

IRTI-IDB and UCB Thematic Workshop on
Macroprudential Regulations and Policy for
Islamic Financial Industry: Theory and Appli-
cation



Islamic Finance and Macroprudential Policy

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Abstract

The repeated occurrence of financial crises in capitalism that have plagued economies around the world, especially since 1980s, has shown that instability in the conventional financial system which is highly procyclical can severely jeopardize macroeconomic environment and result in economic recessions. In response to the build-up of systemic risks and widespread financial vulnerabilities, mainstream policymakers in many countries have adopted macroprudential regulations to mitigate systemic risks in the financial sector as a whole. Islamic finance, on the other hand, has its own unique features promising stable financial markets. The experience, however, has shown divergence between the ideal version of Islamic finance in theory and its practiced version, where the bottom line of dominated contracts, murabaha contracts, are highly similar to those of the conventional financial system, interest-based contracts, and unfortunately the portion of those preferred contracts, PLS modes of



finance, is really negligible. It has been argued that this exposes the Islamic financial system to systemic risks like the conventional system. Therefore, in the long run, Islamic financial authority should make their dedicated effort to realize a genuine version of Islamic finance by promoting PLS and equity-based finance since it is inherently a self-stabilizing instrument of Islamic finance, which eliminates the sources of systemic risks in the financial sector whereas conventional macroprudential policy tries to contain but not eliminate them. In the short run, nevertheless, the Islamic financial system should be subjected to macroprudential regulations, but those instruments and tools that are primarily permissible in sharia, and then compatible with countries' circumstances should be adopted. For empirical assessment, some financial ratios of Iranian banking system, as a chief practitioner of Islamic finance, and their relevance for the real economy has been presented to show an urgent need for macroprudential regulations in Iranian banks.

Key words: macroprudential policy, Islamic finance, interest rate, borrowing, systemic risk.

1. Introduction

The recent financial crisis in the U.S. afflicted many countries clearly shows that problems and weaknesses in the financial sector of conventional system can severely damage the real economy. It has

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changed the overall perspective on the interaction of the financial sector and the real sector. The role of financial stability, robustness and resilience of the financial sector, which is the main characteristic of Islamic financial system, has been highlighted much more than it has been so far in the macro model of conventional policymakers and economists. As a result, the search for the policies which stabilize the financial sector and mitigate financial crises has been on the agenda.

One of the prevalent approaches to overcome financial vulnerabilities in the conventional system has led to a call for Macroprudential policies. As a consequence, policymakers around the globe are currently working on the implementation of tools, instruments and institutional frameworks for these policies. Whether it is an appropriate and effective way to solve the problem of financial disasters in capitalism highly depends on the causes and roots of financial externalities. Hence, it is necessary to review the financial externalities and transmission mechanisms, which result in systemic risk, and also the tools that are going to address them. Moreover, the absolute adoption of these policies in the Islamic financial system, which has otherwise characteristics to the traditional system, may contradict some of Shari'ah law. Accordingly, surveying permissible instruments of macroprudential policies in Islamic economy will navigate its policymakers to achieve their goals.



In this paper, I address the above issues in the following order. Section two provides a brief literature review of macroprudential polices proposed by mainstream in the traditional system. The third one explores the principles of Islamic financial system and its consequences for financial stability. The next section examines the financial data of the Iranian banking as a major practitioner of Islamic finance in the world. The fifth section puts forwards on the applicability of some macroprudential instruments and the implementation of them in Islamic economy. Finally, providing some suggestions for achieving financial stability in Islamic economic system will be discussed in the conclusion.

2. Literature review:

Macroprudential Polices

Recent events have underscored the costs of financial instability, and therefore, due to policy and research efforts, this highlighted the need for dedicated macroprudential policies ((Bernanke, Bertaut, DeMarco, & Kamin, 2011), (Hanson, Kashyap, & Stein, 2010), (Jiménez, Ongena, Peydró, & Saurina Salas, 2012)). There is not, however, a clear definition of macroprudential policies, like other policies, such as monetary and fiscal policy. According to ESRB, the ultimate objective of macroprudential policy is to contribute to the safeguarding of the financial system as a whole which includes the resilience of the financial system against adverse shock in the econ-

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omy and decreasing the build-up of financial systemic risk, thereby ensuring a sustainable contribution of the financial sector to economic growth (ESRB, 2014). Therefore, for a better understanding of these policies and fundamental rationale for their intervention, we have to know about the systemic risk and then identify the financial externalities which generate excessive procyclicality and the build-up of systemic risk in the financial system as a whole.

According to IMF, systemic risk refers to the risk of disruptions to the provisions of financial services that is caused by an impairment of all or parts of the financial system, and can cause serious negative externalities for the real economy (IMF, 2013). The literature has classified the known financial systemic externalities in three categories (De Nicoló, Favara, & Ratnovski, 2012).

