دار المراجعة الشرعيّة

SHARIYAH
REVIEW BUREAU

INFLATION-LINKED BONDS: HEIGHTENING TERRAINS OF SHARIA COMPLIANCE

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INTRODUCTION

Inflation is an economic term that describes the general rise in prices of consumer goods and services. As prices rise, a dollar will buy less goods and services, or in other words, investors lose purchasing power of their dollar. To account for the effects of inflation, investors could focus on “real” return - the amount earned after adjusting for inflation. Investments that target returns above the rate of inflation can protect and potentially increase investors’ future purchasing power.

Assume a hypothetical equity portfolio return of 4% per year and an inflation rate of 2.5%. The real return of this portfolio, or the return minus the rate of inflation, would be 1.5%. So, in this case, an investment in equities would increase investors’ purchasing power by only 1.5% a year. An investment in a GBP money market fund, savings account or any other investment returning less than the 2.5% rate of inflation would effectively erode purchasing power, defeating even the most conservative goal of maintaining quality of life. Inflation-linked bonds – also known as index-linked bonds - are designed to help protect investors from the negative impact of inflation by contractually linking the bonds’ principal and interest payments to a nationally recognized inflation measure such as the Retail Price Index (RPI) in the UK, the European Harmonised Index of Consumer Prices (HICP) ex-tobacco in Europe, and the Consumer Price Index (CPI) in the U.S[1]. Considering how inflation impacts investments, this paper seeks to understand index-linked bonds from a Shariah compliance perspective.

1 Pimco, Inflation-linked bonds, Available from: https://www.pimco.co.uk/en-gb/resources/education/understanding-inflation-linked-bonds/

INDEX-LINKED BONDS

A bond investor holds a bond with a fixed level of interest rate. The interest payments, known as coupons, are usually paid semi-annually and represent the bondholder's return on investing in the bond. However, as time goes by, inflation also increases, thereby, eroding the value of the investor's annual return. This is unlike returns on equity and property, in which dividend and rental income usually increases with inflation. To mitigate the impact of inflation, index-linked bonds are issued by the government.
An index-linked bond is a bond which has its coupon payments adjusted for inflation by linking the payments to some inflation indicator, such as the Consumer Price Index (CPI) or the Retail Price Index (RPI). These interest-bearing investments typically pay the investors a real yield plus accrued inflation, providing a hedge against inflation. The yield, payment, and principal amount are calculated in real terms, not nominal numbers. One can think of the CPI as the exchange rate that converts the return on a bond investment to real return.

An inflation indexed bond protects both investors and issuers from the uncertainty of inflation over the life of the bond. Like conventional bonds, indexed bonds pay interest at fixed intervals and return the principal at maturity. The fundamental difference is that while conventional bonds make payments that are fixed in nominal dollars (and thus are called nominal bonds), indexed bonds make payments that are fixed in real terms (and thus are called real bonds). Because the purchasing power of fixed nominal cash flows is reduced by inflation, nominal bonds expose both investors and issuers to the risk of changes in inflation, while real bonds do not[2].

For example, consider two investors – one purchases a regular bond and another buys an index-linked bond. Both bonds are issued and purchased for $100 in November 2017, and have the same terms – 4% coupon rate, 1 year to maturity, and $100 face value. The CPI level at the time of issuance is 204.

The regular bond pays annual interest of 4% x $100 = $4, and the principal amount of $100 is repaid at maturity. At maturity, the principal and the interest payment due, that is, $100 + $4 = $104, will be credited to the bondholder.

Assuming the CPI level in November 2018 is 207, the interest and principal value must be adjusted for inflation with the index-linked bond. Coupon payments are calculated using an inflation-adjusted principal amount, and an indexation factor is used to determine the inflation adjusted principal amount. For a given date, the indexation factor is defined as the CPI value for the given date divided by the CPI at the original issue date of the bond. The indexation factor in our example is 207/204 = 1.0147. Therefore, the inflation rate is 1.47%, and the bondholder will receive $104 x 1.0147 = $105.53 when it matures.

