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## **Fair Value Accounting Practices and Financial Performance of Commercial Banking Industry**

S G Sisira Dharmasri Jayasekara<sup>1</sup>, K L Wasantha Perera<sup>2</sup>  
and A Roshan Ajward<sup>3</sup>

*This conceptual paper discusses the impact of fair value accounting practices on financial performance of commercial banks in relation to the established banking theories i.e. Credit creation, fractional reserve and financial intermediation theory. These theories are discussed in view of historical cost accounting principles and fair valued accounting principles considering the financial performance during different stages of economic conditions. The analysis shows that fair value accounting practices in banks create reserves in economic booms improving financial performance and deteriorate created reserves in economic downturns causing financial crises. Enhanced financial performance in terms of unrealized gains improves the overall efficiency of banks in view of production approach of the financial intermediation theory. Therefore, it can be interpreted that external factors such as accounting, infrastructure, and technology can influence efficiency of the financial intermediation process. This is the first study to discuss the implications of fair value accounting on banking theory in view of performance of financial institutions and stability of financial system.*

**Keywords:** Fair Value, Historical Cost, Financial performance, Credit Creation, Fractional Reserve, and Financial Intermediation

**JEL Codes:** E32,G21, M41

### **1. Introduction**

Financial statements provide information about the performance of reporting entities for a given period of time. The conventions or the principles behind the disclosed financial information are useful in understanding and interpreting the reported performance. These conventions are broadly in two types i.e., historical cost and current value accounting. Historical cost convention recognizes the value of an asset on the balance sheet at its nominal or original cost when it was acquired by an entity. However, exceptionally inventories are recognized at the lower of cost or market value. Revenues and expenses are recognized when they are turned into accounts receivable/payable or cash under the realization principle. On the other hand, current value accounting, which is often referred as fair value, recognizes the value at which an asset or liability could be exchanged between knowledgeable willing parties in an arm's length transaction. Current value accounting is a generic term, which often represents fair values. However, there are some other instances where fair values

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cannot be arrived due to non-availability of a market to ascertain values .In such instances, the values of assets and liabilities are ascertained using replacement cost for assets which are worth replacing and deprival value for assets which are not worth replacing. For the purpose of this study, it is assumed that current value and fair value of assets and liabilities are synonyms despite the slight differences discussed above.

At present, there is a global trend towards adopting International Financial Reporting Standards (IFRS), which are based on fair values. Global accounting bodies such as IFRS Foundation and the Financial Accounting Standards Board are working towards developing a single set of high-quality global accounting standards. The intranational organisations such as International Monetary Fund, World Bank, Fiancial Stability Board have extended their support for the objective of achieving a single set of high-quality global accounting standards (World Bank, 2017; FSB, 2015 ;G 20 ,2012). IFRS Foundation (2017) has profiled 150 jurisdictions in terms of IFRS adoption and found that 126 jurisdictions which is 84 per cent of the total profiles require IFRS for all or most domestic publicly accountable entities in their capital markets. Lourenço & Branco(2015) having analysed a set of 67 articles published by the accounting journals that make up the Social Sciences Citation Index (SSCI), published between 2000 and 2013, concluded that, as a general rule, IFRS adoption has a positive effect on information quality, the capital market, analysts' ability to predict, comparability, and information use which leads, in our view, to enhance the performance of banks.

### **1.1 Problem Statement**

Studies on the performance of commercial banks have long been a topic of discussion in many countries over the last few decades. These discussions have provided rich insights into the financial performance, efficiency of banks, and different determinant factors of financial performance and efficiency of banks. Most of such studies have been carried out based on the data, which were prepared in terms of historical cost principles(e.g. Sherman & Gold, 1985; Ferrier & Lovell, 1990; Fried, Lovell, & Eeckaut, 1993; Berger & Humphrey, 1997; Bhattacharya, Lovell, & Sahay, 1997; Sathye ,2001;Jayasekara, 2014 and , 2015). Adoption of IFRS, which are based on fair values, is an emerging area that is needed to be studied in a broader view of financial performance of banks. In this context, fair value is recognized as the current market value of an asset or a liability at which an asset can be sold or a liability can be settled in an orderly transaction to a third party under the prevailing market conditions. Main studies on fair value accounting focus on accounting quality (Ball & Shivakumar, 2005; Leuz, 2006;Burgstahler, et al., 2006;Gebhardt & Farkas,2011;Pinto & Picoto, 2018),earnings management (Beatty, et al., 2002; Fonseca & González, 2008), loan loss provisionning and regulatory capital (Gebhardt & Farkas, 2011), and internal control regulations on the accounting behavior of banks (Altamuro & Beatty, 2010; Pinto & Picoto, 2018). These studies have discussed the implications on fair value accounting only on a specific componant of the reporting behaviour of banks rather considering overall impact on the performamnce of banks. Macro level analysis on the impact of fair value accounting on the financial performance of commercial banks will help to understand and redefine the established banking thoeries in current complex reporting environment. Some are based on credit cration where credit creation theory holds that each bank can individually create money out of nothing through

