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Basel III liquidity requirement ratios and Islamic banking

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ABSTRACT Basel III was initiated after the recent global financial crisis to strengthen the regulatory regime for the banking sector. As liquidity problems faced by banks were a key feature of the crisis, Basel III has added liquidity requirement ratios in addition to reinforcing the capital requirements. Specifically, the liquidity coverage ratio (LCR) has been introduced to ensure liquidity in banks in the short term, and a net stable funding ratio (NSFR) is proposed to promote medium- and long-term resilience against liquidity shocks. Islamic banking has been growing rapidly in different parts of the world and forms a significant part of the financial sector in many countries. This paper examines the implications of the new Basel III liquidity requirement ratios for Islamic banks. Given the short history of its development and the restrictions imposed by *Shari'ah* principles, the Islamic banking sector faces several restrictions that will constrain its adoption of the Basel III liquidity requirements. After presenting the basic principles of Islamic finance, the paper identifies the challenges that Islamic banks will face in meeting their liquidity needs and outlines certain practices in which these are being resolved.

Keywords: Basel III; liquidity coverage ratio; net stable funding ratio; Islamic banking; *sukuk*; Islamic money markets

INTRODUCTION

The liquidity problems faced by many financial institutions during the recent global financial crisis (GFC), even those with adequate capital levels, highlight the significance of liquidity in the proper functioning of the banking sector and financial markets. Responding to the crisis, the Basel Committee for Banking Supervision (BCBS) initiated the Basel III standards to strengthen

the regulatory framework, which will enhance the stability of the financial sector. As well as improving the capital adequacy standards, Basel III has introduced additional controls related to leverage and liquidity. Whereas the former is intended to limit the leveraging in banks, the liquidity requirements are expected to promote a regime that will help financial institutions withstand liquidity shocks. In a cross-country study, BCBS shows that the impact of higher capital and liquidity ratios will produce net benefits by significantly reducing the likelihood of crises and the accompanying GDP losses.¹ Similarly, Yan, Hall and Turner show the positive impact of Basel III standards in terms of greater stability and lower GDP losses for the UK economy.² The new Basel III standards will also require changes in governance, business models and processes in banks.³

Although Islamic banking has been growing rapidly and has become a significant part of the financial sector in many countries, it came to attention during the GFC as it appeared to be withstanding the downturn much better than its conventional counterpart.⁴ Hasan and Dridi show that, during the years immediately after the crisis, Islamic banks were more resilient and their credit and asset growth were relatively higher compared to conventional banks.⁵ As a result, Islamic banks were assessed more favourably by rating agencies in the post-crisis era. Beck, Demirguc-Kunt and Merrouche studied the status of Islamic and conventional banks for the period prior to the crisis (1995-2007) and found that Islamic banks had higher capitalization and liquidity reserves relative to conventional banks.⁶ Similar results were found by Parashar and Venkatesh, who confirmed that liquidity in Islamic banks was higher during both pre- and post-crisis years.⁷ Better capitalization and liquidity are among the possible reasons for the better performance of Islamic banks during the crisis.

Higher liquidity in Islamic banks, however, is also indicative of the constraints faced by Islamic banks in terms of lack of liquidity management instruments and markets arising from adherence to *Shari'ah* principles. Due to *Shari'ah* restrictions on interest-bearing transactions, Islamic banks cannot hold liquid debt securities such as government bonds and are also unable to tap into interest-based money markets to obtain cash in case of need. Due to these restrictions, devising infrastructure and instruments to manage liquidity risks is considered a key challenge to the sound development of the Islamic banking sector.⁸

While there is a growing body of literature on the implications of Basel III standards for conventional banks, studies on their implications for the Islamic banking sector are scant. In response to the crisis, the Islamic Financial Services Board (IFSB), an international standard-setting body for Islamic financial institutions, published guidelines on liquidity risk management in March 2012.⁹ The document, however, does not cover issues related to application of the liquidity ratios identified in Basel III for Islamic banks. This paper explores the issues and challenges of implementing the Basel III liquidity requirements for Islamic banks. To do so, the paper firstly introduces the basic *Shari'ah* principles and products used by Islamic banks on both the liabilities and assets sides; it then presents the regulatory environments under which these banks operate. After outlining the key features of the Basel III liquidity requirements, the problems likely to be encountered by Islamic banks in meeting these requirements are analysed.

ISLAMIC CONTRACTS, BANKING MODEL AND SECURITIES

The underlying principle of Islamic law related to economics and commerce is permissibility (*ibahah*), which maintains that everything in economic affairs is permitted except those explicitly forbidden by divine guidance.¹⁰ Prohibitions under Islamic law can be broadly classified as *riba* and *gharar*. *Riba* (literally meaning increase or growth) is prohibited by *Shari'ah* (Islamic law). Although it is common to associate *riba* with interest, it has much wider implications and can take different forms. The common premise in the prohibition of *riba* lies in the unequal trade of values in exchange.¹¹ One of the implications of *riba* is that debt cannot be sold at a discount and can be transferred at its par value only.

While *gharar* literally means 'danger' and also signifies deception, the word has connotations of excessive uncertainty and contractual ambiguity in transactions.¹² *Gharar* can exist in the terms of a contract or in the object of a contract. *Gharar* in a contract arises when the consequences of a transaction are not clear and there is uncertainty about whether a transaction will take place. *Gharar* in the object of the contract arises when there is uncertainty about the subject matter of the sale and its delivery. Islamic law distinguishes between ownership and possession and requires actual possession before selling something to ensure delivery.¹³ *Gharar* is present when either the object of sale does not exist or the seller and/or buyer has no knowledge of the object being exchanged.

Islamic Banking: Contracts and Model

As interest-based loans are prohibited, Islamic banks replace these with permissible contracts to structure their products. Traditional Islamic contracts that are used as modes of financing can be broadly classified into equity and debt instruments. While equity instruments are derived from partnership contracts (*mudarabah* and *musharakah*), debt instruments arise from sale transactions. These fixed-income contracts include *murabahah* (cost-plus or mark-up sale), *bai-muajjal* (price-deferred sale), *istisna/salaam* (object-deferred sale or pre-paid sale) and *ijarah* (leasing).¹⁴ Before the Islamic banking model is outlined, the basic features of these contracts are presented below.

