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Real-Financial Interlinkage via Mortgage-Backed Securities

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Abstract: The objective of the study is to understand the nature of the interaction between the financial and real sector in the wake of financial sector innovation of mortgage-backed securities and identify characteristics of financial markets responsible for making the real sector more vulnerable to crisis. The vulnerability of the real sector to crisis rises, higher the proportion of asset-backed securities. To explain the chain through which asset-backed securities make an impact on the real sector, we develop a basic theoretical structure using the multiplier effect introduced by Keynes.

The analysis constitutes the development of a theoretical framework of interaction between the real and financial sectors.

Keywords: real-financial interlinkage, mortgage-backed securities

Introduction

The Financial Crisis 2007-09 depicts the other side of the picture and poses several questions before us. Why could it not be anticipated? Could it have been prevented? What went wrong? Should there be an expanded role of the state? Does the financial sector need to be regulated more? Are the financial innovations that are designed to further support the real sector making it more vulnerable to a crisis? These are the questions arising in the minds of people who do not have any option but to observe how this crisis was impacting their lives.

In the current scenario, the financial system is very broad and complex. It extends beyond the money market to the term market, capital market, and derivative market, etc, coupled with the internationalization of finance. So, to understand the impact of the financial sector on the real sector, there is a need to find all the possible links between the financial and the real sector. The global financial system has evolved a lot. This has happened to facilitate the smooth functioning of the real sector and to reduce the risk element involved in it. But the crisis of 2007-09 has shown us the other side of the picture. The financial system has made the real sector all the more vulnerable to crisis and shocks emerging from it.

The objective of the study is to understand the nature of the interaction between the financial and real sectors and identify characteristics of financial markets responsible for making the real sector more vulnerable to crisis. The vulnerability of the real sector to crisis rises, higher the proportion of asset-backed securities. To explain the chain through which asset-backed securities make an impact on the real sector, we develop a basic theoretical structure using the multiplier effect introduced by Keynes. The analysis constitutes the development of a theoretical framework of interaction between the real and financial sectors.

The paper consists of the following sections: Section 2 discusses the review of existing literature linking real and financial sectors, section 3 is on the theoretical model of real and financial market interaction and section 4 finally concludes.

Literature Review

Existing literature on linking financial development and growth can be classified into two sub-sections: (a) Theoretical literature (b) Empirical literature.

(a) Theoretical literature

All financial systems provide certain financial functions to serve the real sector and thereby contribute to the growth performance of an economy. Ross Levine (2004) classifies them in different broad categories, such as monitoring investments and exert corporate governance after providing finance, facilitate the trading, diversification, and management of risk and ease the exchange of goods and services. George Argitis (2003) investigates the role of finance in economic instability and crisis. In addition, as Keynes convincingly argued in his General Theory, under capitalism it is not certain if industrial capitalists wish to invest all their savings. Developments in money, financial, product and labor markets, uncertainty, and expectations about future returns on industrial and financial capital as well as psychological factors will determine industrial and financial capitalists' interests and decisions, which is an evolutionary and dynamic perspective are almost impossible to be the same. A three-class model of income and profit determination and distribution is therefore a super disequilibrating model, in which instability due to deficient demand and overproduction are its most obvious outcomes.

Industrial investment decision-making might therefore depend on the realized and expected industrial profits. The realized industrial profits depend

on total capitalist profits minus the amount of interest paid to financial capitalists. The expected total capitalist profits depend on effective demand, i.e. on the consumption, investment, and savings decisions of industrial and financial capitalists and income distribution between capitalists and workers. A fall in consumption and investment creates negative demand expectations, which disappoint industrial capitalists about their future gross and industrial profits. Negative demand expectations possibly discourage industrialists to increase prices and redistribute wage income in their favor, at least in the short run. The opposite will lead to a new fall in demand. Such developments will negatively influence capital accumulation and employment. The capitalist system will pass to an unstable situation with the potentiality for an overproduction crisis.

