

Early Warning Indicators and Macroprudential Policy Tools

by

Hazik Mohamed

**Managing Director, Stellar Consulting Group
PhD Candidate at INCEIF
Email : stellar.xic@gmail.com**

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Abstract

At the outset, all macroprudential policies like limits on credit growth and other balance sheets restrictions, (countercyclical) capital and reserve requirements and surcharges, caps on loan to value ratios, levies and taxes, are part of the policy implementation in emerging, developed and advanced markets alike, even in Islamic Finance. These policies are motivated by market failures and externalities, but sometimes they can be hard to identify and unfortunately even more difficult to time. Chief among the benefits of these tools are that they can reduce procyclicality and limit systemic risks. But, policy makers need to coordinate these macroprudential policies with other policies, such as monetary and microprudential ones. We discuss how to best adapt these tools to specific country circumstances, drawing examples relevant to Asia and the GCC, following the repercussions from Euro and U.S. interventionist policies (i.e. expansion and reduction in global liquidity through QE and its subsequent taper). Some institutional reforms to address the cyclical behavior of our present economy are proposed and timely early warning indicators are discussed. At the end, we touch on behavioral-based approaches for the future.

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1.0 Introduction

While experts worldwide continue to debate the best potential and most implementable solutions, there is a remarkable level of consensus as to the key causes of the global financial crisis that gripped every major economy. In summary, three key causes can be identified (Stiglitz, 2011) :

- Excessive lending to (and borrowing by) households, corporations, governments, and funds;
- Opaque financial securities, including mis-rated securitized debt instruments; and
- Failings on governance, at both the institutional and systemic levels.

Incidentally, the International Monetary Fund (IMF) has endorsed the principles of Islamic finance, saying it could prove safer than conventional finance¹ (2015). The report noted that because Islamic banking forbids pure monetary speculation and stresses that deals should be based on real economic activity, it could pose less risk than conventional banking to the stability of financial systems. But to deliver this promise, the still nascent industry has to institutionalize its advantages into mechanisms to be applied consistently and implemented better across its applications regardless of jurisdictions. Furthermore, its concepts and theoretical underpinnings have to be developed further to set free its full potential.

Taking stock of current academic and policy research on theory, methodology and application of macroprudential regulation and policy within the Islamic Finance industry, we have to consider all possibilities including the already existing theoretical frameworks in the conventional systems as well as the emerging branches of modern economics, in particular behavioural economics which will employ Islamic Finance tenets (see section 4.2). We also need to have a clear understanding of what macroprudential policy is expected to do, which is more than just reducing the risk of financial instability. Its role in affecting socioeconomic development should also be assessed to prevent unintended consequences. Given such multiple objectives (stability in macrofinancial, microfinancial, and socioeconomic issues), a whole range of policy options need to be considered and prioritised.

In safeguarding the economy from the potential risks of bank-led flows, most emerging market economies refocused their policy on the asset and liability side of bank

¹ IMF endorses Islamic finance, warns it must be implemented better
<http://www.reuters.com/article/2015/04/07/islam-financing-imf-idUSL6NOX402120150407>

balance sheets² (Forbes and Warnock, 2012; Azis and Shin, 2013). Given the sheer size of capital flows, it can be argued that some sort of capital controls can help — in the form of direct quantitative controls such as imposing a macroprudential levy (or taxes) on bank-led flows. But macroprudential policies at the national level may be inadequate to deal with large and volatile capital flows. Regional safety nets and cooperation can be a useful supplement, in particular to minimize the possibility and impact of financial repercussions and contagion.

For the oil-rich countries, especially the GCC, swings in the resource-exporting sector spill over to the rest of the economy. During periods of high energy prices, the external balance and government finances strengthen significantly, domestic liquidity and confidence rise, and credit and asset price booms often develop (Arvai et al., 2014). As financial institutions increase their lending during the upswing of the cycle, they become more exposed, particularly to the real estate sector (for instance, in Qatar and the United Arab Emirates prior to the global financial crisis). When energy prices drop, this cycle quickly reverses, putting particular stress on borrowers and financial institutions that have become overly exposed during the upswing. Although such cycles may be driven largely by exogenous factors, they need to be managed by domestic policies.

1.1 Early Warning Indicators (EWIs) for Financial Vulnerabilities

The design and implementation of early warning indicators to financial vulnerabilities should issue signals in a timely (not too early and definitely not after-the-fact) manner for policy makers to control. EWI based on quantities — especially balance sheet aggregates — are most likely to yield indicators that issue warning signals well before vulnerabilities have grown too large, and thus could be interpreted as false alarms or give a false sense of security.

Cerrutti et al. (2014) noted that the first phase of global liquidity growth is the period leading up to the 2008/2009 global financial crisis and the immediate aftermath of the September 2008 Lehman Brothers collapse. This phase is marked by an expansion in global banking and the transmission of financial conditions across borders through capital flows — intermediated by the global banking system. The concept of core and non-core liabilities is central, as they help define the level of risk-taking and the expansion of leverage and bank balance sheets. The second phase of global liquidity begins roughly in 2010, when several

² On the asset side, separate from reducing loan-to-value ratios, efforts are made to contain excessive credit expansion and other risky investments. On the liability side, mitigating the increase of non-core liabilities through bank-led flows is critical because they can heighten risky bank behaviour and increase leverage.

central banks in advanced economies began using quantitative easing (QE) and asset purchase policies. These affected bond markets — both sovereign and corporate — and led to much easier conditions in the fixed-income securities market — such as higher durations, lower long-term yields, and increased volatility. In emerging Asia, the result was the rapid growth of local currency bond markets. Real money asset managers — rather than banks — are central in this second phase of global liquidity. The third phase of global liquidity was the so-called May 2013 taper tantrum after the US Federal Reserve (Fed) announced its intention to taper QE and the financial storm that followed in emerging markets. Large capital outflows from emerging Asia were linked to the impending end of 'easy money' as central banks in advanced economies said they would gradually 'normalize' monetary policy.

Liquidity	Period	Result	Focus Areas
Phase 1	Prior to 2008 crash	Expansion of global banking through cross-border investment flows	International Banks
Phase 2	Beginning of 2010	Quantitative Easing (QE) & Asset purchase policies	Capital Market / Fund Managers
Phase 3	May 2013 QE Taper	Large capital outflows from emerging Asia	Bond Markets

Table 1 : The 3 Phases of Global Liquidity Expansion in the 21st Century so far.

