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Monetary Policy in the Presence of Islamic Banking

by Mariam El Hamiani Khatat

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Monetary Policy in the Presence of Islamic Banking

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Abstract

This paper discusses key issues related to the conduct of monetary policy in countries that have Islamic banks. It describes the macrofinancial background and monetary policy frameworks where Islamic banks typically operate, and discusses the monetary transmission mechanism in economies where Islamic and conventional banking coexist. Most economies with Islamic banks also have conventional banks and this calls for a comprehensive approach to monetary policy. At the same time, a dual approach to monetary policy should be considered whenever the Islamic segment of the financial system is not as developed as the conventional one. The paper tries to shed light on potential spillovers between conventional and Islamic financial systems, and proposes specific recommendations on the design of Islamic monetary policy operations and for facilitating monetary transmission through the Islamic financial system.

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Contents Page

Boxes

Appendices

GLOSSARY

AREAER	Annual Report on Exchange Arrangements and Exchange Restrictions
CA	Current Account
CB	Central Bank
FX	Foreign Exchange
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GFSR	Global Financial Stability Report
GIC	Government Investment Certificates
HQLA	High Quality Liquid Assets
IDB	Islamic Development Bank
IFSB	Islamic Financial Services Board
IIFM	International Islamic Financial Market
IIFS	Institutions offering Islamic Financial Services
IILM	International Islamic Liquidity Management Corporation
IIMM	Islamic Interbank Money Market
IMF	International Monetary Fund
ISIMP	Information System for Instruments of Monetary Policy
LOLR	Lender of Last Resort
MII	*Mudarabah* Interbank Investment
MoF	Ministry of Finance
MTM	Monetary Transmission Mechanism
OMO	Open Market Operation
PLS	Profit and Loss Sharing
PSIA	Profit-sharing Investment Account
REPO	Repurchase Agreement
RR	Reserve Requirements
SF	Standing Facility
SLOLR	*Shari'ah*-compliant Lender of Last Resort
SME	Small-and-Medium Enterprise
SPV	Special Purpose Vehicle
U.A.E.	United Arab Emirates
U.K.	United Kingdom
U.S.	United States of America
WDI	World Development Indicators
WEO	World Economic Outlook

I. INTRODUCTION

Despite a fast growing Islamic banking industry, the implementation of monetary policy and the transmission mechanism of monetary policy in the presence of Islamic banks remain a challenge for the central banks (CBs). The challenges arise not only from the Islamic finance core principles but also from the macrofinancial background and monetary policy frameworks of countries where Islamic banks operate. Since the early 1990s, the related literature has broadly followed two streams: the first one, theoretical, was derived from the work of Khan and Mirakhor (1990) and was based on the premise that Islamic finance is strongly anchored on the profit-and-risk sharing principle and mainly equity-based. The second one, empirical, has focused on monetary transmission from the conventional segment to the Islamic segment of the financial system (Cevik and Charap, 2011). This paper builds on both streams and highlights the evolving nature of Islamic financial systems and related complexity of the transmission and operation of monetary policy in dual financial systems (i.e. coexisting Islamic and conventional systems).

Financial systems where Islamic banking is systemic are typically dual and not fully developed. Islamic banks tend to develop side-by-side conventional banks and are influenced by "standard" monetary policy instruments and conditions. As Islamic finance grows in importance, development in that segment may start to influence, under competitive pressure, the conventional financial system and overall market conditions. Islamic banks are not isolated from the macrofinancial background in which they operate: exogenous shocks, macroeconomic management, and systemic liquidity conditions have implications for monetary policy implementation and its transmission through the Islamic banking system.

Assessing monetary policy effectiveness in the presence of Islamic banking is complex, as it requires examining it through multiple and sometimes conflicting dimensions. These include: the fundamental Islamic principles of ex-ante interest payment prohibition and profit-and-risk sharing; the spillovers from the conventional segment to the Islamic segment of the financial system; and the monetary policy framework and instruments in place. As in conventional systems, monetary policy in the presence of Islamic banking needs to adequately address structural excess liquidity, financial system shallowness, and fiscal dominance issues. Dominant public sectors, direct monetary financing of fiscal deficits, or distorted credit environments also limit the scope of monetary policy transmission through Islamic banks.

Monetary policy mainly works through prices or quantities. However, the CBs' capacity to influence market conditions varies significantly. The effectiveness of the CBs' actions through price setting necessitates sufficiently developed financial systems to transmit the signaling effect of monetary policy. Shallow banking systems and underdeveloped financial markets hinder the effectiveness of the monetary policy signal, while rigid exchange rate regimes leave little room for the exchange rate channel to play a role in the monetary transmission mechanism. On the other hand, intervention through quantities is often tied to the ability of CBs to affect the supply of credit, but excess liquidity and constrained credit environments can weaken monetary policy transmission through the credit channel.

When conducting monetary policy in the presence of Islamic banks, caution is required in assessing the monetary transmission mechanism. Islamic financial systems are heterogeneous: they can be full-fledged Islamic or they can be developing side by side a more-or-less mature conventional banking system. Introducing Islamic banks in macrofinancial environments where the interest rate channel is well established can result in conventional monetary policy transmission through the Islamic financial system, even if this transmission has not been anticipated by the CB. In full-fledged Islamic financial systems, monetary policy transmission could be activated through the credit channel as long as the CBs' actions affect the supply of Islamic credit. However, the bank lending channel—or *financing* channel for Islamic banks—may eventually weaken with financial liberalization and financial markets development. Another important consideration is the extent to which the CB can influence the funding costs[2] of Islamic banks by targeting the profit-sharing ratio of interbank *Mudarabah* markets.

Monetary policy objectives in the presence of Islamic banks have to be adapted to the level of development of the Islamic financial system and its interaction with the conventional one. At an early stage, special attention should be given to the development of Islamic credit, money, and government *Sukuk* markets, as well as to the design of effective sterilization policies and liquidity management frameworks. As both segments of the financial system become more balanced, a unified monetary policy stance might be feasible when there is arbitrage between the conventional and Islamic segments of the financial system. However, arbitrage between conventional and Islamic banks as well as the resulting monetary transmission from the conventional to the Islamic segment of the financial system incurs the risk of not being accepted by all Islamic finance standard setters. Going forward, there is a need to explore when and how a unified monetary policy stance can be achieved by using conventional and Islamic monetary policy instruments simultaneously.

The rest of this paper is structured as follow: Section II gives an overview of the macro-financial background and monetary policy frameworks where Islamic banks operate; Section III explores the monetary transmission mechanism in economies where Islamic finance is reaching a critical size; Section IV provides some guidance on how to adapt the monetary policy framework in the presence of Islamic banks; Section V discusses the monetary policy operational framework for Islamic banks; and Section VI concludes.

[2] In conventional interbank markets, funding costs are interests paid for the funds borrowed; in interbank *Mudarabah* markets, funding costs represent the share of profits that is given to the financier or provider of funds (*Rab-al-mal*).

II. Macrofinancial Background and Monetary Policy Frameworks

There are few economies where monetary policy operates with an important Islamic financial segment as a backdrop. These are mainly countries in the Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (U.A.E.)) as well as Bangladesh, Brunei, Iran, Jordan, Malaysia, Pakistan, Sudan, and Yemen. Except Iran and Sudan, the majority of these countries have dual financial systems. The experience of some of these countries shows that it is possible to have low and stable inflation and a functioning transmission mechanism for monetary policy in the presence of Islamic banks. However, monetary transmission through the Islamic segment of the financial system may not be accepted by all *Shari'ah* scholars when it comes to the role of interest rates. At the same time, the experience of these countries suggests that when supported by sound macroeconomic management and adequate institutional arrangements, an Islamic monetary policy may, under certain conditions, be transmitted through the credit channel and implemented with Islamic monetary policy instruments.

At present, Islamic finance has reached systemic importance mostly in countries with fixed exchange rate regimes and not fully developed financial markets. In fact, the majority of the countries where Islamic banking assets are an important share of the financial system operate a fixed exchange rate or a monetary targeting regime. The GCC countries, Jordan, and Brunei have an explicit exchange rate anchor, while Bangladesh and Yemen allow limited exchange rate flexibility (Table 1). Many of these economies have financial systems that are not fully developed and the share of domestic credit-to-GDP is below 50 percent (Figure 1). Islamic finance has grown rapidly over the past decade fuelled by financial liberalization, capital inflows and large savings accumulated by oil-exporting countries that are seeking to invest in these instruments. Islamic assets per capita around the world exhibit an inverse relationship with the countries' degree of exchange rate flexibility and a direct relationship with the countries' current account surpluses, oil-rents and GDP per capita (Figure 2).

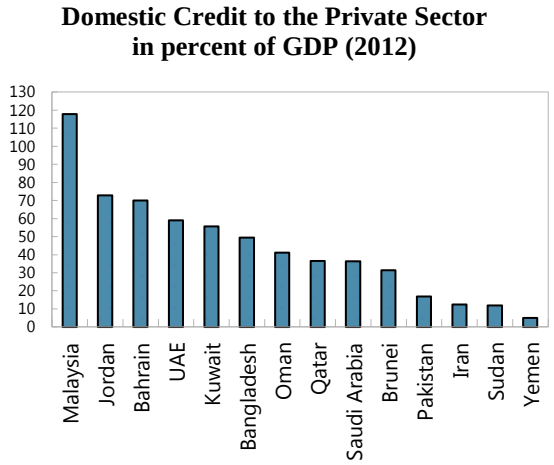
As expected, Islamic banking countries that have fixed exchange rates tend to have more stable inflation and more volatile growth than countries with more flexible exchange rates. In countries with pegged exchange rates, money becomes endogenous and the control of systemic liquidity is crucial. For these countries (GCC, Jordan, and Brunei), the monetary policy anchor is the exchange rate and liquidity management becomes a key feature of an effective monetary policy. In some countries with other monetary policy regimes (e.g. Iran, Sudan, Pakistan, and Yemen), there seems to be a more pressing need for strengthening the monetary policy framework to keep inflation in check. Among all countries where Islamic finance represents an important segment of the financial system (i.e. with fixed and more flexible exchange rates), Brunei, Bahrain, and Malaysia recorded the lowest inflation rates during the period 2004–2013 (Figure 1).