- a) *Musharakah: Sharikah* is a partnership between parties in which financial capital and/or labour act as shared inputs and profit is distributed according to the capital share of the partners or in some pre-agreed ratio. The loss, however, is distributed among partners according to the share of the capital. Although there can be different kinds of partnerships based on money, labour and reputation, one particular case of *sharikah* is participation financing or *musharakah* in which partners share in both the capital and management of the business enterprise. Thus, partners in *musharakah* have both control rights and claims to the profit.
- b) *Mudarabah: Mudarabah* is similar to the concept of silent partnership in which financial capital is provided by one or more partner(s) (*rab al mal*) and the work is carried out by the other partner(s) (*mudarib*). The funds are used for a particular activity for a fixed period of time. The financiers and managers of the project share the profits in an pre-agreed ratio. The loss, however, is borne by the financiers according to their share in the capital. The manager's loss consists in not receiving any reward for his/her services. As the *rab al mal* is a sleeping partner, he/she has a claim on the profits but has no say in the management of the venture.
- c) *Murabahah/Bay Muajjal: Murabahah* is a sale contract in which the seller adds a profit component (mark-up) to the cost of the item being sold. When the purchase is made on credit and the payment for a good/asset is delayed, the contract is called *bai-muajjal*. A variant would be a sale where the payments are made in instalments. These contracts create debt that can have both short- and long-term tenors. In these debt contracts, the

supplier of the good has claims on a fixed amount that must be paid before arriving at profits.

- d) *Salam*: A *Salam* sale is an advance purchase (or product-deferred) sale of a generic good. In a *salam* contract, the buyer of a product pays in advance for a good that is produced and delivered later. The contract applies mainly to agricultural commodities.
- e) *Istisna*: An *Istisna* contract is similar to the *salam* contract with the difference that in *istisna* the good is produced according to the specifications given by the buyer. This applies mainly to manufactured goods and real estate. Furthermore, in *istisna* the payments can be made in instalments over time with the progression of the production. Note that, in the case of a firm, *istisna* can be used in a couple of ways. First, the firm can obtain funds to finance its working capital needs. This *istisna* contract is a debt contract that can be used only if the financier is willing to purchase the goods at the stipulated time of delivery. The second approach would be for the firm to ask the financier to provide a built asset (such as real estate) and to make the payments over a period of time in the future. In this case, the financier may need to have a parallel *istisna* and subcontract the project to a third party for its completion.
- f) *Ijarah*: *Ijarah* is a lease contract in which the lessee pays rent to the lessor for the use of usufruct. In *ijarah*, the ownership and right to use an asset (usufruct) are separated. It falls under the category of sale-based contract as it involves the sale of usufructs. A lease contract that results in the transfer of an asset to the lessee at the end of the contract is called *ijarah wa iqtina* or *ijarah muntahia bittamleek*. *Ijarah wa iqtina* combines sale and leasing contracts and uses hire-purchase or rent-sharing principles. The ownership of the asset is transferred to the lessee, as payments for the asset are also made along with the rent. At the end of the contract period, the lessee assumes the ownership of the asset.¹⁵

The dominant model of Islamic banking is the one-tier *mudarabah* with multiple financing tools. On the liability side of Islamic banks, demand deposits take the form of *qard hasan* (interest-free loans) that are returned fully on demand. Savings and investment deposits use *mudarabah* contracts and take the form of profit-sharing investment accounts (PSIA). Using the profit-sharing principle to reward depositors is a unique feature of Islamic banks. The returns on PSIA are contingent on return on assets, implying that neither the principal nor a return is guaranteed.¹⁶

On the asset side, Islamic banks use *murabahah* (cost-plus or mark-up sale), *istisna/salam* (pre-paid sale) and *ijarah* (leasing), and profit-sharing modes of financing (*musharakah* and *mudarabah*). Although, in theory, all these instruments can be used on the assets side, in practice most Islamic banks predominantly use debt-based (*murabahah*) and leasing (*ijarah*) contracts. In some cases, Islamic banks also use *tawarruq*, a controversial transaction that replicates an interest-based loan. This mode, however, is prohibited by the Islamic Fiqh Academy, a global Islamic jurisprudential body, on the grounds that it involves *riba*.¹⁷

Table 1 shows the diversity of banking practices on the asset side in different countries. In all countries, except Sudan, the equity-based modes constitute a small percentage of the total financing.¹⁸ The Table shows the dominance of *murabahah* in all countries, except Jordan and Saudi Arabia. Note that, while the category of ‘Others’ constitutes various instruments such as real estate, *bai-muajjal*, etc.,¹⁹ one of its significant components in some countries is *tawarruq*. For example, a large percentage of financing in the ‘Others’ category in Saudi Arabia includes *tawarruq*-based products.²⁰

Table 1: Modes of Financing used by Islamic Banks in Selected Countries²¹

Modes	Saudi Arabia	Jordan	Malaysia	UAE	Bahrain	Pakistan	Sudan
<i>Murabahah</i>	15.81	15.41	41.04	49.29	51.73	50.96	42.45
<i>Musharakah</i>	0.65	2.99	0.24	2.59	0.89	2.52	17.77
<i>Mudarabah</i>	0.05	11.36	0.27	4.36	1.96	-	3.10
<i>Ijarah</i>	0.04	13.8	9.40	18.90	5.56	20.41	0.87
<i>Istisna</i>	3.74	1.2	1.72	3.22	0.63	-	0.95
<i>Salam</i>	-	-	-	-	-	0.23	0.55
Others	79.71	55.25	47.33	21.65	39.23	25.88	34.31

Islamic Securities: *Sukuk*

The Islamic alternatives to interest-based bonds are *sukuk*. The Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIF) defines *sukuk* as “certificates of equal value representing, after closing subscription, receipt of the values of certificates and putting it to use as planned, common title to shares and rights in tangible assets, usufructs and services, or equity of a given project or equity of a special investment activity”.²² AAOIFI identifies various types of *sukuks* that can be classified based on assets, debt, equity, and services. Asset-based

securities include *ijarah sukuk*s, which are certificates issued against a tangible, leased asset, and/or promise of lease in the future.

