Critical Success Factors For Access To Funds In The Interbank Market: A Review Of Existing Literature

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Abstract: Guaranteed and timely access to funds in the interbank market is crucial for continued existence of any commercial banking institution. Banks need assurance that they are can access funds from the interbank market every time a need to do so arises. Scholars have observed varying factors as having influence on banks' ability to access funds from the interbank market such as the size of the bank, bank reputation, and credit worthiness among others. This study intends to identify these factors with a view to establishing what banks prioritize or consider most critical while lending or borrowing money from each other in the interbank market .The study summarizes the key access factors for further research and analysis using factor reduction techniques to establish the most critical factors.

Keywords: Access to funds, interbank markets, Bank liquidity, Critical success factors

I. INTRODUCTION

A. BACKGROUND

The ease at which banks access the funds from the interbank market is crucial for their very existence (Murinde et al. 2016).Commercial banks need sufficient access to funds in order for them to be able to honor their maturing obligations either in the clearing house or with their creditors and to be able to meet their statutory cash reserve requirements with the regulatory authorities (Cocco et al., 2009). However, the importance of timely access to funds notwithstanding, studies have shown that some banks are able to get funds from the interbank market more easily while others have difficulty accessing funds from the same market.

Indeed access to interbank funds is discriminatory and like an exclusive club for a few large banks (Sichei et al., 2012). While Cocco et al., (2009) noted existence of a well-established and clear set of network groupings amongst some large and medium banks who dictate who can access funds and at what rate. Other scholars have identified varying factors as influencing a commercial banks ability to access funds in the interbank market(Bruche & Suarez, 2010; Ongena & Popov, 2010; Sichei et al., 2012; Green, C., et al., 2016).This

paper identifies the various factors that have been cited has having an influence on banks' ability to access funds from the interbank market with a view to establishing what banks prioritize or consider most critical while lending or borrowing money from each other in the interbank market.

B. ACCESS TO FINANCE

According to Beck, Demirguc-Kunt, & Peria (2007) financial access involves three types of banking services of deposits, loans, and payments usually across three dimensions of physical access, affordability, and eligibility. However Demirguc-Kunt, Beck & Honohan, (2008) saw access to finance as including the possibility that individuals or enterprises would make use of financial services, including credit, deposit, payment, insurance and other risk management services and also brought in the issues of actual use and non-use of finance which they classified as either voluntary or involuntary.

Beck(2015) brought in a multidimensional approach of geographical access(proximity to a financial services provider)socioeconomic access(absence of prohibitive fees and documentation requirements) which included appropriate design of products that meet the needs of the clients, were

sustainable and not overpriced while Goyal et al.(2011),defined access to include the process of increasing the depth (e.g., credit intermediation) and breadth, (e.g., range of markets and instruments); as well as the reach of financial systems. Access to finances can therefore be said to involve the aspect of the physical access to financial service provider, availability of affordable products, simple and flexible eligibility criteria as well as adequate and timely availability of the sought funds.

C. THE INTERBANK MARKET

Several scholars have highlighted the crucial role played by the interbank market in ensuring smooth operations of the banking sector. Cocco et al., (2009) for instance saw interbank market as a market where banks lend and borrow funds to and from each other and observed that the market played three key roles; it helps in liquidity management through intermediation; that is, they take deposits from their customers who have excess or idle cash and on lend the same to either their clients who need credit or to other banks who have a liquidity imbalance for a return (Bruche & Suarez, 2010). Secondly, it enables the other banks to meet their daily financial obligations of paying for their clients cheques in the clearing house and thirdly, it enables banks meet their statutory reserve requirements with the regulatory body (Bruche & Suarez, 2010; Ongena & Popov ,2010; Sichei et al., 2012;Green, C., et al., 2016).

D. CRITICAL SUCCESS FACTORS APPROACH

Rockart (1979) first defined Critical success factors (CSFs) as "limited number of areas, in which results, if they are satisfactory, will ensure successful competitive performance for the organization" (Rockart 1979). While Saraph et al. (1989) further defined CSFs as "those critical areas of managerial planning and action that must be practiced in order to achieve effectiveness".

Boynton and Zmud (in Chen, 1999) defined CSF first in 1984 as the "few things that must go well to ensure success for the manager or an organization".

According to Boynlon and Zmud (1984), critical success factors approach reduces numerous factors to a smaller number, which in turn makes a complex system manageable. Khandelwal and Ferguson, (1999) argued that CSF identification allows the executives and managers to have a continuous focus on those identified and most important areas until they are successfully addressed.