The first two categories have a time-series nature, one before the crisis and the other after the crisis. The former relates to strategic complementariness and the later relates to fire sales and credit crunch. During a boom period, or upswing of a business cycle, due to market interaction between greedy agents, and competitive pressures of financial intermediaries to make easily short-term profit, demands for credit rise and financiers' incentives to assess borrowers' risk or analyze funding projects decrease. As they reduce screening standards and increase lending or exposure to special assets, endogenous feedback between the extension of credit and the rise of asset prices con-



tributes to excessive leverage and increases the vulnerability of financial system to asset price downturns. Similarly, in a bust period, or in the aftermath of a sharp decline in asset prices, this takes the form of credit crunch and fire sales where multiple banks respond to a common adverse shock by cutting new lending and forcing to liquidate their assets in order to repay their debt or collect liquidity for deposit withdrawal. This triggers further decline in asset prices and exacerbates financial stance of both lenders and borrowers, in turn reducing investment and employment, with contractionary consequences for the real economy (Claessens, 2014).

The third one arising across the financial system relates to interconnectedness. Due to interbank activities or bilateral balance sheets, the failure of one bank can affect others, especially when the distressed bank has a considerable role in financial markets which is called Systematically Important Institution (SII). These individual intermediaries are critical to the functioning of key markets since they are providing unique services or financial infrastructures and operating internationally. Exposures to SIIs reduce market discipline as they are perceived “too big to fail”, and therefore they do not internalize the consequences of their operations for the build-up of systemic risk in the financial sector. Moreover, this leads to misaligned incentives and magnifies moral hazard. As a result, the risk of failure shifts to government bailouts to protect shareholders and managers, not only creditors (Claessens, 2014).

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The above externalities give rise to the role of borrowing and leverage in financial cycle, as well as the role of financial intermediaries, and their adverse effect for the real economy. As a result, mainstream approaches towards these externalities focus on instruments to reduce procyclical feedback between asset prices and credit and also contain unsustainable increase in leverage and volatile funding in financial intermediaries.

Macroprudential Instruments

Being preventive in their nature, macroprudential policies introduce a wide range of regulations and instruments for ex-ante stabilization of the financial markets via monitoring and containing the aforementioned sources of systemic risk. Generally, these instruments include restrictions, both quantity-based and price-based measures, on balance sheets of lenders and borrowers. **Table 1** presents some of prevalent macroprudential instruments. The transmission mechanism of these instruments is through either reducing build-up of vulnerabilities or increasing resilience of financial system to aggregate systemic shocks, by monitoring credit growth and also building buffers to absorb their impact and help maintain the ability of the financial system to provide credit to the economy. To be effective, the selection and calibration of these instruments must reflect the underlying source and level of systemic risk (ESRB, 2014). In addition, their quantities can differ in upswing and downswing of the financial cy-

cle, therefore it will be challenging for macroprudential authorities as they should assess the marginal effect of selected instruments.

Table 1. Macroprudential Instruments		
Instrument		Definition
Borrower-Targeted Instrument	Caps on Loan-to-Value Ratio (LTV)	Constraints highly levered debts by enforcing limit or by determining regulatory risk weights.
	Caps on Debt-to-Income Ratio (DTI)	Constraints borrower indebtedness by enforcing a limit
Financial Institution-Targeted Instruments	Time-Varying / Dynamic Loan-Loss Provisioning (DP)	Requires bank to hold more than loss provisions during upturns.
	General Countercyclical Capital Buffer (CTC)	Requires banks to hold more capital during upturns.
	Specific Sectoral Requirement (SR)	Requires banks to hold more capital for lending in specific sector (eg: Housing) during upturns.
	Profit Distribution Restriction (PDR)	Limit dividend payment in good times to help build up capital buffers in bad times
	Leverage Ratio (LEV)	Limits banks from exceeding a fixed minimum leverage

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		ratio.
	Limit on Interbank Exposures (INTER)	Limits the fraction of liabilities held by the banking sector
	Capital Surcharge on SII's (SII)	Requires Systematically Important Institutions to hold a higher capital level than other financial institutions.
	Concentration Limits (CONC)	Limits the fraction of assets held by a limited number of borrowers
	Limits on Foreign Currency Loans (FC)	Reduces foreign currency loans directly
	Reserve Requirement Ratio (RR)	Limits credit growth indirectly
	Limits on Domestic Currency Loan (CG)	Limits credit growth directly
	Levy/Tax on Financial Institution (Tax)	Taxes revenues of financial institutions
	Net Stable Funding Ratio (NSFR)	Limits banks' one-year maturity and liquidity mismatch
	Loan-to-Debt Ratio (LTD)	Reduces the amount of bank's loan to a specific level of its debt.
	Liquidity Cover	Requiem a bank to increase the stock of liquid asset to



	Ratio (LCR)	cover sudden outflows
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Source: (Cerutti, Claessens, & Laeven, 2015) and (ESRB, 2014)

Due to a lack of understanding of possible externalities in other financial market segments, and also given the existence of microprudential tools adaptable to macroprudential objectives, most tools considered to date apply to the banking system (Claessens, 2014). Moreover, the presented classification is not unique and can differ. For example some of the above instruments are related to capital flow management which have a macroprudential nature, and can be subdivided in the second category (Carré, Couppey-Soubeyran, & Dehmej, 2014).

