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Lowly or Negative Benchmark Rates Bandwagon: Any Risk Implications for Islamic banks?

Jamshaid Anwar Chattha[1], Syed Musa Alhabshi[2]

Abstract. *To stimulate the economy, regulators across all jurisdictions have been taking unconventional approaches. Thus, in recent years, the management of benchmark rates (or interest rates) has received considerable prominence in the banking sector due to some reasons including supervision banks' benchmark rates under Basel II. This paper reviews the possible dysfunctional implications of lowly and/or negative rates and provides a risk management and regulatory perspective for Islamic banks. These consequences call for a better risk management with appropriate tools and effective supervisory oversight. It hoped that the initial discussion presented in this paper on the implications and controls invites a broader debate on this issue in the Islamic financial services industry.*

Keywords: *negative rates, benchmark rates, Islamic banks, financial stability*

Abstrak. *Untuk merangsang ekonomi, regulator di semua yurisdiksi telah mengambil pendekatan yang tidak lazim.. Dengan demikian, dalam beberapa tahun terakhir, pengelolaan suku bunga acuan (atau tingkat suku bunga) telah mendapat banyak perhatian di sektor perbankan karena sejumlah alasan termasuk tingkat suku bunga bank acuan di bawah Basel II. Artikel ini mengulas implikasi disfungsional kemungkinan tingkat rendah dan / atau negatif, dan memberikan perspektif manajemen risiko dan peraturan bagi bank-bank Islam. Implikasi ini menuntut pengelolaan risiko yang lebih baik dengan alat yang tepat dan pengawasan pengawasan yang efektif. Diharapkan bahwa diskusi awal yang disajikan dalam makalah ini mengenai implikasi dan kontrol mengundang perdebatan yang lebih luas mengenai masalah ini di industri jasa keuangan Islam.*

Kata kunci: *tingkat bunga negatif, suku bunga acuan, bank syariah, stabilitas keuangan*

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[1] Central Bank of Kuwait. Po Box 526, Safat, 13006, State of Kuwait.
[2] International Islamic University of Malaysia. Po Box 10, 50728, Kuala Lumpur, Malaysia
E-mail: [1] jamshaid.anwar@gmail.com, [2] syedmusa@iium.edu.my
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Introduction

More than nine years after the global financial collapse (GFC), most economies are still much presented with unprecedented challenges. The slowdown in the global economy and its inconsistent performance has received some unconventional responses (e.g., intensive quantitative easing and keeping lower and/or negative interest rates) from the regulators. The banking industry, being at the heart of these economic developments, is going through a challenging time. To a greater extent is dealing with lower and/or negative interest rates.

In mainstream finance, the benchmark rates or return on investment have always featured as one of the essential considerations in explaining the saving and consumption behavior of individuals. In recent years, the management of benchmark rates has received considerable eminence in the banking sector due to various factors including: (a) the increasing instability of benchmark rates: (b) financial market conditions including the reason of a flat yield curve and the risk of yield curve remaining flat for the more extended period: (c) and the growing international emphasis on the supervision and control of banks' benchmark rates under Basel II.

In April 2016, the IMF's Global Financial Stability Report provided an assessment of the global financial system and markets. The report also indicated that economic outlook has deteriorated in advanced economies because of heightened uncertainty and setbacks to growth and confidence, while the decline in oil and commodity prices and slower growth have kept risks elevated in emerging markets. Six months later, this uncertainty and sluggish growth remain a sincere concern for the world's major and emerging economies. Since a bulk of Islamic finance operates within the emerging economies and also being an integral part of the global financial system, the impact of such uncertainty is inevitable for Islamic banks.

In May 2016, the Islamic Financial Services Board (IFSB) Islamic Financial Stability Report hinted two crucial moving-forward guidance pertaining to Islamic finance: (a) the increased fragility of emerging financial markets and the sharp decline of oil prices might negatively impact the profitability and asset quality of Islamic banks; (b) the monetary policy of Western central banks can induce yield volatilities and may shake investors' confidence in emerging markets' financial assets, including Sukūk. Now, a recent report (Islamic Finance in 2017: Modest Growth and Amid Oil-Prices Woes) published by S&P Global Ratings in September 2016 affirms the IFSB predictions and indicates a drop in Islamic finance growth in 2017. This report suggests Islamic banks will be having a slowdown in growth. One of the critical reasons noted for such economic downturn is the prevailing very low and/or negative yield rates for investment in the developed economies coupled with sharp declining commodities prices mainly oil, which reflect an important concern

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to the financial markets and its participants. That said, in line with the Expectation Theory, investors across the border are desperately looking for suitable investment opportunities in a very low rate regime.

From a conventional banks perspective, a lot has been written recently by scholars explaining the impact and implications of low and/or negative rates environment on banks' profitability (Arteta, Kose, Stocker, and Taskin, 2016; Busch, and Memmel, 2015; Bech and Malkhozov, 2016; Bean, Broda and Kroszner, 2015; Genay and Podjasek, 2014; Jobst and Lin, 2016; Linnemann, 2016). Therefore, the purpose of this paper is not to cluster the literature on the subject, rather highlight the implications for Islamic finance as very little has explored from Islamic banks' perspective. Research has addressed the implications of increasing benchmark rate risk for Islamic banks, not the opposite (e.g., Bacha, 2004; Chattha and Bacha, 2010). This research mainly focuses on lower rates.

