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Procyclicality in Financial System: A Conceptual Study

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Abstract: *This paper examines the procyclical behavior of the financial institutions in the financial systems. The paper has highlighted the importance of banks and other financial institutions in the economy. The concept and various definitions of procyclicality have been discussed. The paper also discussed the mechanism of procyclicality –feedback effect which states that when economy is in recessionary phase, banks in response to this economic recession reduce the flow of credit to the economy. This leads to feedback effect in which decrease in credit towards economy negatively affect economic output and impacts back on the bank in the form of growth non-performing loans.*

Keywords: *Procyclicality behavior, Recession, Financial institutions*

Introduction

Banks are not only the supplier of credit but also the harbinger of social and economic development. Banks are playing significant role in the growth of economy. It is important to watch how banks behave and act during the economic cycle. The term economic cycle refers to economic wide fluctuations in economic activity over several months or years. Economic cycle typically involves expansion phase and contraction phase. It is observed that there are banking variables which increases in expansion phase and decreases in contraction phase. Such behavior of banking variables is said to exhibit procyclicality. In business cycle theory and finance, any economic quantity that is positively correlated with the overall state of economy is said to be procyclical. In recent years the issue of the possible procyclicality of banks' activity notable bank lending has drawn the attention of both academics and policy makers. Indeed, to guarantee macro and financial stability, it is crucial to understand if, and to what extent, banks are affected by the evolution of the macroeconomic environment and if there are second round impacts. (Mario Quagliariello, 2004)

Procyclicality-Concept and Definitions

The recent economic crisis in 2007-2012 has highlighted the issue of procyclicality in banking system. It is first essential to dwell into the concept and various definitions of procyclicality. Procyclicality also means moving together with economic cycle. There are some banking variables which move along with the direction of economic cycle. Such variables are said to show the procyclical behavior. For example, bank credit is said to be procyclical. When economy is in expansion phase banks sanction more and more credit to the borrowers and when economy is in contraction phase, banks limit the sanction credit to the borrowers. There are variables which move in opposite direction to the economic cycle. Such variables are said to show countercyclical behavior. For example, loan loss provisioning and capital requirements. Banks decreases loan loss provisioning and capital requirements in the upward phase of the economic cycle and increase in the downward phase of the economic cycle.

Some authors have defined procyclicality as the magnification of swings in the economic cycle by the financial sector activities most notably by bank lending. The main feature of procyclicality is the underestimation or overestimation of risks to which banking sector is exposed. Banks underestimate the risk during upward phase of the cycle and gives out more and more credit to the borrowers. This increases the supply of money and consumption in the economy which leads to relatively high growth during the upward phase of the cycle. On the other side during downward phase of the economy, bank shows strong risk aversion. Banks put a brake on the sanctioning of credit to the borrowers in apprehension of probability of default by borrowers. Thus, the banking industry

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changes from effective mechanism of allocating funds to a mechanism that exacerbates cyclical fluctuations, hindering the efficient allocation of resources in the economy and adversely affecting credit growth and financial stability. (Panayiotis P. Athanasoglou and Ioannis Daniilidis, (2005)).

The concept of procyclicality is explained in diagram 1 and diagram 2.

