



From the Financial Crisis to the Real Economy: the Main Channels of Transmission through a Theoretical Perspective

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Abstract: In the financial sector, due to the structure of the involved companies, the sophisticated network of exposures among institutions, the related credibility problems and the inter-temporal character of financial contracts contagion phenomenon is hence considered a noteworthy topic in the scientific discussions. Understanding the transmission channels that exist between the financial and real sectors of the economy is critically important when assessing financial stability and economic growth. Identifying three categories of transmission channels (the interest rate channel, the wealth effect, and the financial accelerator) that exist between the financial and the real sector, this paper comment the literature on this issue and present some original observations. The current financial crisis by tighten the financing conditions, by falling houses' and financial assets' prices, by damaging growth prospects, has a devastating negative impact on the financial situation of firms and households.

Keywords: contagion; shocks; accelerator mechanism

1 Introduction

In the financial sector, due to the structure of the involved companies, the sophisticated network of exposures among institutions, the related credibility problems and the inter-temporal character of financial contracts contagion phenomenon is hence considered a noteworthy topic in the scientific discussions. In the same time, any financial crisis impacts the real economy.

The integration of financial markets plays an important role in the transmission mechanism. Interdependent financial markets are especially exposed to systemic risks that can be spread more easily. In a globalized market, risks are not limited to a certain market, but can spread easily across borders.

The ongoing financial crisis has brought into attention the importance of liquidity that influence the force of existing real and financial sector transmission channels and even create additional transmission channels.

Credit market tensions certainly affect production costs. The volume of arrears greatly increases, on a background of freezing credit markets, which is for the real economy a way to resist to the high cost of credit.

The effects of an international financial crisis are transmitted via commercial channel through a deceleration of exports increase or even through the downturn of their exports. Through the financial channel the access to the external financing is narrowed and thus the volume of lending is restricted and can generate private external debt service difficulties.

Through the exchange rate channel, the decrease of the external financing is reflected in the depreciation of the domestic currency. Through the confidence channel, appear withdrawals of investors. Propagation of these effects makes the uncertainty about economic variables developments to be extremely high. At its turn, this conducts to the accentuation of the crisis by emphasizing the

negative effects on the expectations and by an increased degree of prudence at the level of consumers and economic agents.

In the literature are identified transmission channels between the real and financial sectors that may operate in both directions. In other words, some conditions of the real economy influence the financial ones (observable in the household's' and companies' balance sheets) and the financial conditions of households and firms in turn affect the real economic sector.

The economic literature written on the transmission channels from the real to the financial sector is usually standard macroeconomic theory. Generally speaking, poor macroeconomic conditions reduce the revenues and profits for companies and the incomes of households. In these conditions, the increase of their net worth will be lessened; in some situations, the net wealth will even decrease. Another possible effect will be a tightening of credit conditions and an increase of borrowers' default probabilities. The last situation has direct impact on the bank losses and thereby bank balance sheets.

There is considerable academic research that documents the link between financial and real sector. In this paper we discuss the main literature in the field of transmission channel mechanism, identifying three categories of transmission channels (the interest rate channel, the wealth effect, and the financial accelerator) that exist between the financial and the real sector and present some original observations.

2 Interest Rate Channel (or Cost of Capital)

The cost of capital is the key channel of transmission mechanism of interest rate shocks (due to changes in liquidity on the interbank market or monetary policy changes). Considering fixed prices and wages, lower interest rates by reducing the cost of capital leads to increased investment spending, generating an increase in aggregate demand and therefore production. The same reasoning is kept for investment decisions referring to purchase of houses or long-term assets, through financing costs reduction.

For this channel to be operative, we must take into account two key elements (Mishkin, 1995, 1996). On the one hand, the decisions of households and firms are affected rather by the real interest rate, meaning that it is necessary to keep some prices in the economy. On the other hand, these decisions depend on the long-term interest rate, meaning that changes in short-term interest (due, for example, to the central bank's monetary policy) should lead to corresponding changes in real interest rate¹. When appears a financial shock, a direct shock on long-term interest rate (e.g. a shock on bonds) or on the short-term interest rate (e.g. interbank market shock), it can alter rather the structure of the interest rate than the monetary policy per se. In the current financial crisis, by reducing the liquidity available for commercial banks, it comes to a rapid increase in interbank rates. How fast and how far the shock is transmitted to interest rates paid by firms and households is an empirical question². While theory suggests that this channel may play an important role, the inability of empirical studies to find a strong impact of changes in interest rates on investment and consumption decisions led to the consideration of another channel of transmission.

¹ If, as assumed by the structure of interest rates, long-term interest rate consists of the average expectations of future developments of short-term interest rate, a decrease in short-term interest rates will lead to lower long-term interest rate that will stimulate firms' investment and households' consumption.

² In France, for example, the time for transmission of interbank interest rates to borrowers was estimated at 2-3 months, depending on the type of credit (Coffinet, 2005). However, due to deteriorating balance sheets, banks may have a reduced incentive to pass to a lower interest rate set by the central bank for borrowers.