In light of the lower benchmark rate, lately, economists and central banks are grappling with significant concerns such as: Whether there is any impact or risk to Islamic finance, in general, and to Islamic banks, in particular? How is it relevant to the Islamic banks and is there any profound impact on financial markets in emerging economies? How well are Islamic banks and their regulators (central banks) prepared to tackle this? What are the potential concerns and remedies to counter low and/or negative rates?

Within the above context, the novelty of this paper is to examine and address these questions from a risk management and regulatory and banking supervisory perspective. With that in mind, the purpose of this article is two-fold: first to review the broader picture of low and/or negative rates; second to provide a risk management and regulatory perspective for Islamic banks on the implications of weak and/or negative rates.

The remainder of the paper organized as follows. Section 2 provides an overview of the broader picture of negative policy rate globally supported by data and methodology used in the article. Chapter 3 presents discussion and analysis and explains the relevance and implications of low or negative policy rate for Islamic banks. Section 4 concludes and offers suggestions for moving forward.

Literature Review

For a long time, central bankers believed that the policy rate could not drop below zero because households and corporates might start converting deposits into cash to avoid devaluation (Jobst and Lin, 2016). This is imaginable now. Low-interest rates (USA, UK, and Australia) and even negative rates (Eurozone,

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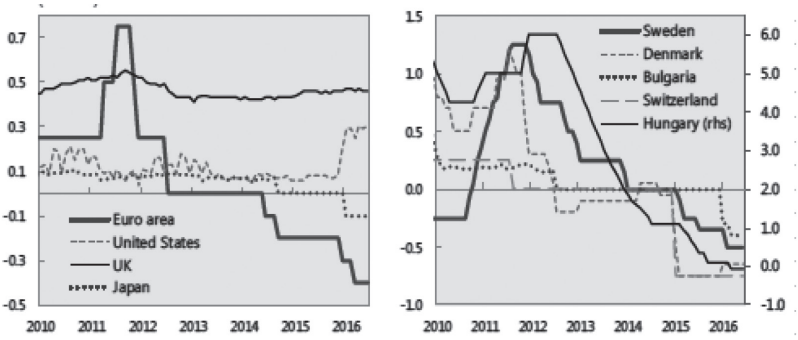
Denmark, Sweden, Switzerland and Japan) across the developed world underscore a low inflation world. The economists are referring this phenomenon as 'a new normal' for the financial industry.

Recently, we have seen that lower rates have been a problem in Japan and the EU in particular. A variety of economic factors have pressed these rates very low offering challenges to maintaining price and economic stability. Some of the key factors are related to the global supply and demand for funds, slower trend productivity, and economic growth. Figure 1 shows policy rates for four major economies: the United States, the Euro area, the United Kingdom and Japan; and the economies with negative territory.

It is understood, as the literature suggests that as rates cut aggressively, the investor seeking higher return will be in search of yield, and consequently, the flight of capital will influence the lending and consumption patterns within the jurisdiction. When banks pay customers on their mortgages and charge big corporate clients on deposits, though these challenges the financial intermediation model. The notion behind this mechanism is to encourage spending and discourage savings behavior to provide a much-needed impetus to a slowing economy. This is one of the ammunition for economic growth, but it is apparent from the experience of particular central banks that there is a limitation of options to combat global disinflation and low-interest rate. The post Brexit easing in monetary conditions – including delayed U.S. rate hikes further compounds this problem.

Figure 1: Policy Rates for Major Economies, 2010-2016



Source: Jobst and Lin (2016)

It is important to recall that back in March 2016, the Bank for International Settlements (BIS) cautioned that the policy risk backfiring if rates stayed negative for a prolonged period fix. Therefore, there has been the intense debate in the industry

on keeping the rates low or negative to provide the desired stimulus to the economy. In fact, Mr. Raghuram G. Rajan, ex-RBI Governor has recently commented, " *low-interest rates globally could distort markets and would be difficult to abandon, and they are no substitute for reforms*".[1] His words show both wisdom and experience. This indicates that governments' reliance on central banks for ultra-loose monetary policy is not a viable option for a long-term preferably it should be complemented by carefully designed fiscal and structural reforms to better cope with a low-interest rate environment.[2]

Developments in the current and previous year have provided more hints that the era of negative interest rates could be protracted than initially predicted. Amid these developments, we have seen some banks (in Europe) warning business customers that from year-end they could introduce negative interest rates for account holders. In this context, the question arises: How is this relevant to the Islamic banks and is there any profound impact on financial markets in emerging economies? We address this issue in next section of the paper.

Method

In line with the purpose of the paper and about Islamic banks, we collected recent available data (as of July/September 2016) from a sample of 12 jurisdictions. The samples are: Bahrain, Bangladesh, Brunei, Indonesia, Kuwait, Malaysia, Oman, Pakistan, Qatar, Saudi Arabia, Turkey, and the United Arab Emirates. These samples are holding roughly 70% of total Islamic banking global assets. The policy rates of these 12 jurisdictions were collected from the respective central bank or monetary authority individually. Therefore, the policy rate authorities from the 12 sample countries mentioned above, included: Central Bank of Bahrain; Bangladesh Bank; Autoriti Monetari Brunei Darussalam; Bank Indonesia; Central Bank of Kuwait; Bank Negara Malaysia; Central Bank of Oman; State Bank of Pakistan; Central Bank of Qatar; Saudi Arabian Monetary Agency; Central Bank of the Republic of Turkey; and Central Bank of the U.A.E. Furthermore, in terms of research method, we followed qualitative research approach with particular focus from the regulatory perspective.

