# Banks: tbtf concept

Finance, Banks

Literature Review

The failure of a single financial institution has the potential to spark catastrophic losses in local, regional and global financial systems. The global financial crisis of 2008 has proved this. Financial institutions considered “ too big to fail” (TBTF) have always been of concern to policy makers. However, this was highlighted especially during the global financial crisis, with the collapse of several large financial institutions. If a bank has a large role in a nation’s financial system, for instance by processing many of the nation’s payments or security transactions– its failure may threaten the solvency of other institutions financially connected to it and to each other. By creating a domino effect, the failure of a TBTF bank threatens to cripple the national economy. Should an important bank fail, and other banks rely upon this bank and its creditors to fulfil their obligations to operate, then these banks too, and potentially those institutions they are financially connected to, may collapse as well. If the spill-over effects generated via this process are large enough, then the failure of a big bank could trigger an economy-wide recession. [iv]

Large financial institutions that failed or required a government “ bailout” included firms such as Citigroup, Fannie Mae and Freddie Mac, AIG, Bear Stearns and Lehman Brothers, which were either depositories, insurance companies, government sponsored enterprises or investment banks. Similarly the European debt crises has shown how the interconnectedness of large financial institutions may have a rippling effect on the rest of the banking system.

“ Too big to fail” has raised a lot of issues due to the systemic risk these large firms carry with them. There are many definitions for “ systemic risk” and may be used in different contexts. For instance, Acharya et al. (2009) [xvi] define systemic risk as “ the risk of a crisis in the financial sector and its spill over to the economy”. De Bandt and Hartmann (2000) [xv] define systemic risk as “ the risk of experiencing an event such that the release of bad information on, or failure of, one institution propagates across the system resulting in further failures of other institutions” [iii] . Thus we can say that Systemically Important Financial Institutions (SIFI’s) are firms that would have grown to significant proportions, even outgrowing their economies of scale. They also hold a high leverage, focus on short term funding, and have a high proportion of trading in complex structured products in an interconnected market.[i]

These firms have become so large and important to an economy that a government will provide assistance to prevent its failure, as this may cause widespread distress either as a direct impact or as a trigger for broader contagion. A government would not have any policy forcing it to rescue such large and systemically important financial institutions. However, it may choose to do so due to catastrophic effects of allowing the financial institution to fail on the rest of the economy. Thus, this systemic importance that SIFIs have, has become one of the top issues that policymakers targeted to tackle.

Rescuing such firms is predicted to result in a less stable financial system because of the moral hazard involved which weakens market discipline. If

these firms expect to be saved from their own mistakes, they will have an added incentive to take on more risk in hope for greater profits being generated, as they would be shielded from the dangers those risks carry with them, creating a moral hazard of titan proportions.[ii]

Therefore, supervisory authorities have devoted a lot of effort into monitoring and regulating these financial institutions. It is vital that if such supervision is to be successful, policymakers need analytical tools to measure the systemic importance of individual financial institutions. In times of financial distress, these tools can help to gauge the likely impact of distress at a given financial institution on the stability of the overall banking system. It is important that even in a healthy economy, such tools may help calibrate prudential instruments, such as capital requirements and insurance premiums, according to the relative contribution of different institutions to systemic risk.

Given the various different structures and activities of SIFIs, the nature and degree of risks inherent to international financial system will vary. Therefore, international bodies such as the FSV and BCBS have distinguished between those institutions which are globally systemic (G-SIFI) and those which are only systemic in their particular country, known as domestically systemic (D-SIFI).

A D-SIFI is a financial institution whose failure could have a significant impact on their domestic financial system and economy compare to non-systemic institutions. Some of these institutions may have cross-border externalities, even if the effects are not global in nature.

There have been a few measures proposed on the measuring of the systemic importance of financial institutions. One method of calculating the systemic importance of a financial institution is the conditional Value-at Risk (CoVaR), proposed by Adrian and Brunnermeier (2009). Similar to the Value-at-Risk measure quantifying the unconditional tail risk of a financial institution, the CoVar can measure how much the distress of one institution can increase the tail risk of others, providing a clear way on the bilateral relation between the tail risks of two financial institutions. When applying this to measure the systemic importance of an institution to the entire system, we have to construct a system indicator on the status of the system and then analyse the bilateral relation between the system indicator and a specific institution. However, the complexity of the financial system usually makes this a tricky process to construct a general indicator of the system. Another issue is that the CoVar method is hard to be generalized to measure a group of financial institution's contribution to systemic risk. [xii]

Another method proposed by Segoviano and Goodhart (2009) is to create an indicator to measure the systemic importance of a specific institution, by estimating the probability that a number of institutions in the system would be distressed given that this specific institution is in distress. This measure only considers the probability of the failure of at least another institution depending on the failure of a specific institution. However, it does not provide further useful information on the systemic importance of institutions. The measure is not capable of characterizing the likelihood that all other institutions fall into failure given that a specific institution runs into financial trouble. [xiii]