During the first phase of global liquidity, non-core liabilities of financial intermediaries were most likely to yield timely signals — as banks were principal in intermediating credit growth. The second phase of global liquidity pivoted on the behavior of capital markets, so the behavior of fund managers should be reflected in the indicator. When credit growth is driven by corporate bond issuance by non-financial borrowers, aggregate issuance by firms would be a useful indicator. In addition, if corporate borrowers engage in “carry trades” by borrowing in foreign currency while holding the proceeds of corporate bond issuance in local currency financial instruments and deposits, then tracking the aggregate cash holdings of firms would also yield useful information.

1.1.1 Principles of Selection

The conventional approach was to distinguish between crises in emerging economies from those in advanced economies — with a different set of variables for each group. For example, emerging economy crises focus on capital flow reversals associated with 'sudden stops', where variables such as external borrowings denominated in foreign currency are key (Azis, 2014). For advanced economies, housing booms and household leverage were more

important. This distinction is also reflected in the work of official multilateral institutions. The IMF has added a new vulnerability exercise for advanced economies (VEA) to an existing vulnerability exercise for emerging economies (VEE), which both feed into a joint early warning exercise with the Financial Stability Board (FSB).

The guiding premise here is that the procyclicality of the financial system provides an organizing framework for selecting vulnerability indicators, especially those associated with banks and financial intermediaries more generally. The use of ratings may introduce (more) procyclicality (Amato and Furfine, 2004). And accounting rules aimed at greater transparency and fostering more market discipline can mean more procyclicality as chances of fires-sales increase when institutions mark asset to market (Leuz and Laux, 2010; Ellul et al., 2012). Even when set optimally from a microprudential perspective, capital requirements can increase overall procyclicality (Angelini et al. 2010; Repullo and Suarez, 2013).

Practically, effective outcomes will be tied to the specificity of particular economies. The financial stability unit (FSU) in the United Arab Emirates is developing a stress index and working on formalizing its EWI dashboard. The FSU in Oman is developing a database on key variables relating to the macroeconomy, financial markets, financial institutions, and financial safety nets / infrastructure, as part of a move toward formulating an EWI for macrofinancial surveillance. Qatar's real estate price index is part of its EWI toolkit. Saudi Arabia has strengthened its off-site surveillance system and is developing its own domestic EWI (Arvai et al., 2014). And as these markets develop, best practices can be learnt from each other to be implemented at the appropriate time and sector.

1.1.2 Core and Non-Core Liabilities

In addressing financial system procyclicality, it is useful to distinguish between banks' core and non-core liabilities. Core liabilities are the funds that banks draw on during normal times and are mainly sourced domestically. When bank assets grow rapidly, the core funding available will likely be insufficient to finance the rapid credit growth. This is because retail deposits grow in line with the aggregate wealth of households. In a lending boom, when credit is growing very rapidly, the pool of retail deposits will likely be insufficient to fund growth in bank credit. Other sources must be tapped, typically from other banks operating as wholesale lenders in the capital market. The state of the financial cycle is thus reflected in the composition of bank liabilities. Indeed, one of the key results of an empirical investigation (by Azis and Shin, 2014) is that the most consistently reliable indicator of vulnerability for

both currency and credit crises is a high level of foreign bank liabilities. The banking sector's expansion is funded by non-core liabilities (in this case, from foreign creditors), building vulnerabilities to foreign creditor deleveraging.

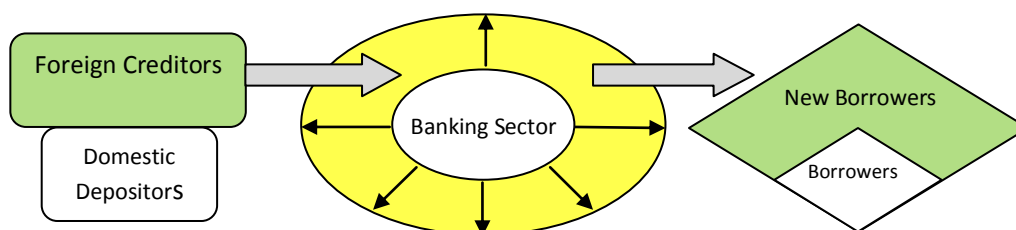


Figure 1 : Expansion of banking sector leads to a lending boom financed by foreign creditors (non-core liabilities). Source : Authors' illustration.

Between 2003 and 2008, Arvai et al. (2014) observed that most of the credit growth in the GCC was financed by domestic deposits; but banks' foreign liabilities increased in Kuwait, Oman, Qatar, and the United Arab Emirates, partly because banks issued foreign currency — denominated medium-term notes to address mismatches in asset-liability maturity. However, banks also used short-term speculative foreign deposit to finance their lending, exacerbating maturity mismatches and creating a refinancing risk on their balance sheets. On the corporate sector side, Arvai et al. believed that the boom was associated with a rise in leverage, increasing the sector's vulnerability to funding availability and cost.

Hahm et al. (2013b) found two features that distinguish non-core liabilities. First, they include claims held by intermediaries on other intermediaries. Second, they include liabilities to foreign creditors, who are typically global banks, and hence also intermediaries, if foreign. Even for liabilities to domestic creditors, if the creditor is another intermediary, the claim tends to be short term. The distinction between core and non-core liabilities becomes meaningful once there are differences in the empirical properties of the two types of liabilities.

Additionally, where the line between core and non-core liabilities lies depends very much on the financial system in question, its degree of openness, and stage of financial market and institutional development. For a developed financial system, as in the US or western Europe, the distinction between core and non-core liabilities seems reasonably well captured by the distinction between deposit versus non-deposit funding. Figure 2, from Shin (2009), shows the composition of the liabilities of Northern Rock, the UK bank which failed in 2007. In the nine years from 1998 to 2007, Northern Rock's lending increased six and a

half times. This increase in lending far outstripped funds raised through retail deposits, with the rest of the funding gap filled by wholesale funding.