Bullen and Rockart (1981), identified five major sources of critical success factors: as the industry, competitive strategy and industry position, environmental factors' temporal factors; and managerial position" further, they identified three dimensions of critical success factors: as internal versus external, monitoring versus building or adapting and all the five sources" CSF identification helps management to take steps to improve the potential for success because they provide management with a rating tool on which improvement efforts can be focused (Kiweu, 2010). It can therefore be argued that critical factor approach enables the management of an organization to channel their energies and resources in pursuit of a set of identified factor(s) for the desired maximum management outcome.

II. ACCESS TO FUNDS FACTORS IDENTIFIED FROM LITERATURE

Allen and Gale, (2004), observed existence of relationship networks within the interbank market and argued that banks had established alliances from where they can either borrow or lend liquidity to one another. Arguably, under this set up, relationship network is an important consideration for access to liquidity (Ongena, & Smith, 2000).Banks within each network always come to the rescue of their network colleague in case any of liquidity distress due to their reciprocal nature. (Cocco et al., 2009; Craig &Peter, 2010;Affinito ,2012; Afonso et al., 2014; Temizsoy 2015; Bräuning & Fecht, 2016)

Allen et al., (1990) observed that the ability of banks to access funds in the interbank was principally determined by bank reputation, which depended on such factors as bank size and ownership. Allen et al., (2014) further expanded their factor considerations for access and argued that a small bank wishing to borrow in the interbank market faced the problem of conveying to potential lenders that it had a good credit risk record. Furfine (2001) however observed that banks with higher profitability, fewer problem loans and high capital ratios paid a lower interest rate when accessed funds from the interbank market while Vodora (2015) argued that the decision to allow access to liquidity by one bank to another depended on business cycle and noting that banks were willing to lend more during times of economic expansion than during recession.

Cocco et al., (2009) observed that the nature of bank ownership especially whether a bank has foreign or indigenous roots as well as the percentage of government stake influenced its level of access to liquidity. Whereas Multinational banks are viewed as being more stable since by their very nature, they are seen as being too big to fail (Kim, 2014) On the other hand, banks where the government has stake are seen as being more stable and are preferred in allowing access to funds (Ongena, & Smith, 2000) because the government is seen as liquidity guarantor in the event of an encounters with any liquidity problem. Further, banks owned by individuals or those associated with same particular communities are seen as being too risky and consequently have difficulty accessing funds from the interbank market (Cocco et al., 2008, Sichei et al., 2012).

Ho and Sanders, (1985) observed the size of the bank as an important consideration for access to liquidity from the interbank market. Having observed that banks were classified as either small, medium or large depending on either their level of their capitalization, profitability, total assets, number of customers or branch network (Ongena, & Smith, 2000;Craig and Peter, 2010). Sichei et al. (2012) noted that small banks were seen to be more at risk of failure.

Xie et al., (2016) found that the bank's asset position and the size of the capital influenced its access to liquidity in the Chinese interbank market while Murinde et al., (2012) found the level of credit risk as an important consideration for access to liquidity in the Kenyan interbank market. Tiriongo &

Kanyumbu (2016) observed influence of monetary policy signals through interest rate and credit channels as an important determination for access to funds while Green et al., (2016) observed that access to liquidity was influenced by the prevailing central bank rate, cost of operating in the interbank market, central banks operating tools such as structure and size of repo auction and reserve requirement as well as aggregate and distributional liquidity shocks

Sichei et al., (2012) on the other hand observed that access to funds in the interbank market depended on the individual banks credit profile. Notably banks maintained continuous credit profiling of each other in order to establish the level of credit risk of their trading partners. Further, it was noted that each bank has a challenge of retaining a good credit record and has to consistently convince lenders in the interbank market that it is credit worthy and that it can repay their loans without default (Broecker, 1990; Allen & Gale, 2004). Green et al., (2012) however, identified the level and quality of non-performing loans as an important consideration for access to funds in the interbank and noted that smaller banks and banks with more non-performing loans tended to have limited access to liquidity from the money markets. Green et al., (2012) seemed to confirm an earlier argument by Cocco et al., (2009) that banks relied on relationships and that even the terms of access including the rate of interest, the volumes and tenure of the credit line varied depending on the size of the bank and its ownership.