3 The Wealth Effect

The wealth effect has its roots in Friedman's permanent income. Households hold assets derived from labour income, financial assets (stocks, bonds, etc.) and non-financial assets (houses). This property allows households to establish a permanent income (by updating the current and future income) on which is set their consumption. A negative shock affecting their property (e.g. a decrease in stocks or houses prices) will reduce the permanent income and therefore their consumption. If the adverse shock is temporary (or perceived to be temporary) the impact on the consumption will also be temporary and undistinguishable due to the update of the entire income, current and future. If the adverse shock is perceived as permanent (e.g. the bursting of the speculative bubbles on the capital markets and real estate), the permanent income reduction will be noticeable, inducing a long-term reduction in consumption.

So far, the empirical studies that attempted to estimate the wealth effect impact on the household consumption have been disappointing, except the U.S. and UK, two major factors being mainly responsible for these results. First, unlike the U.S. and the UK, continental European households have a lower part of their wealth expressed in financial assets³. As a result, the households' consumption in continental Europe shows a reduced perceptiveness to stock market fluctuations. On the other hand, Anglo-Saxon households can take credits as long as home prices rise; however, the decrease of housing finance sources help to increase their price, ultimately contributing to increased households' expenses. In continental Europe, and especially in France, as very few households use mortgage loans, the wealth effect on houses is almost ineffective (ECB, 2009). For these two reasons, labour incomes are the main source for consumption in continental Europe, contrasting with the U.S. and U.K.

4 The Importance of the Financial Effects and Uncertainty Amplification

Recent economic turmoil assigned a central role to the financial sphere in transmitting the crisis to the real economy. As Bernanke and Blinder (1988) and Bernanke and Gertler (1995, 1996) consider, the financial imperfections (due to information asymmetry) contribute with an amplifier effect to the transmission of the monetary and financial shocks.

In theory there are several mechanisms that amplify the financial phenomenon. In models based on the **financial accelerator**, the borrowers have to pay a risk premium for external finance that is borrower-specific and depends on its financial situation. The financial accelerator can be broadly defined as a catalyser that amplifies a financial shock and transmits it to economic activity. The mechanism is self-sustaining and is presented in the next figure. A decline in the net worth of economic agents reduces aggregate demand and national output, which once again reduces agents' net worth. The bigger is the information asymmetry, the greater is the external financing; the higher is the net wealth, the lower is the cost of external financing. Thus, a monetary or financial shock, that alter the revenues of non-financial agents or reduce the collateral value, will increase the risk premium for an external finance. Therefore, the investment and consumption projects of the financially constrained agents will be modified, amplifying the initial shock.

³ For example, in late December 2006, the share of financial assets held by the French possessions was 23%, unlike the Americans and British that had a rate of 56%, respectively 36.5% (Aviation et al, 2007).