Zhou (2010) proposes the systemic impact index to measure the expected number of bank failures in the banking system given the failure of one particular bank. This index focuses on the number of banks are influenced when a particular bank fails, but is unable to provide sufficient information in identifying the systemic importance of a financial institution more than another. For example, even though two financial institutions may have the same value of systemic impact index, their contribution to systemic risk can be different. [xiv]

Toni Gravelle and Fuchun Li (2011) identify systemic risk as an event which at least a certain fraction of financial institutions crash simultaneously. The systemic importance of a financial institution or a group of financial institutions is measured by its contribution to the systemic risk. The higher the probability of simultaneous crashes of at least a certain fraction of financial institutions, the more systemic importance a financial institution has. This method can measure the impact that the failure of an institution would have on other institutions.

When identifying the systemically important financial institutions in the Czech banking sector Komárková, Hausenblas and Frait (2012) used a static approach. This method uses static quantitative and qualitative indicators which allow for simple comparison and further analysis of the individual components of the system. It is a simple, transparent and flexible method making it easier to communicate to system participants. It has been used to identify global systemically important banks (BCBS, 2011b). Drehmann and Tarashev (2011b) further show that correctly set simple indicators can proxy

quite well for measures based on more complex models. However, it is clear that this method does not cover all forms of systemic risk. A major handicap is its inability to cover the time dimension of systemic risk, i. e. the rise and fall of systemic importance over the financial cycle.

SIFI Identification by Central Bank of Malta

The Maltese banking sector consists of 27 credit institutions, 3 of which are owned mainly by Maltese, while the other 24 institutions are mainly foreign owned. Of the 24 foreign owned, eleven are subsidiaries of EU institutions, one is a subsidiary of a non-EU institution, and another two are branches of non-EU institutions.

The Central Bank identified the systemically important banks operating in Malta by using five broad criteria that reflect size, substitutability and connectivity. Weights were then assigned to each criterion based on their importance to financial stability. The criteria and their weights were: credit to residents [30%], resident deposits [30%], holdings of domestic bonds [13. 3%], resident and contingent liabilities [13. 3%], and market capitalisation [13. 3%]. The weighted standardised values of each criterion for every bank were then added. On the basis of this methodology, the Central Bank identified three separate categories: ‘ core domestic banks’, ‘ non-core domestic banks’, and ‘ international banks’. [xvii]

The core domestic banks were made up of the institutions which have strong links with the domestic economy and are considered to be highly systemically important. These banks would have many local branches,

provide a wide range of banking services and are core providers of credit and deposit services in Malta. The banks that fall under this category are APS Bank Ltd, Banif Bank (Malta) plc, Bank of Valletta plc, HSBC Bank Malta plc, and Lombard Bank Malta plc. [ix] As of 2012, these banks together have a combined total assets as a % of GDP of 218. 2%.

The non-core domestic banks have a more restricted role in the domestic economy, this is due to the fact that the volume of operations and the banking services and offered to the locals are rather limited. The banks making up this category consist of BAWAG Malta Bank Ltd, Credit Europe Bank N. V. (Branch Malta), FIMBank plc, IIG Bank (Malta) Ltd, Izola Bank plc, Mediterranean Bank plc, Sparkasse Bank Malta plc, and VolksBank Malta Limited. Together these banks have a total assets as a % of GDP of 77%.

The final sub-classification " Other banks" include institutions which are essentially of an international nature and have virtually no links with the domestic economy.

Quantitative Indicators

In their paper of identifying systemically important banks in Sweden, Bengtsson, Holmberg and Jönsson (2013) say using a purely judgment-based methodology to identify systemically important financial institutions may be attractive as it offers the authority responsible for finance stability a large degree of flexibility to designate any banks as systemically important. It also reduces the risk of relying on indicators that are not capable of capturing the complexities of systemic risk. However, in the absence of quantitative

indicators, the methodology may be criticized of being subjective, arbitrary and unpredictable.

To circumvent these shortcomings, one may construct simple indicators of systemic risk on the basis of 4 criteria- size, substitutability, inter-connectedness and complexity, in a relatively straightforward manner. The indicators would use accounting data to serve as proxies for systemic risk. Such simple indicators are attractive in that they are intuitive, easy to implement in practical regulatory policy and easily explained to legislative bodies and the public.