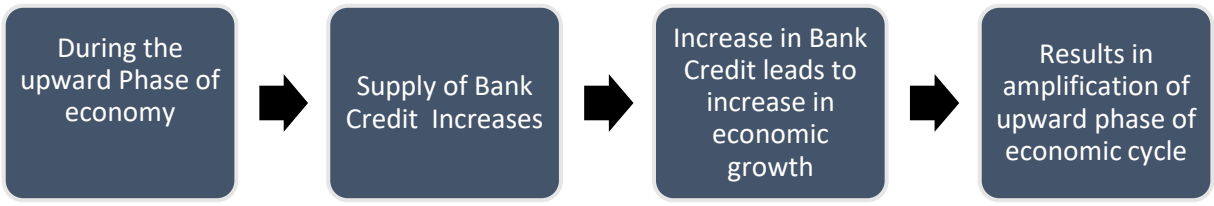


Diagram 1

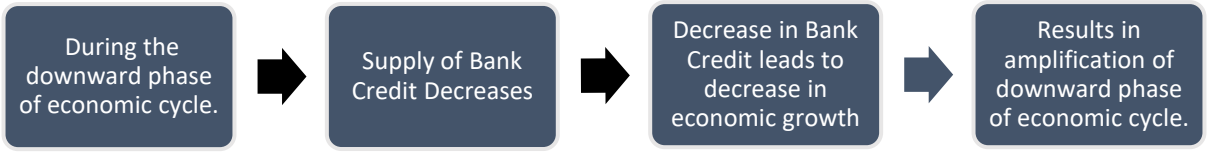
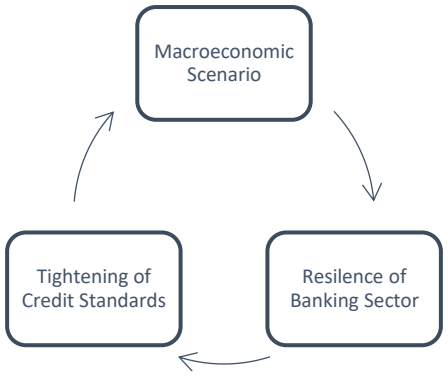


Diagram 2

Financial Stability forum in its report to address the procyclicality in financial system in 2009 has defined the term "procyclicality" as the dynamic interactions (positive feedback mechanisms) between the financial and the real sectors of the economy. These mutually reinforcing interactions tend to amplify business cycle fluctuations and cause or exacerbate financial instability.



Feedback effect on Economy

Banks for International settlement has also defined the term "procyclicality". Procyclicality is generally used to refer to the mutually reinforcing (positive feedback) mechanism through which the financial system can amplify business fluctuations.

Procyclicality refers to the tendency of financial variables to fluctuate around a trend during the economic cycle. Increased procyclicality thus simply means fluctuations with broader amplitude. Such a simple description seldom fits the behavior of financial systems in real life. More likely, following a shock, the path of asset prices and evolution of financial aggregates will display various and highly

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irregular forms of volatility, with possible non linearities and discontinuities (a good example being liquidity freezes). These are characteristic features of complex systems. "Once such a system is destabilized, it moves away from the linear regime and experience nonlinear behavior such as path dependance...sustained oscillations...and regime shifts". Indeed, financial systems can be seen as complex systems. They are based on interdependence between multiple actors and counterparties. Transmissions occur through networks whose structure and architecture is constantly changing through financial innovation and regulatory arbitrage. Also, financial systems are "human" systems. Their behavior is shaped by the way human beings react to shocks in their environment. Herd behavior has long been known to be an essential feature of financial markets. More subtly, individual reactions, by themselves rational, can, by the virtue of their mutual interaction, produce strong amplification effects. A broader definition of procyclicality would thus encompass three components, which cannot easily be distinguished in real life: (1) fluctuations around the trend (2) changes in the trend itself and (3) possible cumulative deviations from equilibrium value. These points to the policy challenges regulators face. They have to try and identify when pure cyclical fluctuations morph into something different: either a change in the trend itself or the start of a cumulative process. A good operational approach to procyclicality would look at all amplification mechanisms which provoke (or allow) the financial system to deviate durably or permanently from its predetermined path so that the trend itself may be affected in the short or medium run. **(Jean-Pierre Landau, Deputy Governor of the Banque de France (2009))**

The traditional concept of procyclicality has been defined by **Borio et al (2001)** where real credit and output growth and other variables move together in a relatively smooth fashion over the cycle, is based on the experiences of industrial countries with stable financial systems. Further the concept has been declared from the emerging market point of view. In some emerging markets, the experience has been somewhat different, with sharper and more sudden simultaneous fall in credit, output and asset prices often associated with financial instability. Procyclicality is a normal feature of economic systems. It reflects a process where credit expansion supports economic growth and asset prices rise to facilitate an efficient allocation of resources.