accounting operations and the fractional reserve theory which holds that only the banking system as a whole can collectively create money while each individual bank is a mere financial intermediary. On the other hand, financial intermediation theory holds that a bank individually or collectively cannot create money. In this conceptual paper, it is expected to review the impact of fair value accounting practices on financial performance of commercial banks in view of the three theories. Jayasekara (2015) indicates that fair value accounting may have some impact on efficiency of financial institutions. Thus, the problem that is addressed in this study will be “Do fair value accounting practices impact financial performance of commercial banking industry?”.

In this background, studying the impact of fair value accounting on financial performance of banks is useful in making policy decisions in order to maintain financial system stability through sound banks. Previous studies on this area were in different perspectives rather comparing the ROA and ROE in different accounting regimes.

The fair value concept in the banking sector emerged as a result of introducing accounting standards for financial instruments (IAS 39, IFRS 9 and IFRS 7). The financial performance of banks is externally measured using publicly disclosed financial results, the reliability of which depends on the accounting conventions used in preparing financial statements. Schinasi (2005) states that accounting is an important component in the infrastructure of a financial system and may affect the stability of that financial system. Financial performance of a bank is usually measured using accounting ratios such as return on assets (ROA), return on equity (ROE) and net interest margin (Flamini, et al., 2009; Naceur & Omran, 2010; Robin, et al., 2018). Volatility of these ratios over the period of time is common due to various reasons such as competition, changes in policies and regulations, changes in business environment, and changes in management etc. (See figure 1). Therefore, studying the impact of fair value accounting practices on financial performance of banks in different phases of the business cycle or economic conditions is essential for the policy makers to understand the soundness of individual banks as well as the stability of the financial system. If fair value accounting practices improve the financial performance over the historical cost principles, the additional performance which were generated using unrealized gains can be used to expand credit portfolios of banks since the credit expansion depends on the level of capital of each bank. In this background, a study on impact of fair value accounting on the financial performance of commercial banks is timely for maintaining financial system stability. The remainder of this paper is structured as follows. Section 2 provides a critical literature review on financial performance of banks in terms of return on assets and return on equity linking them with the established three main banking theories. Section 3 discusses the proposed conceptual analysis of financial performance of banks in relation to banking theories, and section 4 concludes.

## **2. Literature Review**

Historical cost was an important component of banking theories which were developed over different time periods. However, evolution of fair value accounting has not been discussed in view of different banking theories. In banking literature, three distinct banking-related theories can be identified, namely credit creation

theory, fractional reserve theory, and financial intermediation theory. The oldest, credit creation theory, maintains that each bank can individually create money out of nothing through accounting operations, for example when extending a loan. The fractional reserve theory states that only the banking system as a whole can collectively create money while each individual bank is a mere financial intermediary, gathering deposits and lending those out. The financial intermediation theory considers banks as financial intermediaries both individually and collectively, rendering them indistinguishable from other non-bank financial institutions in their behaviour, especially concerning the deposit and lending businesses, being unable to create money individually or collectively.

On the other hand, the performance of banks is assessed in different perspectives such as financial performance and efficiency of banks. Accounting ratios are used in assessing financial performance and different other techniques are used to measure efficiency of banks. The efficiency can be used to evaluate and compare the performance of a bank in relation to the performance of another bank, particularly with compared to a best practice. Efficiency measures provide a numerical efficiency value, which facilitates ranking banks against each other, and a bank is considered efficient when it uses a right proportion of appropriate amount of inputs in the intermediation process. Jayasekara (2015) states that at least four different approaches have been evolved to analyse the efficiency of financial institutions. These approaches differ in the assumptions placed on the probability distributions of the X-efficiency (deviations from the efficient frontier) differences and unrelated random errors. These methods are: (i) the econometric frontier approach; (ii) the thick frontier approach; (iii) the distribution-free approach; and (iv) the data envelopment analysis.