Indicators for Implementation of Macroprudential Instruments

After identifying the objectives of macroprudential policies and assigning specific instruments to them, in order to release every instrument, macroprudential authorities need some useful and efficient indicators to identify the systemic risk and its severity. In this framework, it is necessary to narrow down the list of possible indicators and also identify indicative threshold beyond which the activation of that instrument would be presumptive. (ESRB, 2014). As shown in **Table 2**, there are some useful indicators for the build-up of systemic risks in time dimension which proposed in recent studies and gathered by IMF staff.



Table 2. Signals Indicating the Need for Macroprudential Measures			
Instruments		Core indicators	Additional indicators
Borrowers	Household tools	Household loan growth <ul style="list-style-type: none"> • Increasing house prices (nominal and real growth) • House price-to-rent and house price-to-disposable income ratios • Increasing share of household loans to total credit 	Increasing house prices by region and by types of properties <ul style="list-style-type: none"> • Deteriorating lending standards • High LTV ratio • High loan-to-income (LTI) ratio • High DSTI ratio • Share of FX loans and interest only loans
	Corporate tools	Corporate loan growth <ul style="list-style-type: none"> • Increasing share of corporate loans to total credit • Increasing commercial property prices • Increasing commercial 	Increasing corporate leverage (debt to equity ratio) <ul style="list-style-type: none"> • Corporate credit gap • Increasing debt-service ratio • Deteriorating lending standards • Average DSTIs on

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		<p>real estate credit.</p> <ul style="list-style-type: none"> • Increasing share of FX loans 	<p>commercial real estate loans</p> <ul style="list-style-type: none"> • Average LTVs on commercial real estate loans • Share of FX loans and extent of natural hedges
Lenders	Broad-based (Capital) tools	Credit/GDP gap	<p>Growth in credit/GDP</p> <p>Credit growthAsset price deviations from long-term trends</p> <ul style="list-style-type: none"> • Under-pricing of risk in financial markets (low volatility/spreads) • Leverage on individual loans or at the asset level • Increasing wholesale funding ratio (noncore funding) • Weakening exports and resulting current

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			account deficits
	Liquidity tools	Increasing loan-to-deposit (LTD) ratio • Increasing share of noncore funding to total liabilities	Decreasing share of liquid assets • Worsening maturity mismatches • Increasing securities issuance • Increasing unsecured funding • Increasing FX positions • Increasing gross capital inflows

Source:(IMF, 2014)

When we peruse these indicators, it eventuates in emphasizing endogenous feedback between credit and asset prices with a remarkable role for excessive leverage and volatile funding. For example, an increase in share of household loans to total credit signaling the build-up of systemic risk in housing sector and therefore it is necessary to tight relevant instruments such as caps on LTV or DTI. Moreover, a sharp increase in Credit-to-GDP ratio and increase in Credit-GDP gap are useful indicators of increasing vulnerabilities in the financial sector and the need to implement borrower-targeted in-



struments, like LTV, to contain borrowing and excessive leverage, or lender-targeted instruments such as CTC, SR, LEV to decrease the supply of credit, or PDR and DP to increase banks' ability to absorb negative shocks.

It should be mentioned that, for macroprudential policies to be effective, besides considering other related factors, there are many caveats about the signaling thresholds of these indicators to tight or release an appropriate instrument. In the following, some other issues affecting the overall effectiveness and usefulness of macroprudential policies briefly discussed.

Some issues in the application of macroprudential policies

While the need for macroprudential policies is now largely accepted, their effectiveness are not yet well understood (Galati & Moessner, 2014), mainly due to the lack of an agreed modeling framework of the interaction between the financial system and the macroeconomy (Galati & Moessner, 2013). Therefore, effective macroprudential policy demands a multidimensional perspective. It is necessary to identify information gaps, such as relevant data on household and corporate sector as well as banking sector and cross-border credit flows in the economy (Claessens, 2014). Given both type I and II errors, in order to reach a reliable assessment of systemic risk and effectively calibrate macroprudential policy tools to different circumstances and country characteristics, these gap should be closed.

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Also, policymaker should consider regulatory arbitrage and international issues. Macroprudential regulation are prone for the problems of circumventions and risk transfer to other, possibly less regulated parts of the financial system, both at the national level and through cross-border leakages (IMF, 2013). Closing these gaps is indispensable, however, they may require to be presented to parliament for public approval and legislative changes, to avoid exposing regulatory authorities to political risk.