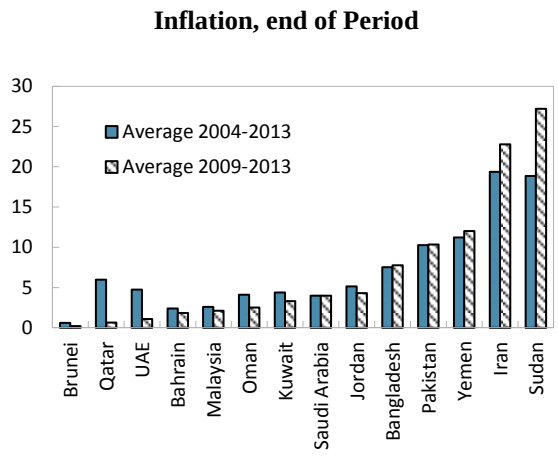
Table 1. Monetary Policy Frameworks and Exchange Rate Arrangements in Countries with Islamic Banks (as of 2014)

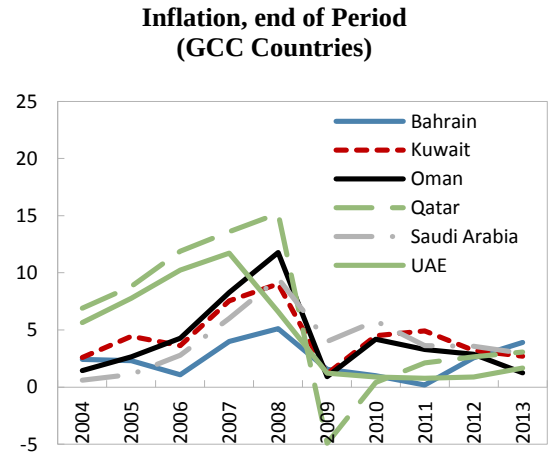
Exchange Rate Arrangement (number of countries)	Monetary Policy Framework						
	Exchange Rate Anchor (9)				Monetary Aggregate Target (2)	Inflation-Targeting Framework	Other (3)
	U.S. Dollar (6)	Euro	Composite (2)	Other (1)			
Currency board (1)				Brunei Darussalam			
Conventional peg (7)	Bahrain Jordan Oman Qatar Saudi Arabia U.A.E.		Kuwait				
Stabilized arrangement (2)					Bangladesh Yemen		
Other managed arrangement (4)			Iran				Malaysia Pakistan Sudan

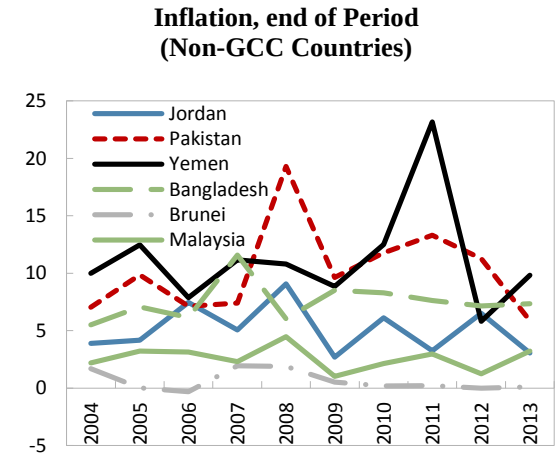
Source: Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) 2014.

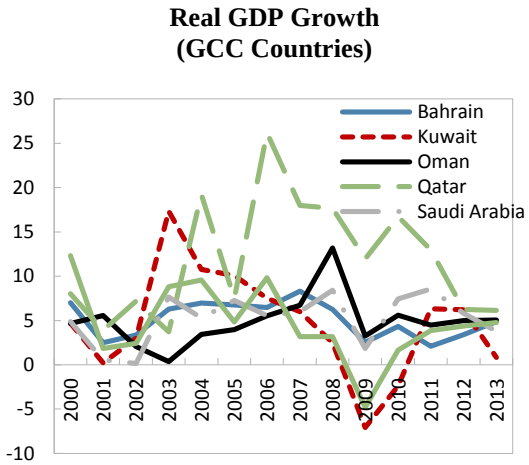
Figure 1. Islamic Banking, Financial Deepening, and Monetary Policy

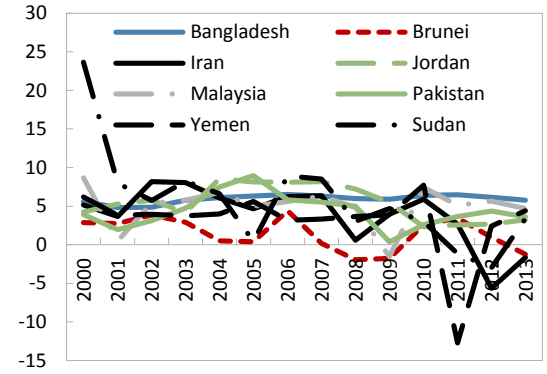






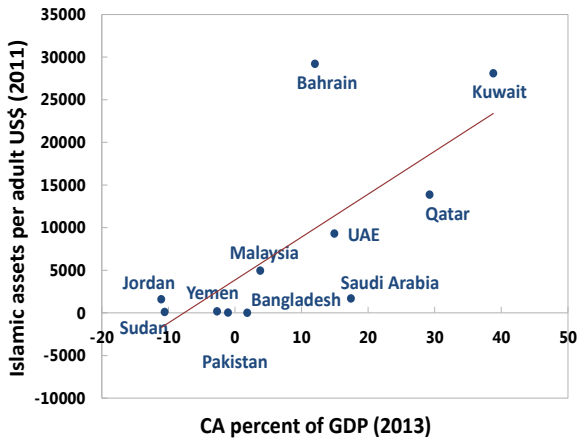


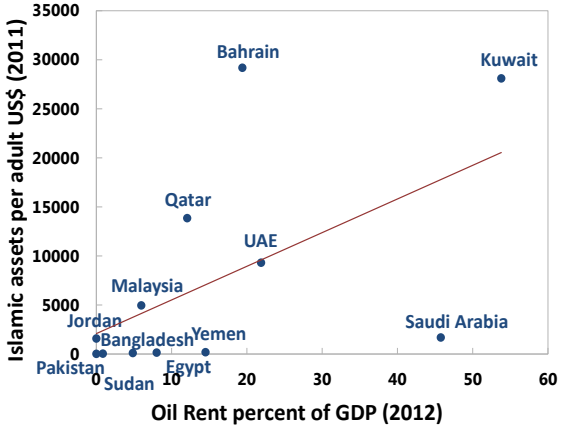


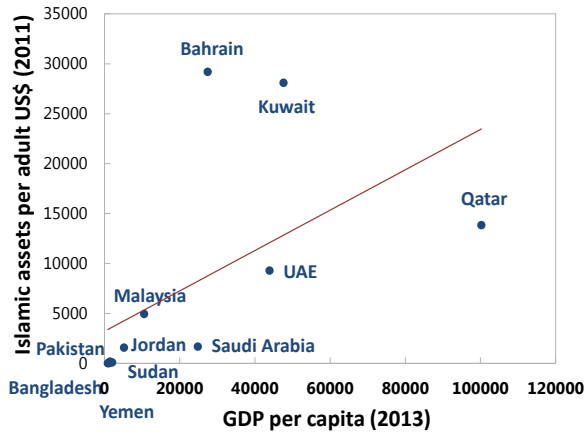


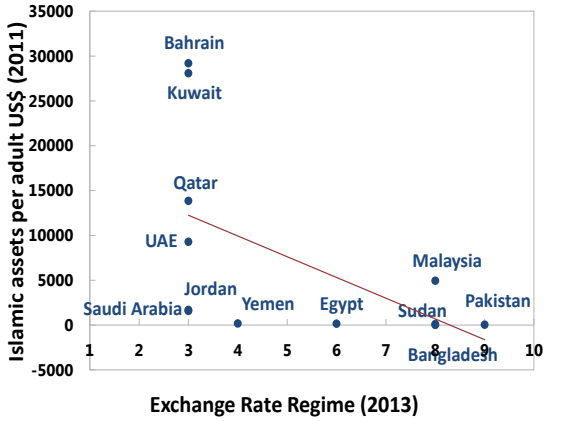
Sources: Word Economic Outlook (WEO) database, and World Development Indicators (WDI).

Figure 2. Islamic Banking, Current Account Balances, and Exchange Rate Regimes









Sources: WEO database, WDI, AREAER 2013, and Islamic Banking Database (World Bank).

(*) Oil rents are the difference between the value of crude oil production at world prices and total costs of production. Estimates based on sources and methods are described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011). http://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS

(**) Exchange Rate Regimes: 1= No separate legal tender ; 2= Currency board ; 3= Conventional peg ; 4 = Stabilized arrangement ; 5 = Crawling peg ; 6 = Crawl-like arrangement ; 7 = Pegged exchange rate within horizontal bands ; 8 = Other managed arrangement ; 9 = Floating ; and 10 = Free floating.

III. Exploring the Monetary Transmission Mechanism

A. Overview of the Monetary Transmission Mechanism

The monetary transmission mechanism (MTM) differs from one economy to another and changes over time. The intensity of nominal rigidities, market imperfections, other distortions arising from government interferences, the degree of financial development and openness, as well as potential constraints on the supply and demand side of credit are important determinants of a country's MTM. Understanding monetary policy transmission is a prerequisite to monetary policy implementation in general, but especially in dual financial systems.[3] As a starting point, this section focuses on the bank lending or *financing* channel as well as the interest rate and exchange rate channels in the presence of Islamic banking (Figure 3).[4]

The interest rate channel

In standard macroeconomic models, the interest rate channel is the main channel of monetary transmission. Traditional models emphasize the effects of monetary policy on the real interest rate, under the assumption of wage and price stickiness, on the cost of capital and aggregate demand: an expansionary monetary policy decreases the interest rate and produces an output expansion. However, CBs do not always have an effective control over money creation or interest rates. Further, while high-powered money is supplied by the CB, conventional commercial banks also contribute to money creation. In addition, the CB typically controls the short end of the yield curve, while economic agents respond to the level and changes in a broader spectrum of interest rates.

Several factors may weaken the effectiveness of the interest rate channel. For example, in the absence of an active interbank market, the CB would be unable to steer a short-term interbank reference rate using its policy rate. As a result, the signaling effect of changes in the policy rate as well as its transmission through the interest rate channel is weakened. The absence of a money market or a sovereign yield curve that generally serve as reference for bank lending rates also weakens the interest rate channel. The policy rate being a short-term interest rate, effective monetary policy transmission involves the link between short-term and long-term interest rates, and the existence of a term structure of interest rates: expectations operating on the term structure tie long-term to short-term interest rates.[5, 6] Monetary policy

[3] See Gray, Karam, Meeyam, and Stubbe (2013).

[4] Different frameworks to analyze the monetary transmission mechanism have been proposed. We follow the representation proposed by Kuttner and Moser (2002).