[1] www.nytimes.com/2016/09/05/business/.../india-raghuram-rajan-central-bank.html.

[2] It is to be noted that monetary policy is set while carefully aligning with fundamental of the economy and reform plans, so, it cannot monotonously be decided only with linear combinations of growth rate.

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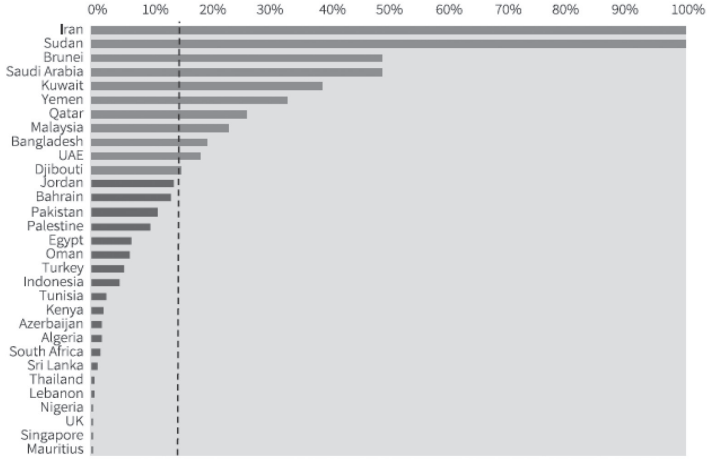
Result and Discussion

Foremost, it is essential to reflect on the Islamic banking sector related critical developments before discussing the implications of low rates. Islamic banking remains the most dominant form of asset-based intermediation system with approximately 80% of Islamic financial assets held within the banking sector in different asset classes, products, and services. The industry's assets remain heavily concentrated in the Middle East region and a select few Asian countries—the top ten Islamic banking jurisdictions account for almost 94% of the global Islamic banking assets (Figure 2). According to the IFSB Islamic Financial Stability Report (2016), the Islamic banking sector assets in full-fledged Islamic banks, subsidiaries, and windows amount to an approximately USD1.50 trillion as of IH2015 with a CAGR of 15.4% between 2008 and 2014.[3]

Figure 2: Islamic Banking Assets by Jurisdiction (1H2015)



Source: IFSB FSR 2016

Moreover, Figure 2 exhibits that Islamic banking sector in some jurisdictions (e.g., Brunei, Kuwait, Malaysia, Qatar, Saudi Arabia, the United Arab Emirates (UAE) and Yemen) is becoming gradually substantial. These jurisdictions seem to have accomplished at least 15% market share for their Islamic banking compared to total banking assets. This represents that between them, these financial

[3] The global IFSI reached an overall total value1 of USD1.88 trillion as of 2015 YTD (IFSB, FSR 2016).

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institutions account for more than 5% of the total global Islamic banking assets. The IFSB designates these jurisdictions as systemically important. This increasing prominence and higher market share of the industry pose some challenges for the stability of financial systems where Islamic banks operate. In this connection, net profit margin (NPM) or profitability remains a key concern.

At the outset, it is important to note that Islamic banks do not deal directly with interest rate or benchmark rate; however, as a matter of practice, most Islamic banking products, and financial instruments, are priced concerning a conventional benchmark rate (e.g., the LIBOR). Although, this entices criticism in a dual banking systems - where conventional banks operate side-by-side Islamic banks - changes in the market rates tend to introduce some risks in the earnings of Islamic banks, the value of assets, management of liquidity, and funding cost (Chattha and Bacha, 2010). In this context, a case in point is the low and/or negative rates and their implications to the Islamic banks[4]

In Islamic banks, investment account holders (IAH, also referred to as "profit sharing investment accounts (PSIA))' funds invested in fixed-return assets such as Murābahah; accordingly, the IAH or depositors expect a return reflecting current market conditions. This return is related to market rates and relevant benchmark rates on the return on assets and the returns payable on funding. This phenomenon is referred to as "Rate of Return (ROR) risk" by the IFSB. Therefore, contrary to an increase in benchmark rates (which may result in IAH having expectations of a higher ROR, while the returns on assets may be adjusting more slowly due to longer maturities), a scenario of a decrease in benchmark rates offer more interesting perspective, which has not explored adequately.

In simplistic terms, for Islamic banks, an important question that comes out of this concern is how IAH, which constitute a bulk of funding, will pay (a fee) for investing money with the Islamic bank? On the other hand, for Islamic capital markets (being a second most significant segment of the Islamic finance), the issue is similar to what conventional financial markets are facing: can Sukūk yields go negative at any given time considering the global yield trend?

With respect to benchmark rates, for Islamic banks, there is a fundamental

[4] Khan and Ahmed (2001) uses 'benchmark risk' or 'rate of return (ROR)' terminology instead of 'interest rate risk (IRR)' as to avoid unnecessary confusion since Islamic banks do not deal directly with interest rate. Subsequently, this term was used by the IFSB (2005), and other academicians and researchers (e.g. Ariss and Sarieddine, 2007; Cihak and Hesse, 2008; Chattha and Bacha, 2010).

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issue (i.e. no re-pricing of sale contracts, e.g. *Murābahah*[5])) that needs to be understood. Under Islamic finance, once the sale price is fixed for *Murābahah* financing, the Islamic banks cannot claim more than the pre-fixed sale price, even if the assets were to become 'non-performing' or the benchmark rate has been changed either upward or downward (Chattha, 2013). This indicates that if benchmark rate increases by the regulator, the conventional banks can easily adjust the impact accordingly. (For instance, if the rate is up, the conventional banks can reprice the loans as per the prevailing market rates).