Moreover, macroprudential policies should account for policy coordination since they are not the only policies aimed at economic and financial stability (Claessens, 2014) and some of their instruments can also have some functions for other policies (Claessens, Ghosh, & Mihet, 2013), including monetary, fiscal, microprudential, competition, and capital-flow management (CFM) policies. A lack of coordination between policies could counteracts the effectiveness of every policy and imposes other risks by jeopardizing the overall performance of the economy. How to make this operation, however, remains to be determined (Claessens, 2014). In this view, the design of institutional framework of macroprudential policies, therefore, should be carefully done. For example it should be defined that who is in charge for macroprudential mandates, central bank or ministry of finance or even a committee composed of various institutions, and also how he implements them, gradual or forceful action. This brings accountability and transparency for macroprudential authori-



ty. Furthermore, the preferred design and use of the institution framework will vary depending on the specific country's structural and financial markets characteristics including their exposures to shocks and risks (Claessens et al., 2013). In addition, international financial integration and exchange rate regime matter in the adoption of macroprudential policies and also their effectiveness

Implementing macroprudential policies, however, may also impose some costs by constraining actions of agents. Therefore, it is necessary that macroprudential tolls perfectly target the sources of financial externalities so that they won't worsen resource allocations and increase overall systemic risk (Claessens et al., 2013).

Although few theoretical analyses exist to guide macroprudential policies this way and hardly any have been formally tested (Claessens, 2014) proponents of the policies are generally hopeful about the efficiency and usefulness of their instruments to decrease the build-up of systemic risks and vulnerabilities in the financial sector and alleviate financial crisis as a result. As it has been already specified, the efficacy of macroprudential policy to enhance the stability of the financial sector highly depends on the premise that systemic risk is the main story and the identified externalities are the roots of instabilities. The next section presents the Islamic financial system which has specific implications for the resilience and robustness of the financial sector.



3. Islamic Financial System

The central proposition of Islamic finance is the prohibition of interest rate since it has an adverse effect on justice and humanity. Therefore, every type of transaction in which a rent is collected as a percentage of an amount of principal loaned for a specific time period and shifts the entire risk of the transaction to the borrower is condemned in Shari'ah (Mirakhor, 2009). There are several Islamic modes of financing which serve as alternatives to interest based financing. Islamic doctrine considers profit and loss sharing (PLS) contracts to be the ideal of finance in Shari'ah. Being based on risk participation, they are not only Shari'ah-compliant, but also preferable to other types of contracts because they have a great role in stability of Islamic financial systems as discussed in many papers. Chishti (1985) argues that PLS financing makes payment commitments a function of cash flows and strongly discourages the financing of speculative borrowers. By using a qualitative model of two differential equations to express financing conditions and investment behavior, he shows that PLS contracts are flexible enough to provide built-in stabilizers to the investment process (Chishti, 1985). Therefore, PLS contracts eliminate excessive leverage and borrowing in upswing of business cycles and also, by absorbing the realized losses in downturn period and distributing the outcome between two parties. In this ways, they prevent credit crunch and fire sales in the Is-



lamic finance. In other words, PLS contracts not only mitigate systemic risks in Islamic finance but also prevent them since they eliminate the first two externalities which result in the build-up of vulnerabilities in the financial sector.

Moreover, Chapra (2007) argues that The PLS system help ensure greater discipline by making the bankers more careful in lending and the depositors more vigilant about the health of their banks and therefore will further help by not allowing the debt to exceed the growth of the real economy. The introduction of' such a discipline carries the potential of helping realize not only greater stability, but also greater efficiency and equity in the financial system (Chapra, 2007). This is another advantage of PLS contracts which resolves the externalities arising from interconnectedness and misaligned incentives of systematically important institutions.

Given the aforementioned rationales about the necessity of macroprudential policies and the salient features of PLS contracts, one may conclude that Islamic financial system having intrinsic stabilizers, which result in financial-sector resilience and robustness, doesn't need any macroprudential polices. That is so because the prohibition of riba and encouraging PLS contracts in Islamic finance eliminate externalities which result in systemic risks, and therefore the need for macroprudential policies will not matter anymore. There is a subtle point here to ponder upon. Unlike Islamic finance,

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conventional system is not against interest rate, and therefore its best effort in implementing macroprudential policies would eventuate in controlling systemic risk, but not eliminating it. Hence, macroprudential policies in conventional system may decrease the severity of financial crises, but can't prevent them as long as interest rate prevails in the system. In other words, systemic risks and pecuniary externalities of the traditional financial sector are the symptoms and not the causes of financial crisis. The main cause of instability is the existence of interest rate, which allows borrowing and excessive leverage. Therefore, the promising way that should be adopted to avoid financial instability is the elimination of interest rate.

There are also forms of non-participatory financing particularly for consumer credit and short and medium-term financing, the most popular involve murabahah (sale term) and ijarah (leasing) contracts. Contracts of this type, which are also known as "trade-based" or "asset-based" contracts, entail a fee or a mark-up on the price of the goods that are bought with the funds supplied. In this case, the remuneration does not explicitly refer to the temporal dimension and is thus considered the compensation for a commercial service (in the

case of a murabahah contract) or for the use of a good (in the case of an ijarah contract)¹ (Wilson, 2007).

The stability of Islamic finance discussed in theoretical literature, however, is not for granted in practice. It would be stable as long as the progress that Islamic finance has made so far is based on its fundamental principles. But, as studies show, there is divergence between theory and practice about the order of these preferred modes of financing. Even though there are many profound theoretical researches that argue Islamic finance is more stable than conventional finance, there are many researches, as well, that show Islamic finance is close to conventional finance in practice. Therefore, challenges arise from the disparity that exists between the ideal vision of Islamic system and its present performance. The greater the disparity, the more serious may be the challenges faced, like those of conventional financial system (Iqbal, 2007).