The annual interest rate on the bond is [($105.53 - $100.00)/$100.00] x 100% = 5.53%. The investor's approximate real return rate can be calculated as 5.53% nominal rate – 1.47% inflation rate = 4.06%.

This type of bond is valuable to investors because the real value of the bond is known from purchase and the risk involved with uncertainty is eliminated. These bonds are also less volatile than nominal bonds and help investors to maintain their purchasing power[3].

FTSE Russell illustrate the difference between inflation-linked and conventional bonds with the table and chart below, where two bonds are compared for illustrative purposes. One, a conventional bond, has a fixed nominal value of 100 at maturity and a 5% annual interest payment and the other, an inflation-linked bond, has a principal value and a 2% annual coupon that are both indexed to inflation. Both bonds cost 100 at issue (represented by time Y0) and produce cash flows in the ten subsequent years (Y1-Y10). The annual interest payments (5% a year) and the principal value at maturity of the conventional bond (100) are fixed at the time of issue. But the interest payments and the principal value at maturity of the inflation-linked bonds increase with inflation over the life of the bond[4].

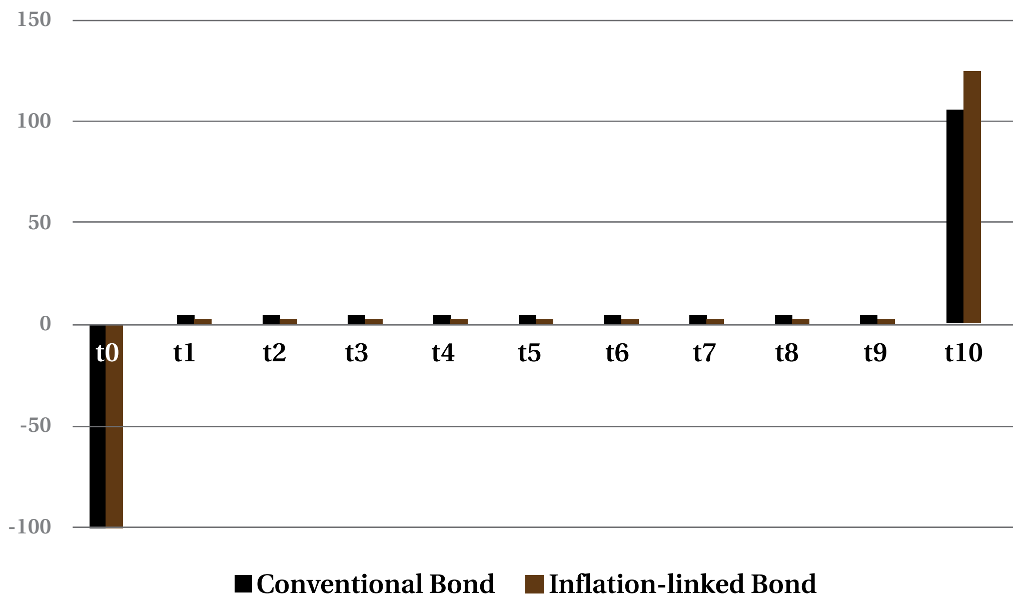
2 Pu Shen, Benefits and Limitations of Inflations of Indexed Treasury Bonds, Available from: https://pdfs.semanticscholar.org/c1a5/829420f1b43ee15bbd60a7269935c6fbfb62.pdf

3 Investopedia, Index-linked bonds, Available from: https://www.investopedia.com/terms/i/indexlinkedbond.asp

4 FTSE Russell (2015), Inflation-linked bonds, Available from: https://www.ftserussell.com/sites/default/files/research/inflation-linked_bonds_final.pdf

Cash flows on conventional and inflation-linked bonds

Time	Conventional bond with 5% annual coupon	Inflation-linked bond with 2% annual coupon, 2% inflation
YO	-100	-100
Y1	5	2.04
Y2	5	2.08
Y3	5	2.12
Y4	5	2.16
Y5	5	2.21
Y6	5	2.25
Y7	5	2.30
Y8	5	2.34
Y9	5	2.39
Y10	105	124.34



Source: FTSE Russell, for illustrative purposes only. Inflation is assumed to be constant and indexation lag is ignored.