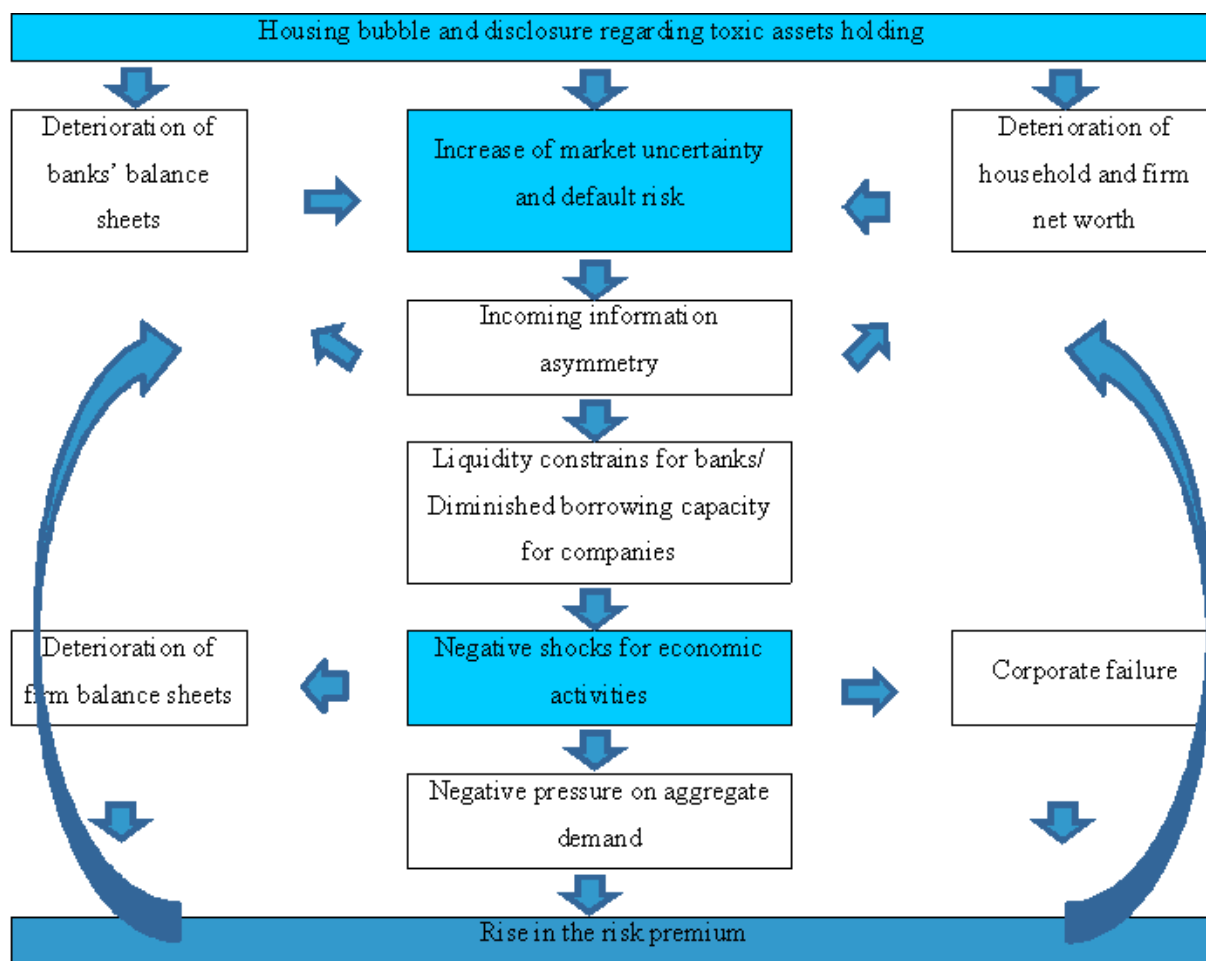


Figure 1 Short description of the financial accelerator mechanism observed in the last crisis

The roots of the accelerator mechanism stay in the imperfections of the financial systems. As Stiglitz and Weiss (1981) have suggested, information asymmetries between lenders (principals) and borrowers (agents) generate agency costs because of the need to monitor and obtain information on the quality of projects applying for financing. Bernanke (1983) further document this relation and showed that these imperfections are reflected in the external finance premium demanded by investors. In the time of crisis, the premium increases underlying the uncertainty in the financial markets and the resulting amplification in information asymmetries.

As Bernanke, Gertler and Gilchrist (1996 and 1999) documented, the deterioration in economic agents' balance sheets causes the initial shock to spread. From this perspective, the financial accelerator acts through the *balance-sheet channel*. The close links between the real and financial sectors is explained by this mechanism, since it greatly enhances the effect of the diminution in bank lending, activating the *bank-lending channel*.

In their analysis of the credit cycle, Kiyotaki and Moore (1997) stated that many tangible assets serve simultaneously as factors of production and loan collateral. Thus a shock to the value of these assets results in a shorter tightening of conditions for intermediate financing. The downfall of investment reduces the value of the firm's assets, which afterwards diminished their borrowing capacity in the subsequent period. The authors call this negative feedback an "inter-temporal multiplier effect" that is based on control over assets instead of costly verification of project returns.

In line with findings of Mody et al. (2007), some empirical studies suggested that the financial accelerator effects played a role in the decline in economic activity in the 2007 crisis, this

characteristic being more evident in United States than in Europe. In the literature, the stronger influence of the accelerator effects is explained by two factors: an increased role of the financial sector for the economy and the characteristics of the 2007 crisis as banking and financial one.

The current financial crisis by tighten the financing conditions, by falling houses' and financial assets' prices, by damaging growth prospects, has a devastating negative impact on the financial situation of firms and households. Financial accelerator is an important channel through which financial shocks are transmitted to the real economy due to a lowering of investment and consumption and to an increased cost of capital.

The current crisis, beside purely financial aspects, induces a level of uncertainty to the economic agents. Prospects for economic growth and an increased employment are uncertain. Firms and households must decide how much to invest and consume in a risky environment, which may result in expectant behaviour.

In a context of high uncertainty, households tend to save more from preventive reasons. For companies, the thinking is based on the irreversibility of investment decisions, since many installation costs cannot be recovered. Investment decision becomes similar with the exercise of an option (Pyndick, 1988): as the decision is irreversible, the company may delay the investment project, waiting for better times. Thus, the investment is made only if the gain is greater than the cost of installation costs together with the default option. Global uncertainty that characterize the current macroeconomic situation may entail companies to postpone all or part of the investment decisions, thus slowing demand and production.

The enhancement of the financial accelerator consequences amplifies the impact of the financial sector on the side of the real economy. The fluctuations in the net value and balance sheet position of the economic agents have an essential role in the transmission of shocks and economic cycles. The financial volatility can become more and more destabilizing, because financial accelerator effects are stronger in a recession than in a recovery period.

5 Possible Further Research

Taking a tour of the main research direction in the field of transmission channel from financial to the real sector, we consider that an area that would benefit from further developments will be researches that look at nonlinearities and structural instabilities. These shortcomings are spreads in all types of models that analyse linkages between real and financial sectors. We noticed that can be worthwhile to do some studies that look at the influence of lending for the real sector.

There are relatively few studies that focus on how real economic conditions affect the general vigour of borrower balance sheets, rather than just borrower defaults.

There is considerable literature attempting to understand how the shocks from the real sector are transmitted to and spread in the financial sector and less attention is paid on how shocks from the financial sector can have effects on the macroeconomic side.

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