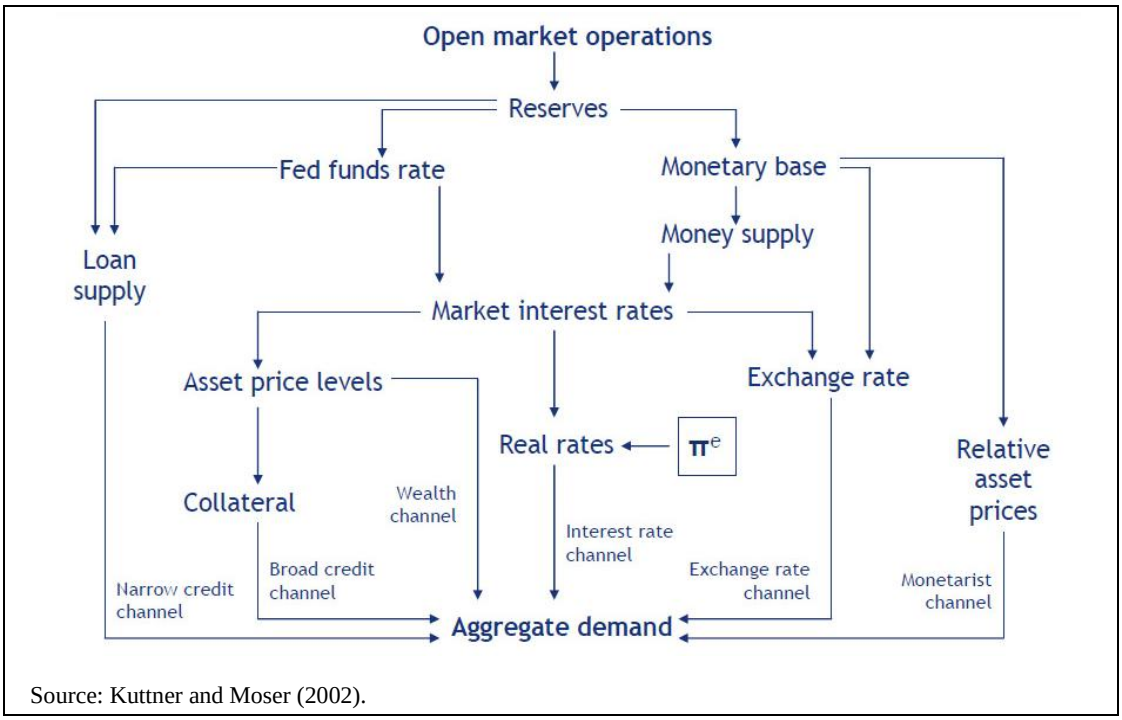
[5] Boivin, Kiley, and Mishkin (2010).

[6] Mishra, Montiel, and Spilimbergo (2012).

actions on prices are transmitted through money market rates and sovereign yield curves, as well as bank lending rates.

Large and variable gaps between short-term and long-term interest rates can impair the interest rate channel. For example, unsterilized liquidity surpluses would tend to put downward pressures on short-term interest rates which may widen the gap with long-term interest rates. CBs may not always be able or willing to fully sterilize liquidity surpluses at a certain level of interest rate. Long-term interest rates will however remain influenced by inflation expectations, and the supply and demand for government securities, as well as the depth of financial markets. A large supply of government securities to finance large fiscal imbalances for example, will place upward pressures on long-term interest rates. Therefore, the combination of weak liquidity management frameworks, unsterilized liquidity surpluses, and fiscal dominance[7] is likely to widen the gap between short-term and longer term interest rates above and beyond what is explained by the term structure, impairing monetary transmission. Deep money and government securities markets allow monetary policy impulses to be transmitted along the yield curves and to bank lending rates.

Figure 3. The Monetary Transmission Mechanism



Source: Kuttner and Moser (2002).

[7] Sargent and Wallace (1981) define a fiscal dominant regime as a regime where "the fiscal authority independently sets its budgets, announcing all current and future deficits and surpluses and thus determining the amount of revenue that must be raised through bond sales and seignorage. Under this second coordination scheme, the monetary authority faces the constraints imposed by the demand for government bonds, for it must try to finance with seignorage any discrepancy between the revenue demanded by the fiscal authority and the amount of bonds that can be sold to the public."

The credit channel

The credit channel recognizes that monetary policy impacts the economic activity not only through the interest rate's influence on aggregate demand but also through shifts in the supply of credit.[8] The credit channel operates through two mechanisms: the bank lending channel (i.e. the narrow credit channel) and the balance sheet channel (i.e. the broad credit channel). Under imperfect substitutability of the retail and wholesale funding of banks, monetary policy transmission through the bank lending channel operates through the money multiplier: a change in reserve balances affects banks' deposits and the supply of credit.[9] However, the bank lending channel tends to weaken with financial liberalization, especially when banks have relatively easy access to external sources of funding.[10] In advanced economies, the effectiveness of the credit channel is subject of debate with several researches arguing that banks balance sheets, and not just bank credit, is the main channel of monetary policy transmission.

The country's financial structure is a key determinant of monetary transmission through the bank-lending channel. This channel tends to be more "potent" and effective for banks with less liquid balance sheets, when small banks dominate the financial sector and firms have limited access to nonbank funding sources. Highly liquid banks weaken the bank lending channel.[11]

Other factors affect the supply and demand for credit and the effectiveness of the bank lending channel. On the supply side, the presence of weak banks, their inability to properly assess risks, weak property rights and poor judiciary systems generally constrain the flow of credit to the private sector. On the demand side, the economic structure (more-or-less bank-based or market-based), and the relative importance of credit-dependent SMEs and large firms that can borrow directly from financial markets, are key drivers of the demand for credit. Sizable informal finance may also limit the demand of credit channeled through the formal financial sector. In general, the relationship between credit demand and supply is complex, and distinguishing demand-side from supply-side drivers is not straightforward either conceptually or empirically (Figure 4).

Government policies can interfere with the free functioning of credit markets and thus with the credit channel. Government interventions can introduce distortions in credit markets in many ways including through interest rate controls, bank lending ceilings, and selective

[8] See for example Farinha and Marques (2001).

[9] We follow the description of the bank lending channel provided by Mishkin (1996).

[10] Bernanke and Gertler (1995).

[11] Mishra, Montiel, and Spilimbergo (2012).

credit policies.[12] Fiscal dominant regimes can crowd-out the supply of credit to the private sector, especially in the presence of high financing needs, but they also impair the interest rate channel.

The exchange rate channel

In modern macroeconomic models, the effectiveness of the exchange rate channel in economies with flexible exchange rates is measured by the extent to which changes in interest rates pass through the exchange rate. However, CBs interventions through quantities—both in FX and domestic currency—also affect the exchange rate. In practice, the effect of monetary policy on the exchange rate depends on several factors: the exchange rate regime, capital controls, and the development and integration of the money and foreign exchange markets. When the exchange rate is allowed to move, increases in domestic liquidity tend to depreciate the exchange rate. When the exchange rate is fixed, a significant increase in CB liquidity injection can deteriorate the external balance, induce losses of FX and weaken the sustainability of the fixed exchange rate. While the empirical evidence supports inflation performances of fixed exchange rates, especially for developing countries,[13] rigid exchange rate arrangements not supported by prudent macroeconomic policies may give rise to sizeable current account deficits which are difficult to contain without output costs or a change in the exchange rate. Those fixed exchange rate regimes also can become prone to speculative attacks and currency crises. In contrast, countries with large FX reserves and persistent current account surpluses are able to sustain fixed exchange rates when supported by sound macroeconomic and liquidity management.

When the exchange rate channel is operative, an expansionary monetary policy generally leads to a currency depreciation. Nevertheless, the ability of the exchange rate depreciation to generate an improvement in the trade balance depends on foreign trade responsiveness to exchange rate fluctuations as well as the level of domestic absorption. Capital flows' responsiveness to a monetary policy shock also affects how this is transmitted through the exchange rate channel. Taking into account that an expansionary monetary policy is more likely to generate an improvement of the current account (under flexible exchange rates) and a deterioration of the capital account, the overall effect on output and inflation will depend on the structure of the economy.

A sketch of the transmission mechanism

There are two main mechanisms through which monetary policy is, on impact, transmitted to the financial system: (i) quantities involving the CB balance sheet; and (ii) prices, i.e. changes in interest rate signaling changes in the policy stance. The conduct of monetary

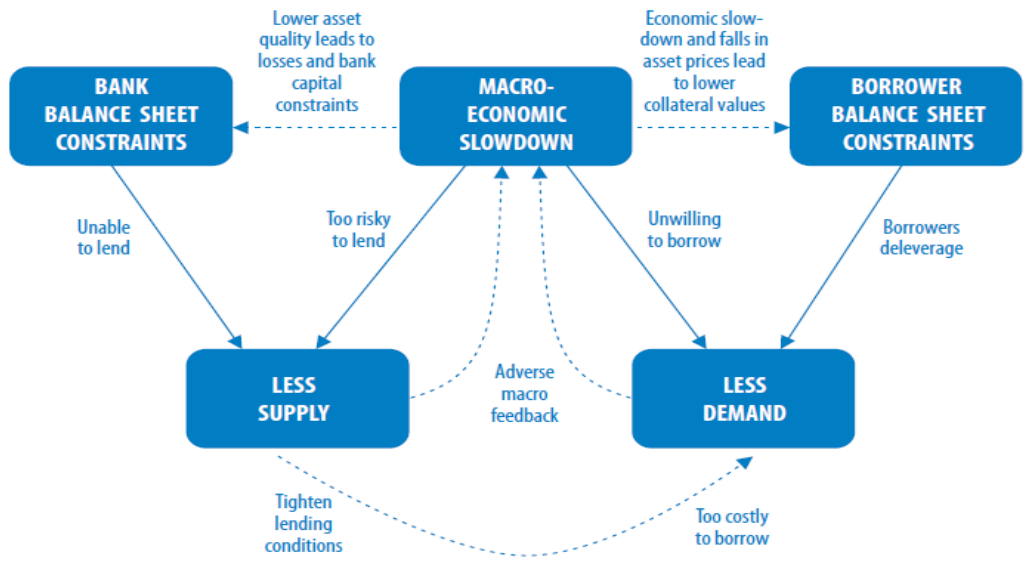
[12] Gray, Karam, Meeyam, and Stubbe (2013).

[13] Rogoff, Husain, Mody, Brooks, and Oomes (2003).

policy through the reliance on quantities is based on the assumption of CB control over money creation.[14] However, as noted, CBs do not always have full control over money creation. The intervention through price setting presupposes developed money and government securities markets allowing price formation.

Monetary transmission starts to operate through the effect of the CBs' actions on banks reserves and interbank markets. Arbitrages between several segments of financial markets represent the second stage of monetary transmission. These include arbitrages between the money and government securities markets, between the money and FX markets, and between the government securities and credit markets. Arbitrage by commercial banks between the interbank and government securities markets links government securities returns to interbank rates. The transmission to money and government securities markets enabling price formation over different maturities depends on the existence and efficiency of those markets.

