72%	18.19%
Bloomberg Barclays Emerging Markets Hard Currency Aggregate: Other Government Related	-2.08%	49.74%
Bloomberg Barclays Emerging Markets Local Currency Government 10% Country Capped	-4.55%	9.21%
MSCI Emerging Markets Currency Index	-7.06%	13.90%
Bloomberg Barclays US Treasury Index	-3.57%	9.84%
Bloomberg Barclays US Treasury Bills: 1-3 Months	0.03%	2.21%
Bloomberg Barclays US Corporate Investment Grade	-2.49%	18.68%
Bloomberg Barclays US Corporate High Yield	-4.47%	58.21%
MSCI World Net Total Return USD Index	-8.67%	29.99%
S&P 500 Index	-4.37%	32.37%
MSCI All-Country World Index	-8.87%	35.48%
JP Morgan EMBI Global Core	-6.45%	28.78%
Bloomberg Barclays Emerging Markets Local Currency Universal Asia Total Return Index	-3.08%	9.50%
Bloomberg Barclays Emerging Markets Local Currency Government Index: Americas	-22.24%	36.48%
Bloomberg Barclays Emerging Markets Local Curr Europe/Mideast/Africa Total Return Index	-9.03%	19.74%
Bloomberg Barclays GCC USD Credit Total Return Index	-0.43%	33.54%
FTSE IdealRatings Sukuk Index	0.26%	27.13%
Bloomberg Barclays Emerging Markets Hard Currency Aggregate Index	-4.12%	34.23%
Bloomberg Barclays Global Aggregate ex USD Index	-7.16%	10.55%
Bloomberg Barclays China Aggregate Index (CNY Denominated)	-5.17%	9.74%
Bloomberg Barclays Pan European Aggregate Corporate TR Index Unhedged USD	-9.10%	21.08%
Bloomberg Barclays Pan-European Government Total Return Index Unhedged USD	-9.75%	13.69%
Bloomberg Barclays Pan-European High Yield (USD) Total Return Index Unhedged US	-8.18%	92.67%
Bloomberg Barclays Global Agg - United Kingdom TR Index Unhedged USD	-5.45%	14.01%
Bloomberg Barclays Global Credit - United Kingdom TR Index Unhedged USD	-5.59%	24.95%
Bloomberg Barclays Emerging Markets Latin America Local Currency Govt Country Capped Gross	-20.50%	35.00%

In tracking the annual performance of 28 benchmarks from 2009 through 2021, only the FTSE Sukuk Index and the Bloomberg Barclays US Treasury Bill Index (1-3 months) have been able to demonstrate a positive return during that period. The FTSE Sukuk Index's worst performance was 0.26% in 2018, and the worst performance for the Treasury Bill Index was its return of 0.03% in 2015. While these track records do not guarantee future returns, they do help illuminate the unique investment characteristics of *sukuk*.

We do not mean to imply that *sukuk* are not risky investments, as this market is still relatively nascent and has unique risks that may not be entirely captured through standard deviation metrics. However, the data provide context for how this asset class has performed over intermediate and short-term periods relative to other asset classes during both favorable and adverse financial conditions. This exercise is meant to provide valued context for investors to consider the potential benefits that *sukuk* can offer as part of a diversified portfolio.

Conclusion

On balance, GCC US dollar-denominated *sukuk* provide investors a valuable means of diversification with a distinct asset class possessing unique and favorable risk and return attributes.

The collective attributes of this region with their large capital buffers, vast hydrocarbon reserves, and strong credit ratings provide an appealing climate for investors. The favorable investment attributes of *sukuk* are rarely found among emerging and frontier markets, and rarely observed among developed world fixed-income benchmarks. The steady high decile performance metrics in conjunction with low-risk attributes warrants investors' consideration as a part of their comprehensive asset allocation.

While *sukuk* are considerably off the radar for most investors, we hope that you find this white paper useful in your pursuit to understand this region, its community, and ultimately, its unique Islamic-compliant fixed-income market.