This paper considers the impact of fair value accounting on the financial performance of banks considering only the ROA and ROE. For the purpose of this study, ROA is the total net profit before tax earned by a bank as a percentage of its total assets (net profit before tax divided by total assets) and ROE is the total net profit after tax earned by a bank as a percentage of its shareholder's equity (net profit after tax divided by total equity). Casu et al, (2006) state that banks have been attacked by the globalization, competition from non-banking financial institutions and volatile market dynamic pressures. In such a context, banks may change financial performance through different accounting conventions for their survival in a very competitive environment. Profitability measures such as ROA and ROE are common in measuring financial performance of banks. Gilbert & David (2007) states that these measures have been used by analysts and bank regulators in assessing industry performance, forecasting market structure trends and in some other purposes where a profitability measure is required. Managers of banks can use different accounting practices to improve financial performance to achieve different objectives (Casu, et al., 2006; Gilbert & David, 2007; Naceur & Omran, 2010; Robin, et al., 2018). Therefore, managers can use complex fair value models to improve ROA and ROE of which their performance is also measured. Some other studies have focussed on the determinants of bank performance considering the internal and external factors (Bourke, 1989; Molyneux & Thornton, 1992; Athanasoglou, et al., 2008; Dietrich & Wanzenried, 2011; Salim, et al., 2016).

Greiner (2015), having studied whether earnings and regulatory capital management incentives differ between fair value option (FVO) banks and non-FVO banks, using a

balanced panel sample covering pre-and post-FVO implementation periods, found evidence that banks with net positive FVO earnings have fewer earnings and regulatory capital management incentives than do non-FVO banks. Eventhough, the results suggest the ability of fair values in earnings management, this has some limitations in comparing two groups because there are significant differences between the two groups such as business segments, international exposures, size and regulatory framework and scope of business.

On the other hand, some other previous studies on fair value accounting suggest that with an alternative accounting treatment, one might therefore expect bank managers to alter their behavior in a fair value accounting environment (Fiechter , 2011;Kaaya, 2015;Schipper, 1989).Further, Greiner (2015) provides evidence that banks achieve opportunistic transition adjustments during the implementation Period of fair values. He further provides additional evidence that, post FVO implementation, adopters have fewer incentives for earnings and regulatory capital management but only among banks with net positive FVO earnings. Wu, et al., (2016) having studied the presence of adverse selection among firms adopting the fair value option for liabilities (FVOL) embedded in Statement of Financial Accounting Standards (SFAS) 159 during the financial crisis, state that the FVOL is a controversial accounting choice because it allows firms to increase earnings when credit quality deteriorates. They found that that firms with higher credit risk, lower profitability, and negative abnormal stock returns are more likely to adopt the FVOL, and that these firms exhibit negative abnormal stock returns after adoption. This shows that the state of economy is a significant factor in manipulating financial performance of banks under the fair value option.

### **3. Conceptual Analysis**

The three main theories of banking discussed earlier have been dominant in different eras and still there are supporters for each of these theories. Werner (2014) states that empirical tests on these theories were very limited despite the pivotal significance for research and policies. He studied the actual operations and accounting entries taking place when a new bank loan is granted and paid out. This study was based on transactions which were performed by the financial institutions. On the other hand, fair value accounting is not based on the transactions which results in creating assets or liabilities. This aspect has not been considered by previous studies in terms of the three theories discussed earlier linking with the financial performance of banks. Therefore, moving to fair value based financial reporting from historical cost principles may affect not only the performance of individual financial institutions, but also the performance of the financial system as a whole. Generally, issues of financial system stability arise as a result of the risks faced by the main components of the financial system.

Houben, Kakes, & Schinasi (2004) identify sources of risks to financial system stability in view of the main components of the system as well as macroeconomic disturbances. They have identified accounting, supervision and regulation under the infrastructure of the financial system. Therefore, changes in accounting practices may affect the performance of financial institutions as well as financial system stability.