Figure 4. Credit Demand and Supply Following an Adverse Macroeconomic Shock—Conventional System



Source: April 2013 GFSR.

[14] Laurens and others (2005).

B. Relevance of the Bank Lending Channel for Islamic Banks

In dual financial systems where both the conventional and Islamic segments are at early stage of development, reserve balances may play a central role in the conduct of monetary policy. In such context, the effectiveness of the bank lending—or *financing*—channel for Islamic banks will depend on (i) the CB's capacity to be one of the main suppliers of liquidity for Islamic banks, and (ii) the Islamic banks' capacity to shift their supply of credit/financing in response to changes in their reserve balances at the CB. According to the IMF Islamic banking survey results of 2012, 81 percent of the central banks have responded applying reserve requirements (RR) to Islamic banks. In cases where banks (Islamic and conventional) are in surplus liquidity or have fluid access to wholesale funding, or when there are binding constraints on the supply and demand of credit, the bank lending channel and the Islamic financing channel may tend to be ineffective. The extent to which CBs can affect the supply of Islamic credit/financing through changes in banks' reserves is an important area that requires further empirical investigation.

At present, most countries with Islamic banks operate regimes with fixed exchange rates that are subject to important liquidity shocks. When CBs do not have the appropriate tools, capacities, and processes to offset these shocks, they can be transmitted to the economic activity and therefore influence the economic and financial cycles. Governments' cash management can interfere with the conduct of monetary policy whenever public treasuries transactions and deposits with the banking system induce important fluctuations of systemic liquidity. In particular, the combination of oil shocks, oversized public sectors, poor government cash management, lack of sterilization policies, and weak liquidity management can result in ineffective monetary policy.

C. The Interest Rate Channel in the Presence of Islamic Banking

In dual financial systems with fairly developed conventional money markets, Islamic banks evolve in an *interest rate dominant* environment. Due to arbitrage between conventional and Islamic financial systems, there tends to be spillovers from conventional interest rates to Islamic banks funding costs, to returns of profit-sharing investment accounts (PSIAs) as well as to costs of Islamic credit (see Box 1).[15]

In dual systems where Islamic finance is still embryonic, there is often no Islamic finance equivalent to money market or government securities yield curves that can serve as references to price Islamic banks credit. As a result, some Islamic banks tend to rely on conventional interest rates to price their *Murabahah* and *Ijarah* contracts.[16] Nonetheless, even when resorting to conventional interest rates to price Islamic credit, Islamic banks can be

[15] Cevik and Charap (2011).

[16] Zaheer, Ongena, and Van Wijnbergen (2011).

more-or-less reactive to changes of conventional policy rates. If Islamic banks' reactions to changes of conventional interest rates are sluggish, monetary policy transmission through the interest rate channel will be less effective in the presence of sizable Islamic banking.

Box 1. Monetary Transmission from Conventional to Islamic Financial Systems

Islamic finance contracts can be classified in three broad categories: (i) profit-and-loss sharing contracts such as *Mudarabah* and *Musharakah;* (ii) debt-like contracts such as *Ijarah* and *Murabahah*; and (iii) services such as *Wadi'ah*.[17] *Mudarabah* is a contract where the financier (*Rab-al-mal*) provides capital and the beneficiary (*Mudarib*) offers labor and expertise.[18] When used for interbank transactions, the bank in surplus invests funds over the short-term (usually 3 to 12 months) in the shortage bank on a *Mudarabah* basis for returns based on pre-agreed profit-sharing ratio. The *Musharakah* is a joint partnership where the bank enters into an equity partnership agreement (joint-venture) with one or more partners to jointly finance a project.[19] *Ijarah* is a lease contract, where a party leases a good for a specific sum and period of time. In a *Murabahah* contract, the bank purchases a good from a third party and resells it to the customer at an agreed mark-up for immediate or deferred payments. When used for liquidity management, the commodity *Murabahah* can be an interbank or a central bank transaction using an underlying commodity (mostly a metal). *Wadi'ah* is a safekeeping contract used for demand deposits that earn no return. When used for liquidity management, a central bank *Wadi'ah* certificate can be issued against the funds deposited by the Islamic bank at the central bank.

In countries where conventional finance predominates, competitive pressures may limit the extent to which returns of PSIAs can deviate from conventional banks' deposits rates. As a result, Islamic banks in some dual financial systems tend to link the mark-ups and returns of their contracts to conventional interest rates. In a recent study, Cevik and Charap (2011) found cointegration, causality and volatility correlation between conventional and retail Islamic banks deposits returns in Malaysia and Turkey: conventional banks deposits rates and PLS returns exhibit long-run cointegration; the time-varying volatility on conventional banks deposits rates and PSIAs returns is correlated and statistically significant; and the causality seems to run from conventional deposits rates to PSIAs returns.

In Malaysia, Islamic banks funding costs are strongly influenced by the Bank Negara Malaysia Overnight Policy Rate (OPR), and several papers suggest the existence of a transmission from the conventional to the Islamic financial system.[20] The Malaysian Islamic Interbank Money Market (IIMM) was established on January 3, 1994 and allows Islamic banks to match liquidity shortages and surpluses. The *Mudarabah* Interbank Investments (MII) are part of the IIMM. MII is a transaction where a deficit Islamic banking institution can obtain investment from a surplus Islamic banking institution, based on a profit-sharing ratio, on maturities ranging from the overnight to twelve months.[21]

[17] For further details, see Hussain, Shahmoradi, and Turk (2015).

[18] In a *Mudarabah* contract, profits are shared between the partners on a pre-agreed ratio; any loss is generally borne only by the capital owner.

[19] In *Musharakah* contracts, profits are distributed according to a pre-agreed ratio, while losses are shared in proportion to capital contribution.

[20] See for example, Husin (2013).

[21] http://iimm.bnm.gov.my/index.php?ch=4&pg=4&ac=22.

D. The Signaling Mechanism and the Profit-sharing Principle

The development of Islamic interbank *Mudarabah* markets introduces other channels through which monetary policy can be transmitted. In addition to the interest rate, the exchange rate or the RR instruments used in conventional systems, in dual systems CBs can also try to influence Islamic banks' funding costs by targeting the profit-sharing ratio of Interbank *Mudarabah* transactions. The effectiveness of this monetary policy instrument depends on the level of development of Islamic financial markets.

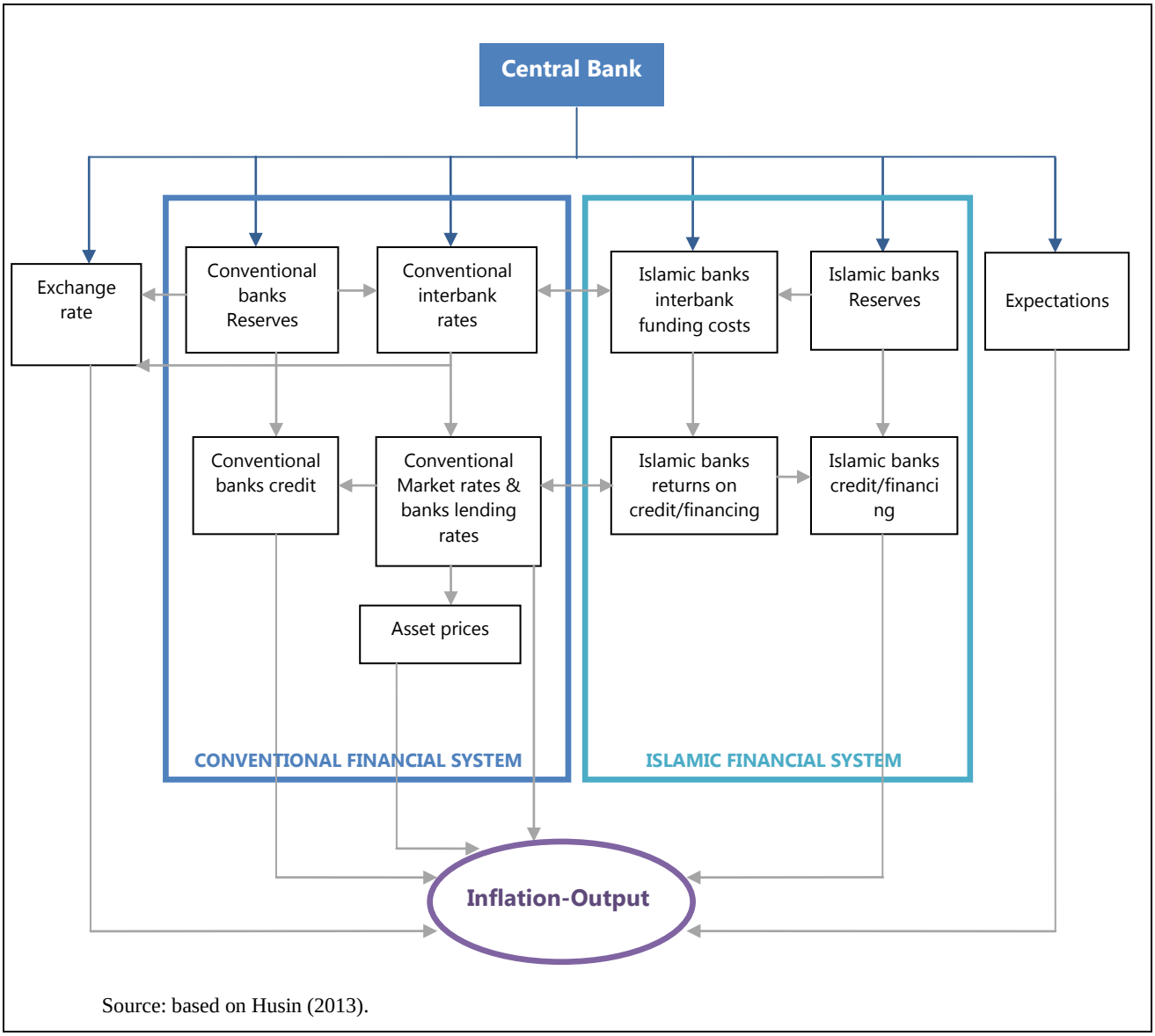
The extent to which monetary policy affects the profit-sharing ratios through the signaling mechanism is another area that deserves further empirical investigation. In theory, CBs can affect interbank *Mudarabah* markets profit-sharing ratios by setting the profit-sharing ratios of their *Mudarabah* transactions with Islamic banks; Islamic banks can, in turn, set the profit-sharing ratios of Islamic contracts with their clients. However, there is no empirical evidence supporting the notion that the profit-sharing mechanism is an effective monetary policy channel and that economic agents make their investment and consumption decisions according to the profit-sharing ratio set by the CB. The results so far suggest that when the profit-and-loss sharing contracts such as *Mudarabah* are not widely used by banks, consumers and firms, this monetary transmission channel breaks down or is too weak. Figure 5 shows a simplified sketch of the monetary policy transmission in dual financial systems with sufficiently developed Islamic banking system and interbank markets.