The purchaser of a conventional bond knows what cash flows to expect in nominal terms, but not what the real (post-inflation) value of those cash flows will be (since future inflation levels are unknown). By contrast, the purchaser of the inflation-linked bond knows what real return to expect, but not what the cash flows will be in nominal terms[5].

5 FTSE Russell (2015), Inflation-linked bonds, Available from: https://www.ftserussell.com/sites/default/files/research/inflation-linked_bonds_final.pdf

SHARIAH ANALYSIS

Index linked bonds are debt instruments which pay investors interest (riba) which is categorically prohibited in the Qur'an. The Quran says,

O you who believe! Remain conscious of Allah, and give up all outstanding gains from usury, if you are [truly] believers; for if you do it not, then know that you are at war with Allah and His Messenger. But if you repent, then you shall be entitled to [the return of] your principal. You will do no wrong, and neither will you be wronged. [Surat Al-Baqarah, 278-279]

Additionally, the AAOIFI Shariah Standard No.21 expounds on the rulings of bonds:

"The issuance of all kinds of bonds is prohibited when these bonds include stipulations for the return of the amount of loan and excess in any form, whether such excess is paid at the time of the satisfaction of the principal amount of loan, is paid in monthly or yearly instalments or in another manner and whether this excess represents a percentage of the value of the bond, as in the case with most types of bonds, or a part of it, as is the case with zero-coupon bonds. Likewise, prize bonds are also prohibited. This applies irrespective of the bonds being private, public or governmental."

These financial debt instruments are premised on the exchange of two monetary payments; the investor pays upon purchasing a bond and receives periodical payments from the issuer in respect to index linked bonds. In Shariah, unequal payments in homogenous currencies is tantamount to Riba al-Fadhl. Riba al-Fadhl (known as interest/usury due to surplus and excess) originates when an interest (riba) item is exchanged for the same item in an unequal amount. These bonds are prone to Riba al-Fadhl.

The exchange of cash payments at different periods results in another type of interest (riba) known as Riba al-Nasi'ah. This refers to the deferral in an exchange of two homogenous Riba items. The Prophet Muhammad (peace be upon him) said:

"(When) gold is exchanged in lieu of gold, silver is exchanged for silver, wheat is exchanged for wheat, barley is exchanged for barley, dates are exchanged for dates and salt is exchanged for salt; it must be exchanged in equal measure and settled immediately; and if the counter exchanges differ, sell (whichever quantity) as you wish as long as settlement is immediate." (Sahih Muslim)

In addition to the above, the AAOIFI Shariah Standard No.21 mentions in respect to trading bonds:

"Trading in bonds, both sale and purchase, is prohibited and so is their pledging and endorsement and so on."

This is another issue with bonds. These debt instruments are traded in a number of ways; where the sale price is different to the face value. Thus, bonds fail from a Shariah compliance perspective as it results in Riba and the trading of prohibited debt.

SHARIAH COMPLIANT ALTERNATIVE TO BONDS

The AAOIFI Shariah Standard No.21 proposes an alternative to bonds: "the Shari'ah substitute for bonds are investment Sukuk." The overall risk profile and economic return for a Sukuk investor has some similarities albeit differences to a conventional bond where the bondholder is a debtor of the issuer.

AAOIFI defines Sukuk as being: "Certificates of equal value representing undivided shares in the ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activities." Unlike a conventional bond (secured or unsecured), which represents the debt obligation of the issuer, a Sukuk technically represents an interest in an underlying funding arrangement structured according to Shariah, entitling the holder to a proportionate share of the returns generated by such arrangement and, at a defined future date, the return of the capital.

Sukuk is a financial instrument that shares characteristics with bonds and stocks which are issued to finance trade or the production of tangible assets. Similar to a bond, Sukuk has a maturity date and in some of them the holder will receive a regular income over the period and a final payment at the maturity date. While the conventional bonds price is determined only by the creditworthiness of the issuer, Sukuk price is determined by the creditworthiness of the issuer and the value of the asset. Although Sukuk is also similar to stocks in the sense that it represents ownership and no guarantee of a fixed return (at least theoretically and in the standard model of Sukuk) but stocks have no maturity date. Sukuk also have to relate to a specific asset, project or service.