Financial performance is measured using different accounting ratios (Casu , et al., 2006; Gilbert & David , 2007; Naceur & Omran, 2010; Robin, et al., 2018) while the efficiency is measured using input and output variables (Sherman & Gold, 1985; Ferrier & Lovell, 1990; Fried, Lovell, & Eeckaut, 1993; Berger & Humphrey, 1997; Bhattacharya, Lovell, & Sahay, 1997; Sathye ,2001; Jayasekara, 2014 and , 2015).

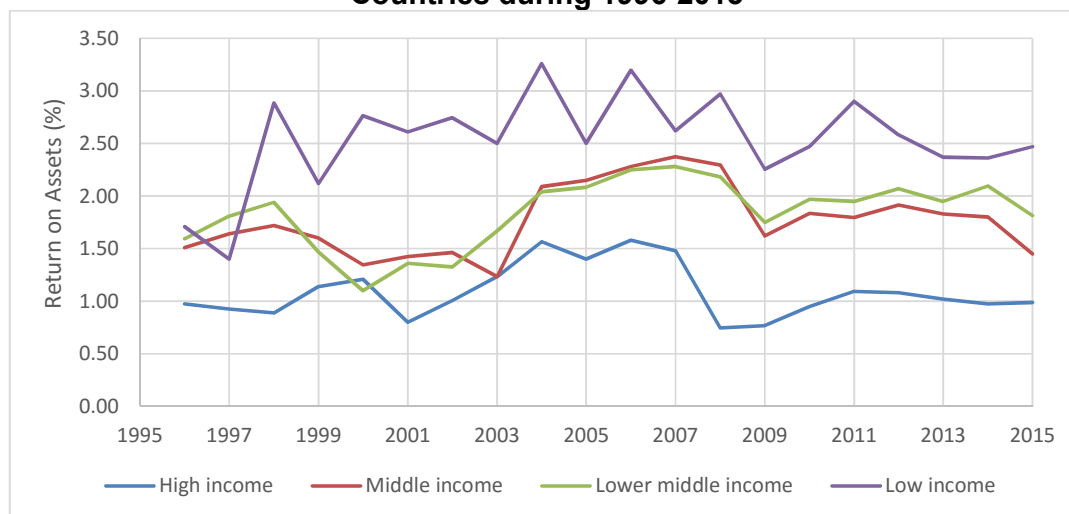
The banking theories discussed so far have ignored the implications of fair value accounting. Fair value adjustments fluctuate the value of assets and liabilities based on the position of business and financial cycles. Financial cycles denote self-reinforcing interactions between perceptions of value and risk, attitudes towards risk and financing constraints, which translate into booms followed by busts (Borio, 2014). Some studies argue that the interactions could amplify economic fluctuations and possibly lead to serious financial distress and economic dislocations (Borio, Furfine, & Lowe, 2001; Danielsson , Shin, & Zigrand, 2004; Kashyap & Stein, 2004; Brunnermeier, 2009; Adrian & Shin, 2010; Borio, 2014). Therefore, focus on additional capital formation by way of unrealized gains using fair value accounting in different stages of financial and business cycles needs to be studied in view of financial performance of banks as well as the financial system stability. Drehmann, Borio, & Tsatsaronis, (2012) arguably state that the most parsimonious description of the financial cycle is in terms of credit and property prices. Borio, (2014) states that credit and property prices tend to co-vary rather closely with each other, especially at low frequencies, confirming the importance of credit in the financing of construction and the purchase of property. Therefore, banks build more reserves under a regime of fair value accounting when an economy performs well in the short run giving them more opportunities to expand loan portfolios as a result of increased capital. In downturns, banks will face severe liquidity issues as a result of erosion of built reserves and fall in value of assets.

On the other hand, banking regulation principles have evolved from Basel I to Basel III strengthening the capital structure of financial institutions in order to absorb losses in financial crises. Initially, Basel I required banks which were undercapitalized to improve their capital ratios in order to strengthen the stability through their balance sheets. A common criticism of Basel I was that it lacked broader elements to assess the risk potential of a bank in addition to the credit risk and capital ratios. Therefore, Basel II concentrated on a much broader view of risks in the financial industry. Basel II broadened the scope of bank regulation covering risk assessment and management by adding a three-pillar approach to the Basel I framework. The Basel II framework was heavily criticized subsequent to the financial crisis of 2008 due to its failure to prevent the crisis. Some argued that the average levels of capital requirements enforced were inadequate, and that the assessment of credit risks was improperly delegated to inappropriate (non-banking) institutions. Furthermore, Basel II was criticized for making assumptions that the internal models used by banks to measure risk exposure were superior to those which external (supervisory) agencies could have implemented. The framework was also seen as providing an incentive to banking intermediaries to hide risky exposures from the banks' balance sheets. Accordingly, the Basel Committee decided to foster transparency and accountability within the international banking community in order to avoid similar crises. In this context, banks have been mandated to maintain healthier amounts of capital in the form of equity capital in contrast to the Tier I core capital requirement under the Basel II. Accordingly, banks have to exclude the use of preferred equity and other hybrid capital instruments from the calculation of Tier 1 capital reserves under the