Adam Gersl and Petr Jakubik (2010) has also defined procyclicality as the magnification of swings in the economic cycle by financial sector activities. Procyclical behavior can have particularly serious implications in an economic downturn, as under certain assumptions it can considerably prolong and deepen the recession via feedback effect on the economy. Under certain conditions, procyclical behavior of the banking system of the banking system can lead to feedback effect where by banks, in response to an economic downswing; reduce their lending to the economy in order to maintain the required capital adequacy ratio. This then further negatively affects economic output and impacts back on banks in the form of nonperforming loans.

Mechanism Of Procyclicality

The feedback mechanisms between the financial and real sectors of the economy are particularly apparent and disruptive during an economic downturn or when the financial system is facing strains. A weakened financial system cannot absorb further losses without causing amplifying retrenchment. As a result, the system acts as a shock amplifier rather than playing its usual role of shock absorber.

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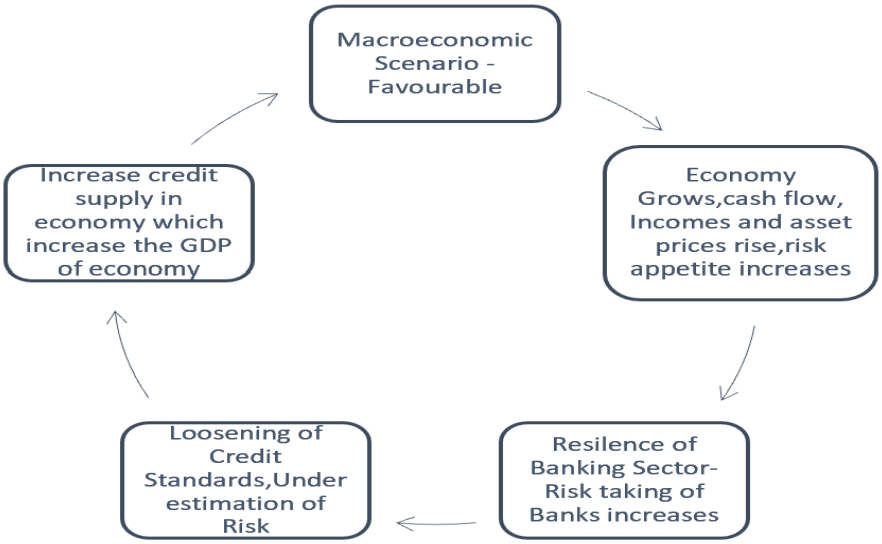

Diagram 3

Diagram 3 shows the mechanism of feedback effect of procyclicality during upward phase of economic cycle. When macroeconomic scenario is favorable it indicates that economy is growing, cash flows and incomes of corporate or borrower's rises, their risk appetite also increases. In this scenario risk taking capacity of banks also increases. Banks loosen the credit standards and underestimate the risk of borrowers. Banks grants more and more loans and advances to the borrowers. This increases credit supply in the economy. Increase in money supply in economy leads to increases the production and consumption in economy. GDP of country rises.