Signaling the monetary policy stance helps the formation of market expectations and eases monetary transmission through the expectation channel.[22] CBs communication typically goes beyond the policy rate and encompasses features related to macroeconomic forecasts, monetary policy strategies as well as monetary operations. To develop this channel, CBs in economies with Islamic banks should try to communicate information related to Islamic banks liquidity conditions, interbank markets, and their *Shari'ah*-compliant operational framework. In facts, in its Guiding Principles of Liquidity Risk Management for IIFS, the Islamic Financial Services Board (IFSB) suggested that "supervisory authorities should provide greater clarity of their roles in both normal and stressed times" and "should be more explicit regarding their handling of a liquidity crisis situation, such as defining the type of *Shari'ah*-compliant collateral that can be pledged, the limits applicable to various types of eligible *Shari'ah*-compliant collateral, and possible durations of the financing".[23]

[22] The expectation channel is the effect of changes in the monetary policy stance on economic agents' expectations of future assets prices, growth, and inflation.

[23] IFSB-12 (2012).

Figure 5. Monetary Transmission Mechanism in Dual Financial Systems



Source: based on Husin (2013).

IV. Adapting the Monetary Policy Framework

A. The Dual Monetary Policy Regime

In countries with relatively underdeveloped financial markets (e.g. countries with low ratios of credit to GDP), the conduct of monetary policy is fundamentally different from that in countries with developed financial systems (Figure 6). In the former, monetary policy tends to be more focused on the supply of credit. At an early stage of financial systems development, CBs actions generally aim to affect the supply of conventional credit through refinancing policies—when there is a liquidity deficit—or the use of credit as collateral, and gradually introduce government securities as eligible collateral as markets for these securities

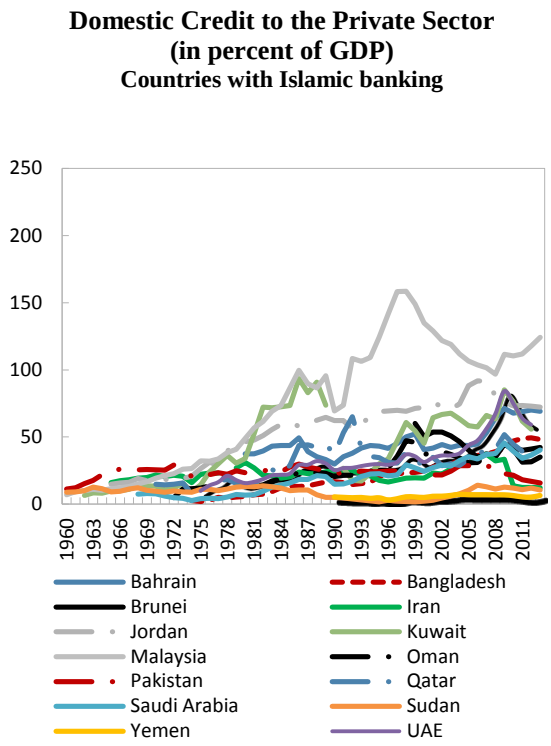
develop. In presence of structural excess liquidity, it is important to distinguish situations where the excess liquidity fuels a credit boom from those where other factors affecting the supply and demand for credit constrain lending.

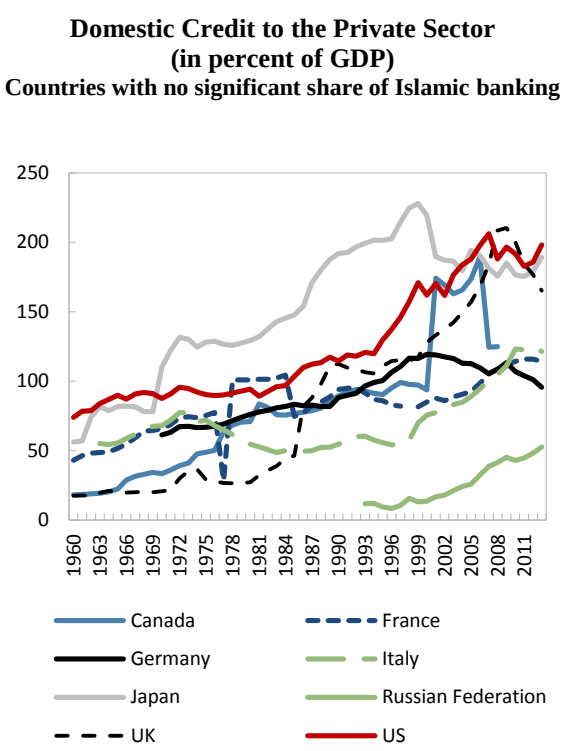
In dual financial systems, it is often the case that the conventional segment is more developed than the Islamic one. Addressing the shallowness of the Islamic segment when the conventional system is developed is challenging. Clearly, monetary policy cannot operate in the same way when the dual financial markets have different levels of development. Further, as some economic activities are prohibited under Islamic rules, Islamic credit might not flow through the economic sectors as conventional credit.[24] Whether monetary policy will have broadly similar effects on the conventional and Islamic segments of the market will depend on several factors including: the size of the Islamic segment relative to the conventional one; the jurisdiction; the structure of Islamic contracts; the behavior of consumers and Islamic banks; and the extent to which consumers are responsive to changes in interest rates. In some cases, Islamic banks clients can be indifferent to the level or changes in returns of the PSIAs or cost of Islamic credit mainly due to their deep religious beliefs. However, in other countries consumers' arbitrages may lead to a convergence of returns of PSIAs and costs of Islamic credit to conventional banks' deposits and lending rates.

Designing a monetary policy framework for countries where Islamic finance reaches an important share of the financial system entails different levels of complexity. The first one is related to the Islamic finance core principles and the cautious interpretation of the *Shari'ah* rules; the second one, is the heterogeneity of the financial systems and monetary policy frameworks; and the third one, is the relationship between monetary policy, financial development and financial stability policies for Islamic banks.

[24] Prohibited activities include for example those involving gambling and investment in certain industries (e.g. alcohol).

Figure 6. Domestic Credit to the Private Sector (1960-2013)





Source: WDI.

B. Fixed Exchange Rate Regimes Considerations

As noted earlier, pegged exchange rate regimes limit the CBs' ability to significantly influence monetary conditions through changes in quantities. Even in cases when there is some exchange rate flexibility, external vulnerabilities and high exchange rate pass-through may constrain the ability of CBs to stimulate credit through large liquidity injections.[25] Hence, monetary policies aimed at significantly expanding banks reserves can be challenging in many countries where Islamic banks operate. For these countries, the level of FX reserves and the control over systemic liquidity are key features of the viability of the exchange rate anchor.

CBs with fixed exchange rate regimes are limited in their capacity to freely manipulate a policy rate—especially under high capital mobility—but can still enhance their liquidity management. This requires having in place adequate sterilization policies and monetary

[25] Jacome, Sedik, and Townsend (2011).

policy instruments aimed at offsetting liquidity shocks, thereby supporting market development.

C. Making Monetary Transmission Operational

Relying on market-based instruments to conduct monetary policy in an economy with Islamic banks is preferable than relying on direct instruments of monetary control for both conventional and Islamic banks. Direct instruments are often associated to non-transparent discretionary interventions that may result in a liquidity misallocation. They can create distortions in favor of some sectors of the economy or segments of the banking system, impairing banks competition and interbank markets development. When implemented in a surplus liquidity situation without an appropriate liquidity forecasting framework, direct instruments of monetary control can aggravate the liquidity overhang.[26]

To incorporate Islamic banks in the monetary policy framework, two important dimensions need to be considered. The first one is the challenge of developing the basic infrastructure necessary for a market-based Islamic monetary policy. The second is addressing more broadly the continuous evolution of the monetary policy framework. Developing Islamic money and *Sukuk* markets, as well as addressing the factors that give rise to market segmentation belong to the first dimension. Addressing potential spillovers from one segment of the financial system to another has implication for the monetary policy and financial stability. Competition among Islamic banks is a precondition for the development of Islamic interbank markets. A small number of Islamic banks or a dominant role of government-owned banks limits the scope of interbank market development and monetary transmission more generally.

Market segmentation between conventional and Islamic banking systems can be a challenge for the conduct of monetary policy. In some countries with dual banking systems, Islamic banks are not participating in CB's conventional monetary operations and interbank markets, creating segmentation between Islamic and conventional money markets. While conventional banks use several money markets instruments to manage efficiently their liquidity, Islamic banks face greater difficulties as they cannot access markets that do not comply with the Islamic finance rules. Inefficient liquidity management reduces Islamic banks profitability, as they need to maintain more liquidity than strictly necessary.[27] The IFSB Technical Note on Islamic Money Markets argues that there is an evidence of market segmentation between Islamic and conventional banking systems, as IIFS rely primarily on interbank arrangements with other IIFS, with limited usage of transactions between IIFS and conventional banks. This segmentation can hamper the well-functioning and development of liquid money markets particularly when the number of Islamic banks in the system is small. IIFS usually

[26] Alexander, Balino, and Enoch (1996).

[27] Di Mauro, Caristi, Couderc, Di Maria, Ho, Grewal, Masciantonio, Ongena and Zaher (2013).

represent a small share of the overall financial system in dual financial systems and interbank market instruments that are limited to Islamic financial institutions alone seldom have the scale and volume needed to generate a liquid interbank market.