Basel III. One of the core areas allowed under the Basel III framework is allowing practices of current value accounting in terms of fair value assessment. The core of the Basel recommendations is focused on the maintenance of capital. However, there are limitations of using capital to assess the performance of banks because banks make different decisions in respect of capital which results in increase or decrease i.e., payment of dividends, infusing new capital and implementing share buyback options. Therefore, using financial performance of banks is more appropriate to study whether fair value accounting practices create reserves by way of unrealised gains in economic booms and deteriorate created reserves as a result of losses during economic downturns.

Figure 1 shows the average ROA before tax of four categories of economies in terms of the World Bank classification of economies, from 1996 to 2015. All the categories show a similar trend of ROA over the time period. However, Low income countries show significantly higher average ROA as well as high volatility for the period as a result of exposed high risk of such countries. Further, the higher average ROA of that category may be due to the technical deficiencies of the adopted models and manipulation of fair value practices. This context warrants studying the impact of fair value accounting practices on financial performance of banks in different stages of business and financial cycles.

**Figure 1: Movement of Return on Assets of Banks of Different Group of Countries during 1996-2015**



Source: World Bank -The Global Financial Development Database

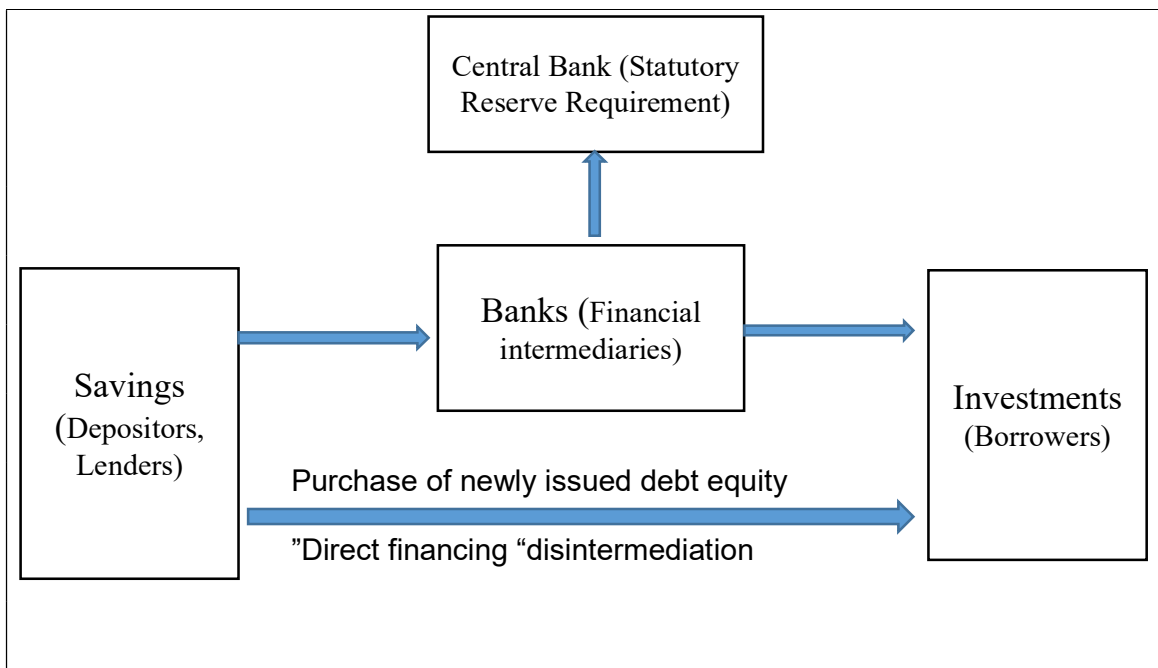
In this background, the credit creation theory cannot be extended based on the development of fair value accounting practices since the theory assumes that it is not required to gather deposits or create reserves prior to lending. Under a fair value regime, banks generate higher returns through fair value adjustments when the economy performs well and low or negative returns during economic downturns. However, Werner (2016) recognizes deposit creation as the act of recording a deposit transaction as an accounting entry. He argues that if the adjustment of an account is termed the creation of such an accounting record, by this definition banks are of course creating entries whenever a transaction is made. Accordingly, under the fair value accounting, banks can create more reserves/capital as a result of unrealized gains which are generated during economic booms. However, these