Debt-based *sukuk*s arise from transactions that create debt. *Murabahah sukuk*s are used to raise funds from investors in order to purchase goods or assets that are sold at a mark-up to the originator. The price of the goods is repaid to the *sukuk* holders at a later date either in instalments or as a one-off payment. Holders of *istisna sukuk*s provide funds that are used in the construction of real estate, and investors become the owners of the real estate upon completion. Equity-based *sukuk*s arise when funds raised are used in profit/output-sharing contracts. The holders of *mudarabah sukuk*s participate in a project in which the issuer acts as a manager and the returns are shared on a profit/loss basis.²³ *Musharakah sukuk* holders invest in and manage the project and share the profit according to a pre-agreed ratio. Under the agency-based *wakala sukuk*, the holders of the certificates provide funds that are managed by an investment agency in some income-generating activity. The manager or agent is paid a certain fee for the services provided.

Holders of *sukuk*s are the owners of the rights and bear the risks that these instruments represent. Depending on the contractual basis used, *sukuk*s can have fixed or variable returns and may be tradable. Securities can be traded at negotiable prices if these represent equity, real physical assets or usufruct.²⁴ However, *sukuk*s representing debt or money are not negotiable and can be exchanged at par value only.

While *sukuk* is a relatively new phenomenon that began in the early 2000s, it has grown rapidly in a short period of time. Although the *sukuk* issuance decreased significantly after the global financial crisis, the sector has rebounded in recent years. IFSB reports that, with an average growth rate of 60.1% during the period 2009-2012, the total outstanding *sukuk* stood at USD 229.3 billion by the end of 2012.²⁵ During 2012, *sukuk* was predominantly issued by sovereign issuers, of which the central bank of Malaysia (Bank Negara Malaysia) dominated the market, contributing to 43.7% of all issuances (amounting to USD 57.3 billion). The share of the primary market issues in the GCC region, which is the other major market, was 18% of the total issues, with the United Arab Emirates and Saudi Arabia being among the larger issuers.

ISLAMIC BANKING AND INTERNATIONAL REGULATORY STANDARDS

The Shari'ah compliant contracts used by Islamic banks change the risk-return features of products on both the assets and liabilities sides and have regulatory implications.²⁶ While some of the regulatory standards of BCBS can be applied to Islamic banks, Shari'ah compliant contracts introduce certain unique features that are not dealt with in international regulatory standards.²⁷ For example, the use of profit-sharing investment accounts (PSIA) on the liability side raises several regulatory issues. One key concern related to PSIA is whether to consider them as deposits or treat them as capital, as they share the risks of the assets.²⁸ Furthermore, as the returns on PSIA are based on the profit/loss-sharing principle there is a need to protect the rights of depositors/investors. The fiduciary nature of the contract would also require more disclosure of banking operations to the depositors/investors.

Recognising the specific regulatory requirements of Islamic financial institutions, the Islamic Financial Services Board (IFSB) was established in 2002 as an international standard-setting body for the Islamic financial services industry. As of April 2014, the IFSB had 184 members, comprising 59 regulatory and supervisory authorities, eight international inter-governmental organisations and 117 market players, professional firms and self-regulatory organisations operating in 45 jurisdictions. To date, IFSB has issued 22 standards, guiding principles and technical notes covering various regulatory aspects for Islamic banking, insurance (*takaful*) and capital markets.²⁹

The IFSB regulatory standards and guidelines for Islamic banks can be categorised into two broad types. The first set of standards comprises the Islamic counterparts of the conventional international regulatory guidelines and principles and it includes the prudential standards required to ensure a stable and sound financial system. IFSB uses the existing international standards issued by standard-setting bodies such as BCBS as a basis for its own standards and modifies these to cater to Islamic banking practices. For example, the *Capital Adequacy Standard for Institutions (other than Insurance Institutions) Offering Only Islamic Financial Services (IFSB-2)* issued in 2005 is primarily based on the principles outlined in Pillar 1 of the Basel II standards. Specifically, the IFSB modified and adapted two documents of the BCBS to develop the appropriate capital requirements for Islamic banking practices.³⁰ Subsequent to the introduction of Basel III by BCBS in the aftermath of the financial crisis, IFSB responded by

issuing the *Revised Capital Adequacy Standard for Institutions Offering Islamic Financial Services [Excluding Insurance (Takaful) Institutions and Islamic Collective Investment Schemes]* (IFSB-15) incorporating the changes in capital adequacy requirements in the new international standards.³¹ The second type of standards of IFSB is unique to the Islamic financial industry. An example from this category of standards is the *Guiding Principles on Shari'ah Governance Systems for Institutions offering Islamic Financial Services* (IFSB-10), which provides guidelines for a sound *Shari'ah* governance framework in Islamic financial institutions.

As is the case in other international standard-setting bodies, IFSB does not have enforcement powers to ensure the adoption of its prudential standards in different jurisdictions. As such, the adoption of various IFSB standards vis-à-vis the Basel standards depends on the regulators.

Overall, the IFSB standards have been implemented only in a few jurisdictions. While some of the IFSB standards, such as IFSB-6 and IFSB-11, had not been applied by any regulator by the end of 2011, two of its standards, IFSB-2 and IFSB-3, had been adopted by only six countries.³²

Given the above, the regulatory regimes for Islamic banks can be broadly categorised into three types. The first constitutes a small group of countries that have specific regulatory guidelines for Islamic banks. Countries in this category include Bahrain where the Central Bank of Bahrain issued the *CBB Rulebook Volume 2* which provides the detailed regulatory guidelines for Islamic banks and Oman where Central Bank issued the comprehensive *Islamic Banking Regulatory Framework in 2012*.³³ In the second group of countries Islamic banks are required to follow the regulations that apply to their conventional counterparts, although some adjustments and modifications are made for *Shari'ah* compliant transactions. For example, in the cases of the Dubai Financial Services Authority and the Bangladesh Bank, the central bank of the country, apply the same regulations for both Islamic and conventional financial institutions with some changes and modifications to accommodate the operations of the former.³⁴ The third group constitutes countries in which Islamic banks operate under the same regulatory regime as their conventional counterparts. In these countries, which include Saudi Arabia and UK, Islamic banks adjust their operations to comply with the existing regulations.