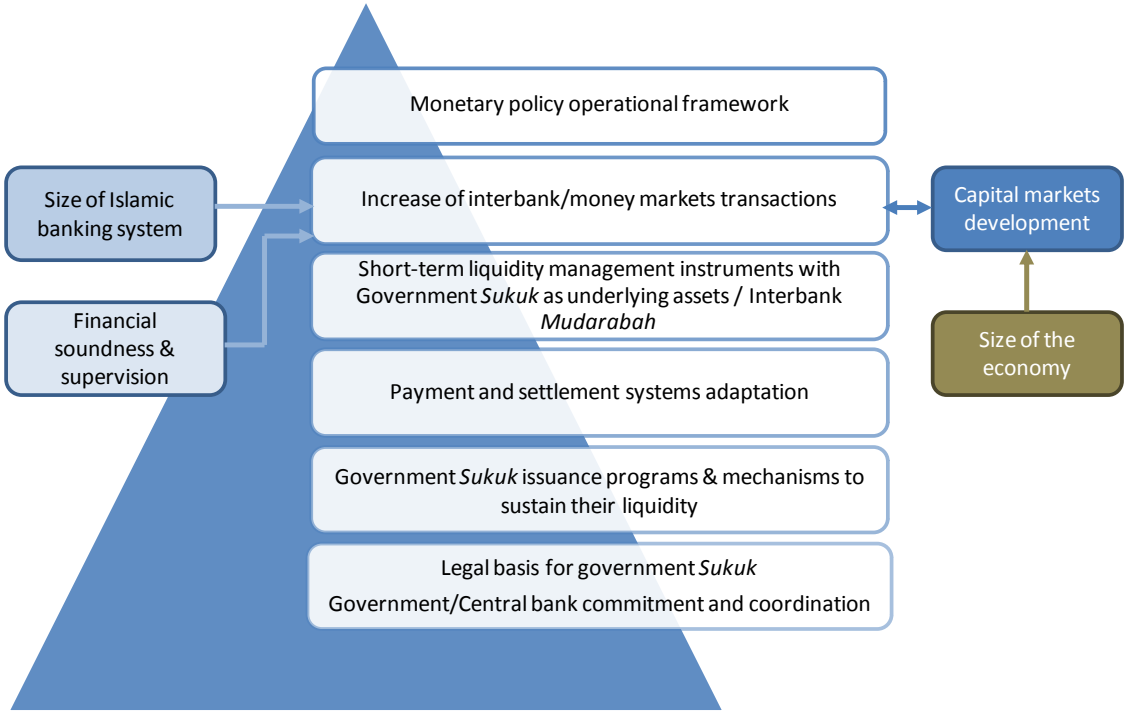
Active Islamic interbank markets are crucial for monetary policy transmission through the Islamic financial system. Interbank markets allow liquidity to circulate through the banking system and reach its most needing segments. Developed interbank *Mudarabah* markets allow the transmission of monetary policy changes through profit-sharing ratios. Active FX interbank markets are also important for monetary policy transmission through the exchange rate channel.

The basic infrastructure for a market-based Islamic monetary policy should comprise: (i) Islamic collateralized money-market instruments for liquidity management; (ii) high quality marketable collateral (in sufficient amounts); (iii) active interbank *Mudarabah* and collateralized interbank markets; (iv) efficient operational framework; and (v) adequate payment and settlement systems (Figure 7). The operational framework should ideally encompass *structural* operations, such as the issuance of sovereign securities and outright purchases/sales of securities, and *short-term* monetary policy instruments needed to manage short-term liquidity shocks. Other options might be considered as alternatives to the interbank *Mudarabah.* However, favoring the development of the interbank market at an early stage may require the standardization of interbank arrangements as the first stage and introducing other types of contracts gradually. To this purpose, analyzing the comparative advantage of the interbank *Mudarabah* relative to other structures of interbank transactions might be useful when considering strategies of Islamic interbank markets development. This includes carefully assessing the *Shari'ah*-compliance risk of each structure.

An adequate financial market infrastructure—including the adaptation and upgrading of payment and settlement systems—is necessary to facilitate the transmission of monetary policy actions through the Islamic financial system. In particular, the "dematerialization"[28] of government securities, and effective delivery-versus-payment and collateral mobilization procedures are important prerequisites for smooth monetary operations.

[28] Dematerialization refers to the issuance and recording of securities in electronic format.

Figure 7. Islamic Monetary Operations Infrastructure: Building Blocks



Source: the author.

V. Monetary Operations under Islamic Banking

A. Sterilization Policies

As in conventional financial systems, excess liquidity has to be managed properly to enhance monetary policy transmission through the Islamic banking system. One of the characteristics of Islamic banks around the world is that they often are in surplus liquidity. Key reasons for this include: prohibition on interest rates; insufficient sterilization; lack of *Shari'ah*-compliant High Quality Liquid Assets (HQLA) and more generally insufficiently developed Islamic financial markets. Islamic banks have not been able neither to create viable *Shari'ah*-compliant money markets nor to effectively participate in the prevailing conventional money markets. This outcome was largely the result of difficulties in developing *Shari'ah*-compliant interbank markets when the size of the industry could not, in many jurisdictions, justify or support the creation of such markets. Finally, the constraints have been compounded by insufficient issuing of sovereign *Sukuk*, even if recently on a growing trend. In extreme cases, surplus liquidity can be aggravated by monetary financing of government deficits and weak government cash management. Addressing the surplus liquidity issue requires first identifying its main causes, and deploying the adequate combination of fiscal, monetary, foreign exchange, and market development policies to eliminate them.

Sterilization of Islamic banks structural liquidity surpluses should be considered in a broader approach that does not rely exclusively on a CB *Shari'ah*-compliant short-term liquidity

absorption instrument, but also on the development of structural and/or long-term sterilization tools. Surplus liquidity can originate not only from CBs unsterilized FX interventions but also from other factors such as the persistence of direct monetary financing of government activities or CBs quantitative measures. When the source of surplus liquidity is monetary financing, then it should be prohibited preferably than having the CB offsetting the effect of government expenditures with its short-term monetary operations. Sterilization is also a policy or a strategy because CBs have usually to choose among different types of structural and/or long-term instruments such as the issuance of CBs securities, government securities or RR, and consider the best option or combination of these instruments.

Relying exclusively on RR to sterilize large liquidity surpluses can constrain the growth of Islamic credit if RR are not remunerated. Setting RR at a certain level is generally appropriate, especially when combined with an averaging mechanism, as it helps create a structural refinancing need while reducing the volatility of banks' funding costs. Nonetheless, because Islamic banks reserves are typically not remunerated, imposing high RR ratios creates distortions and tends to increase the cost of Islamic credit. If Islamic banks' reserves could be remunerated through *Shari'ah*-compliant mechanisms, RR would be more easily used as an effective sterilization mean. In practice, when applying RR, CBs operating in the context of Islamic banks tend to harmonize their features through conventional and Islamic banks except for the return: there is generally no return on Islamic banks' RR while there can be for conventional banks. Not all CBs in these economies, however apply RR to PSIAs.

The development of HQLA that Islamic banks can use as collateral plays an important role in successful sterilization policies. However, monetary policy cannot rely solely on government *Sukuk* issuances as they cannot substitute for standing facilities (SFs) and standard open market operations (OMOs), but they can provide the necessary collateral to CBs to offer SFs and OMOs to Islamic banks through a *Shari'ah*-compliant manner. In full-fledged Islamic banking systems, public investment on infrastructure were often used to issue government securities for monetary policy purposes.

Examples of government instruments issued to absorb liquidity surpluses are the Government Investment Certificates (GICs) in Sudan. GICs were mainly designed as long term *Ijarah* contracts involving payment of rentals by the government for durable assets sold. The leased assets were owned by a Special Purpose Vehicle (SPV), which enters into a lease agreement with the government, and issues securities to the public in order to finance the purchase of assets. Recently, Godlewski, Turk, and Weill (2014) have found that the structure of *Sukuk* matters in terms of its acceptance and potential of development. In particular, the *Ijarah*-based *Sukuk* appear to have the lower *Shari'ah*-compliance risk compared to other types of *Sukuk,* and a higher potential of development due to better investor's reaction to them compared to other structures.

Islamic CBs securities also have been issued to mop up structural excess liquidity. In Bahrain and Malaysia, *Sukuk* or other *Shari'ah*-compliant papers were issued over different maturities.[29] When the markets for CBs securities are undeveloped, it is possible to resort to government securities. The use of government securities can help introduce discipline and transparency to government debt and cash management, curtail direct monetary financing of government activities and fosters financial markets development. Issuing CBs securities on the other hand can create competition with government securities markets especially at early stage of their development and when coordination between the CB and the Ministry of Finance (MoF) is weak, and may result in market fragmentation. In addition, these securities can generate losses for the CB.[30] Continuous issuance of CBs' securities requires persistent levels of surplus liquidity. When monetary financing is not allowed and CBs have not heavily monetized the economy, excess liquidity often originates from FX reserves accumulation that depends on global macrofinancial conditions. In the post-GFC crisis, many developing and emerging markets switched from a situation of liquidity surplus to deficit limiting the scope for issuance of CBs securities. Stopping CBs issuances can create a gap in the short end of the yield curve impairing monetary transmission.

There might be some cases where the issuance of CBs' securities is unavoidable especially when there is no possible agreement between the CB and the MoF to issue government securities for sterilization purposes and when large and persistent liquidity surpluses impair the conduct of monetary policy. However, whenever such agreement can be reached and government securities markets are not yet developed, it is preferable to focus on developing those instruments first (Table 2).[31]

[29] IFSB (2008).

[30] Nyawata (2012).

[31] Filling yield curve gaps can justify issuing some types of CB securities. See Gray and Pongsaparn (2015).

Table 2. Sterilization under Islamic Banking: Key Considerations

STERILIZATION INTRUMENT	PROs	CONs
Reserve Requirements	▪ Under CB's control ▪ Powerful effect on credit	▪ Not remunerated for Islamic banks ⇒ Increase cost of Islamic credit ▪ Non market-based instrument
Central banks securities	▪ Under CB's control	▪ Require persistent levels of surplus liquidity to maintain regular issuances ▪ Can compete with government securities at early stage of development ▪ Can generate losses to the CB
Government securities	▪ Sterilization costs borne by the government ▪ CBs preferred collateral ▪ Development of a benchmark yield curve ▪ Impose discipline and transparency to debt management	▪ Large fiscal surpluses ▪ Crowd out of private credit at early stage of development
Stabilization funds	▪ Permanently insulate the economy from FX inflows	▪ Mainly a solution when excess liquidity source is FX