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About The Author



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Patrick T. Drum, Senior Investment Analyst and Portfolio Manager, joined Saturna Capital in October 2014. He is a former adjunct professor of finance for the Sustainable MBA Program at the Bainbridge Graduate Institute (BGI), currently known as Presidio Graduate School. Mr. Drum 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 (CFA) charterholder and a CERTIFIED FINANCIAL PLANNER®.

Prior to joining Saturna Capital, Mr. Drum led environmental, social, and governance (ESG) research and was director of fixed income portfolio management since 2007 with a private account group at UBS Institutional Consulting Services specializing in investment management for global conservation and national wildlife park endowments as well as sustainable-social screened client portfolios. He is a former Chair of the United Nation's Principles for Investment (UNPRI) Fixed Income Outreach Subcommittee and a current member of the UNPRI's Bondholder Engagement Working Group (BEWG), an advisory committee working to elevate important ESG considerations and best practices among issuers and investors. Mr. Drum's past experience also includes business valuation at Moss Adams and portfolio management at Washington Mutual Bank.

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The Amana Funds limit the securities they purchase to those consistent with Islamic and sustainable principles. The Saturna Sustainable Funds limit the securities they purchase to those consistent with sustainable principles. This limits opportunities and may affect performance. Fund share prices, yields, and total returns will change with market fluctuations as well as the fortunes of the countries, industries, and companies in which it invests. Foreign investing involves risks not normally associated with investing solely in US securities. These include fluctuations in currency exchange rates, less public information about securities, less governmental market supervision, and the lack of uniform financial, social, and political standards. Foreign investing heightens the risk of confiscatory taxation, seizure or nationalization of assets, establishment of currency controls, or adverse political or social developments that affect investments.

While diversification does not guarantee against a loss in a declining market, it can help minimize the risk of the decline of a single market.

Index Definitions

The Bloomberg Barclays US Treasury Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. STRIPS are excluded from the Index because their inclusion would result in double-counting.

The Bloomberg Barclays US Treasury Bills 1-3 Month Index is designed to measure the performance of public obligations of the US Treasury that have a remaining maturity of greater than or equal to 1 month and less than 3 months. The Index includes all publicly issued zero coupon US Treasury Bills that have a remaining maturity of less than 3 months and at least 1 month, are rated investment grade, and have \$300 million or more of outstanding face value.

The Bloomberg Barclays US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD-denominated securities publicly issued by US and non-US industrial, utility, and financial issuers.

The Bloomberg Barclays US Corporate High Yield Bond Index measures the USD-denominated, high-yield, fixed-rate corporate bond market. Securities are classified as high-yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below.

The Bloomberg Barclays Emerging Markets Hard Currency Aggregate Index is a flagship hard currency emerging markets debt benchmark that includes USD, EUR, and GBP-denominated debt from sovereign, quasi-sovereign, and corporate EM issuers. This includes the EM Hard Currency Aggregate: Corporate, and the EM Hard Currency Aggregate: Other Government Related.

The Bloomberg Barclays Emerging Markets Local Currency Government Universal Index is the broadest Barclays benchmark tracking the performance of fixed-rate local currency Emerging Markets (EM) debt. Classification as an EM is rules-based and reviewed annually using World Bank income group and International Monetary Fund (IMF) country classifications. This includes the Bloomberg Barclays EM Local Currency Universal Asia Total Return Index and the Bloomberg Barclays EM Local Currency Europe/Mideast/Africa Total Return Index.

The Bloomberg Barclays Emerging Markets Local Currency Government Index is a flagship index that measures the performance of local currency Emerging Markets (EM) debt. Classification as an EM is rules-based and reviewed annually using World Bank income group, International Monetary Fund (IMF) country classification and additional considerations such as market size and investability. This includes the Bloomberg Barclays Emerging Markets Local Currency Government Index: Americas.