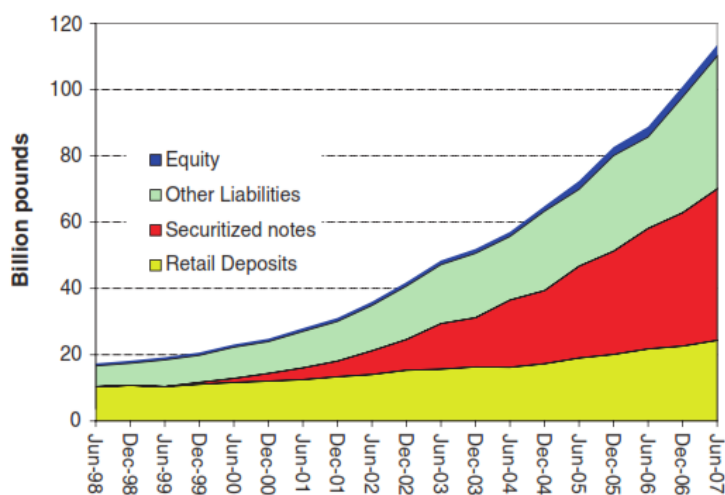


Figure 2 : Northern Rock (UK) bank liabilities (1998–2007).
Source : Northern Rock Annual and Interim Reports, 1998–2007.

From this case, it is clear that during a credit boom, the rapid increase in bank lending outstrips the core deposit funding available to a bank. As the boom progressed, the bank resorted to alternative, non-core liabilities to finance lending. Like many other credit markets, syndicated loan markets grew rapidly in the run-up to the financial crisis (Chui et al., 2010). The gross amount of syndicated lending to developed economies rose from around US\$400 billion per quarter in 2002 to almost US\$1.3 trillion in the second quarter of 2007. Syndicated lending to emerging market borrowers followed a similar pattern, reaching a peak of almost US\$150 billion in the third quarter of 2007. As it turned out, investment banks and hedge funds grew dramatically in the early 2000s until the disastrous crash on Black October in 2008, starting with Lehman Brothers. During the second half of 2008, gross syndicated lending declined by 67% in developed economies (Fig. 3, left-hand panel). A similar decline was also observed in emerging markets (Fig. 3, right-hand panel), with Africa and the Middle East being particularly affected.

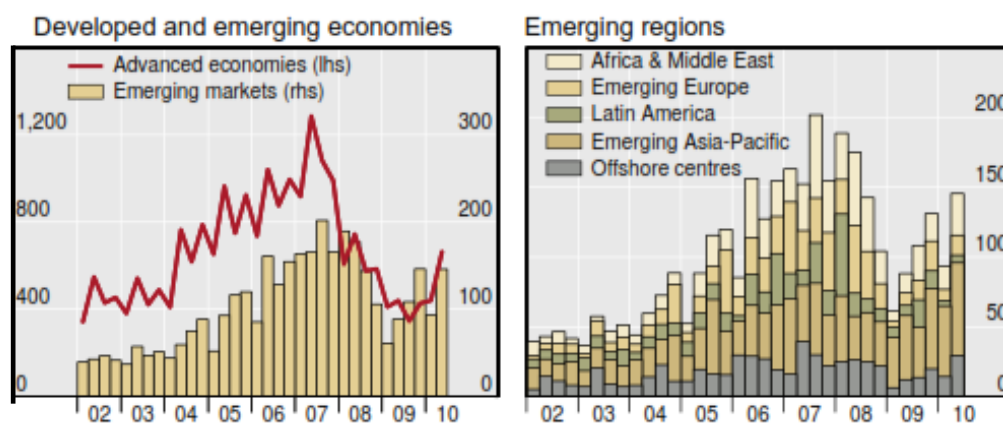


Figure 3 : Gross Syndicated Loan Issuance (in US\$ billions)
Source : Loan Pricing Corporation *DealScan*.

Therefore, the proportion of non-core bank liabilities serves as a useful indicator of the stage of the financial cycle and the degree of vulnerability of the banking system to a downturn in that cycle. For emerging or developing economies, including those in Asia and the GCC, more dexterity in thought is needed to find a useful classification system between core and non-core liabilities³. In many developing economies at an early stage of financial development, or in those generally closed to the global banking system, the principle behind the distinction is better expressed as the distinction between retail household deposits and the wholesale deposits of non-financial companies. In an open emerging economy where the banking system is open to funding from global banks, rapid increases in non-core bank liabilities show up as capital inflows through increased foreign exchange-denominated banking liabilities. For this reason, foreign exchange-denominated banking liabilities can be expected to play a key role in diagnosing potential financial instability.

1.2 Capital Flow Management

The national policy most relevant to the phenomenon of capital flows is financial sector liberalization, where capital openness is a central component. Financial liberalization has been widely promoted as a way to better allocate capital and widen opportunities for savers and investors. This has been the predominant thinking and practice in developing and advanced economies for several decades.

³ Based on financial instruments, a possible definition of non-core liabilities is the sum of (i) foreign exchange-denominated bank liabilities; (ii) bank debt securities; (iii) promissory notes; (iv) repos; and (v) certificates of deposit (CDs) not held by households.

One of the most important components of financial sector liberalization is capital account liberalization. Capital flows resulting from capital account liberalization are channelled through domestic intermediaries (banks or firms) allowing greater competition and thus more efficiency. Countries freeing up their capital accounts often see a sudden jump in economic growth as they see more capital for economic and financial activities. Yet, many economies (developing and developed), subsequently face instability, with some eventually suffering financial crisis. After decades of advocating the virtues of cross-border capital flows, the International Monetary Fund (IMF) acknowledged that some restrictions on capital flows can help protect an economy from financial turmoil (IMF, 2012).

1.2.1 How Capital Flows Affect Income Inequality

The following Fig. 4 depicts the link between financial development, product and factor market, trade, and household income. It is a summarized flowchart explaining the transmission mechanism from increased capital flows in the financial market block to rising unemployment in the product and factor market block, and worsening income inequality and poverty in the household income block. Azis (2014) explains that the largest (reddish) part of the flowchart represents the dynamics in goods and factor markets (real sector) — including trade (exports and imports) — while the left side captures the workings of financial markets. The interconnection between the two determines the resulting unemployment and the generated household incomes in the income block (right part of the flowchart).