B. Monetary Policy Operational Framework

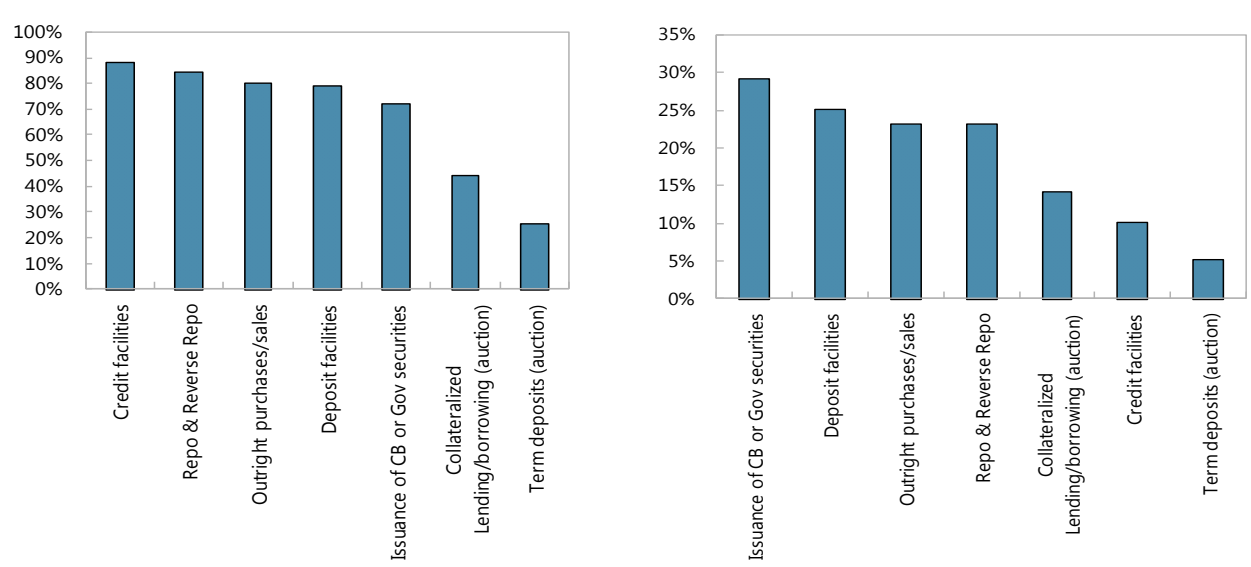
While the majority of countries where Islamic banking is reaching a critical size do not rely extensively on direct instruments of monetary control, some of them still use them.[32] Interest rate controls are used in Bangladesh, Iran, and Yemen. Credit ceilings are used in Jordan, Oman and United Arab Emirates (U.A.E.). Directed credits and specific lending requirements are applied in Iran. Jordan also applies specific lending requirements. Bangladesh Bank is extending Islamic refinancing facilities to the Islamic banks and financial institutions for priority sector lending.

In terms of the development of *Shari'ah*-compliant instruments to mop up structural excess liquidity there has been progress in some countries; the use of short-term monetary policy instruments however, is lagging. The evidence shows an important reliance on government and CBs securities issuances in dual banking systems mainly due to liquidity surpluses and prohibition on interest rates. Outright purchases and sales of tradable *Sukuk* are also used in

[32] Based on the ISIMP database, and answers to the 2010 survey by the following countries: Bahrain, Bangladesh, Iran, Jordan, Kuwait, Malaysia, Oman, Pakistan, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

Iran, Malaysia, and Sudan. According to the IFSB Stability Report of 2013, 72 percent of the regulatory and supervisory authorities surveyed rely on CB or government securities for monetary policy purposes, and 29 percent have adapted them to meet Islamic finance requirements. The report also notes that only 23 percent of the regulatory and supervisory authorities have adapted their repo and outright operations to accommodate transactions with Islamic financial institutions; only 10 percent have adapted their credit facility and 25 percent their deposit facilities to Islamic banks (Figure 8).

Figure 8. Central Banks[33] Monetary Operations Compliance with the *Shari'ah* Requirements



Source: IFSB Stability Report of 2013. Bars measure the percent of CBs (out of a total of 32) that use the instrument.

C. Lender of Last Resort

In times of systemic crisis, CBs may use unconventional measures in the context of impaired MTM, or deflation and recession risks. Under their financial stability mandate, monetary authorities have also the discretion to respond to idiosyncratic needs for liquidity, when no other sources are available to individual banks. The dividing line between conventional and unconventional monetary policy is becoming blur, but the distinction between a systemic and

[33] Results are based on the IFSB survey that included regulatory and supervisory authorities of the following 32 countries: Afghanistan, Bangladesh, Brunei, China, Egypt, Indonesia, Iran, Japan, Jordan, Kazakhstan, Korea, Kuwait, Lebanon, Luxembourg, Malaysia, Maldives, Mauritius, Morocco, Nigeria, Oman, Pakistan, Palestine, Philippines, Qatar, Saudi Arabia, Senegal, Singapore, Sudan, Tajikistan, Turkey, UAE, Zambia. For furher details see IFSB (2013) and Chattha and Abdul Halim (2014).

idiosyncratic liquidity support is more straightforward. In this paper, we define Lender of Last Resort (LOLR) as CBs' intervention in response to an idiosyncratic need.[34]

In terms of best practices, LOLR support is usually provided at a penalty rate, to solvent and viable entities, assessed on an ongoing basis, and whose shutdown would create financial stability risks. Banks resort to LOLR when they have exhausted all other funding options available to them, including money markets funding, CB conventional funding and the stock of monetary policy eligible collateral. LOLR is temporary and institutions granted LOLR should be subject to supervisory intrusion and conditionality to reduce moral hazard and insure that the loan can be repaid and the funding appropriately used. When designing a *Shari'ah*-compliant LOLR framework (SLOLR), it is necessary to separate the LOLR from the regular operational framework. LOLR is a bilateral collateralized lending at counterparty's initiative but at CBs' discretion, performed under the financial stability mandate, in exceptional circumstances, with broader collateral than conventional monetary policy.

Despite the risk-sharing principle and the high liquidity typical of Islamic banks, weak banks experiencing idiosyncratic liquidity shocks may find difficulties to absorb those shocks in the absence of liquidity management instruments and money markets. It is therefore recommended to establish a SLOLR. The use of SLOLR should be clearly regulated and should not become an additional tool for increasing Islamic banks liquidity.

LOLR can be extended to Islamic banks as long as it is *Shari'ah*-compliant. The main complications for this reside on the interest-bearing loan, and especially the reference to the penalty rate, as well as the need for a broader collateral. To be compliant with the *Shari'ah*, the LOLR structure should be interest rate free and the collateral used needs to comply with the *Shari'ah* rules. According to the IFSB, only 25 percent of the regulatory and supervisory authorities surveyed have developed a *Shari'ah*-compliant LOLR framework for IIFS using different types of structures (*Muḍarabah*, *Musharakah*, *Murabahah*).[35]

D. Interbank Markets

Creating Islamic interbank markets when all the markets participants are in excess liquidity and have no liquidity needs is difficult if not impossible. Although some countries with Islamic banks have developed interbank collateralized and uncollateralized money market instruments for those banks, their compliance with Islamic finance rules has raised some questions. Uncollateralized instruments can take the form of *Mudarabah* contracts (Appendix I), where interbank funds are invested over different maturities with returns based on an agreed profit-sharing ratio. Islamic banks have also designed collateralized money market

[34] Dobler, Gray, Murphy, and Radzewicz-Bak (2015).

[35] Chattha and Abdul Halim (2014).

instruments such as the commodity *Murabahah* contract where interbank funds are used to execute a *Murabahah* transaction in a commodity (Appendix II). However, the *Shari'ah*-compliance of the commodity *Murabahah* has been put in question in certain jurisdictions. In addition, some operational constraints may also limit the use of the commodity *Murabahah* as a very short-term liquidity management instrument.

Well-designed strategies of Islamic domestic money and government *Sukuk* markets are crucial for monetary policy implementation and its transmission through the Islamic banking system. One such strategy may consider first the development of tradable *Sukuk* issued by governments on a regular basis over different maturities, and in sufficient volumes. Different categories of market operators would increase the volumes traded on those markets. A key challenge would be to avoid the proliferation of different types and structures of Islamic government securities and money markets instruments; such proliferation would impair the formation of a stock of fungible HQLA that can be more easily priced, traded and used as collateral for liquidity management purposes. Standardized structuring of Islamic government securities and money market instruments will ease their use for liquidity management by CBs and Islamic financial institutions. Going forward, Islamic financial systems development strategies should rationalize the number of different instruments created with similar functions. Once key Islamic money and government *Sukuk* markets have been developed, other instruments may be introduced gradually.

To foster Islamic interbank markets development, Islamic financial institutions and CBs should aim at standardizing the type of Islamic interbank market instruments. Taking into account the challenge of designing collateralized money-market instruments for Islamic banks, a strong commitment of CBs to develop these markets is needed. Two options can also be considered as collateralized transactions for Islamic banks liquidity management: (i) Sell and buybacks; or (ii) interest-free collateralized loans (*Qard* with *Rahn*-Appendix III). Ideally, the collateral would be a government *Sukuk* rather than a less liquid asset (e.g., a commodity), non-suitable from a monetary policy and financial deepening perspective. At the same time, interbank *Mudarabah* investments may remain an effective instrument for uncollateralized interbank transactions.The sell and buybacks and interest-free collateralized loans can offer alternative ways of structuring interbank and CBs' transactions to the conventional repos that are more controversial from a *Shari'ah*-compliance point of view. In Islamic finance, sell and buy-backs are often referred as the *Shari'ah*-compliant repos even if they differ from a conventional repo. When considering the most appropriate collateralized transaction arrangement, the *Shari'ah*-compliance risk of sell-buyback and sell-lease-buyback arrangements should be minimized. In some jurisdictions, sell and buyback transactions are prohibited because they are viewed as replicating an interest-bearing loan.

Sukuk issued by governments might be the most suitable collateral for *Shari'ah*-compliant monetary operations. From an operational point of view, the existence of a liquid, transparent government *Sukuk* market may reduce the impact of individual transactions, such as government issuances, on price discovery mitigating the risk of fiscal dominance and

reducing their market risks. They may facilitate the use of *Sukuk* as collateral not only for CBs operations but also between market operators. Increased collateralized transactions with underlying government *Sukuk* can sustain their market liquidity.

While collateral needs for liquidity management should ideally be met with government *Sukuk*, the IFSB suggested that the lack of sufficient supply of such *Sukuk* in domestic markets often will require that CBs expand the range of eligible collateral. This collateral extension may include accepting *Shari'ah*-compliant instruments or *Sukuk* issued by public sector enterprises and major national corporate bodies, multilateral institutions as well as other sovereigns and CBs. Recently issued IFSB Guidance Note on Quantitative Measures in Liquidity Risk Management of IIFS[36] has proposed that CBs consider *Sukuk* issued by the international organizations such as the Islamic Development Bank (IDB) and the International Islamic Liquidity Management corporation (IILM) as collateral for providing liquidity support to IIFS. However, expanding the range of acceptable collateral should not come at the expense of the development of domestic government *Sukuk* markets.

Creating active and deep government *Sukuk* markets is a difficult task. Many factors can constrain their development including large fiscal surpluses, non-standardized issuances, reliance on non-tradable *Sukuk*, *Shari'ah*-compliance risk, continued reliance on CB direct financing, weak government debt management strategies, narrow investors base and limited financial sector diversification, inappropriate payment and settlement systems as well as the absence of collateralized instruments with government *Sukuk* as underlying assets.[37] The development of government *Sukuk* markets may require a variety of investors, effective intermediaries, as well as robust market infrastructure reducing operational risks, delays and transaction costs. Beyond technical and operational considerations, other factors may hinder the development of these markets, including the degree of commitment of the MoF to develop them and the lack of mutual funds and asset management activities.