Islamic banks, however, due to the nature of the sale contract and adherence to Shari'ah rules and principles, cannot adjust the impact because the rate cannot changed once it fixed. They will have to wait until the contract matures. This contract leaves the Islamic banks vulnerable from a risk management perspective compared to their peers and reflects an important consideration for the asset-liability management (ALM) in Islamic banks. Alternatively, Islamic banks restructure or enter into profit rate swap.

On the other hand, if the benchmark rates were going down, as a case in point, then in principle Islamic banks would not be at a disadvantage at least for the cash flows that have been contractually agreed with the customers under *Murābahah* financing until the maturity of the contracts. Nevertheless, there will be concerns on extending new financing at lower rates, which subsequently can lower Islamic banks' NPM.[6] Another possibility that Islamic banks can face during the lower benchmark rates regime is the early settlements of financing, as it would appear expensive to the customers.[7] Refinancing may be sought by customers to benefit from the more competitive rate. Detailed implications and controls discussed in the following subsections.

[5] The balance sheet of the Islamic banks' suggests that *Murābahah* financing is the most dominant form of financing extended by the Islamic banks to the customers for different needs.

[6] Similar to their conventional counterparts, the role of Islamic banks is maturity transformations, where they borrow funds in short-term and offer long-term financing/investments. Therefore, banks benefit from steep yield curve, which translates into wide spread between long-term and short-term market rates. It is important to underline that when yield curve steepens Islamic banks NPM rises and conversely, when yield curve flattens bank's NPM falls. In this way, low short-term rates can compress NPMs.

[7] In this context, it should be noted that the prohibition of interest (*Riba)* in Islamic finance does not allow Islamic banks to refinance debts on the basis of renegotiated higher markup rates. However, debt rescheduling or restructuring arrangements (without an increase in the amount of the debt) are allowed.

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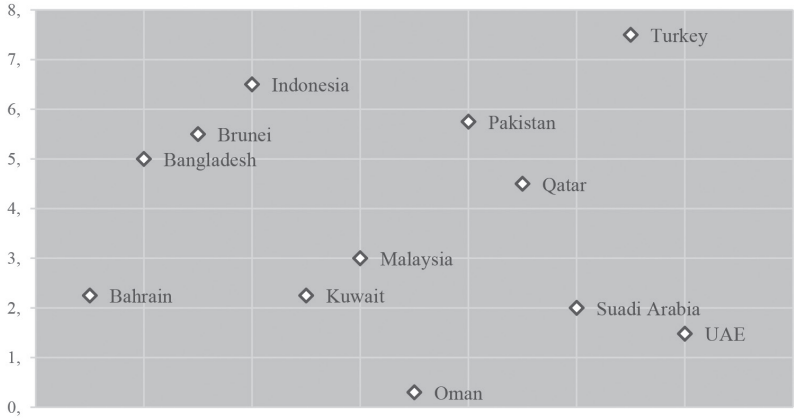
Figure 3: Policy Rate by Central Banks Having Islamic Finance (%)



Source: Authors workings from sample central banks data

Note 1: Every country's economy is driven by something called "Policy Rates". In essence, these rates are used by central banks as the main indicator to convey signals to the market revealing the stance of their monetary policy.

Note 2: The latest available policy rate for each central bank is used in Figure 3. Of 12 central banks, for eight central banks, the data (i.e. policy rate) is as of July 2016; two central banks (as of September 2016); one as of June 2016 and another as of August 2016.[8]

Note 3: The repo rate is a rate at which commercial banks can borrow from a central bank to cover temporary shortages of liquidity. In this process, the central bank normally buys domestic government securities from the banks and sells them back two weeks or one month later. This rate is used to control inflation, that is, price stability. On other hand, the term 'reverse repo' is the rate at which a central bank would borrow from commercial banks.

To analyze the possible risks and implications of the low rate environment for Islamic banks, the comprehension of the policy rates in critical Islamic finance jurisdictions is essential. Primarily, it argued that the benchmark rate risk may not hit the traditional Islamic finance markets soon but it may slowly and surely spread beyond EU and Japan. There are immediate concerns and implications if Islamic banks are operating in the jurisdictions, which described in Figure 1.[9]

[8] The type/name of the policy rate and the latest available policy rate for each central bank used in Figure 3 are as follows: Overnight Repo Rate as of September 2016 (Central Bank of Bahrain); Bank rate as of August 2016 (Bangladesh Bank); Prime Lending Rate as of June 2016 (Autoriti Monetari Brunei Darussalam); Bank Indonesia rate as of July 2016; Discount rate as of July 2016 (Central Bank of Kuwait); Overnight Rate as of September 2016 (Bank Negara Malaysia); Overnight Domestic Inter-Bank rate as of July 2016 (Central Bank of Oman); Policy rate as of July 2016 (State Bank of Pakistan); Repo rate as of July 2016 for Central Bank of Qatar and Saudi Arabian Monetary Agency; Overnight rate as of July 2016 (Central Bank of the Republic of Turkey); and Six month Emirates Inter-Bank Offered Rate as of July 2016 (Central Bank of the U.A.E).