Questions may be raised on whether such a methodology would encompass sufficient indicators to capture the multifaceted and complex principles of systemic importance. Accounting-based indicators are intrinsically backward-looking and perhaps provide a deceptive and too simplistic view of the extent to which banks contribute to systemic risk. Taken together, systemic importance is a multifaceted concept that in fact may be hard to estimate using both judgement based and quantitative approaches. [xviii]

The Banking System in Malta

The Financial Stability Report 2012, issued by the Central Bank of Malta, explains financial stability as reflecting " the ability of the financial system, comprising institutions, markets and infrastructures, to efficiently supply the necessary credit intermediation and payment services to the real economy to enable it to achieve sustainable growth, to be able to allocate savings into investment opportunities and to facilitate the efficient settlement of

payments. Financial stability also allows the system to absorb shocks and thus manage risks that may harm its performance and, consequently, that of the economy.” [viii]

The banking sector of any country is crucial to its financial stability and Malta is no exception. Throughout 2012, the financial sector continued to show robustness while facing an uncertain external environment characterised by fragile conditions in financial markets. Despite this, the Maltese economy has registered a positive growth. This has been encouraged by the expanding balance sheets of core domestic banks by 3. 5% reflecting in the 1. 6% growth.

In May, 2013, the International Monetary fund noted that “ Malta has shown remarkable resilience in the face of a major crisis in Europe. Average growth of the Maltese economy has been the best in the euro area since the beginning of the crisis, and the unemployment rate remains one of the lowest”. “ This resilience was underpinned by robust export growth and a sound banking system”

The IMF did point out that the short-term risks are associated to the external environment and the interconnectedness with the foreign markets. It also noted the issue of a large banking sector in a relatively small economy stating that the risk resulting from this aspect is contained because the large international banking segment has limited balance sheet exposures to the Maltese economy and negligible claims on the deposit compensation scheme.

To analyse the systemic importance of individual banks in the Maltese financial system, in this paper I used a composite quantitative indicator-based approach based on the recommendations in the FSB/IMF/BIS (2009) report to G20 finance ministers and central bank governors in October 2009. This paper mainly focuses on identifying G-SIBs, however, it the BCBS (2012) suggests that an adapted version with less detail may be used to identify D-SIBs, given the focus is on the domestic impact of failure of a bank and the wide ranging differences in each jurisdiction's financial structure hinder such international comparisons being made.

For the sake of clarity, the XX indicators selected were grouped into four categories: size, interconnectedness, substitutability and complexity in order to follow as closely as possible to the classification of the report by the IMF/FSB/BIS. Cross-jurisdictional activity, the remaining category, may not be as relevant since it measures the degree of global (cross-jurisdictional) activity of a bank which is not the focus of the D-SIB framework. [xix] For the sake of simplicity, the scope of this paper is limited to the Maltese Banking sector using data as of December 2012.

In this paper I shall be assessing the banks making up the two categories of ' core domestic banks' and non-core domestic banks. I will apply an adapted version of the methodology proposed by the IMF, BIS and FSB to the aforementioned banks, with an aim to identify which banks in the Maltese banking sector are systemically important and finally compare them to the results obtained by the methodology used by the central bank.

[i]“ How to Identify Systemically Important Financial Institutions”- Zlatuše Komárková, Václav Hausenblas and Jan Frait

[ii]“ Systemically Important or “ Too Big to Fail” Financial Institutions”- Marc Labonte

[iii] De Bandt & Hartmann and Acharya

[iv] Gary H. Stern, Ron J. Feldman, Too Big To Fail: The Hazards of Bank Bailouts, Brookings Institution Press, Washington, DC, 2004, 230 + xiii pp

[v] Systemic Harms and the Limits of Shareholder Value – John Armour and Jeffrey N. Gordon [vi] Measuring the Systemic Importance of Interconnected Banks -Mathias Drehmann and Nikola Tarashev [vii] FSB, IMF, BIS. 2009. “ Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations”, FSB Background Paper

[viii] Financial Stability Report 2012

[ix] MFSA Report 2012

[x] http://uk. mobile. reuters. com/article/rbssFinancialServicesAndRealEstateNews/idUKWLA713020120427

[xi] http://spiteribailey. com/lang/en/featured/malta-unlikely-to-follow-cyprus-into-crisis-reuters-analysis/

[xii] NBER WORKING PAPER SERIES –COVAR- Tobias Adrian & Markus K. Brunnermeier

[xiii] Banking Stability Measures -by Miguel A. Segoviano and Charles Goodhart

[xiv] Are Banks Too Big to Fail? Measuring Systemic Importance of Financial Institutions byChen Zhou

[xv] SYSTEMIC RISK: A SURVEY BY OLIVIER DE BANDT AND PHILIPP HARTMANN, 2000

[xvi] A Theory of Systemic Risk and Design of Prudential Bank Regulation by Acharya, Viral V.

[xvii] Financial Stability Report 2011

[xviii] Identifying systemically important banks in Sweden – what do quantitative indicators tell us?

[xix] BCBS: A framework for dealing with domestic systemically important banks 2012