In countries that do not have specific regulations for Islamic finance, all banks, including Islamic ones, have to comply with the Basel-based national regulatory stipulations. In these countries, Islamic banks must develop appropriate products and instruments that comply with both *Shari'ah*

and Basel regulatory standards.³⁵ This, however, is likely to be challenging for Islamic banks due to the constraints imposed by Shari'ah and the scarcity of available products that satisfy the Basel requirements. For example, to meet the new Basel III capital adequacy requirements, Islamic banks would require acceptable Tier 1 and Tier 2 capital on the one hand and would have to ascertain the value of the risk-weighted assets in their portfolios with the new risk-weights on the other hand. As PSIA cannot be accepted as capital under the stringent definitions of Basel III, one option may be to come up with long-term equity-based *sukuk* that fulfils the definition of capital under the new regulatory requirements.³⁶ Similarly, as Basel III pays more attention to market risks and counterparty risks, the risk weights for partnership contracts such as *mudarabah* and *musharakah* and sale-based instruments such as *salam* and *istisna* are likely to increase.³⁷

LIQUIDITY RISKS AND BASEL III LIQUIDITY REQUIREMENTS

Liquidity is the 'ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses'.³⁸ The sources of liquidity beyond normal banking practices can be distinguished into three types: 'funding' liquidity can be sought by obtaining credit from other financial institutions; 'market' liquidity can be obtained by selling assets in financial markets; and 'central bank liquidity' in the form of credit can be obtained from the Central Bank by providing acceptable collateral. Liquidity risk may result from difficulties in obtaining cash at reasonable cost either from borrowings (funding liquidity risk) or from sale of assets (market liquidity risk).³⁹ To meet liquidity needs from private sources, a bank must hold assets that can be sold or used as collateral to obtain credit from other financial intermediaries.⁴⁰ However, market failures may constrain access to liquidity from private sources. Opaque bank assets create information-related problems whereby financial institutions may be unable to screen and monitor the prospective borrowers adequately.⁴¹ The failure of markets to provide liquidity can be resolved in two ways. First, private arrangements can be used between banks to create liquidity pools that can be used in case of need. However, this is difficult to implement, particularly when the financial sector experiences economy-wide negative shocks. In such cases, public bodies such as the central bank must provide the liquidity to prevent serious interruptions to operations, which can lead to bank failures. One of the tools used by central banks is the provision of emergency funding to banks as the lender of last resort (LOLR).

While BCBS had published guidelines related to liquidity risk management prior to the GFC, the central role of liquidity in exacerbating the crisis led to the inclusion of specific liquidity requirements in Basel III.⁴² The objective of introducing the regulatory liquidity requirements along with the capital requirements is to promote a more resilient banking sector by improving its ability to withstand shocks from different sources.⁴³ Specifically, Basel III introduced the Liquidity Coverage Ratio (LCR) to cater for the short-term liquidity needs and risks and the Net Stable Funding Ratio (NSFR) to ensure adequate liquid funds in the medium/long term. The essential features of these ratios are discussed next.⁴⁴

Liquidity Coverage Ratio (LCR)

The regulatory requirement for the liquidity coverage ratio (LCR), which banks would be required to report at least monthly, is defined as:

$$\text{LCR} = \text{HQLA} / \text{TNCO} \geq 100\%$$

where HQLA is the stock of high-quality liquid assets and TNCO is the total net cash outflows defined as the liquidity outflows less the inflows over a 30-day stress period. Liquidity outflows include, among others, specific percentages of deposits (5% of retail deposits that are covered by deposit insurance schemes, 10% for those not covered) and various liabilities that become due during the next 30 days. Similarly, liquidity inflows include contractual inflows that the bank is certain to receive over the next 30 days. Note that the inflows are limited to 75% of the liquidity outflows.

BCBS considers HQLA as those that ‘can be easily and immediately converted into cash at little or no loss of value’.⁴⁵ The fundamental characteristics of HQLA include low risk, ease and certainty of valuation, low correlation with other risk assets, and being listed on a developed and recognized exchange market.⁴⁶ The market-related characteristics of HQLA include assets traded in active and sizable markets, low volatility, and features of flight-to-quality assets whereby their demand increases in systemic crises.

HQLA is segregated into Level 1 and Level 2 assets.⁴⁷ Level 1 assets have very high credit and liquidity qualities and are not subject to any haircuts. These include cash (coins and banknotes), central bank reserves, and marketable securities representing claims in or guaranteed by sovereigns and national and international public bodies (such as central bank, public sector

entities, multilateral development banks, etc.) that satisfy the certain conditions, which include carrying a 0% credit risk weight under the Basel II Standardized Approach.⁴⁸

Level 2 assets constitute high-quality credit and liquid assets which are further classified into types Level 2A and Level 2B. A haircut of 15% is applied to Level 2A assets, which include the following⁴⁹:

- Marketable securities issued by sovereigns, central banks, public sector entities and multilateral development banks carrying a 20% credit risk weight under the Basel II Standardized Approach.
- Corporate debt securities, commercial papers and covered bonds that satisfy the following: they should have a long-term credit rating of at least AA-; however, in the absence of a long-term rating, they should have a short-term rating that is qualitatively equivalent to a long-term rating; in the absence of a rating, they should be internally rated as having a probability of default equivalent to a credit rating of at least AA-.

Level 2B assets can be included as HQLA at the discretion of the regulators. Different haircuts are applied to different types of Level 2B assets. Some examples of haircuts applied are as follows:

- Residential mortgage-backed securities (RMBS) can be included provided a haircut of 25% is applied and the following conditions are met: they are not issued by the bank itself or its affiliates; they have a long-term credit rating of AA or higher; in the absence of a long-term rating, they should have a short-term rating that is qualitatively equivalent to a long-term rating.
- Corporate debt securities including commercial papers are included provided a haircut of 50% is applied and the following conditions are met: not issued by the bank itself or its affiliates; having a long-term credit rating between A+ and BBB-; in the absence of a long-term rating, having a short-term rating that is qualitatively equivalent to a long-term rating.
- Common equity shares can be included in Level 2B assets provided a haircut of 50% is applied and the following condition is met: not issued by the bank itself or its affiliates.