T. Khan (1995) argues that although profit and loss-sharing (PLS) and bai' al murabahah (mark-up) are the two parent principles of Islamic financing, the data on concentration of Islamic Banks' assets in different countries like Pakistan, Iran, Egypt, Bangladesh, Turkey, Malaysia shows that the use of PLS is limited and that of mark-up

¹ For a detail explanation of the legal structure of these financing techniques, a lot of literature, mostly in Arabic, is available.

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overwhelming in the operations of the Islamic banks and relates this domination to moral hazard problem of PLS (T. Khan, 1995).

Wm. Khan (1985) shows that under certain assumptions which include risk aversion on the part of investors, the Islamic financial system based on variable return scheme (VRS) is the Pareto optimal contract in comparison with the traditional one based on fixed return scheme (FRS), however due to informational asymmetry and higher monitoring costs in case of VRS, the real world dominates by FRS (W. M. Khan, 1985).

Choong and Liu (2009) argue that Islamic banking services, at least as practiced in Malaysia, diverge from the sharing of profits and losses principle, and in practice are not very different from the traditional system. Based on Malaysian banking data, they show that only a negligible portion of Islamic bank financing is strictly PLS based and that Islamic deposits are not interest-free, but are closely pegged to conventional deposits. Moreover, their findings suggest that the rapid growth in Islamic banking is largely driven by the Islamic resurgence worldwide rather than by the advantages of the PLS paradigm (Chong & Liu, 2009). In addition, Čihák.M and Hesse.H (2010) show that the more the size of the Islamic banks increases, the more they find difficulties of adjusting their monitoring systems of the credit risk (Čihák & Hesse, 2010).



Given the theoretical foundations for implementing macroprudential polices, and also the reality of Islamic finance in practice, we can infer that Islamic banks are exposed to the externalities which result in systemic risk and financial crisis to some extent. Therefore, they should be generally subjected to macroprudential regulations similar to those of their western counterparts since Islamic banks in practice use conventional methods for financing and don't avoid interest rate, excessive borrowing and leverage. In order to present a general picture of financial instability and its consequences, in the next section, I examine some financial ratios of Iranian banking sector, which is a great practitioner of Islamic finance and suffers from lack of macroprudential policies. This will also help to understand the interaction of the financial sector with the real sector, and the impacts of vulnerabilities in the financial sector on the real sector variables.

4. Islamic finance in Iran.

The financial sector can be the cause of ascension or descension of the economy. When financial markets effectively play their roles, the economy can reach its potentials and result in economic growth. Howerer, when the financial sector faces many constraints and structural problems, the accessibility of firms and households to financial funds would be difficult which result in economic growth deterioration.

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A central part of every financial system is banking. Because of the lack of expansion in capital markets of Iran economy and also other institutional arrangement problems, banking system dominates the financial sector in this country. According to the Central Bank of Iran, banking system undertakes 90 percent of financane. It means that the implementation of economic agents' decisions is highly affected by the situation and the performance of banks. In spite of this significance, the official data on the individual bank level and also overall banking system performance indicate the weak soundness and inappropriate financial stance of the banking system.

It should be mentioned that Iran has instituted Islamic financial systems, while many other countries have established mixed systems. Islamic banking in Iran was shaped by the overall reorganization of the economy after the 1979 revolution. The structure of the Islamic banking system was put in place in 1983 by issuing the Interest-Free Banking Law of 1983. This law was implemented in March 1984, required the banks to convert total operations in line with the shari'a, and specified the types of transactions that must constitute the basis for asset and liability acquisition by banks (Shahdani, 2007). Iranian banks make up the world's largest financial system based on Islamic law. According to Dubai government data from 2014, Iran's Islamic banking assets are \$482 billion, which is more than in Saudi Arabia, Malaysia and the United Arab Emirates combined (Bloomberg, 2014).



Surveying financial ratios of major individual banks in Iran, however, shows they suffer from capital adequacy, asset quality and liquidity management. According to **Table 3**, the ratio of equity to total assets of Iranian banks is far below the capital adequacy by international norms specified in Basel III. Capital inadequacy increase banking vulnerabilities and, due to interconnectedness, it generates systemic risks in the financial sector.

Moreover, the amount of liquid assets which enables banks to cover their short-term liabilities shows that banks do not hold sufficient liquid assets, therefore it increases their exposure to bank runs. Last but not the least, the amount of non-performing loans are really considerable in banks total loans. While non-performing loans have decreased the amount of funds which could be used to finance economic activities, its ratio has reached to some destructive levels and increases instabilities in the financial sector. It should be mentioned that most of the deposits in banking systems are in public and privatized banks, which unfortunately have a bad situation in terms of above ratios, and therefore, impose systemic risks to the financial sector that is harmful for the real sector. All in all, the data reveals the vulnerability and instability of Iranian major banks.