Minsky (1977; 1982a; 1982b; 1986; 1992 as Cited in Argitis, 2003), defines profits to be the cash flow that does or does not validate any particular structure of business debt. A debt structure is validated when maturing commitments to pay are fulfilled and expectations are sustained that future remaining commitments will be fulfilled. The validation of industrial debt depends upon expected profits being large enough so that payment commitments to financial capitalists can be fulfilled either out of current profits or by refinancing. The expected level and stability of profits determine the debt structure that industrialists, their bankers, and the ultimate holders of the economy's assets will accept. In particular, in an economy where there are serious consequences to default on financial obligations, the potential negative deviation of realized profits from expected levels is an important determinant of acceptable debt structures.

(b) Empirical Literature

A substantial body of empirical work on finance and growth assesses the impact of the operation of the financial system on economic growth, whether the impact is economically large, and whether certain components of the financial system, e.g., banks and stock markets, play a particularly important role in fostering growth at certain stages of economic development.

Levine (2004) reviews the econometric approaches to examine the relationship between finance and growth. Goldsmith (1969 as cited in Levine, 2004) after showing that financial intermediary size relative to the size of the economy rises as countries develop, graphically documented a positive correlation between financial development and the level of economic activity.

Bhanumurthy and Deb (2009) examined the subprime crisis in the US and argue that the financial sector is distinctive and can be exposed to unregulated competition only at the cost of a complete peril. The authors argue that the "US Sub Prime crisis is the failure of the response of the financial sector in the form of financial innovation in the garb of derivatives, which failed to contain risks of lending…..Securitization was a revolution that brought huge gains. The transformation of sticky debt into something more tradable, for all its imperfections, has forged hugely beneficial links between individual borrowers and vast capital markets that were previously out of reach. However, the cost of securitizations became apparent later."

In light of the above literature review, we recognize that there exists a close interaction between the real and financial sectors. This interaction may be bi-directional each impacting the other. Financial development helps in boosting investment level leading to economic growth, at the same time higher growth performance may also lead to financial development but the recent financial crisis and Asian currency crisis (1997) represent examples where the financial sector has made the real sector more vulnerable to crisis. So in the post-crisis scenario, it becomes increasingly important to examine the possible channels of interaction between the financial and real sectors.

Theoretical Framework

This section presents a preliminary theoretical framework and in no way covers all the aspects linking the financial and real sectors. The framework may be extended to incorporate monetary transmission mechanisms through the impact of interest rates on real and financial investments. The issues such as capital flow across countries, principal-agent problems in the financial market particularly in the presence of securitization need to be addressed to make the framework complete.

Before proceeding, we make two assumptions: a) Consumption is a function of income. As Income rises consumption also rises but a part of the incremental income goes to savings. b) Funds raised from issuing Asset-Backed Securities are loaned out for consumption purposes. We can easily relax this assumption to extend the analysis where funds raised from Asset-Backed Securities are partially utilized for consumption loans and partially to fund productive investments. The conclusion remains valid.

An exogenous increase in investment brings an equivalent change in output in the first round of the process. Further, that, increase in output creates

more consumption demand but some part of the output goes into savings. We usually denote it as absorption from the system as this amount will not get utilized in further increasing output level and hence employment. Due to the existence of mortgage-backed securities in the market, we cannot call the entire amount of savings absorption. A part of these savings is utilized in buying mortgage-backed securities (MBS) which became a very popular and rewarding instrument to invest in. The funds thus collected through the sale of these MBS get utilized in creating more credit by the banks and financial institutions. As we all know that the further added credit amount is not given for productive investment purposes but to finance consumption requirements of the Americans especially to buy homes. So savings are not absorption in their true sense as a part of it again becomes a part of consumption. We need to derive a new multiplier that can take into account the presence of mortgage-backed securities in the economy. Suppose initial exogenous investment is denoted by I. Table below depicts the increase in output and consumption in each round of the multiplier process due to exogenous investment ΔI.