The Bloomberg Barclays Emerging Markets Hard Currency Aggregate Index is a flagship hard currency emerging markets debt

benchmark that includes USD-denominated debt from sovereign, quasi-sovereign, and corporate EM issuers. This includes the Bloomberg Barclays Emerging Markets Hard Currency Aggregate Index. This index includes the Bloomberg Barclays GCC USD Credit Total Return Index.

The Bloomberg Barclays Global Aggregate ex USD Index is a measure of investment-grade debt from 24 local currency markets. This multi-currency benchmark includes Treasury, government-related, corporate, and securitized fixed-rate bonds from both developed and emerging markets issuers. Bonds issued in USD are excluded. This includes the Bloomberg Barclays Global Aggregate ex USD Index.

The Bloomberg Barclays China Aggregate Index tracks the performance of the CNY-denominated fixed-income market. The China Aggregate Index was launched in March 2004, with an inception date of January 1, 2004. It contains fixed-rate Treasury, government-related (including policy banks), and corporate securities that are listed on the China Interbank market. This includes the Bloomberg Barclays China Aggregate Index (CNY Denominated).

The Bloomberg Barclays Pan-European Aggregate Index tracks fixed-rate, investment-grade securities issued in the following European currencies: EUR, GBP, NOK, DKK, SEK, CHF, CZK, HUF, PLN, RUB, and SKK. Inclusion is based on the currency of the issue, and not the domicile of the issuer. This includes the Bloomberg Barclays Pan European Aggregate Corporate TR Index Unhedged USD and the Bloomberg Barclays Pan-European Government Total Return Index Unhedged USD.

The Bloomberg Barclays Pan-European High Yield Index measures the market of non-investment grade, fixed-rate corporate bonds denominated in the following currencies: euro, pounds sterling, Danish krone, Norwegian krone, Swedish krona, and Swiss franc. Inclusion is based on the currency of issue, and not the domicile of the issuer. This includes the Bloomberg Barclays Pan-European High Yield (USD) Total Return Index Unhedged US.

The Bloomberg Barclays Global Aggregate Index is a flagship measure of global investment-grade debt from 24 local currency markets. This multi-currency benchmark includes Treasury, government-related, corporate, and securitized fixed-rate bonds from both developed and emerging markets issuers. This includes the Bloomberg Barclays Global Aggregate - United Kingdom Total Return Index Unhedged USD and the Bloomberg Barclays Global Credit - United Kingdom Total Return Index Unhedged USD.

The FTSE Sukuk Index measures the performance of global Islamic fixed-income securities, also known as sukuk. Investors cannot invest directly in the Index.

The FTSE WorldBIG Bond Index is a multi-asset, multi-currency index, which provides a broad-based measure of the global fixed-income markets.

The JP Morgan EMBI Global Core Index is composed of US dollar-denominated government bonds issued by emerging market countries. The Index is a broad, diverse US dollar-denominated emerging markets debt benchmark that tracks the total return of actively traded external debt instruments in emerging market countries. This includes the Bloomberg Barclays Global Credit - United Kingdom Total Return Index Unhedged USD.

The MSCI All Country World Index is produced by Morgan Stanley Capital International (MSCI). It is a broad measure of equity market performance throughout the world. Investors cannot invest directly in the Index.

The MSCI Emerging Markets Index, produced by Morgan Stanley Capital International, measures equity market performance in over 20 emerging market countries.

The MSCI Emerging Markets (EM) Currency Index tracks the performance of 25 emerging market currencies relative to the US dollar.

The MSCI World Net Total Return Index Futures are cash settled upon expiration. The underlying index is the MSCI World Net Total Return Index denominated in USD. This index covers approximately 85% of the free float-adjusted market capitalization across the World Developed Markets equity universe (large and mid-cap).

The S&P 500 is an index comprised of 500 widely held common stocks considered to be representative of the US stock market in general.



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