[9] It is important to note that in the current global environment not only are the rates low, so are the

To test the hypothesis for Islamic banks about Figure 1, recent data (as of July/ September 2016) from a sample of 12 jurisdictions as mentioned above suggests that policy rates are positive and most of the central banks are keeping above 200 bps (Figure 3). The historical trend, nevertheless, is in line with the global economic development. In the context of central bank policy rates, it is important to note that these rates are the monetary tools of central banks, which they use to control the money supply in the country, determine and maintain day-to-day liquidity in the system and to determine other bank rates. Also, it is also worth noting that these rates are always lower than the rates on which conventional banks and Islamic banks lend/finance customers in local currency-denominated loans/financing.

As indicated above, the rates in the Islamic finance jurisdictions are positive but yet they are on a declining trend. If the rates continue sliding, this would mean that Islamic banks can face a variety of challenges (e.g., squeeze on profits, excessive risk-taking, distortion in credit allocations, and late signaling of credit quality), depending on their circumstances and the jurisdictions in which they operate.

Also, the actual impact will depend on the business model and portfolio sophistication of an Islamic bank. For instance, the effect will be different when an Islamic bank is highly concentrated in a financing portfolio as compared to an Islamic bank which has considerable exposures in investments (e.g. listed and non-listed equities, Sukūk, real estate, mutual funds) or investments and/or financing.

Within the argument above, the critical implications are assessed from two angles: the balance sheet and the profit loss statement (PLS) (Figure 4). In the former case, though Islamic banks would benefit from lower bank-funding costs. However, the impact would be to the new investment of Shari'ah-compliant financial assets (mainly through Sukūk due to low yield), possibly lower financing by the Islamic banks resulting in less economic activity within the country, and deterioration of asset quality (probably due to due to non-performing financing and early settlements by the customers). In the latter case (i.e., PLS), NPM—through Shari'ah—compliant financing—will squeeze resulting low retained profits.[10] his profitability concern will have implications for Tier-1 capital as

expected returns in any asset class (e.g. equity, bond and RE). Therefore, this may affect the Islamic bank as well. This is examined in this paper. At this point it's not clear how long such low rate will last (with a complicated dynamics of lower bound oil price); however, are there any build up risks – in search of yield and how carefully supervisors handle these risks, would be worth questions to address in future.

[10] It is important to note that Islamic bank profits are not likely to decline in countries with large outstanding financing amounts due to the fact that banks' customers are contractually obliged to pay back house/car financing installments until the maturity of the their contracts. That said, there will be no exposure to those financing, but certainly new financing at lower rates will reduce the banks' financing margins which need to be off-set with other measures.

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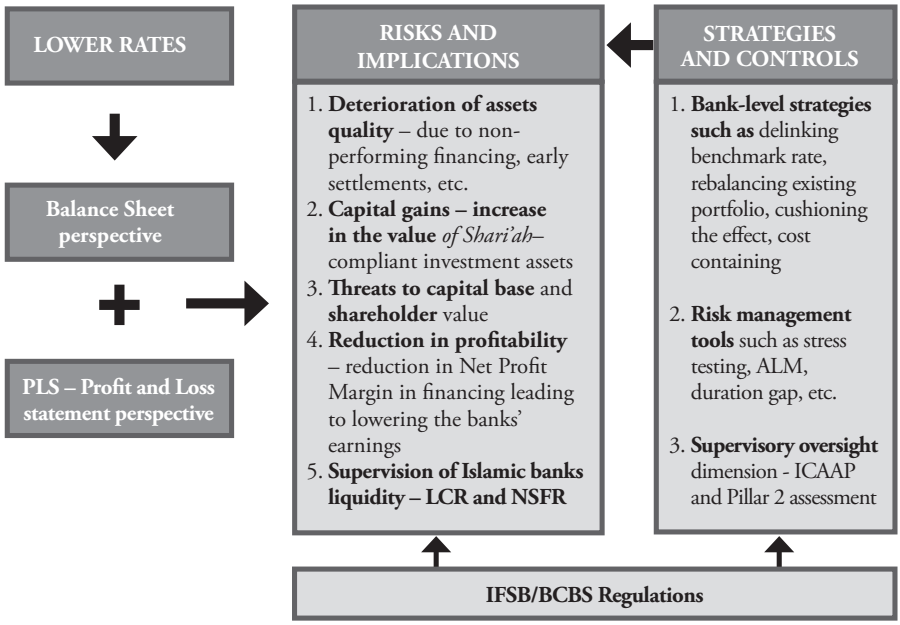
well. It is important to mention that Tier-1 capital is the core measure of an Islamic bank's financial strength from a regulator's point of view. It is composed of Common Equity Tier-1 and Additional Tier-1. The former forms the highest quality of capital for Islamic bank and is comprised of common equity share capital, retained earnings and some other reserves, the latter is consists of Sharī`ah-compliant instruments and some reserves.

Figure 4: Benchmark rates: Diagnostic Analysis, Implications and Controls



Source: Authors

About profitability amid the low rates regime, the IFSB Islamic Financial Stability Report (2015 and 2016) also points out that the profitability of Islamic banks has recovered but it is still below the 2008 level, and net profit margin has declined. This fact shows that the profound impact - of low rates regime coupled with sharp falling commodities prices mainly oil - have contributed to the deterioration of Islamic banks' profitability and an extent, asset quality.

The term structure (maturity dates) of assets and liabilities points out that Islamic banks tend to have longer maturities on the asset side of the balance sheet compared to shorter maturities to fund these assets (Chattha and Bacha, 2010). For this very reason, this intermediation poses serious challenges and put a significant emphasis on the management of the ALM and NPM by Islamic banks.