reserves are not based on transactions as proposed by Werner (2016). In contrast, under the fractional reserve theory, the banking system in aggregate creates money (Samuelson, 1948). Samuelson & Nordhaus (1995) have explained the fractional reserve theory more clearly and unambiguously stating that the central bank-created reserves are said to be used by banks as an input and then transformed into a much larger amount of bank money.

In contrast, financial intermediation theory views banks as mere financial intermediaries who can not create money individually or collectively. At present, financial intermediation theory is dominant, and it holds that banks are merely financial intermediaries, not different from other non-bank financial institutions. The banks gather deposits and lend these out as shown in Figure 2.

**Figure 2: Financial Intermediation Theory**

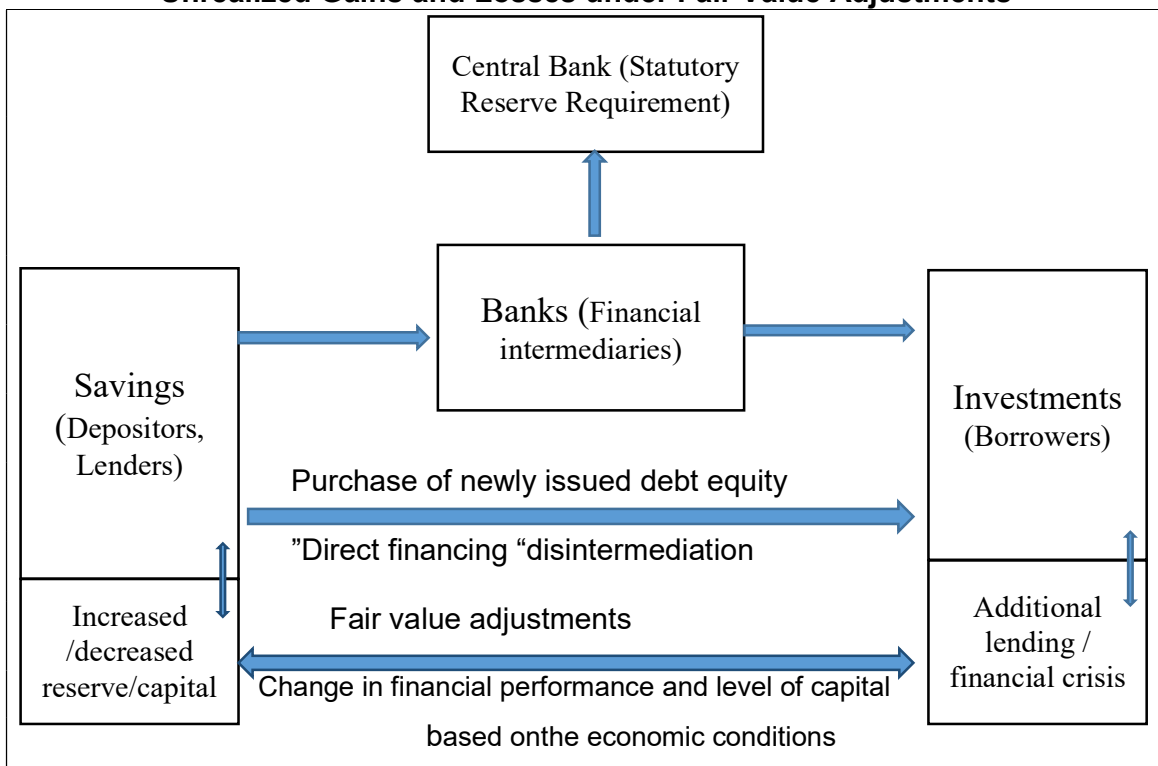


Source: (Werner, 2016)