VI. CONCLUSION

The majority of countries where Islamic banks are becoming important have fixed exchange rate regimes. This has important implications for the conduct of monetary policy: in those countries, the exchange rate is the main nominal anchor and liquidity management and the control over the systemic liquidity is a key determinant of the effectiveness of monetary policy and the sustainability of the exchange rate. Yet, Islamic banks in many of these countries are typically in surplus liquidity. Excess liquidity need to be managed properly to enhance monetary policy transmission through the Islamic banking system. When the interest rate channel is effective, monetary transmission can operate from the conventional to the Islamic segment of the financial system. However, such transmission may not be accepted by

[36] IFSB GN-6 (2014).

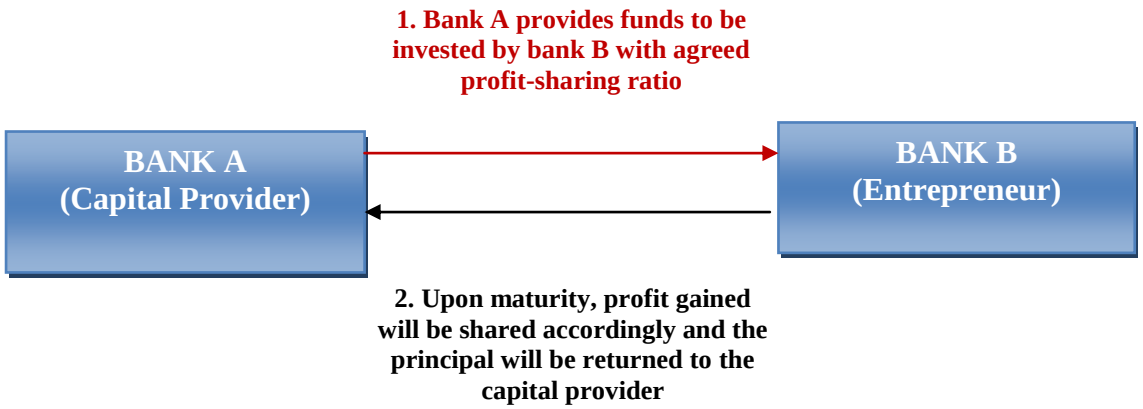
[37] Laurens and others (2005).

all *Shari'ah* scholars and depends on several factors including consumers and Islamic banks behavior and their reaction to changes in interest rates as well as the degree of development of Islamic money markets. In dual financial systems, a dual approach to monetary policy may be considered whenever the Islamic segment of the financial sector is not as developed as the conventional segment.

Incorporating Islamic banks in the monetary policy framework is a complex task not only because of the need of compliance with Islamic finance core principles but also due to the heterogeneity of financial systems and monetary policy frameworks of countries where Islamic banking exists. Several layers of difficulties confront monetary policy in most countries where Islamic banking is present, including shallow financial markets, pegged exchange rate regimes, fiscal dominance, and interest rate controls and directed lending. Delineating the specific difficulties associated with Islamic banking from a host of other issues is indeed quite challenging but necessary. Designing strong monetary policy frameworks for countries with Islamic banks requires careful study and striking a balance among several factors. The coexistence of conventional and Islamic banks calls for a prompt development of strong and resilient dual monetary policy frameworks. For this, the evidence available suggests that the orderly development of Islamic domestic interbank markets may facilitate the liquidity management of Islamic banks. While several initiatives to develop liquidity management instruments for Islamic banks have been undertaken, substantial efforts in standardizing these instruments, reducing their *Shari'ah*-compliance risk and developing CB's operational frameworks are still necessary.

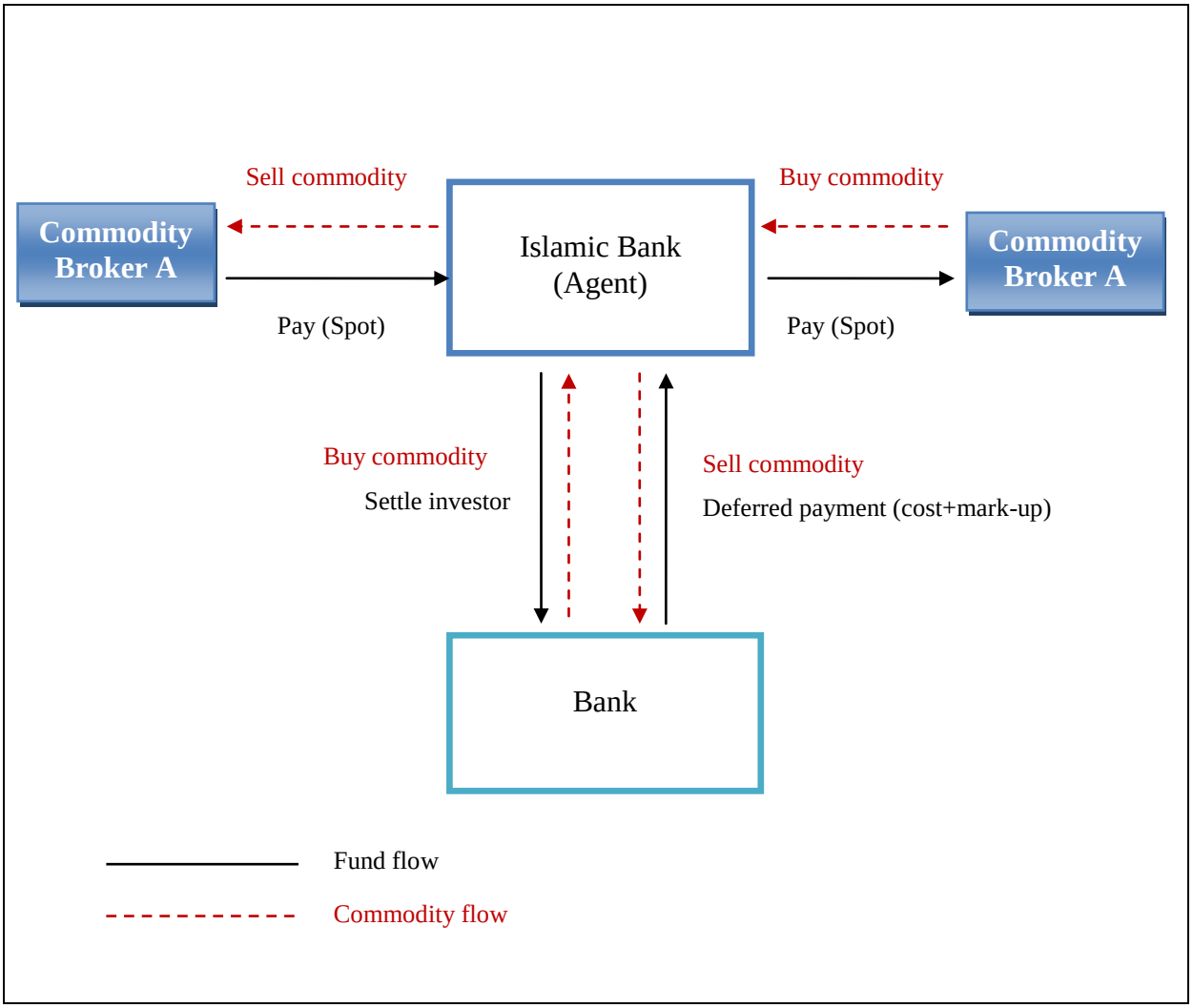
The design of effective liquidity management frameworks for Islamic banks is based on the orderly development of Islamic domestic *Shari'ah*-compliant interbank and government *Sukuk* markets. Those markets cannot develop without coordination and strong commitment of the CB and the fiscal authority as well as the necessary regulatory change needed to facilitate their development. The importance of domestic government *Sukuk* markets not only for the implementation of an Islamic monetary policy but also for the profitability and viability of Islamic banks calls for a more proactive role of CBs in the development of these markets.

Appendix I. The Interbank *Mudarabah*

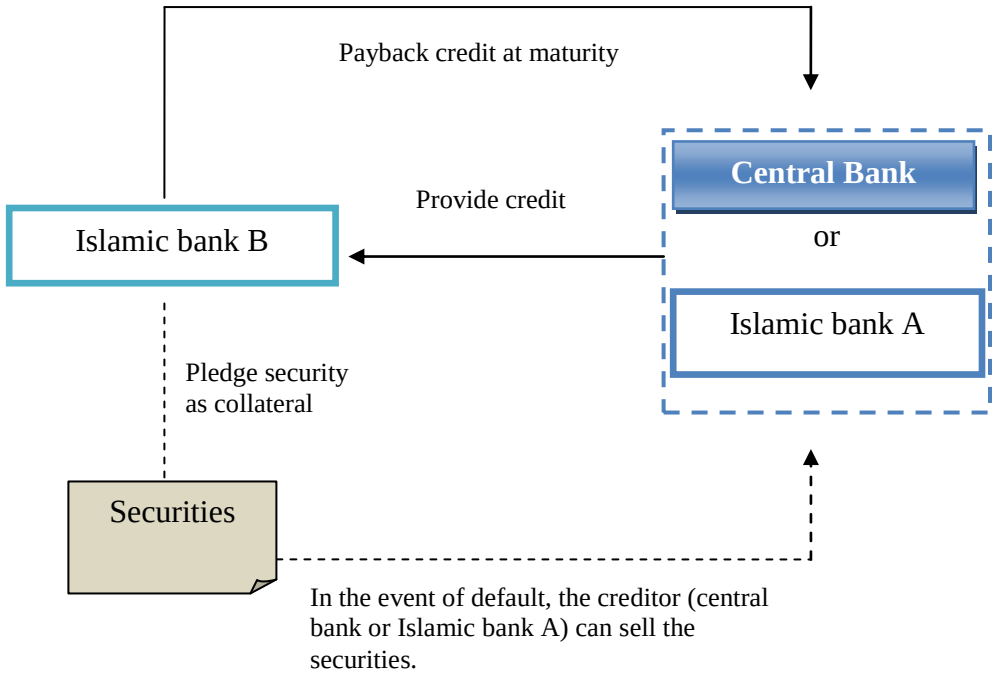


Source: Technical note on issues in the development of Islamic money and FX markets, IFSB, March 2008.

Appendix II. The Commodity *Murabahah*



Appendix III. *Qard* with *Rahn*



Source: Technical note on issues in the development of Islamic money and FX markets, IFSB, March 2008.

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