The primary income is derived from the value enhanced, the returns on fundamental inputs of capital, and labor. Consecutively, these returns generate factor incomes including income from abroad. However, total income consists of more than just factor incomes; it also includes transfers between agents/institutions. For example, these transfers include tax payments that subtract and subsidies that add to income, where their size depends on the existing fiscal policy. Thus, income of different agents, including households, is influenced by both the level of economic activity and this non-factor income⁴. Typically, most subsidies go to low-income households but the main

⁴ The effect of income level on macro variables is seen in expenditures. Real consumption reflects the size of agents' expenditure out of their disposable income (determined by their respective income levels), together with government expenditure and net exports.

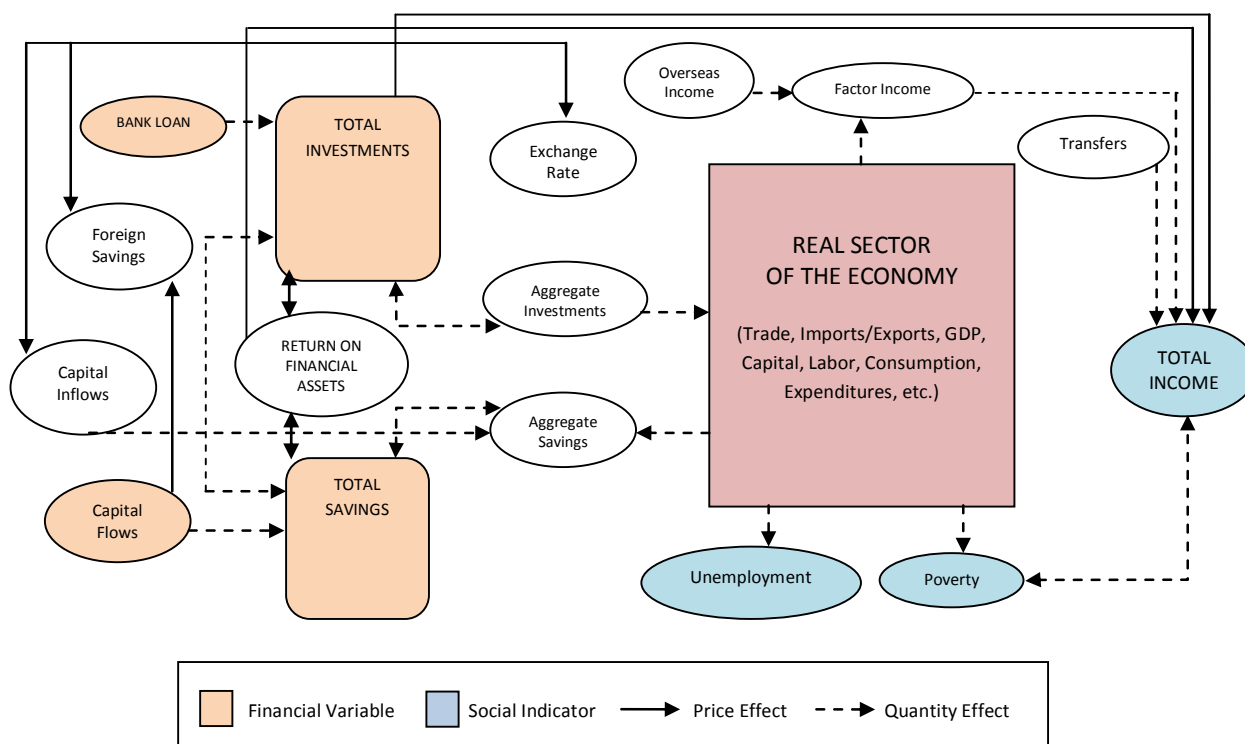


Figure 4 : Flowchart of the interaction of the real and financial sectors and the resulting income distribution.
Source : Modified from Azis (2014).

contributor for income inequality comes from the income generation that originates in the financial sector. In reality, Azis observes that the actual income received by the rich and urban households holding financial assets can be well above income accumulated by those who do not hold financial assets, even if factor incomes and transfers tend to be more equalized.

In a liberalized financial and capital account environment, rich urban households are better able to reap benefits from an expanding financial sector, to the extent that when the financial sector accelerates much faster than the real sector during a boom, the resultant income distribution becomes gaping — the rich earn far more than the poor, and urban household income grows faster than rural income.

2.0 Macroprudential Tools

Despite the wide-ranging sources of financial instability, those emanating from banks draw most attention, and rightly so. The experience of the first phase of global liquidity and the unwinding of bank excesses serve as a reminder of the importance of finding the right combination of micro- and macroprudential policy tools. Traditional solvency regulations based on minimum capital requirements are a key component of the policy mix. But

microprudential tools need to be supplemented by macroprudential ones. There are several types of macroprudential tools for banks :

- i. bank capital-oriented tools that limit loan growth through altering bank incentives,
- ii. asset-side tools that limit bank loan growth directly, and
- iii. liability-side tools that limit vulnerability to liquidity and currency mismatches.

2.1 Capital Requirements that Adjust Over Economic Cycles

The rise in asset values that accompanies a boom results in higher capital buffers in financial institutions, facilitating more lending in the current context of capital adequacy Basel requirements. During a bust in an economic cycle, the value of this capital can drop abruptly, possibly even necessitating a cut in lending that may require stopping all loans or impinge on those already issued. Practically this does not happen, and the financial institution run inadequately, at least by capital requirements. Here we can observe that current inflexible capital requirements by benchmark percentage can exacerbate the credit cycle. However, time-varying capital requirements that are countercyclical to credit or business cycle instead (i.e. rise with credit growth and fall when it contracts) can play an important role in promoting financial stability and reducing systemic risk from the financial sector. Although countercyclical capital buffer sounds straightforward, it is triggered in response to quantitative signals⁵ which in turn have to be quick and accurate. Also, bureaucratic delays as experienced from implementing Basel II & III gives us an understanding of the hurdles that need to be overcome in implementing something as complex as time-varying capital requirements.

In the GCC, the region's high macroeconomic volatility, due to dependence on hydrocarbon revenues and a history of procyclicality in some countries, together with its lack of economic diversification, non-transparencies in its financial and non-financial sectors, and high credit concentrations all call for sizeable capital buffers in its banking systems. Additional capital in the GCC compensates for the special characteristics of these countries, as well as concerns about asset quality in the aftermath of the crisis in some countries. GCC banks could somewhat reduce the need for the extra capital through improved corporate governance and disclosure, as well as by requiring large borrowers receive credit ratings.