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As the lending/financing standards are relieved, negative policy rates transmission can observed to the broader economy for both households and corporates. Nevertheless, any reduction in rates makes savers worse off while borrowers benefit and could have critical intergenerational implications (Jobst and Lin, 2016). Also, when banks lower lending/financing rates to both households and corporates, they will have to offset the negative impact on lending/financing margins either by some small increase in fees and commissions or cost-cutting. This suggests increasing fee-based (Wakālah) activities within the Islamic banks.[11] In light of the substantial reductions in the deposit rate will weigh on banks' equity prices, as investors will be likely to revise down their expectations of banks' future earnings. This fact also raises financial stability concerns for a regulator. In particular, the downward stickiness of deposit rates encourages banks to substitute less stable wholesale funding for deposits (Jobst and Lin, 2016) and it can offer more incentives for hoarding cash.

The Islamic banks' assets under Murābahah cannot reprice when benchmark rates are going down, but it is important to see how it works on the deposit side. On the liabilities side, a closer look at the deposit composition of the Islamic banks reflects the following considerations for the NPM in light of the lower benchmark rates. The reflections are: (a) Concerning PSIA, the Islamic banks that cannot change the PSR (profit-sharing ratio) due to the contractual stipulation, but they can pass on the rate of return to the PSIA, which is commensurate to the market rates. In this case, the impact to Islamic banks' NPM will be lesser as on the asset side cash inflows (which contractually agreed with the customers) will not change. They will pay the market rates to the PSIA; (b) If the Islamic banks offer more current accounts (e.g., Qard or Wadī'ah), then the cost to these accounts will be closer to zero. This, in turn, will have less impact on the Islamic banks' NPM. These current accounts in Islamic banks are similar to traditional deposits, and these banks sometimes provide these statements with a "gift" (Hiba) to provide level playing field. Lately, in certain jurisdictions, some Islamic banks are launching immense campaigns to derive more current account based-funding, which seems to be sticky, and hence cheaper for the banks. (c) Commodity *Murābahah*[12] (also terms as reverse *Murābahah*) based funding (or CMT)[13] will have to reflect the market conditions in

[11] In EU, though margins get real tight, the banks have done exceptionally well to stay profitable in negative rate. For instance, low impairment charges and greater wholesale funding at negative rates has benefitted them. These measures appear to be relevant and Islamic banks can benefit equally.

[12] According to the IFSB Guidance Note 2, the term "Commodity Murābahah Transactions (CMT)" means a *Murābahah*-based purchase and sale transaction of Sharī`ah-compliant commodities, whether on cash or deferred payment terms. See IFSB GN-2 (2010): *Guidance Note in Connection with the Risk Management and Capital Adequacy Standards: Commodity Murābahah Transactions*.

[13] Using commodity *Murābahah* as a source of funding introduces a new category of item

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particular the likelihood of the arrangements being rolled over by the counterparty. As the counterparties look for a stable and fixed return through Sharī`ah-compliant structures, the lower benchmark rates can play an essential role in their decision whether to roll-over their term deposit funding or withdraw and look for higher yields on alternative asset classes. In this respect, the ROR risk for this type of deposit is different from ROR risk in connection with a PSIA. The former has a contractually fixed return ex-ante in the form of the cost plus profit, whereas the latter, holders of PSIA have no such contractually fixed rate of return..

In summary, the above considerations reflect the following: (1) On the substance, with a negative benchmark rate a *Mudārabah*-based deposit account would not work. One based on CMT might do so, with the *Murābahah* payable at maturity being less than the original cash price. Another solution worth considering would be one based on *Wakālah*, such that the bank would get its fee while the depositor would get the return from investing the funds (less the fee). If the return were negative, the depositor would bear the loss but that would not be inevitable so the product might be more attractive than the CMT-based deposit with a built-in negative return. (2) It is clear that with benchmark rates so low, Islamic banks are highly exposed to ROR risk as rates are bound to rise eventually and if an Islamic bank is locked into financing assets with very low returns it will be seriously squeezed. Effective ALM with gap analysis will be crucial. *Ijārah*-based financing can be repriced based on a benchmark. *Murābahah* can be offered in the form of a revolving credit (say 3-monthly).

Moreover, we should bear in mind as governments are finding out, low rates do not encourage consumers to borrow if they are afraid of unemployment, and similar considerations apply to businesses in time of significant economic uncertainty. There is also a danger that, in search of yield, banks and investment managers invest in more risky assets. This would call for increased loss provisions.

If the deposit rate is kept below zero or virtually zero by any central bank then it suggests that the central banks want to encourage the banks for more financing rather than placing the funds with the central bank. In this way, provided there is real growth in economy, the credit will grow; else such cheaper credit may turn to bad quality assets. Quite often in these circumstances, the banks will opt to search for high yield cross-border destinations. In addition, it is imperative to understand that the slowing economy would put the brakes on corporate or consumer financing and this in turn, would shift the attention of Islamic banks to the *Sukūk* market to

to the balance sheet of an Islamic bank, which should be classified as a liability of the bank based on its contractual obligation. In principle, the advent of this concept in Islamic banks brings about a divergence from the traditional mode of mobilising funds in Islamic banks (e.g. *Mudārabah* (PSIA)).

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use excess liquidity present in the system. However, it can be argued that with global yield on average close to zero, may not provide incentive for the banks to continue holding large chunks of regional or sovereign *Sukūk*.