Angelini et al. (2011) observed that bank' characteristics such as credit ratings, capital ratios, or profitability influenced formation of counterparty relationships. However, Boot (2000) observed proximity between a lender and its borrower bank as an important consideration arguing that the nearness to the borrower bank mitigated on asymmetric information problems about the borrower's creditworthiness because of the closeness while Choon et al. (2013) found that factors size of bank, capital adequacy, profitability, credit worthiness as well as macroeconomic factors influenced banks access to liquidity in the Malaysian interbank market.

Hovarth et al. (2012) identified non-performing loans, profitability, level of business activity as well as bank size, capital adequacy, financial crisis as influencing availability of funds in the interbank market. Other researchers like Rauch et al. (2010), Were, (2013), found that the size of bank, profitability, and the interest rate of monetary policy (central bank rate-CBR).

Gabbi et al. (2012) observed that access to liquidity was influenced by micro-structure features of a bid-ask spread effect, noting that access to liquidity and more so to better rates were obtained, both by lenders and borrowers, when they acted as quoters (initiators of the transaction) rather than as aggressors. Beck & Fuchs, (2004), as well as Vodora (2015) noted that the decision to lend in the interbank market depended on demand and supply of liquidity and on the risk free interest rate.

	Identified Considerations for Access factor	Researcher
X_1	Creditworthiness (continuous credit profiling).	Sichei et al., (2012) Cocco et al., (2009) Broecker (1990). Allen and Gale (2000).
X_2	Banking Relationships	Duffie et al. (2005) Cocco et al., (2009) Sichei et al., (2012) Hatzopoulos et al., (2015) (Furfine, 2001; Cocco et al., (2009; Affinito (2012); Liedorp et al., (2010; Bräuning and Fecht, (2012).Cobral et al.,(2002).Allen and Gale(2000).Affinito(2010)
X_3	Bank reserves(statutory requirements)	Sichei et al., (2012) Cocco et al., (2009) Angelini et al., (2011)
X_4	Non-performing loans(quality of NPLs)	Green et al., (2012) Allen et al., (1992) Hovarth et al. (2012)
X_5	Size of the bank(small, medium or large)	Cocco et al., (2009) Choon et al. (2013) Hovarth et al. (2012) Rauch et al. (2010) Mohamed et al.,(2015)
X_6	Ownership-(local or foreign)	Cocco et al., (2009), (Green et al., (2012). Allen et al., (1992)
X_7	Reputation(how do other banks view its corporate image, governance)	Allen et al., (1990) (Green et al., (2012). Sichei et al., (2012)
X_8	Good credit risk record	Allen et al., (1992)
X_9	Fewer problem loans (listing/numbers)	Furfine (2001)
X_{10}	Capitalization(assets)	Furfine (2001) Choon et al. (2013), Hovarth et al. (2012)
X_{11}	Collateral(T-bill, bonds)	Cocco et al., (2009) Sichei et al., (2012)
X_{12}	Proximity to a financial services provider	Boot (2000), Goyal et al., (2011),Beck(2015)
X_{13}	Credit ratings (Global credit rating (GCR), Moody or Fitch).	Angelini et al., (2011) Choon et al. (2013)
X_{14}	Capital ratios (ROA, ROE, Earnings per share etc.).	Angelini et al., (2011) Choon et al. (2013)
X_{15}	Profitability (published financial reports).	Angelini et al., (2011) Choon et al. (2013) Hovarth et al. (2012) Rauch et al. (2010) Mohamed et al.,(2015),Valla and EaerEscorbia(2006). Aburime, (2008).
X_{16}	Macroeconomic factors (levels of inflation, GDP growth).	Choon et al. (2013) Hovarth et al. (2012) Mohamed et al., (2015) Vodora (2011), Were (2013).

X_{17}	Financial crisis (shocks like interest capping, collapse of banks-liquidity hoarding	Hovarth et al. (2012)
X_{18}	The interest rate of monetary policy (central bank action)	Rauch et al. (2010),Mohamed et al.,(2015)
X_{19}	Micro-structure features of a bid-ask spread effect, (access to better rates were obtained, both by lenders and borrowers, when they acted as quoters rather than as aggressors)	Gabbi et al. (2012), Beck and Fuchs, 2004).
X_{20}	Level of liquidity in the market-as determined by ALM committee.	Sichei et al., (2012) Cocco et al., (2009) Angelini et al., (2011)
X_{21}	Business cycle(time of expansion or recession)	Vodora, P. (2015)
X_{22}	Price of liquidity (interest rate).	Vodora P.(2015)

Table 1: Table representation of the Summary of Access to Funds Factors Identified from Reviewed Literature

III. FACTOR EXTRACTION MODEL

According to Brooks, (2008), Factor models are employed primarily as dimensionality reduction techniques in situations where there are a large number of closely related variables and where one wishes to allow for the most important influences from all of these variables at the same time. In this regard, they decompose the structure of a set of series into factors that are common to all the series and a proportion that is specific to each series. The decomposition is done using either Principal component analysis (PCA) which is employed where explanatory variables are closely related or are near multicollinearity (Brooks, 2008) and is used to transforms them into unrelated variables or Principal Component Matrix(PCM) otherwise referred to as Factor Loading.