⁵ It is important to note that the composition of liabilities provides a better early warning signal of vulnerability than conventional asset side indicators such as non-performing loans or Basel-style capital ratios. For most banks, such ratios were perfectly healthy even on the eve of the crisis, e.g. Northern Rock bank in the UK (see Shin, 2010).

2.2 Loan-to-Deposit Caps

A cap on the loan-to-deposit ratio limits credit growth by tying it to growth in deposits. This proposed regulation would command that the ratio of, let's say, Bahraini dinar-denominated loans to dinar-denominated deposits should fall below 100%. The rationale for this policy is to restrict loan growth by tying it to the deposit base, and has been introduced in countries like Korea (see Bruno and Shin, 2014). For domestic banks, the loan-to-deposit ratio cap has two effects. First, it restrains excessive asset growth by tying loan growth to growth in deposits. Second, there is the direct effect on the growth of non-core liabilities and hence on the build-up of vulnerabilities that arise from the liability side of the balance sheet.

2.3 Non-Core Liabilities Levies and Taxes

Liability-side tools address the build-up of vulnerabilities to liquidity and currency mismatches along with the under-pricing of risk on global capital markets. A levy on non-core bank liabilities mitigates the build-up of systemic risk through currency or maturity mismatches. The levy works by counteracting the distortions to global funding conditions and the funding “supply push” by global banks.

Bruno and Shin (2014) found that a levy on non-core liabilities affects overall financial stability in several ways. First, the levy's base itself varies over the financial cycle. It stings hardest during the boom stage (when non-core liabilities are large) so the levy acts as automatic stabilizer even if the tax rate itself remains constant. Given the well-known political economy challenges facing regulators, this automatic stabilizer feature of the levy may have important advantages.

Second, the levy addresses financial vulnerability, leaving alone the essential financial function of channelling core funding from savers to borrowers. By only targeting non-core liabilities, the levy addresses externalities associated with excessive asset growth and systemic risk arising from bank interconnectedness. In other words, it addresses the element of bank liabilities that can cause "bubbles", rather than the core liabilities of the banking system.

Third, targeting non-core liabilities can address the vulnerability of emerging economies with open capital accounts to sudden capital flow reversals due to bank deleveraging. Indeed, for many emerging economies, a levy on non-core liabilities could narrowly target just foreign currency-denominated liabilities.

On taxes, Shin (2010) noted that a tax on non-core liabilities has many advantages as a prudential tool in dampening the procyclicality of the financial system, especially for emerging economies. Compared to other devices for the mitigation of procyclicality, such as time-varying capital requirements or expected loss provisioning, a tax on non-core liabilities is easier to implement, is less distortive, and is suitable for both advanced and emerging economies. A non-core liabilities tax will be especially effective as a tool for mitigating the risks from sudden reversals of foreign capital flows in emerging economies.

Both for advanced and emerging economies, the ratio of non-core to core liabilities reflects the degree of risk-taking by the banking sector, and the extent of under-pricing of risk. Shin describes the risk as being “under-priced” from the observation that banks take cues from current buoyant market conditions to take on additional exposures, without taking sufficient account of the fallout to the rest of the economy when a “bubble” eventually bursts. A globally coordinated introduction of a non-core liabilities tax (perhaps through the G20 process) would maximize its effectiveness and minimize the distortions through possible circumvention or shifts in the pattern of capital flows, although Shin believes even local adoption may still be effective. An important desirable feature of the non-core deposit tax is that the tax rate should not be so high as to create attempts to evade the tax.

2.4 Time-varying Loan-to-Value (LTV) Ratios and Debt Service-to-Income (DTI) ratios

As shown by several high credit growth and asset price boom-bust episodes in the GCC, controlling retail and real estate lending is crucial to protecting the financial system, and it can also help prevent the economy from overheating (Arvai et al., 2014). Most GCC regulators had set limits on DTI ratios and loan tenors for retail lending, but as of early 2014 only Qatar had a cap on LTV ratios for real estate lending. Although mortgage lending is currently nascent in the GCC, setting appropriate limits on LTV ratios and adjusting them to market conditions will become important as mortgage lending picks up. The recent experience of Hong Kong SAR and Singapore illustrates the use of LTV and DTI ratios as macroprudential instruments to contain property lending and price growth⁶. In the Singapore

⁶ In the U.S. within less than twenty-five years, “affordable housing” and other housing policies have turned a healthy market into financial ruin. In 1989, for example, only 1 in 230 homebuyers made a down payment of 3 percent or less; by 2007, it was 1 in 3. Meanwhile, average home equity plunged from 45 percent to 7 percent. The affordable housing goals imposed on Fannie Mae and Freddie Mac in 1992 were the major contributors to both the deterioration in underwriting standards between 1992 and 2008 and the growth of an unprecedented ten-year housing bubble that suppressed delinquencies and stimulated the growth of a private securitization market for subprime loans. Other government policies are also to blame for the deterioration in

case, an escalating series of macroprudential measures were introduced during 2009–12, focusing on both domestic and foreign buyers of real estate. Since 2009, the LTV cap has been lowered from 90 percent to 40 percent in some cases, and the Special Stamp Duty has been repeatedly extended and increased. These measures were sufficiently effective that price growth slowed sharply in late 2011.

2.5 Regional Safety Nets

Instilling market confidence is a key initiative of macroprudential policy and usually involves some measure of guarantees, direct financial resources, or establishing precautionary funds such as swap agreements and emergency external funds — including international and regional organizations, along with multilateral banks. Even with macroprudential policies, domestic financial safety nets may be inadequate in dealing with financial instability due to the size and volatility of capital flows. In such cases, *regional* financial safety nets can be useful. The US\$240 billion regional crisis fund known as the Chiang Mai Initiative Multilateralization (CMIM) is an example within the ASEAN+3 (ASEAN, China, Japan, Korea) framework. The European example is the European Stability Mechanism (ESM) and European Financial Stability Facility (EFSF) whose combined lending ceiling is €700 billion as of July 2013, €80 billion of which is pledged by member states and the balance to be raised from capital markets. Regional cooperation in providing financial safety nets can complement domestic efforts and existing bilateral swaps (Azis, 2012). It can also minimize the probability of contagion, both intra-regional and externally. From a welfare perspective, the resulting financial market stability feeds into the real economy, boosting factor income rather than returns on financial assets. In real world Islamic finance application, we suggest that for the GCC (possibly extended to other OIC countries wanting to partake) a similar arrangement can be made where the pooled funds can be administered by the Islamic Development Bank (IsDB) under a *takaful* (e.g. *wakalah*) structure.