Therefore, the above necessitates for greater attention on the appropriate supervision of Islamic banks' liquidity, including the newly introduced measures of liquidity such as the liquidity coverage ratio (LCR) and net stable funding ratio (NSFR). While the LCR promotes resilience over a short-time horizon, the NSFR promotes resilience over a longer time horizon. Both the LCR and NSFR as part of liquidity formed one of the key planks of the Basel III reform package, as liquidity problems faced by banks were a key feature of the crisis and a disruption to liquidity availability is a central element in the origination or amplification of systemic financial crises (Daniel and Philipp, 2014). In particular, this calls for more emphasis with respect to liquidity in Islamic banks, as banks are faced with, among others, perennial issues of short-term Shari'ah-compliant financial instruments that meet the *Shari'ah*-compliant high quality liquid assets (HQLA), which is a Basel III and the IFSB requirement under the LCR.

Based on Figure 4, a low-yield environment can be managed through appropriate strategies and controls as explained below. From a risk management perspective, there is no exhaustive list of the strategies but Islamic banks can address this phenomenon by three approaches. Of these three approaches, the first two relate to purely Islamic banks and the last one discusses the supervisory perspective. These proposed approaches will ensure and enable the Islamic banks to envisage the damage in advance and prepare themselves for the contingency planning; on the other hand, these controls would provide some comfort to their supervisors in their supervisory review process under Pillar 2. It is expected that the impact of these controls will be dependent upon the size, business model, and sophistication of the Islamic banks.

The first approach for the Islamic banks is to have a combination of bank-level operational strategies as follows: First, Islamic banks may delink the use of benchmark rate or to avoid the use of benchmark rates in their products. Considering this issue has immensely been debated in the industry from a *Shari'ah* perspective, so the delinking may be more appropriate to build a truly *Shari'ah*-based Islamic banking model. This requires that the banks develop and offer more equity-like (*Mushārakah* and/or *Mudārabah)* or *Wakālah* based products. In this respect, one of the notable recent example is by the Central Bank of Pakistan (State Bank of Pakistan, SBP), which has issued a circular[14] granting Islamic banks option

[14] State Bank of Pakistan, IBD Circular No. 1 of 2016, Exemption from KIBOR as Benchmark rate for Participatory and *Wakālah* Modes Based Products, available at http://www.sbp.org.pk/ibd/2016/C1.htm.

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to dissociate from interest rate benchmark for financing provided on the basis of participatory (*Mushārakah* & *Mudārabah*) and *Wakālah* (Agency).[15] It is understood that in this way, banks will use an alternative to the use of benchmark rates and they will diversify their products thus having a minimum exposure to the use of conventional benchmark rates. A more robust internal rate of return from portfolio of risk sharing instruments with service-based income could be explored.

Second, Islamic banks should get involved in rebalancing existing portfolios (i.e. ALM optimizations) and depending on banks business model, the ALM framework needs to be reviewed to understand the impacts.

Third, Islamic banks should cushion the effect of changing benchmark rate by altering the business, that is, higher fee income and/or carefully adjusting tolerance to loan-loss provisions. In this context, as stated above, it is important to bear in mind that re-pricing is not allowed for Islamic contracts on the asset side; however, increasing fees across the products is a viable strategy. Thus, the banks may consider introducing handling fees on a manual services and paper based transactions, as well as introducing value added promotional services for the merchants to boost revenue.

Lastly, through the adoptions of new value-add distribution strategies and lowering personnel and non-personnel costs (e.g. the banks can selectively reduce branches and move towards digital transformations, where the cost saving will have immediate impact).

The second approach is to use risk management tools such as *stress testing, ALM techniques, duration gap analysis*[16], *etc.* to effectively manage the benchmark rate and in calculating the economic impact of the ROR risk on the Islamic banks' balance sheet. In particular, within these tools, an emphasis should be made to stress testing by Islamic banks, where banks should include a profitability scenario under

[15] The circular by the SBP, however, also indicates that Islamic banks desirous of availing this exemption shall ensure, among others: (a) adequate measures for risk management to mitigate equity investment risk in participatory mode based products; (b) compliance with minimum *Shari'ah* requirements set vide various circulars and AAOIFI *Shari'ah* Standards; (c) submission of the details of *Mudārabah*, *Mushārakah* and *Wakālah* based products (new/revised) for delinking with KIBOR benchmark including:(i) detailed mechanism for pricing under these modes with proper policies for risk mitigation;(ii) amendments in agreements and related documents; (iii) approval of Islamic banks' product by their *Shari'ah* board;(iv) criteria for selection of firms/companies with whom Islamic banks can execute *Mushārakah* or *Mudārabah* contract.

[16] The duration gap is the difference between the durations of a bank's assets and liabilities, and it is defined as the "weighted average maturity in which the weights are stated in present value terms" (Chattha and Bacha, 2010). In addition, the BCBS's definition also reflects that "duration is a measure of the percentage change in the economic value of a position that will occur given a small change in the level of interest rates."

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low profit rate regimes into their constrained bottom-up stress-testing programme (Chattha, 2016). From a risk management perspective, mainly in stress testing exercise, this negative rate was an anchor scenario in EU as profitability and net margin were under threat in this regime. This issue is equally relevant to the Islamic banks and they should consider in their stress testing framework under Pillar 2 of Basel Accord, the low-yield rate environment and its implications on the profitability and NPM for sustainability.