A common feature of the financial intermediation process is that banks create liquidity by borrowing short and lending long (Dewatripont, et al., 2010), which means that banks borrow from depositors with short term maturities and lend to borrowers at longer term maturities. The financial intermediation theory has been discussed and supported by well-known economists. Some examples are: (Keynes, 1936; Gurley & Shaw, 1955; Tobin, 1963; Tobin, 1969; Diamond & Dybvig, 1983; Gorton & Pennacchi, 1990; Diamond, 1996; Diamond, 1991, 1997; Diamond & Rajan, 2001; Eatwell, Milgate, & Newman, 1989; Fulghieri & Rovelli, 1998; Bencivenga & Smith, 1991; Bernanke & Gertler, 1995; Myers & Rajan, 1998; Kashyap, Rajan, & Stein, 2002; Allen & Gale, 2004; Allen & Santomero, 2001; Matthews & Thompson, 2005; Casu, Girardone, & Molyneux, 2006; Dewatripont, Rochet, & Tirole, 2010; Gertler & Kiyotaki, 2010; Werner, 2014; Werner, 2016; Stein, 2014) and others.

However, Sealey & Lindley (1977) view financial intermediation theory in a different way as a production theory for deposit taking institutions. According to them, the transformation process for a financial firm involves the borrowing of funds from surplus spending units and lending those funds to deficit spending units. The production process of the financial firm, from the firm's viewpoint, is a multistage production process involving intermediate outputs, where loanable funds, borrowed from depositors and serviced by the firm with the use of capital, labor and material inputs, are used in the production of earning assets. This approach has been used by many studies to evaluate the efficiency of financial institutions in terms of input and output variables in the production process (Sherman & Gold, 1985; Ferrier & Lovell, 1990; Fried, Lovell, & Eeckaut, 1993; Berger & Humphrey, 1997; Bhattacharya, Lovell, & Sahay, 1997; Sathye, 2001; Jayasekara, 2014 and , 2015). In this theoretical context, increased capital/reserve by way of unrealised fair value adjustment will improve the financial performance of banks as a result of changing accounting practices. Schinasi, (2005) shows that accounting practices influence the financial system stability. Accordingly, transformation process of financial intermediation can generate additional capital as a result of increased financial performance in economic booms under the fair value accounting while providing opportunities to lend more as per the capital adequacy requirements of the banks. However, this expansion will be contracted at a time of economic downturns and create financial crises as a result of fall in value of assets. The revised transformation process under a fair value regime can be shown as follows.

**Figure 3: Revised Financial Intermediation Process after Recognizing Unrealized Gains and Losses under Fair Value Adjustments**