2.6 Working with Other Stabilization Policies

When formulating macroprudential policy, its link to the broader macroeconomic stabilization policies, particularly monetary policy, needs to be deliberated as in both advanced and emerging economies, monetary policy resonates broadly in securing financial stability.

the U.S. housing market, including the thirty-year fixed-rate mortgage, the mortgage interest tax deduction, the right to refinance without penalty, and the Community Reinvestment Act (Wallison & Pinto, 2012).

For example, a survey paper by Magud et al. (2011) conducts a “meta-analysis” of existing survey literature of 37 empirical studies on the linkage effects of capital controls with respect to monetary policy. Their results list four main findings. Capital controls (i) make monetary policy more independent; (ii) alter the composition of capital flows; (iii) reduce real exchange rate pressures; (iv) do not reduce the volume of net flows (and hence, the current account balance). Within the broader macroprudential policy framework, capital controls effects the composition of capital flows and the likely pace of currency appreciation that gives additional autonomy to monetary policy.

3.0 Core Monetary Reform and Financial Integration

As much as the above-mentioned tools that can be used in macroprudential policy, it cannot change fundamental flaws within a global financial system that need to be set right in order to move to a more robustly stable system. The following sections contemplate on core reforms and the paradigm shifts that are necessarily aligned to Islamic principles.

3.1 Proposed Monetary Reform and its Possible Implementation

At the height of the Great Depression a number of leading U.S. economists advanced a proposal for monetary reform that became known as the Chicago Plan. It envisioned the separation of the monetary and credit functions of the banking system, by requiring 100% reserve backing for deposits. This is very much in line with what Islamic Finance and the Islamic banking industry should look like. Irving Fisher (1936) claimed the following advantages for this plan :

- a) Much better control of a major source of business cycle fluctuations, sudden increases and contractions of bank credit and the supply of money.
- b) Complete elimination of bank runs.
- c) Dramatic reduction of the (net) public debt.
- d) Dramatic reduction of private debt, as money creation no longer requires simultaneous debt creation

An IMF study by Benes and Kumhof (2012) confirmed these claims by embedding a comprehensive and carefully calibrated model of the banking system in a DSGE (dynamic stochastic general equilibrium) model of the U.S. economy. Their analytical and simulation results fully validated Fisher’s (1936) claims. The Chicago Plan could significantly reduce business cycle volatility caused by rapid changes in banks’ attitudes towards credit risk, it would eliminate bank runs, and it would lead to an instantaneous and large reduction in the

levels of both government and private debt. It would accomplish the latter by making government-issued money which represents equity in the commonwealth rather than debt, the central liquid asset of the economy, while banks concentrate on their strength, the extension of credit to investment projects that require monitoring and risk management expertise. Coincidentally, an ideal Islamic Finance model has a banking system that promotes risk-sharing ventures in its *mudarabah* (silent partnership) and *musyarakah* (joint venture) contracts and moving away from *murabahah* (cost-plus) models which is akin to current conventional practices. While these shifts warrant the banks to take more risks, it spreads the overall risk (and embeds justice and fairness) between the borrower and the lender, as opposed to the transfer of risks solely to the borrower. In return, the lender shares the profit (higher than interest rate) of the venture and has a vested interest to want the venture to succeed as much as the borrower.

Furthermore, Benes and Kumhof showed that output gains approach 10 percent, and steady state inflation can drop to zero without posing problems for the operation of monetary policy. The large steady state output gains were due to the removal or reduction of multiple distortions, including interest rate risk spreads, distortionary taxes, and costly monitoring of unnecessary credit risks. The analysis also demonstrated the ability to drive steady state inflation to zero in an environment where liquidity traps do not exist, and rebuts the belief that a government monopoly on money issuance would be highly inflationary.

One possible way of implementing the Islamic principles of the Chicago Plan within the current financial structure, we think, is for the monetary authority (government) to issue certificates that is tied to the GDP performance of the country and not to extend credit beyond what is reasonable to be paid back. If more credit had to be extended, then either GDP had to increase, or more reserves (from country's surpluses) had to back the increased credit circulation.

Another way is to also issue treasury bills that are tied to a quantity of goods. These bills are only granted for goods that are exchanged to ensure that the circulation of such 'currency' remained in equilibrium with the circulation of goods. (This is also the basic principle of currency policy). The capital raised from those bills and certificate issues are invested in sustainable-yielding sectors of the real economy, e.g. infrastructure projects like public transportation or power and energy supply, in order to provide reasonable stable returns to the issuer and investors.

3.2 Key Principles and Distinct Features of the Islamic Finance Model

Arguably, the ideal Islamic finance paradigm points to a full-spectrum menu of instruments serving a financial sector imbedded in an Islamic economy in which all rules of market behaviour prescribed by Islam are fully operational. Islam proposes two general sets of risk-sharing instruments:

- i. *mu'amalat* risk-sharing instruments in the financial sector, and
- ii. redistributive risk-sharing instruments through which the economically more able segment of the society utilize in order to share the risks facing the less economically able segment of the population.

The second set of instruments are used to redeem the rights of the less able from the income and wealth of the more able. According to Mirakhor (2010), these are not instruments of charity, altruism or beneficence. They are instruments of the redemption of rights and repayment of obligations between human beings or market actors.

Despite the current inadequacies in application of *Shari'ah* maxims by the Islamic finance sector, the concepts behind Islamic finance are highly relevant to addressing the global financial crisis as well as its possible prevention. In particular, four practices are worth emphasizing :

A. Increased Emphasis on Asset-based Financing

Due to its asset-orientation, Islamic lending theoretically (but practically too) should be limited by the value of real collateral. This practice can help prevent upward spirals of debt, particularly unsecured consumer debt. Measures to increase the linkage between actual assets and the financing offered can add greater conservatism and prudence going forward.