Basel III stipulates a cap at 40% of the Level 2 assets and 15% of Level 2B assets of the total HQLA.⁵⁰

Net Stable Funding Ratio (NSFR)

Whereas the objective of LCR is to ensure that banks have enough liquidity in the short term (three months), the Net Stable Funding Ratio (NSFR) is intended to promote medium- and long-term resilience against shocks. NSFR focuses on ensuring that banks have on-going stable funding sources on the liability side to fund long-term assets over a year. NSFR, which should be reported to the supervisors at least quarterly, is defined as follows:

$$\text{NSFR} = \text{ASF}/\text{RSF} > 100\%$$

where ASF is the available amount of stable funding relating to the sources of funds and RSF is the required amount of stable funding linked to the uses of funds.⁵¹ Stable funding sources comprise capital, preference shares and liabilities with maturities of more than one year, deposits, and wholesale funding with maturities of less than a year but expected to remain with the bank over long stress periods. To arrive at the ASF, the items in the stable funding are multiplied by ASF factors ranging from 0% to 100% depending on their maturity and other characteristics. For example, capital, preferred stocks, and liabilities with maturity of more than one year have a 100% ASF factor, while unsecured wholesale funding and non-maturity demand and term deposits of less than one year carry an ASF factor weight of 50%.⁵²

While the ASF relates to the capital/liability side of the balance sheet, the RSF is linked to the liquidity characteristics of the assets and off-balance sheet items and activities (BCBS 2010a).⁵³ Similar to ASF, RSF is calculated by multiplying different assets and off-balance liabilities by appropriate RSF factors ranging from 0% to 100%. A higher RSF factor indicates that an asset cannot be monetized easily either through sale or by using it as collateral to obtain external funding, and it would therefore require a more stable funding source. For example, cash, unencumbered short-term unsecured instruments, transactions, securities, and loans with less than one year of maturities carry a weight of 0%, while unencumbered gold, equity securities and corporate or covered bonds that fulfil certain requirements (including rating A+ to A-) have an RSF factor of 50%.

To meet the liquidity ratios, banks can switch to higher-quality assets, shorten the maturity of assets, increase the length of their liabilities and raise more capital.⁵⁴ Recognizing that some jurisdictions may have insufficient Level 1 and Level 2 assets to meet the LCR requirements, BCBS provides the following three options as alternatives.⁵⁵

Option 1- Contractual committed liquidity facilities from the relevant central bank with a fee:

The arrangement to meet liquidity needs to satisfy the LCR are independent of the regular standing arrangements that banks have with the central bank. An irrevocable contract with a maturity date that falls outside the 30-day LCR window guides the facility. Under this scheme, a bank will be guaranteed to obtain the liquidity by paying a fee to the central bank. The fee is payable irrespective of whether the bank avails itself of the facility from the central bank during the contract period.

Option 2 - Foreign currency HQLA to cover domestic currency liquidity needs:

In countries that do not have sufficient HQLA in domestic currencies, supervisors can permit banks to hold HQLA in other currencies under certain conditions, including managing the associated foreign currency risks. Appropriate haircuts would be imposed on assets of different currencies, the minimum being 8% for major currencies exchanged in global foreign exchange markets.

Option 3 - Additional use of Level 2 assets with a higher haircut:

In countries that lack sufficient Level 1 assets but have adequate Level 2A assets, supervisors can allow the holding of additional assets of the latter type subject to a minimum haircut of 20%.

BCBS (2013: 19-20) asserts that, while the LCR requirement should hold for both conventional and Islamic banks, the latter face constraints related to instruments and products in fulfilling it.⁵⁶

BCBS indicates that HQLA for Islamic banks would include *Shari'ah*-compliant instruments such as *sukuk* (Islamic securities) subject to applying appropriate haircuts. Before discussing the complexities arising from applying the Basel III liquidity requirements in Islamic banks, the basic features of Islamic financial contracts and banking model are outlined next.

BASEL III LIQUIDITY REQUIREMENTS AND IMPLICATIONS FOR ISLAMIC BANKS

Liquidity risk arises when banks face problems in obtaining cash at reasonable cost from borrowings or sale of assets. In conventional banks, the funding liquidity needs of banks can be met either from private sources, such as other financial institutions, or from inter-bank money markets. Islamic banks, however, face constraints on accessing liquidity from these sources due to their adherence to *Shari'ah*. As interest-based loans are prohibited by *Shari'ah*, Islamic banks cannot borrow funds to meet liquidity requirements in case of need. Furthermore, sales of debt are proscribed by Islamic law in most jurisdictions, and Islamic banks would not be able to sell their debt-based assets to secure market liquidity. As such, there are no organised Islamic money markets in most countries from which funds can be sought in times of need. Malaysia is one of the few countries with an Islamic Interbank Money Market (IIMM) in which *mudarabah*-based interbank investments can be used.⁵⁷ Similarly, Islamic banks in Indonesia can either use the Domestic Interbank *Shari'ah* Financial Market, which operates using a *mudarabah*-based Interbank Investment certificate, or place their excess liquidity with the central bank under the *Wadiah* Certificate scheme. The market liquidity can be sought by selling liquid assets in the securities markets. As most assets of Islamic banks are predominantly debt-based, these are illiquid due to *Shari'ah* restrictions on sale of debt. Thus, raising funds by selling debt-based assets is not an option available to Islamic financial institutions.

Abdullah provides an overview of some of the liquidity management instruments used in different countries.⁵⁸ In the UAE, the central bank launched debt-based commodity *murabahah* (*tawarruq*) Islamic certificates of deposits with maturities of one week to a year. To facilitate the liquidity management of Islamic banks, the Central Bank of Bahrain started issuing short-term *salam*-based *sukuk*. As *salam sukuk* are debt-based and not tradable, the central bank has now started issuing *ijarah*-based ones which, being asset-based, are tradable. However, the lack of active secondary markets for *sukuk* can hinder their sale at appropriate prices.

While private sources of liquidity are restricted for Islamic banks due to lack of *Shari'ah*-compliant instruments and markets, the role of public bodies in facilitating provision of liquidity is also limited. As indicated, one of the available safety nets is the option to obtain emergency funds from the central bank in the form of lender of last resort (LOLR). Islamic banks, however, can face problems in availing themselves of this facility as most of the existing LOLR facilities are interest-based. An IFSB survey of the central banks of its 24 member countries carried out in

2012 shows that only six had *Shari'ah*-compliant LOLR facilities.⁵⁹ The study also revealed that, of the countries surveyed, only two had discount windows facilities that met *Shari'ah* requirements and only five countries had *Shari'ah*-compliant deposit services for Islamic banks. Indonesia is one of the few countries in which Islamic banks can obtain short-term funds from the central bank via the LOLR scheme. Based on *mudarabah*, the scheme provides financing from 14 to 90 days against collateral such as sovereign bonds and *sukuk*.⁶⁰ The return paid on the funds is tied to the deposit rate that the bank pays to other clients.