In regard to stress testing, it is worth noting that in May 2009, from a regulatory and financial stability point of view in response to the GFC, the BCBS issued "*Principles for Sound Stress Testing Practices and Supervision*" comprising 21 principles. Three years later, in March 2012, in line with the BCBS framework on stress testing, IFSB-13 (*Guiding Principles on Stress Testing)* provided a comprehensive stress-testing framework for both Islamic banks and their supervisory authorities as BCBS did not cover the specificities of Islamic banks. The framework consists of 29 *Guiding Principles* (22 for Islamic banks and 7 for supervisors). Drawing on these 29 *Guiding Principles,* Chattha and Archer (2016) provide technical guidance (including a stress testing matrix) on how to carry out stress testing in accordance with these principles.

Lastly, Islamic banks should include benchmark rates risk implications into their internal capital adequacy assessment process (ICAAP) under Pillar 2 supervisory requirements. In this respect, regulators will have to determine that Islamic banks have adequate systems to identify, measure, evaluate, monitor, report and control or mitigate ROR risk in the banking book on a timely basis. The ICAAP will ensure that Islamic banks are well aware of additional capital requirements to cope with the changing benchmark rates.

From a regulatory point of view, both the Basel Committee (BCBS) and the IFSB set clear guidance on the risk management in particular for the ROR risk in their respective standards. To ensure Islamic banks take into account the implications of benchmark rate risk or ROR risk on their balance sheet and income statement in their stress testing and ICAAP exercises, the regulator/supervisor should ensure that its supervisory assessment including *on-site examinations*[17] and *off-site analysis*[18] places significant emphasis on quality of an Islamic bank's risk management system.

[17] On-site work is used as a tool to provide independent verification that adequate policies, procedures and controls exist at IIFS, determine that information reported by IIFS is reliable, obtain additional information on the IIFS and its related companies needed for the assessment of the condition of the IIFS, monitor the IIFS's follow-up on supervisory concerns, etc. (IFSB-17, 2015).

[18] Off-site work is used as a tool to regularly review and analyse the financial condition of IIFS, follow up on matters requiring further attention, identify and evaluate developing risks, and help identify the priorities, scope of further off-site and on-site work, etc. (IFSB-17, 2015).

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Within the supervisory assessment, the following considerations play pivotal role. First, the Islamic banks mainly in the EMs are split between two divergent regimes: the expectation of achieving higher growth across the jurisdictions amid ultra-lose monetary policy by central banks; and the compliance to new and tougher rules by the Basel III and the IFSB on lending/financing standards (including risk weights for counterparties, collaterals, and capital requirements). In the latter case, to meet the target growth rates, if central banks relax financing standards, then banks may end in pilling up significant provisions due to non-performing financing. In addition, in such an environment, banks' investment assets portfolios will be affected, for instance, due to deterioration in the collateral values of the counterparties, which will ultimately reduce banks' investment value and increase the chances of default. Therefore, from the Islamic banks perspective, this might not be sustainable unless they increase the volume of the business, and hence, they will be afraid to finance more on cheaper rates. This represents a classic case of expectation and conflict of priorities for banks and their regulators.

Third, in theory low benchmark rate should encourage consumers and household to take more debt, but in practice, the major and emerging economies are still struggling to cope with this theory. The supervisors should bear in mind that low returns on safe assets might encourage a leveraged search for yield, which increases financial system vulnerabilities. Moreover, in the pursuit of financial stability, supervisors also have to ensure that banks (including Islamic banks) continuously safeguard risk management, as fragile economic and financial environment can eventually transmute a stable banking system into a considerable stress. In the current scenario, the role of regulators is very critical in order to manage the drastic consequences/fallout.

Conclusion

The global banking industry is witnessing a historic low rates regime. Though, lower rates can have a positive effect on the economy, thus helping to lower bank-funding costs and boost asset prices; yet, concerns about their negative effect on Islamic banks' profitability, financial stability, and sustainability equally resonate to be comprehended. However, persistently low benchmark rate regime carries strategic implications for the behavior of institutional investors as well as financial institutions. In light of the low rate environment, the paper reflected that the primary risks to Islamic banking sector may include pressure on profitability, excessive risk taking (e.g. if Islamic banks search for yield by increasing financing to lower quality borrowers highlighting default risk), distortion in credit allocations (when economy is not growing), and late signaling of credit quality thus delaying balance sheet/credit restructuring.

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Considering the current and potential growth projections in light of the prevailing policy rates, as such, the dominant Islamic finance jurisdictions are not likely to go into a very low or negative benchmark rates trajectory in near future. Nonetheless, so long, the Islamic banks use the conventional benchmark rates in their products, their exposure to the volatility of the rates, remains a candid concern for them and their supervisors. For Islamic banks, managing risks (funding to extending credit) is not vastly different to conventional banks, but it will be a test on the substance of actual Islamic finance: how would the Islamic banking product/ structures will adopt to inverse of the risk-return relationship (you get paid to borrow)? In particular, given the lack of disclosures for the IAHs, which are labelled as retail investors and being less sophisticated, they would face it extremely difficult to digest the economics behind the low or negative yield phenomenon and would barely accept such thing. This will certainly challenge the whole idea of financial intermediation which significantly relies on a leveraged model.

In our view, irrespective the direction (upward or downward) of the rate and the jurisdiction in which it matters, the management of this risk, with appropriate tools (such as duration gap, ALM, ICAAP, and stress testing), is pivotal for Islamic banks for a variety of reasons and implications as reflected in the paper. At this end, it is hoped that initial discussion on this subject provides a broader policy dialogue, though more empirical examination of the subject is needed on the impact whether at domestic level or at cross-border level.

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