B. Ethical Supervisory Boards

The concept of “Ethical Supervisory Boards” for the global Islamic Finance financial institutions is worthy of exploration. Creating such bodies – and granting them an appropriate level of authority – could have a significant impact on both financial practices and customer trust in financial institutions. Interestingly, this practice could be seen as an extension or institutionalization of the ethics-based “shareholder activism” witnessed globally in recent years. Of course, attention should be directed to ensure that such boards do not have excessive scope or vague mandates, and that they act as enablers rather than hindrances on business. Nonetheless, a strong ethical check (and enforcement if necessary)

on financial activity seems worth having. Malaysia's IFSA 2013 is an example to empower audit and the necessary legal enforcement on its Islamic banking industry.

C. Legal and Enforcement Framework

In order to maintain the rule of Law and achieve justice, stability and sustainability, governance has to be operated in a legal environment characterized by impersonal exchange afforded by individual legal responsibility and the existence of a state and legal infrastructure that enables bilateral enforcement of contracts, characterized by legal institutions (courts, jurists, contractual models) structuring transactions, including contractual enforcement.

In the 11th-12th centuries, North African (maghribis) traders operating in an unstable environment characterized by weak political institutions, arbitrary opportunism, random violence and information asymmetries (*gharar*), successful traders worked in collectivist coalitions characterized by private-order institutions for contractual enforcement. They solved fundamental problems of exchange, such as the commitment problem and contractual enforcement, by organizing a “community responsibility system” with multilateral reputation mechanisms and information-sharing arrangements (Lydon, 2008).

Today, the lack of systematic enforcement is glaring despite having regulations after statutes after laws. For instance, the credit boom in 2007 skyrocketed in the GCC despite several macroprudential measures to limit credit growth, pre-empting its contribution to the region's financial instability. During that time, some GCC countries' credit continued to grow, largely going into construction and real estate lending, fuelling a real estate boom; while other GCC countries experienced an increase in lending for the purchase of securities (evident in the GCC stock market gains of 22–60 percent in 2007). Notably in the United Arab Emirates, speculative investments contributed to marked increases in real estate prices. These exceptions to regulatory rules relating to financial stability (in many cases granted by the authorities) undermined the effectiveness of financial governance and regulatory caps. Where rules exist and are not enforced, the *amanah* (trust) of ensuring financial stability by those entrusted becomes an illusion.

D. Separation of risk-free and risk-bearing accounts

One core principle of Islamic finance is that if a party seeks to gain, he or she must also be willing to risk loss. The concept of a “risk-free return” — meaning a gain with absolutely no chance of loss — is not consistent with this principle. A clear distinction between risk-free

accounts (whose primary purpose may be for enabling the flow of payments, protecting savings, and safekeeping) and risk-bearing accounts (whose primary purpose is to grow savings through investments) is a natural consequence of the principle discussed above. Such a distinction is a hallmark of the “narrow banking” model through which deposit-taking banks and investment houses were long separated.

4.0 Globalization and Financial Integration

Globalization poses new challenges and constraints to the ways in which financial sectors have operated. After the inter-war period and into the Bretton Woods years, there was widespread limitations on the international movement of capital and most important economies had tightly regulated banking systems which brought financial stability. However, in today's highly globalized and competitive economy, these are no longer true. Increased trade, travel, and migration make it difficult to maintain capital controls and government allocations of foreign exchange without worsening volatility, contagion effects and consequences of capitalism like income inequality.

Four cross-cutting concerns emerge. First, the erosion of national frontiers by trade, tourism, migration, and capital account liberalization means that residents of all countries have substantial financial assets — and often liabilities — denominated in foreign currencies at home or abroad. Any analysis of national financial systems must take this into account. More important, this factor constrains governments' use of macroeconomic and financial policy and may contribute to economic fluctuations.

Second, individuals and firms benefit substantially from the improved risk and return menu associated with global diversification. Diversification is of particular importance in developing countries where the lack of size and diversity of the national economy results in instability in the value of production (Hanson et al., 2003).

Third, the small size of most developing countries limits the efficiency and quality of financial services: banking, equity markets, and pensions. Thus, cross-border provision of financial services, one facet of globalization that has potential benefits for small economies, become popular and necessary. However, taking full advantage of the opportunities presented by globalization and minimizing its costs depend on effective regulation and supervision to ensure good quality information, transparency, market integrity, and prudent investing by banks and pension funds. The entry of foreign participants and the offshore listing of firms both require this infrastructure and often help to improve it.

Fourth, the escalating public sector debts and the massive monetary expansion in the United States, coupled with the highly uneven macroeconomic policy stimulus taking place throughout the world are two major reasons for large global imbalances and how they are linked to the global reserve system (Ocampo, 2009).

Overall, welfare considerations related to the presence of systemic externalities and to the high cost of public goods suggest that regulatory harmonization should not be left to market forces alone. From the perspectives of national policymakers and analysts of international financial institutions, the relevant question then becomes how countries should pursue financial regulatory harmonization. The dynamics of global financial integration and the related process of regulatory harmonization have taken a considerably different form in recent years. The tremendous growth of capital movements related to technological developments and to current and capital account liberalization has made financial integration inevitable. Replicas of past solutions are becoming obsolete and new pragmatic approaches to regulatory harmonization is moving towards a process of trial and error, in which the lessons learnt are constantly tested against the new emerging reality (Hanson et al., 2003).

4.1 How Islamic Finance Instruments Can Help

As the conventional financial world looks to strengthening its systems through stronger regulation and supervision and allowing the entry of reputable foreign banks, the Islamic financial system embraces such practical intents because in both those areas, globalization actually lends a helping hand. Macroeconomic policy, particularly offshore government borrowing, must be done carefully. Depending on available collateral assets, adjustments may also be needed in the domestic financial sector and the policy toward inflows to ensure that the incentives to borrow offshore are not excessive and explore risk-sharing vehicles like the *sukuk*. In this instance, the issuance of *sukuk* can replace debt as a means to raise more capital for uses such as growth and expansion or even capital adequacy requirements. Instead of the traditional choice of issuing either equity or debt instruments to raise additional capital, *sukuk* issuance spreads the risk in return for a reasonable risk premium. This is especially attractive for entities which are already highly leveraged or have very little equity to offer to raise the capital required. For highly leveraged entities, the interest rate offered by traditional lenders would normally be very high due to lender's gearing ratio criteria. It also does not dilute ownership of the entity as it uses the underlying asset as a collateral, and the shared profit only lasts for the period of the *sukuk* issued. Also, Islamic *sukuk* are based on a variety of

contracts to create financial obligations between issuers and investors such as shared profit and risk-taking, while conventional bonds are based on loan contracts that create indebtedness and the transfer of risks.