Islamic Banks and Basel III Liquidity Ratios

The dearth of available instruments due to *Shari'ah* principles in most jurisdictions will restrict Islamic banks to holding liquid assets identified in the LCR.⁶¹ As indicated above, Level 1 assets included in HQLA include cash, reserves with central banks, and marketable securities issued by sovereigns and other national and international bodies. In most countries, these securities will be interest-based and avoided by Islamic banks. While, in a few countries, governments and central banks issue *sukuk*, most of these are not tradable due either to *Shari'ah* restrictions or to inactive secondary markets. Because of the scarcity of liquid *Shari'ah*-compliant securities and non-existent active secondary markets, there are insufficient Level 2 assets that satisfy the LCR requirements. This is confirmed in a survey of 64 Islamic financial institutions carried out by IFSB in 2011 which concludes that, in the majority of the jurisdictions, *Shari'ah*-compliant securities are not available in sufficient quantity and quality to meet the requirements of Level 1 and Level 2 assets defined by Basel III.⁶²

Similarly, Islamic banks will also face problems in meeting the Basel III NSFR requirement. For example, Islamic banks cannot hold preference shares, a source of liquidity with 100% ASF factor, as these are considered to be non-*Shari'ah*-compliant. The bulk of the assets in NSFR that have low RSF factors are marketable securities and bonds, particularly those issued by sovereigns and public bodies. However, due to the lack of *Shari'ah*-compliant securities that fulfil these criteria in most jurisdictions, Islamic banks will not be able to hold assets carrying relatively higher RSF factors.

As mentioned above, Basel III provides three options for countries that do not have sufficient Level 1 and Level 2 assets to meet the LCR requirement. Under option 1, the central bank can provide liquidity facilities for a fee. This appears to be a feasible alternative that can be used to

support Islamic banks in meeting their liquidity requirements. However, as most of the jurisdictions still do not have Islamic LOLR facilities, providing *Shari'ah*-compliant liquidity facilities will be challenging. Using Options 2 and 3 identified in Basel III is not viable for the Islamic banking sector due to the overall scarcity of marketable *Shari'ah*-compliant securities at both the national and international levels and the lack of exchanges where these can be traded. One problem in the implementation of Option 2, which suggests using high-quality foreign currency *sukuk* as substitutes for domestic ones, is the different *Shari'ah* interpretations in various jurisdictions, rendering instruments issued in one country unacceptable in another. For example, Malaysia is one of the dominant players in the issuing of *sukuk*. However, some of their securities may be unacceptable in the GCC region due to different *Shari'ah* interpretations.

A few international initiatives have been taken to resolve problems related to the development and acceptability of Islamic securities. The International Islamic Financial Market (IIFM) was established in 2002 in Bahrain as a global standard-setting body for the Islamic capital and money markets.⁶³ The organization focuses on the standardization of documentation and processes of Islamic capital market-related financial products. In the same year, the Liquidity Management Centre (LMC) was established to develop short- and medium-term financial instruments that can be used by Islamic financial institutions for liquidity management purposes.⁶⁴ However, the scope of operations of LMC has been relatively small, focusing more on the GCC region in general and Bahrain in particular. More recently, the International Islamic Liquidity Management Corporation was established in 2010 in Kuala Lumpur to issue *sukuk* that can be traded in international financial markets and used by Islamic financial institutions for liquidity management purposes globally.⁶⁵

Without an adequate supply of liquid *Shari'ah*-compliant instruments and active markets in which to trade them, it will be difficult for Islamic banks to meet the Basel III liquidity requirements. The implication of having fewer assets that can be treated as liquid for both LCR and NSFR is that Islamic banks will have to hold more cash and reserves. In the absence of high-quality assets, banks may have to shorten the maturity of assets, increase the length of their liabilities and raise more capital to meet the liquidity requirements.⁶⁶ This may put Islamic banks in a disadvantageous position compared to their conventional counterparts and create obstacles to the long-term growth of the industry. To resolve their liquidity needs, Islamic banks may require additional innovative measures and initiatives.

A novel arrangement for managing liquidity at the private level has been initiated by the Central Bank of Sudan which encourages banks to create ‘alliance groups’ to fulfil certain objectives including managing liquidity.⁶⁷ This plan takes the form of creating liquidity pools that can be used in case of need among the participating banks. However, in the event of economy-wide shocks, the scheme may not be able to meet the needs of all the participating banks and will require a response at the level of governmental bodies. Given the lack of active *sukuk* markets, one option is for a central bank to act as ‘market maker of last resort’ (MMLR).⁶⁸ In its role as MMLR, the central bank would buy the illiquid *sukuk* at discounted prices, thereby providing liquidity to banks when needed.

CONCLUSION

Although the Islamic financial industry is one of the fastest-growing sectors in many countries, it lacks liquidity instruments and infrastructure, which may hamper its future growth. In many jurisdictions in which Islamic banks operate, there are no inter-Islamic banks or organized money markets from which funds might be sought in times of need. Furthermore, due to the lack of liquid *sukuk* and active *sukuk* markets, Islamic banks face significant market liquidity risks. While, in some countries, central banks are playing an important role in providing tradable instruments to meet the short-term liquidity needs of Islamic banks, the scarcity of *Shari’ah*-compliant liquid assets is still a serious problem, forcing many Islamic banks to hold more cash.

Moving forward, liquidity management is one of the most challenging tasks facing Islamic financial institutions. Islamic banks will face constraints in attempting to fulfil the Basel III liquidity requirements if the liquidity instruments and infrastructure are not developed. A robust liquidity infrastructure for the Islamic financial sector will be required, not only for the smooth functioning of Islamic banks but also to fulfil the regulatory liquidity requirements of Basel III. A sound liquidity infrastructure for the Islamic financial sector would include the development of private sources of liquidity (such as an Islamic money market and a vibrant securities market) and supportive public safety-net facilities such as LLOR facilities. Given the restrictions arising from *Shari’ah* principles, there may also be a need for innovative initiatives to resolve the liquidity management requirements at both the private and public levels.