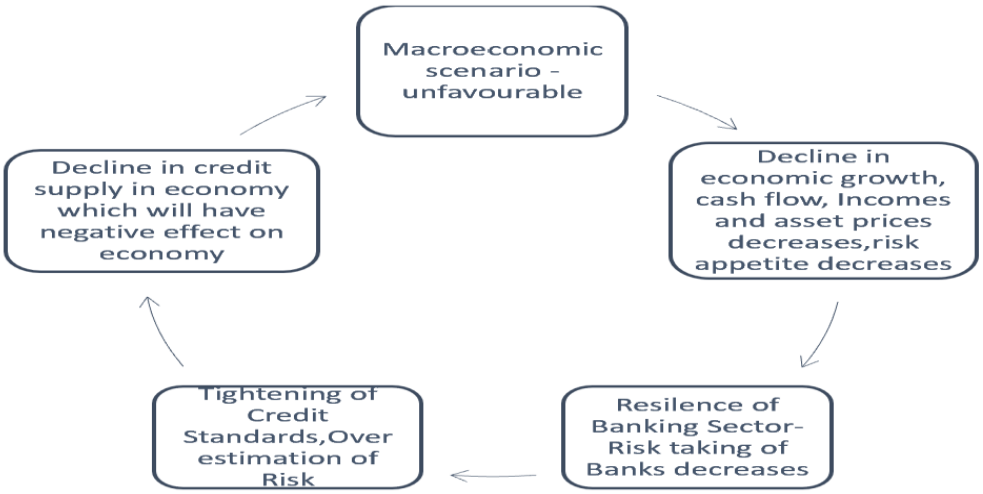

Diagram 4

Diagram 4 shows the mechanism of feedback effect of procyclicality during downward phase of economic cycle. When macroeconomic scenario is unfavorable it indicates that economy is not growing, cash flows and incomes of corporate or borrower's declines, their risk appetite also decreases. In such scenario risk taking capacity of banks also decreases. Banks

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tightens the credit standards and overestimates the risk of borrowers. Banks are now not willing to grant loans and advances to the borrowers. This decreases credit supply in the economy. Decrease in money supply in economy leads to decrease in the production and consumption in economy. GDP of country falls.

Sources of Procylicality

Procyclicality is the inherent feature of the economic cycle. The point why this Procyclicality emerges has to be answered. The answer lies in the market which may functions in less efficient manner. This deviation from the efficient market hypothesis (ECB, 2005) could be due to the following reason, some of which are explained by hypothesis.

- Err in Measurement of risk- The reason to reckon with is the error in measurement of risk during expansion and contraction phase of economic cycle. Banks do underestimate the risk during expansion stage of economic cycle. Banks funds all the commercial projects with positive, zero or negative NPV. This flow of credit in the economy amplifies the upward phase of economic cycle. While in downward phase, banks keep check on the flow of credit to different projects and to an extent banks even do not fund the project with positive NPV in the fear of its probability of default.
- Asymmetric information hypothesis: This hypothesis is based on the fact that information is not available to all parties. It is based on the fact that borrowers have more knowledge than lenders about a project. This fact, combined with the adverse selection hypothesis (i.e. the lender is unable to verify one or more of the project's key characteristics), affects banks' behaviour: banks are willing to grant more loans in the upward phase of the cycle and reluctant in the downward phase (thereby significantly reducing the level of competition). The asymmetric information hypothesis is also directly related to provisioning practices, since increasing provisions lowers banks' profitability and possibly their dividends, transmitting negative messages (signaling) to the market about their financial condition. Even if dividends are not reduced, it is difficult for the management of a bank to make higher provisions than the rest of the industry, in view of the need to avoid giving a negative message about its loan portfolio quality. Consequently, banks will choose the level of provisions that minimizes negative effects **(Rajan, 1994).**
- Principle-agent Hypothesis-There may be a conflict of interest between the principal and the agent, either due to their different risk profiles or due to principals' difficult in verifying that the agent has acted in his interest or has made an "adverse selection" **(Eisenhardt, 1989)**. This assumption leads to Procyclicality when: (a) agents, because of high incentives from the principal (i.e. high bonuses and commission), take excessive risks, which can lead to systemic instability; and (b) borrower underestimate tail risk, retaining in that way the possibility for excess profits, while lenders risk losing their capital **(Landau, 2009)**. Problems arising from the principal-agent hypothesis can only partially be addressed by loan commitments, and therefore borrowers usually pledge collateral.
- Herding Behavior Hypothesis- A Bank's management tends to follow the group behavior. Most of the time banks follow what other banks do. If all other banks are concentrating on lending, then it will also start focusing on lending. Bank does not want to lose its position to its competitors if they follow wrong personal choices. **(Scharfstein and Stein 1990 and Rajan 1994).**
- Free riding Hypothesis – A bank's management may not consider the impact factor of their business decision on the stability of financial system, more specifically during the expansion stage of economic cycle. Their focus would be on earning more and more profit in short time. In this race banks do ignore the impact of their decision on long term stability of financial system.
- Moral Hazard Hypothesis- It is seen that public sector banks (or state-run banks) are of view that government will support them in times of

significant financial problems. Public Sector Banks tend to take high risk in lending to earn higher profits, keeping in mind that government will support them if need arises. **(Borio et al.2001)**