Table 3-Financial Ratios of Iranian Banks										
		Equity to Asset Ratio			Liquid Assets to Short-Term Liabilities Ratio			NPL Ratio		
Types of	Name	2011	2012	2013	2011	2012	2013	2011	2012	2013

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bank										
Private	Parsian	8%	7%	7%	55%	62%	73%	27%	26%	31%
	Pasargad	17%	15%	14%	85%	79%	96%	6%	6%	6%
	Eqtesad Novin	8%	8%	7%	66%	66%	79%	34%	22%	21%
	Saman	7%	7%	5%	51%	58%	57%	42%	39%	31%
	Sarmayeh	8%	7%	6%	43%	42%	22%	34%	21%	27%
	Kar Afarin	17%	16%	14%	77%	78%	58%	15%	19%	15%
Privat-ized	Mellat	6%	5%	5%	34%	34%	34%	10%	8%	7%
	Tejarat	4%	4%	6%	35%	38%	41%	18%	15%	20%
	Saderat	6%	10%	9%	32%	29%	31%	14%	12%	9%
Public	Melli	4%	11%	na	43%	39%	39%	31%	27%	25%
	Sepah	2%	1%	15%	26%	30%	26%	21%	22%	19%
Special-ized	Maskan	5%	4%	5%	7%	16%	10%	4%	4%	6%
	Keshavarzi	5%	4%	4%	17%	19%	19%	27%	24%	28%
	Sanat Madan	22%	18%	13%	12%	18%	18%	14%	14%	10%
	Toseh Sad-erat	34%	27%	32%	49%	55%	56%	18%	33%	19%

Source: Iranian Banking Institute

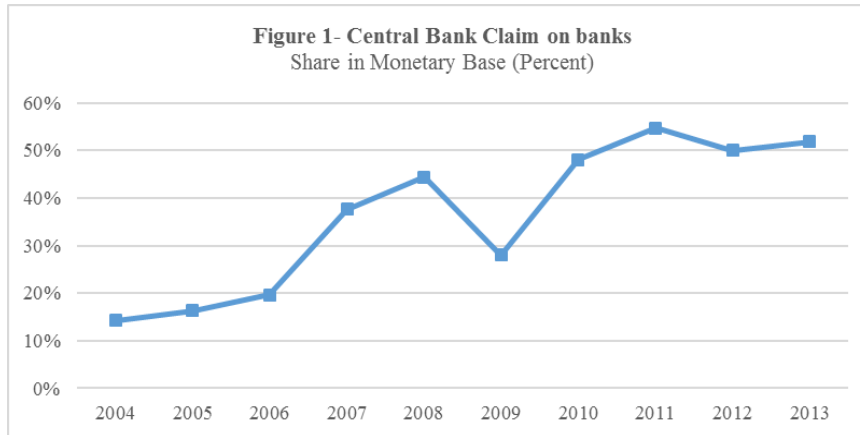
Also, the aggregate data of banking system reveals some other important facts about their adverse effects on macroeconomic variables. According to **Table 4**, during 2004-2013, the composition of liabilities in Iran banking system has faced two major changes. First, the reliance of banks on the central bank lending has increased so that its portion has tripled during the period. Besides endangering banking system stability, it has been a major factor in monetary base

expansion since the portion of bank liabilities in monetary base has increased from 15 percent to above 50 percent as demonstrated in **Figure 1**. Second, the portion of demand deposits and Gharz-al-hasaneh saving deposits which don't bear interest have decreased by 50 percent. In contrast, the portion of time deposits which includes interest has increased up to 50 percent. In other words, the portion of free resources has declined and that of relatively expensive resources has increased which led to the rise in cost of funding and lending rate as a consequence. Therefore, the real sector should struggle with upper cost of financing, and, as a result, financial assets which have eased short-term profits such as housing, foreign currency and gold would be the preferable destinations of bank credits.

Table 4-Composition of Banking System liabilities

Share in Liabilities (percent)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Central bank Claims	2%	2%	3%	5%	7%	4%	6%	7%	6%	6%
Demand Deposits	16%	16%	16%	16%	12%	11%	10%	10%	11%	8%
Gharz-al-hasaneh Saving Deposits	5%	6%	6%	5%	5%	5%	5%	4%	4%	3%
Long Term Deposits	13%	14%	16%	17%	18%	17%	15%	14%	17%	19%
Short Term Deposits	15%	16%	16%	15%	19%	22%	21%	23%	23%	22%