A. PRINCIPAL COMPONENT ANALYSIS (PCA)

If there are k explanatory of x_1, x_2, x_3.....x_k in the regression model, PCA will transform them into k, unrelated variables with principal components denoted as $p_1, p_2, p_3, ...p_k$ which are independent linear components of the original data. In this case, there will be 22 principle components denoted as $p_1, p_2, p_3,........p_{22}$.

$P_1 = \alpha_{11}x_1 + \alpha_{12}x_2 + ... \alpha_{1k}x_k,$
$P_2 = \alpha_{21}x_1 + \alpha_{22}x_2 + ... \alpha_{2k}x_k,$
....,
$P_k = \alpha_{k1}x_1 + \alpha_{k2}x_2 + ... \alpha_{kk}x_k.$

Where, α_{ij} are the coefficients to be calculated (otherwise referred to as factor loadings), representing the coefficient of the jth explanatory in the ith principal component. This study has twenty two observations and therefore, there will be twenty two principal components i.e. one for each explanatory component such that;

$\alpha^2_{11} + \alpha^2_{12} + ... \alpha^2_{1k} = 1,$
...............................,
$\alpha^2_{;k1} + \alpha^2_{k2} + ... \alpha^2_{kk} = 1.$

Expressed in sigma notation as,

$$\sum_{j=1}^{k} \alpha 2ij = 1 \qquad \forall \qquad i = 1...., k$$

The principle components are derived in a way that they are in descending order of importance, if there is some collinearity between the original explanatory variables, it is likely that some of the principal components will account for little variation and therefore can be discarded.

B. PRINCIPAL COMPONENT MATRIX - FACTOR LOADING

The principle components also called eigenvalues is used to factor the original variables where (X'X) is the matrix observation of the original variables and thus the number of eigenvalues will be equal to the variables, in our case twenty two. The varimax matrix (which represents variable relatedness) where eigenvalues are assigned to determine the importance and or the suitability of the data for factor extraction. The aim of statistical factor loading is usually to; identify a smaller number of factors which are critically linked to access to funds in the interbank market, group similar items together (Kiweu, 2010; Sureshchandar et al., 2002; Lekkos, 2001) and to reduce factors to only those that are important for further investigation in subsequent tests and validation using other methods (Kiweu, 2010).

In this study, the ordered eigenvalues will be denoted $as\ \lambda i\ (1, ...X22)$,

Where the ratio,

$\phi_i = \sum_{i=1}^{/k} \frac{\lambda i}{/k} \lambda i$, gives the total variations in the original data explained by the principal component i. the estimated regression will be principal component that will have been formed through factor loading and would be one of y on the *22* principal components(X_{22}).

$Y_{x22} = Y_0 + Y_{1}p_{1X22} = ... Y_r p_{rX22} = u_{x22.}$

Conceptual Framework
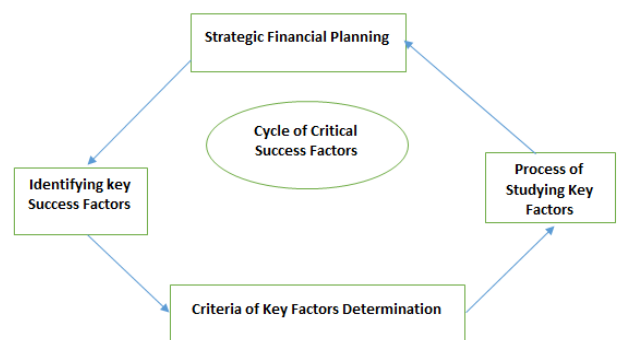
Source: Pakseresht, (2012)

Table 2

IV. RECOMMEDATION

CSF identification helps management to take steps to improve the potential for success every time a bank encounters shortage of funds and ventures into the interbank market to borrow. It is therefore important that banks identify the CSF s for access to funds within their respective interbank markets for them to position their bank strategically for success every time they want to access liquidity from the interbank market.

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