4.2 The Missing Link

The role of ethics in governing financial activity is age-old and present throughout the ethical traditions of the world. Throughout history, societies have drawn on the shared values of their members to limit or curb commercial activities believed to be unethical, despite the material profit therein. The principles of fairness, honesty, responsibility and justice — found throughout the world’s ethical systems — apply as much to financial activity as to other realms of life.

In his new book, *Misbehaving: The Making of Behavioural Economics*, Richard Thaler (2015) uses a term: *econs*. He writes that “*compared to this fictional world of econs, humans do a lot of misbehaving, and that means that economic models make a lot of bad predictions.*” Of course, the behavioural economics school (coincidentally like the Islamic Finance industry) has been around for 40 years or so. But for much of this time, its conclusions have been dismissed by mainstream economists as a set of lab studies, amusing stories but impractical as explanations for the behaviour of an entire economy. These inherent cognitive fallibilities are not recognised in traditional models which assume that humans are rational beings or *homo economicus*, and has the infinite, unbiased and unemotional reasoning ability when making decisions. The finance sector damages the economy because it does not function as well as the models contend. Asset bubbles can and do form due to our irrational expectations of sure-fire profits. Buyers of debt fail to prudently assess whether the borrowers can repay — a narrow unrealistic view of the risks of default. The incentives that govern the actions of financial sector employees tend to reward speculation, rather than long-term wealth creation. Some of this is to do with the way governments have regulated the financial system. But much of it is to do with the psychological fallibilities that make us human. Although the accumulation of decisions made by each agent makes up the market response, macroprudential policy tries to regulate the market (agents, institutions and governments) with more rules and safeguards to the economy. While we view it is prudent to review the current regulatory framework to prevent market failures and create an early warning trigger mechanism, simply allowing markets to work and accepting incomplete economic models to explain market behavior is, to put it lightly, inadequate; to put it in harsh

reality, catastrophic. Behavioral economists contend that the rocky road to defaults (and in most nations, serial defaults) lies in the human nature that makes flawed decisions, putting financial institutions, central banks and sovereign nations into an economic spiral through over-leveraging⁷ (Reinhart and Rogoff, 2011). The arrogance and ignorance that underlie financial crises include the temptation for borrowers to hide the true nature of their balance sheets like AIG and Greece, government guarantee on quasi-government agencies like Fannie Mae and Freddie Mac in US and Thailand's massive FOREX intervention. Across time, place, cultures, institutions and political systems, the data from Reinhart and Rogoff shows that financial crises have been repeatedly occurring throughout history, regardless of culture, religion or civilization. As such, the root cause of these issues seems to be buried deeply in the human psyche and social behavior. These uncomfortable 'ugliness' of the human consciousness in faulty decision-making needs to be accounted for and understood⁸ before any holistic (and cost-effective) interventions can be usefully implemented.

5.0 Conclusion

It is beyond any doubt that the global nature of the 2008 crisis has highlighted the increased interdependence of the world's economies. The challenge is to craft a system that is not only both authentic and vibrant, but effective and dynamic. Economic fundamentals can certainly play a role. Lowering current account and fiscal deficits, for example, will help restore investor confidence. Yet, this requires making changes in the production-cum-export structure and expanding the tax base, not a short-term solution. Cuts in imports of certain goods may help, but at the risk of falling investment and retaliation from trading partners. Allowing easier product exports — such as unprocessed or raw materials — may quickly boost exports, but at the cost of stifling high value-added production-cum-exports, not to mention degrading the environment (resource depletion). Regulators and the corporate sector also have a vital part to play, for example, by making mark-to-market accounting more flexible to prevent a downward spiral in asset prices. Imposing capital flow management,

⁷ The patterns of banking crises and serial defaults based on three hypothesis by Reinhart and Rogoff (2011); (i) private debt (of domestic and external borrowing) surges are a recurring antecedent to domestic banking crises; (ii) banking crises of domestic and international financial centers often precede or accompany sovereign debt crises; (iii) public borrowing accelerates markedly and systematically ahead of a sovereign debt crises. They used a comprehensive new long term historical database that spanned 210 years (from 1800 to 2009) of 70 advanced and emerging countries in Africa, Asia, Europe, Latin America, North America and Oceania.

⁸ The Prophet ﷺ said : "He who knows himself, knows his Lord." The wisdom in his words strike deeply at many levels but none more than when we discover our own inherent weaknesses, that rule-compliance to Allah's Commands and Prohibitions become ever more necessary for ourselves and the collective good.

time-varying capital buffers, levies and taxes as a macroprudential tool will not only reduce the risk of financial instability but also improve the socioeconomic conditions including income inequality. Despite the need for cooperation and policy coordination among countries, national policy should remain key when it comes to maintaining macrofinancial stability and improving socioeconomic conditions.

Likewise, an Islamic economic system based on the *riba*-free principle provides much-wanted solutions for income, employment and prices in any existing classical or Keynesian framework. Modifications involved the removal of the debt culture from the private sector, introduction of risk-sharing instruments (GDP-based or project-driven certificates issued possibly as *sukuk*) and asset price signals that determine the rate of return based on the real sector of the economy (in place of the interest rate as the pricing mechanism). The central banks in this system will have these types of risk-sharing instruments which could be used to regulate the supply of credit and the terms at which it is available to the entrepreneur/firm. Abolition of interest, absence of interest-bearing securities and, hence, of the speculation in the bond market, will greatly reduce its problems. Speculative hoarding of money is at the root of instability in the demand for money and is the cause of trade cycles. The marriage of capital and enterprise, effected by the replacement of interest by profit-sharing, will contribute towards growth and development. With the creation of asset-backed money entirely vested in the central banks, and the automatic restriction of credit with the abolition of interest and curbs on damaging speculative behavior, inflation can also be more easily controlled in the framework of prudent macroeconomic policies and interest-free institutions.

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