Table 1: Working of Magnified Multiplier Effect

	Increase in output	*Increase in consumption*	*Increase in savings*	*Increase in credit/loan*
Round 1	ΔI	cΔI + msΔI	sΔI	msΔI
Round 2	cΔI + msΔI	c(cΔI + msΔI) + ms(cΔI + msΔI)	s(cΔI + msΔI)	ms(cΔI + msΔI)
Round 3	c(cΔI + msΔI) + ms(cΔI + msΔI)	c[c(cΔI + msΔI) + ms(cΔI + msΔI)] + ms[c(cΔI + msΔI) + ms(cΔI + msΔI)]	s[c(cΔI + msΔI) + ms(cΔI + msΔI)]	ms[c(cΔI + msΔI) + ms(cΔI + msΔI)]
	c[c(cΔI + msΔI) + ms(cΔI + msΔI)] + ms[c(cΔI + msΔI) + ms(cΔI + msΔI)]	so on……	so on…….	so on……

* c denotes marginal propensity to consume, s denotes marginal propensity to save, m denotes the proportion of savings invested in mortgage-backed securities.

Total change in output due to exogenous change in investment is:

$\Delta Y = \Delta I + c\Delta I + ms\Delta I + c(c\Delta I + ms\Delta I) + ms(c\Delta I + ms\Delta I) + c[c(c\Delta I + ms\Delta I) + ms(c\Delta I + ms\Delta I)] + ms[c(c\Delta I + ms\Delta I) + ms(c\Delta I + ms\Delta I)]$……..

$\Delta Y = \Delta I + \Delta I(c + ms) + \Delta I(c + ms)2 + \Delta I(c + ms)3 +$……

$\Delta Y = \Delta I (1 + (c + ms) + (c + ms)2 + (c + ms)3 +$……

(sum of infinite G.P. is 1/1-r)

$\Delta Y = \Delta I (1/1\text{-}c\text{-}ms)$

$\Delta Y/\Delta I = 1/1\text{-}c\text{-}ms = 1/1\text{-}c\text{-}m(1\text{-}c) = 1/(1\text{-}m)(1\text{-}c)$ (s = 1-c)

Suppose, in an economy Marginal Propensity to Consume is 90 percent, then the value of traditional multiplier given by Keynes is:

$$1/1\text{-}0.9 = 10$$

If out of the total savings, 50% is invested in mortgage-backed securities and rest in other forms of savings such as jewelry, term deposits in banks, etc, then the new value of multiplier (magnified multiplier) becomes:

$$1/(1\text{-}0.9)(1\text{-}0.5) = 20$$

Hence, the value of the multiplier has increased due to the presence of mortgage-backed securities. Higher the value of m i.e. higher the proportion of mortgage investment-backed security higher is the multiplier. In such a scenario if there is any fall in Investment, the impact on output is also magnified. Hence, in presence of mortgage-backed securities, the economy becomes more vulnerable to shocks emanating from exogenous changes in aggregate demand.

Although we have assumed that funds raised from issuing Asset-Backed Securities are loaned out for consumption purposes, we can easily relax this assumption to extend the analysis where funds raised from Asset-Backed Securities are partially utilized for consumption loans and partially to fund productive investments. The conclusion remains valid that the presence of mortgage-backed securities increases the value of magnified multiplier making the economy more vulnerable to crisis.

Conclusions

In our theoretical model, we have examined the link between the loan market and the real sector and analyze its implication for the macroeconomy. We have shown that mortgage-backed securities that link the loan market with the housing market are inherently problematic. While they may work in the advanced countries where average income levels, as well as probability of finding gainful employment, are high and potential supply of housing is also high (due to low

cost, availability of space), in relatively less developed economies this linkage, if unmonitored, could be a recipe for disaster. Even in the advanced economies, a temporary negative income shock may have a cascading effect, leading to a banking sector crisis and collapse of the loan market, as we did witness during the subprime crisis in the US economy in 2008.

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