Source: Central Bank of Iran



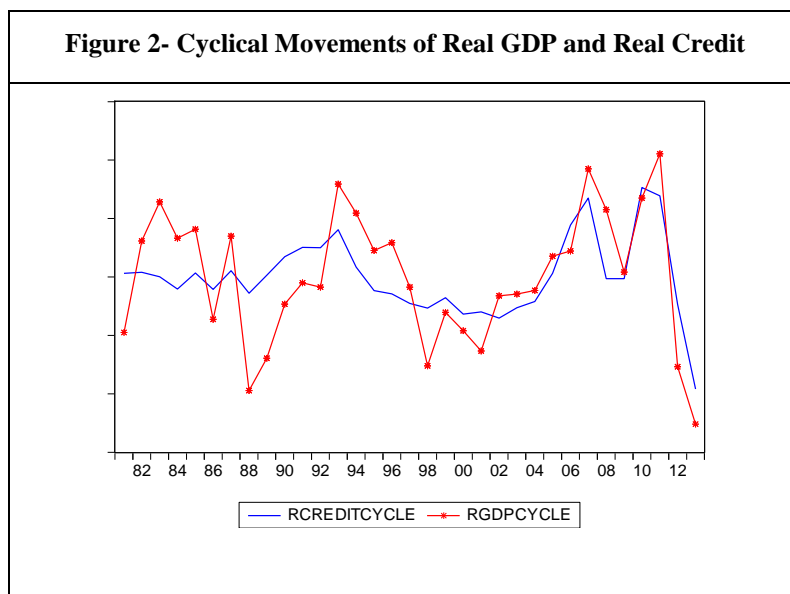
Source: Central Bank of Iran

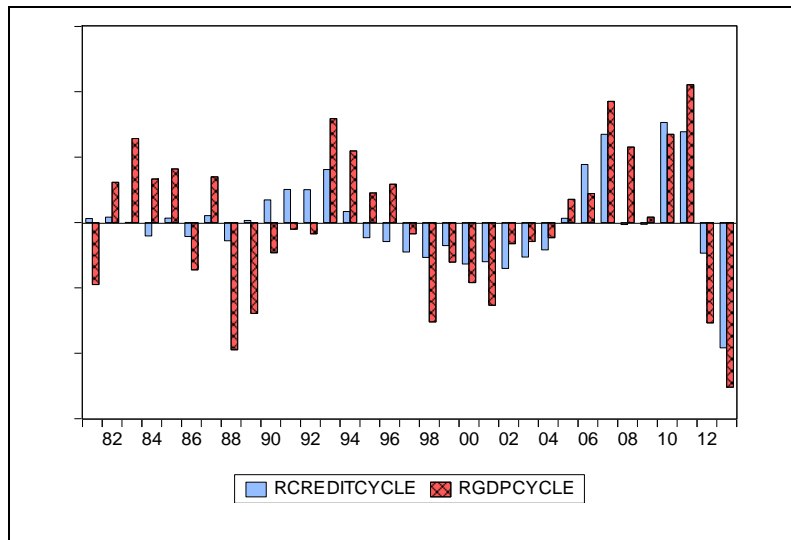
When the real sector could not take advantage of the creation of credit, the economic growth is low, and in contrast the inflation rate and movements in asset prices go up. As shown in **Table 5**, while credit has extended average 28 percent annually, GDP has increased only 3 percent and inflation has increased 18 percent. In other words, the build-up of vulnerabilities and instabilities in banking sector has adversely affected the real sector.

Table 5- Growth Rate of Real and Financial Variables.											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
Credit Growth	38%	40%	42%	35%	10%	15%	38%	28%	16%	22%	28%
GDP Growth	6%	7%	7%	5%	1%	3%	6%	3%	-6%	0%	3%
Inflation Rate	15%	10%	12%	18%	25%	11%	12%	22%	31%	27%	18%

Source: Central Bank of Iran

The impacts of the financial sector on the real sector can be examined more closely by looking at their cyclical components. By using Hodrick–Prescott filter, the cyclical components of real GDP and real credit has been calculated as demonstrated in **Figure 2**. It shows that there is a co-movement between these two parts. On the one hand, the covariance analysis indicates that the correlation between cyclical part of real credit and GDP is about 70 percent which is relatively high. The granger causality test on the other hand shows that there is a one way causality form the cyclical part of real credit to that of real GDP.





Source: Central Bank of Iran and Research Calculation

All of these statistical evidence is implicated in occurring financial business cycles in Iran economy. Although Islamic banking is looked on as a mean to achieve Islamic objective, such as justice and equality through need fulfillment and investment promotion which result in more employment and economic growth, but the practice version of Islamic finance couldn't realize the ideal of Islamic theme since it couldn't dominate PLS and equity-based contracts, and instead it is subjugated by mrabaha and mark-up contracts. As a result, the vulnerabilities and instabilities of the financial sector afflicted the real sector.

Therefore, to achieve macroeconomic goals policymakers should take into account the situation of the financial sector. They should keep in mind that the robustness and resilience of the banking sys-



tem which brings stability in the financial sector are of great importance in order to control their target variables. But, there are some considerations about which instruments and tolls would be applicable in Islamic finance. In the next section, some insights are provided.