Among the benefits of Sukuk are that most Sukuk are a tradable capital market product providing medium to long-term fixed or variable rates of return. It is assessed and rated by international rating agencies, which investors use as a guideline to assess risk/return parameters of a Sukuk issue. It has regular periodic income streams during the investment period with easy and efficient settlement and a possibility of capital appreciation of the Sukuk. Finally, most Sukuk are liquid instruments and tradable in secondary market.

INFLATION-LINKED SUKUK

To develop an inflation linked Sukuk, the Ijarah Sukuk structure is ideal. In long-term lease agreements it is mostly not in the benefit of the lessor to fix one amount of rent for the whole period of lease, because the market conditions change from time to time. In this case the lessor has two options:

a) He can contract lease with a condition that the rent shall be increased according to a specified proportion (e.g. 5%) after a specified period (like one year).

b) He can contract lease for a shorter period after which the parties can renew the lease at new terms and by mutual consent, with full liberty to each one of them to refuse the renewal, in which case the lessee is bound to vacate the leased property and return it back to the lessor.

These two options are available to the lessor according to the classical rules of Islamic Fiqh. However, contemporary scholars have allowed, in long-term leases, to tie up the rental amount with a variable benchmark which is so well-known and well-defined that it does not leave room for any dispute. For example, it is permissible that the annual increase in the rent is tied up with the rate of inflation[6]. Thus, an index-linked Ijarah Sukuk to an inflation indicator such as the Consumer Price Index (CPI) or the Retail Price Index (RPI) would be permissible. A fixed rental rate plus the variable index rate would be the proposed rental payments under such Sukuk. Such an Ijarah Sukuk would pay investors a real yield plus accrued inflation, providing a hedge against inflation.

The AAOIFI Sharia Standard No.17 defines Sukuk al-Ijarah as "certificates of equal value issued either by the owner of a leased asset or a tangible asset to be leased by promise, or they are issued by a financial intermediary acting on behalf of the owner with the aim of selling the asset and recovering its value through subscription so that the holders of the certificates become owners of the assets."

As for the International Islamic Fiqh Academy (IIFA), it has adopted the following definition for Sukuk al-Ijarah: "certificates of equal value that represent diffused shares in the ownership of tangible assets or usufruct that yield income." [7]

These Sukuk, as per current industry practice, can be considered as certificates of equal value issued by the owner of a leased asset, or by a financial intermediary, for the purpose of selling the asset and acquiring its price from the proceeds of the subscription; the assets become the property of the Sukuk holders, either in the form of legal ownership or beneficial (economic) ownership, and the original owner of the asset promises to purchase it at its face value, or market value, or at a price agreed upon with the Sukuk holders at the time of the sale. The sukuk holders promise to sell the asset back to the entity from whom they purchased it at its face value, or market value, or at a price agreed upon with the original owner at the time of the sale.

6 Usmani (2000), An introduction to Islamic finance,

7 Majallat Majma' al-Fiqh al-Islami, 2004: 309

THESE SUKUK ARE ISSUED USING THE FOLLOWING STEPS:

1. The originator, which is frequently a government, sells assets it owns for some compensation, say USD 500 million.

2. The originator sets up a special purpose vehicle (SPV) which will act as a financial intermediary to administer the assets and issue Sukuk al-Ijarah in order to raise USD 500 million.

3. The Sukuk are certified by a respected Sharia Committee.

4. The Sukuk are listed and rated by an international rating agency.

5. The SPV rents out the assets for a period of time (e.g., 10 years) on the basis of annual lease payments.

6. The government (originator) takes the money raised by the Sukuk and pays the lease payments that are the right of the Sukuk holders for each specified lease period—usually, every six months—to the SPV.