REFERENCES AND NOTES

- ¹ See BCBS (2010) An assessment of the long-term economic impact of stronger capital and liquidity requirements. Basel: Bank of International Settlements.
- ² Yan, M., Hall, M.J.B. and Turner P. (2012) A cost-benefit analysis of Basel III: Some evidence from the UK. *International Review of Financial Analysis* 25: 73-82.
- ³ Allen, B., Chan, K.K., Milne, A. and Thomas, S. (2012) Basel III: Is the cure worse than the disease? *International Review of Financial Analysis* 25: 159-166.
- ⁴ The global Islamic financial industry grew at the rate of 20.4% in 2012 and is estimated to be worth USD 1.6 trillion at the end of 2012. See IFSB (2013). *Islamic Financial Services Industry Stability Report 2013*. Kuala Lumpur: Islamic Financial Services Board.
- ⁵ Hasan, M. and Dridi, J. (2010) *The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study*. Washington DC: International Monetary Fund. IMF Working Paper WP/10/201.
- ⁶ Beck, T., Demirguc-Kunt, A. and Merrouche, O. (2010) *Islamic vs. Conventional Banking: Business Model, Efficiency and Stability*. Washington DC: The World Bank. Policy Research Working Paper 5446.
- ⁷ Parashar, S.P. and Venkatesh, J. (2010) How did Islamic banks do during the global financial crisis?, *Banks and Bank Systems* 5 (4): 54-62.
- ⁸ See Hasan and Dridi⁵ and IFSB.⁴
- ⁹ Established in 2002, Islamic Financial Services Board (IFSB) is based in Kuala Lumpur, Malaysia.. For guidelines on liquidity risk management, see IFSB (Islamic Financial Services Board) (2012) *Guiding Principles on Liquidity Risk Management for Institutions Offering Islamic Financial Services [Excluding Islamic Insurance (Takaful) Institutions and Islamic Collective Investment Schemes]*. Kuala Lumpur: Islamic Financial Services Board.
- ¹⁰ Kamali, M. H.(2000) *Islamic Commercial Law: An Introduction*. Oxford: Oneworld Publications. Also see Fatwa No. 1 at pp.75-76 in Dallah Albaraka (1994) *Fatawa: Shari'ah Rulings on Economics*. Jeddah: Dallah Albaraka.
- ¹¹ Siddidi, M. N (2004). *Riba, Bank Interest and the Rationale of its Prohibition*. Jeddah: Islamic Research and Training Institute, Islamic Development Bank Group.
- ¹² For different meanings of *gharar* see ElGamal, M. (2001) *An Economic Explication of the Prohibition of Gharar in Classical Islamic Jurisprudence*. *Islamic Economic Studies* 8 at p. 32. For a detailed discussion on *gharar* see Kamali¹⁰ and Al-Dhareer, SMA (1997) *Al-Gharar in Contracts and its Effect on Contemporary Transactions*. Jeddah: Islamic Research and Training Institute, Islamic Development Bank.
- ¹³ Note that possession can be constructive, whereby the asset/goods are legally owned but not held physically. Example of such possession is a bank account. For a discussion on ownership and possession, see ElGari, MA (1997) *A Short Term Financial Instrument based on the Salam Contract*. In: A. Ahmad and T. Khan (eds), *Islamic Financial Instruments for Public Sector Resource Mobilization*. Jeddah: Islamic Research and Training Institute, Islamic Development Bank Group.
- ¹⁴ For a discussion on these modes of financing, see Ayub, M. (2007) *Understanding Islamic Finance*. West Sussex: John Wiley & Sons.
- ¹⁵ Though a simple *ijarah* appears similar to a conventional operational lease and *ijarah wa iqtinah* a financial lease, there are differences. One such difference relates to maintenance of the underlying assets.
- ¹⁶ While risk-sharing is the contractual feature of PSIA, in reality Islamic banks use different types of reserves such as Profit Equalizing Reserves (PER) to smooth profit-rates given to the deposits similar to the market rates. For a discussion, see IFSB (Islamic Financial Services Board) (2005) *Capital Adequacy Standard for Institutions (Other than Insurance Institutions) Offering Only Islamic Financial Services*. Kuala Lumpur: Islamic Financial Services Board at p. 20.
- ¹⁷ *Tawarruq* replicates a loan contract by using multiple sales and agency contract whereby the client gets cash and owes the bank the amount financed plus a return. The International Council of Fiqh Academy in its 19th session which was held in Sharjah, United Arab Emirates, during 26 – 30 April 2009 ruled that organized *tawarruq* was illegal as it entailed elements of *riba*.
- ¹⁸ The bulk of the *musharakah*-based products in Sudan are government securities that banks are required to hold by the central bank.
- ¹⁹ CIBAFI(2007) *Islamic Finance Directory*. Bahrain: General Council for Islamic Banks & Financial Institutions.
- ²⁰ Ahmed, H. (2011) *Product Development in Islamic Banks*. Edinburgh: Edinburgh University Press.
- ²¹ CIBAFI¹⁹.
- ²² AAOIFI (2003) *Shari'a Standards 1424-5H/2003-4*. Manama: Accounting and Auditing Organisation for Islamic Financial Institutions.