5. Macroprudential Instruments in Islamic Finance

So far, it has been clear that Islamic finance by its nature is a stable financial system because there are some intrinsic elements which prevent procyclicality in the financial sector. The main element is the condemnation of interest rate that eliminates borrowing, leverage and also speculative pressures, which lead to asset price volatility and financial vulnerability in the conventional system. Moreover, it advocates equity-based and PLS-based financial contracts which are self-adjusting mechanisms and increase the resilience and robustness of the financial sector by imposing greater discipline among financial intermediaries. But, as studies suggest, there is disparity between the theory and practice of Islamic finance, as Islamic intermediaries are inclined to mark-up and murabaha contracts which are similar to traditional financial system that is prone to vulnerability and financial crisis. This proximity leads to a call for macroprudential policies in Islamic finance in practice, as discussed in section 2.

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In order to achieve financial stability, Islamic macroprudential authorities should promote the implementation of true Islamic finance in practice. Because the main root of pecuniary externalities which is interest rate has been forbidden by Shari'ah law. In other words, given the present situation of Islamic banks and financial intermediaries, the ideal way to control systemic risk is to realize the principles of Islamic finance, avoid interest-based finance, and try to increase PLS contracts and decrease murabaha contracts. But, it might be a difficult task since financial intermediaries have saturated by conventional models of banking and also there are many other challenges to realize and implement Islamic financial contracts in practice. So, Islamic macroprudential authorities have to choose macroprudential instruments and tools of conventional system.

Macroprudential policies are aware of the danger of borrowing for systemic risk, therefore they aim to prevent excessive borrowing and leverage. They impose quantity-based and price-based restrictive tools and instruments on balance-sheets of borrowers and lenders to limit the amount of borrowing. Quantity measures do this directly while price measures do this indirectly through the lending spread. First of all, the prohibition of interest rate eliminates all the price-based instruments since they act directly through the interest rate which is strictly condemned in Islam. For example, such macroprudential regulations impose higher spreads for lending in housing sector when home prices are increasing. This is not a permissible in-

strument in Islamic finance. Rather they should contain the amount of credit in housing sector by use of LTV instrument which is directly control the amount of borrowing in that sector.

Secondly, besides the permissibility consideration, macroprudential regulators should keep in mind that the adopted institutional framework for implementing macroprudential policies differs from a country to another. Moreover, Implementing macroprudential policies need sufficient data on key markets' movements, therefore, the existence and accessibility to relevant data should be granted for macroprudential authorities in order to make them fully responsible and accountable for the build-up of systemic risk in the financial sector. In other words, unlike conventional policies – i.e. monetary and fiscal policy- macroprudential framework is not unique for different countries. It can include a variety of instruments in the hands of central banks or ministry of finance or a selected committee.

Given the financial data of Iranian banking, their critical situation highlight the need for appropriate macroprudential instruments. Among them are countercyclical capital buffer (CTC), leverage ratio (LEV), and reserve requirement (RR) to enhance their robustness and resilience to absorb negative shocks of default loans and also to be able to continue to supply credit for the real sector in recession period. In addition, it is necessary to increase LCR, LTD, and NSFR ratios to increase banks' ability to cover sudden outflows and reduce



liquidity mismatch as well. Moreover, since the inflation rate in Iran economy is still high, the ownership of macroprudential policy mandate for the central bank of Iran would be an extra burden. Therefore, an independent committee consisted of central bank and government with full responsibility may be assigned to deal with instabilities in the financial sector.

Last but not least, as long as borrowing and interest rate exist in the financial system, we can't eliminate systemic risk and financial crises. Macroprudential policies could mitigate but not prevent financial crises at best.

6. Conclusion

In this Paper, I review the mainstream approach toward financial instability in the traditional system. Many economies are now considering macroprudential framework to mitigate systemic risk arise from pecuniary externalities of the financial sector in order to lessen macroeconomic fluctuations. As a result, a wide range of instruments and tools has been proposed to reduce the procyclicality of the financial activities. Being still in their infancy in comparison to other conventional policies, however, macroprudential policies suffers from a lack of thorough definition and mandate. Besides other controversial debates about the overall usefulness and marginal effectiveness of macroprudential policies, while they acknowledge the harmful impacts of excessive borrowing and leverage, widespread in



an interest-based financial system, these policies don't remedy the main cause of systemic risk and financial externalities in the conventional system. On the other hand, Islamic finance strictly forbids interest-based contracts, which eliminates borrowing, and encourages PLS-based contracts which provide a stable, robust and resilient financial sector. In practice, however, Islamic finance departs from its preferred modes of finance, PLS contract, and tends to mark-up contracts which are similar to the conventional contracts. This jeopardizes the financial soundness of Islamic finance and exposes it to the build-up of vulnerabilities, which necessitate the implementation of macroprudential polices like traditional system.

Given the outstanding features of Islamic finance regarding its superior stability over conventional system, and also with regard to disputable literature over macroprudential policies and issues in the implementation of their instruments, Islamic authorities should encourage financial intermediaries to realize a genuine Islamic finance by providing the required infrastructures with a dedicated mandate to overcome its challenges. Since this is a long term wish, in the short run it is indispensable to consider those macroprudential instruments which are compatible with sharia law. The condemnation of interest rate is against price-based instruments, which acts through lending spreads. Instead, those quantity-based instruments which are applicable, in terms of data accessibility and financial infrastructures of that specific country, should be adopted.



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