- Disaster Myopia Hypothesis- This hypothesis says that Banks consider short term risk. A Bank's management view is myopic **(Guttentag and Herring, 1986)**. They do not take into account the long-term risk involved in their choices.
- Sales Target Pressure- It is widely seen that the banks managers many a times bow down to the pressure of sales targets given to them. Under this pressure, they take decisions to achieve their targets to retain market share ignoring the long term impact of their decision on the financial stability.
- Over- Optimistic or Over-Pessimistic expectations- During the upward phase of economic cycle banks get over optimistic about the repayment capacity of borrowers. They even go to the extent of funding the project with negative NPV. During the downward phase of the economic cycle, banks get over pessimistic and do not even fund the project with positive NPV.
- Financial Regulations- Financial Regulation like BASEL II is said to induce procyclicality in economy. During the expansion phase of economic cycle, banks decrease their provisioning requirement which free up fund for lending. During the downward phase of the economic cycle, banks increase their provisioning requirement which reduces funds available for lending.

Conclusion

This paper is written to present a conceptual framework on the procyclicality in the financial system. In this paper various definitions of procyclicality has been discussed. The mechanism of procyclicality- feedback effect is discussed using the diagrams, sources of procyclicality has been discussed.

When there is a decline in the economic growth, the procyclical behavior of financial institutions can lead to a feedback effect i.e. a mutually reinforcing effect between growing risks in the financial/banking sector and in the real economy. It is imperative that policy makers should take some steps to mitigate the effect of procyclicality in the financial system. Financial Stability Forum has highlighted three key areas as priority areas for mitigating procyclicality. In its report for addressing procyclicality, the forum develops substantive recommendations on (A) Bank Capital Regulation (B) Bank Loan Loss Provisioning and (C) the interactions between leverage in economy, especially the financial sector and valuations. The main objective of this paper was to understand the concept of procyclicality and to look how procyclical behavior of financial institutions can have role in amplification of business cycle. The regulatory bodies –RBI and other policy makers should take into consideration the feedback effects of procyclicality while designing economic and macro prudential policy making.

Reference

1. Ayuso. J; Perez. D & Saurina J. Are capital buffers pro-cyclical? Evidence from spanish panel data. *Journal of Financial Intermediation*, 2004, 14(8):249-264
2. Bouvatier. V & Lepetit L. Banks Procyclical Behaviour: Does Provisioning Matter? *Journal of International Financial Markets, Institution and Mone,* 2007, 48(25):267-273
3. Bikker J. A. & Hu H. Cyclical Patterns in Profits, Provisioning and Lending of Banks. DNB Staff Reports, n. 86, Amsterdam. 2002. URL: http://www.dnb.nl/binaries/sr086_tcm46-146863.pdf, (Last Accessed: 27/10/2010)
4. Duvan B. S. & Yurtoglu H. Determinants of Bank Provisions: Evidence from Turkey. *Journal of Economic Cooperation* , 2004, 25(4):321-325
5. Eisenhardt K. Agency Theory: An Assessment and Review. *The Academy of Management Review*, 1989, 14(1):57-74
6. Fonsceca; Ana & Francisco G. Cross-country determinant of bank income smoothing by managing loan-loss provisions. *Journal of Banking and Finance*, 2008, 32(2):217-228
7. Rajan R.G. Why Credit Policies Fluctuate: A

Theory and Some Evidence. *The Quarterly Journal of Economics,* 1994, 109(2): 399-441
8. Scharfstein D. & Stein J. Herd Behaviour and Investment. *The American Economic Review*, 1990, 80(3):465-479
9. Samy N. B. The Determinants of the Tunisian Banking Industry Profitability: Panel Evidence. Department of Finance, Université Libre de Tunis. 2003. http://www.mafhoum.com/press6/174E11.pdf, Last Accessed Date: 10.02.2013 and Time: 10 AM.