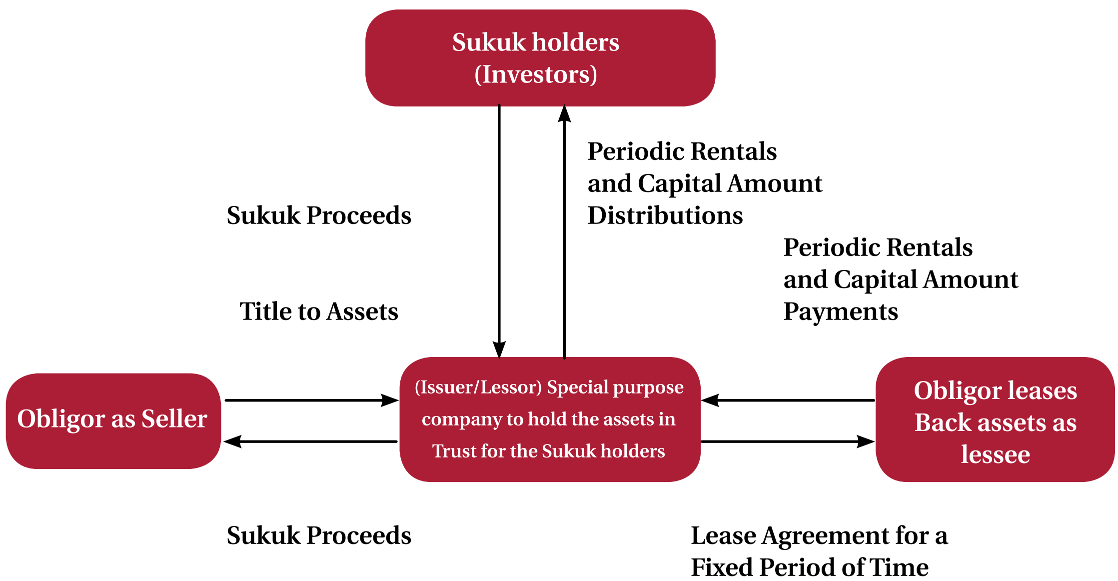
7. The SPV distributes the lease payment at regular intervals in the form of payment coupons.

8. The government (originator) that originated the Sukuk pledges to buy the leased asset(s) back at the end of the lease period. The purchase is usually at the face value of the Sukuk.

9. At the end of the period, the SPV sells the leased asset(s) back to the original owner, usually at the original price. By this step, the asset returns to its original owner.

10. The SPV distributes the proceeds of the sale of the assets to the Sukuk holders, who thereby recover their original capital, the price they paid for the Sukuk[8].

A typical Sukuk al-Ijarah structure is as follows:



8 Shahruddin, A. et al. (2012), A Critical Appraisal of Shariah issues related to Sukuk al-Ijarah, ISRA, Available from: https://ifikr.isra.my/library/pub/223

Conclusion

In contemporary times, return on investments are impacted by inflation. The return on an investment in real terms could be much less that the expected rate of return as inflation would effectively erode the purchasing power. Inflation-linked bonds are designed to help protect investors from the negative impact of inflation by contractually linking the bonds' principal and interest payments to an index such as the CPI or RPI. This bond is not congruent to the principles of Shariah. Bonds are exchanges of cash in staggered payments and of differing amounts. This results in the prohibition of interest (riba). A Shariah compliant alternative to such bonds are Sukuk. Sukuk al-Ijarah where the rental payments are linked to the inflation index can mirror the economic profile of index-linked bonds.

ABOUT SRB

Since our humble beginnings more than 13 years ago we've grown to include more than 100 companies across a host of industries, thousands of transactional programs, multi-disciplinary teams and a combined scholarly workforce of 35 Sharia Scholars from 19 countries. And we're not done yet: our Sharia Advisory and Sharia Audit services will continue to improve—serving local and international businesses to help them maintain and manage Shari'a compliance.

We've been preparing our clients for a new world in which Sharia Advisory rapidly becomes the currency of choice. From faster Certification programs, to direct Sharia Supervisory access, and perhaps most critically, navigating through the economic structures of clients offerings within a matter of days. We've have been working hard to help clients like you capitalize on opportunities in global Islamic financial markets.

Today, scores of institutions across nations, covering public and private businesses, commercial and corporate funds, Sukuks and Islamic equity markets, IPO's and Investment Banking Practices rely on us to run their companies, funds and transactions.

The future of Sharia Advisory and Audit is exciting and we are very lucky to be a part of this business!

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