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- ²³ As indicated, in partnership contracts (*mudarabah* and *musharakah*) the profit is shared between the investors and manager according to pre-agreed ratio. Loss, however, is shared only by providers of capital according to their respective shares.
- ²⁴ The Islamic *Fiqh* Academy has a ruling along similar lines. See Ruling No. 30 (5/4) in IRTI and IFA (2000) Resolutions and Recommendations of the Council of the Islamic Fiqh Academy. Jeddah: Islamic Research and Training Institute, Islamic Development Bank at p. 63.
- ²⁵ IFSB⁴ at p. 25
- ²⁶ El-Hawary, D. Grais, W. and Iqbal, Z. (2007) Diversity in the regulation of Islamic Financial Institutions. *Quarterly Review of Economics and Finance* 46: 778-800.
- ²⁷ Bhambra, H (2007), Supervisory Implication of Islamic Finance in the Current Regulatory Environment In: S. Archer and R.A.A. Karim (eds) *Islamic Finance: The Regulatory Challenge*. Singapore: John Wiley and Sons (Asia) Pte Ltd., pp. 198-212.
- ²⁸ Bhambra²⁷ and Fiennes, T. (2007) Supervisory Implications of Islamic Banking: A Supervisor's perspective. In: S. Archer and R.A.A. Karim (eds) *Islamic Finance: The Regulatory Challenge*. Singapore: John Wiley and Sons (Asia) Pte Ltd., pp. 247-256.
- ²⁹ For information on IFSB, see <http://www.ifsb.org/background.php>
- ³⁰ The BCBS documents used by IFSB are 1) International Convergence of Capital Measurement and Capital Standards: A Revised Framework, June 2004 and 2). Amendment to the Capping Accord to Incorporate Market Risks, January 1996. See discussion on the IFSB's approach to developing standards see IFSB 2 (p.1). Available at <http://www.ifsb.org/standard/ifsb2.pdf>
- ³¹ IFSB⁴ at Pp. 71-72.
- ³² IFSB⁴ at p. 77.
- ³³ Central Bank of Bahrain Rulebooks can be accessed at http://cbb.complinet.com/cbb/microsite/cbb_rulebook.html and the Islamic Banking Regulatory Framework of Central Bank of Oman is available at <http://www.cbo-oman.org/news/IBRF.pdf>.
- ³⁴ See Bhambra²⁷ at p. 207 for a discussion on UAE and A. U. F. Ahmad and M.K. Hassan (2007) Regulation and Performance of Islamic Banking in Bangladesh. *Thunderbird International Business Review* 49(2): 251-277 for a review of regulatory regime for Islamic banks in Bangladesh.
- ³⁵ Sairally, B.S., Muhammad, M. and Mustafa, MM (2013) Instruments for Meeting Capital Adequacy Requirements under Basel III: A Shari'ah Perspective. *ISRA International Journal of Islamic Finance* 5 (1): 183-189.
- ³⁶ Sairally et.al.³⁵
- ³⁷ Msatfa, A. (2012) Basel III in the Islamic Finance Industry. *The Journal of Investing* 21 (4): 165-170.
- ³⁸ BCBS (Basel Committee on Banking Supervision) (2008) Principles for Sound Liquidity Risk Management and Supervision. Basel: Bank for International Settlements at p. 1.
- ³⁹ ECB (European Central Bank) (2002). Developments in Banks' Liquidity Profile and Management. Frankfurt am Main: European Central Bank.
- ⁴⁰ Holmstrom, B. and Tirole, J. (1998) Private and public supply of liquidity. *Journal of Political Economy* 106 (1): 1-40.
- ⁴¹ Rochet, J. (2008) Liquidity regulation and the lender of last resort. In Paris: Banque de France. *Financial Stability Review, Special Issue on Liquidity*, No. 11, 45-51.
- ⁴² For a discussion on the BCBS guidelines on liquidity risks, see Vento, G. A. and La Ganga, P. (2009). Bank Liquidity Risk Management and Supervision: Which Lessons from Recent Market Turmoil. *Journal of Money, Investment and Banking*, 10: 78-125.
- ⁴³ BCBS (Basel Committee on Banking Supervision) (2010) Basel III: International framework for liquidity risk measurement, standards, and monitoring. Basel: Bank for International Settlements.
- ⁴⁴ The information on these ratios is taken from BCBS⁴³ and BCBS (2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools*. Basel: Bank of International Settlements, unless stated otherwise. Note that the latter document covers LCR extensively, and it indicates that NSFR is being reviewed (see paragraph 12 on p. 3). The discussion on NSFR is taken from BCBS.⁴³
- ⁴⁵ BCBS⁴³ at p. 5.
- ⁴⁶ BCBS.⁴⁴
- ⁴⁷ BCBS.⁴⁴

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- ⁴⁸ Other conditions include that the assets be traded in active (large and deep) cash and repo market with low concentration, have a track record of reliable source of liquidity even in stress situations, and not an obligation of the financial institution or its affiliate.
- ⁴⁹ As in the case of Level 1 assets, there are additional requirements for Level 2 assets related to trading in active cash and repo market with low concentration, track record of reliable source of liquidity even in stress situations, and not being an obligation of financial institution or its affiliate. For details see BCBS⁴⁴ at pp. 13-15.
- ⁵⁰ BCBS.⁴⁴
- ⁵¹ BCBS.⁴³
- ⁵² BCBS⁴³ at p.27.
- ⁵³ BCBS.⁴³
- ⁵⁴ Santos, A.O. and Elliott, D. (2012) Estimating the Costs of Financial Regulation. Washington DC: International Monetary Fund. IMF Staff Discussion Note, SDN/12/11.
- ⁵⁵ BCBS.⁴⁴
- ⁵⁶ BCBS⁴⁴ at pp. 19-20.
- ⁵⁷ Abdullah, D. V. (2010) Liquidity Management in Institutions Offering Islamic Financial Services. Paper presented at the Second Islamic Financial Stability Forum; 14 December 2010, Jeddah, Saudi Arabia.
- ⁵⁸ Abdullah.⁵⁷
- ⁵⁹ IFSB⁴ p. 108.
- ⁶⁰ Alamsyah, H. (2011) Lender of Last Resort in Islamic Banking. Paper presented at Fourth Islamic Financial Stability Forum; 17 November 2011, Kuala Lumpur.
- ⁶¹ The exception may be Malaysia where the Islamic capital market is significant with the availability of various types of sovereign *sukuk*.
- ⁶² IFSB⁴ at p. 88.
- ⁶³ For an overview of IIFM, see <http://www.iifm.net/>.
- ⁶⁴ See <http://www.lmc Bahrain.com/>.
- ⁶⁵ See <http://www.iilm.com/about-iilm/about-us.html>.
- ⁶⁶ Santos, and Elliott.⁵⁴
- ⁶⁷ CBS (Central Bank of Sudan) (2012) Central Bank of Sudan Policies for the year 2012. Central Bank of Sudan, <http://www.cbos.gov.sd/en/node/3324>, accessed 29 December 2013.
- ⁶⁸ The suggestion of MMLR comes from Buiter, W. (2008) Central Banks and Financial Crisis. Paper presented at the Federal Reserve Bank of Kansas City Symposium on *Maintaining Stability in a Changing Financial System*, 21-23 August 2008 and Buiter, W. and Sibert, A. (2007) The Central Bank as the Market Maker of Last Resort. VoxEU.org, 13 August. <http://www.voxeu.org/index.php?q=node/459>, accessed 22 December 2013.