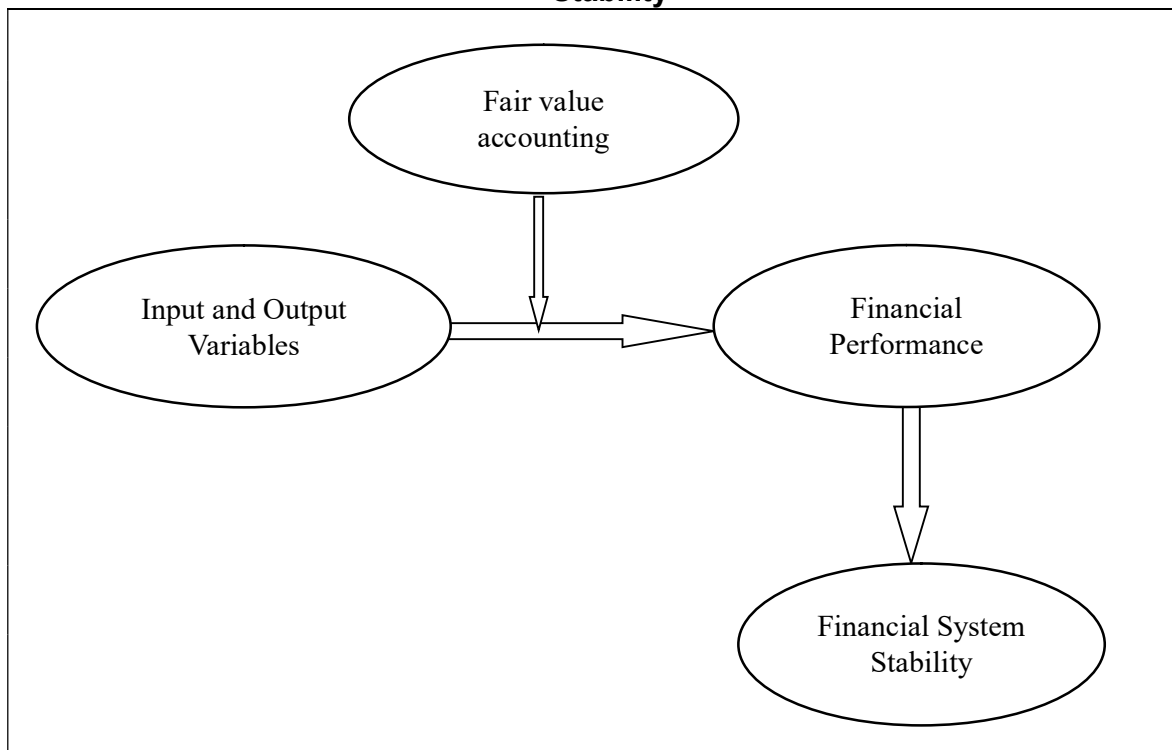


Source: Compiled by the authors

As per the figure 3, fair value accounting results in earning more profits during economic booms by way of unrealised gains ultimately increasing the position of capital of a bank. Accordingly, the improved capital position facilitates banks to lend more within capital adequacy requirements. This transformation process can be interpreted as the improvement of financial performance through intermediation by way of external influence which are outside from the deficit and surplus sectors under the theory. This can be viewed as the improvement of intermediation process of the financial intermediation theory by way of creative accounting practices. This position is more riskier in economic downturns which may lead for financial crises where a bank has eroded the built unrealised gains as a result of fall in value of assets.

Accordingly, the impact of fair value accounting practices on the financial performance of banks and financial system stability is conceptualised as follows.

**Figure 4: Framework of Accounting Impact on Maintaining Financial System Stability**



Source: Compiled by the authors

There were no published work on this area of research observed in reputed journals which indicate the necessity of studies on impact of fair value accounting on financial performance of banks, banking theory, and financial system stability.

#### 4. Conclusion

At present, there is a global tendency of adopting fair value-based accounting practices in banking industry deviating from the traditional historical cost accounting practices which are based on transactions. Financial performance of banks has been highly volatile during last few decades. During this period, accounting regime of

historical cost has begun to shift to fair values. Theories of banking also have evolved from credit creation theory to the financial intermediation theory, which is mostly dominant today. However, still there are supporters of credit creation theory as well as of the fractional reserve theory. The foundation of the three major theories of banking is mostly based on the financial data which are prepared on historical cost accounting principles. However, recent development in fair value accounting in the banking sector has created some concerns over the banking theories in view of financial performance of banks as well as the financial system stability.

Financial performance is assessed using accounting ratios such as ROA and ROE. ROA as well as ROE of banks will be healthier and increase as a result of recognized unrealized gains. This position will be reversed during economic downturns. Credit expansion during the economic booms due to the increased capital through unrealized gains may create crises at economic downturns. Quality of credit of bank lending will erode during economic booms due to the high pressure to expand credit portfolios as a result of increased capital.

Accordingly, banks generate higher returns during economic booms as a result of unrealized gains recognized by way of fair value adjustments. However, the position will be reversed during economic downturns as a result of fall in value of assets. This increased reserves cannot be linked with credit creation theory since it is not a prerequisite under the theory. However, under the production approach of financial intermediation theory as suggested by Sealey & Lindley (1977), created reserves by way of fair value adjustments can improve overall efficiency of banks during economic booms in terms of financial performance and crises during economic downturns. Accordingly, we can suggest that external factors can influence the intermediation process among intermediary, surplus and deficit sectors. The value creation through fair value adjustments through financial intermediation process is evident that bank managers can manipulate performance through new policies, procedures and regulations. Accordingly, it is warranted to conduct an empirical study to measure the impact of fair values on the performance of commercial banks as well as on the financial system stability in terms of financial intermediation theory.

## 5. Limitations of the Research

Although this conceptual paper was carefully prepared, we are still aware of its limitations and shortcomings. The conceptualization was focused on two indicators of financial performance i.e. return on assets and return on equity to represent financial performance of banks. This conceptual analysis has also not been tested empirically to understand and interpret the impact of fair value accounting practices on the financial performance of commercial banks and financial system stability. We tried to limit performance implications to the three main banking theories.

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