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Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism?☆

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ABSTRACT

Few areas of monetary economics have been studied as extensively as the transmission mechanism. The literature on this topic has evolved substantially over the years, following the waxing and waning of conceptual frameworks and the changing characteristics of the financial system. In this paper, taking as a starting point a brief overview of the extant work on the interaction between capital regulation, the business cycle and the transmission mechanism, we offer some broader reflections on the characteristics of the transmission mechanism in light of the evolution of the financial system. We argue that insufficient attention has so far been paid to the link between monetary policy and the perception and pricing of risk by economic agents—what might be termed the "risk-taking channel" of monetary policy. We develop the concept, compare it with current views of the transmission mechanism, explore its mutually reinforcing link with "liquidity" and analyse its interaction with monetary policy reaction functions. We argue that changes in the financial system and prudential regulation may have increased the importance of the risk-taking channel and that prevailing macroeconomic paradigms and associated models are not well suited to capturing it, thereby also reducing their effectiveness as guides to monetary policy.

1. Introduction

Few areas of monetary economics have been studied as extensively as the transmission mechanism.[2] The literature on this topic has evolved substantially over the years, following the waxing and waning of conceptual frameworks and the changing characteristics of the financial system.

The evolution driven by conceptual frameworks is of older vintage; at the cost of some oversimplification, it can roughly be characterised as follows. In the now seemingly distant days of the battles between monetarists and Keynesians, there was a consensus that a key channel through which monetary impulses affected aggregate expenditure was through their impact on the relative yields of imperfectly substitutable assets. The main bone of contention at the time had to do with the degree of relative substitutability between money and other assets and, relatedly, with how large the set of those assets should be to adequately capture the effects. Monetarists highlighted a low elasticity and often envisaged a much broader set than Keynesians, including real assets and possibly human wealth.[3] In fact, in the simplest IS-LM framework,

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[2] For present purposes, the transmission mechanism is defined narrowly to include the channels through which monetary impulses affect expenditures. Except in cases where the distinction is necessary, we thus exclude the factors that affect the split between prices and output.

[3] See, for example, Friedman (1959), Brunner and Meltzer (1976), Meltzer (1995), and Tobin (1961). This, of course, is a simple characterisation. In fact, the monetarist

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which monetarists often found so constraining, the only relevant distinction was between "money", an asset whose nominal yield was exogenously fixed (normally at zero), and "bonds". This way of approaching the issue was a natural consequence of conceptual frameworks that emphasised stock equilibrium.

Subsequently, the main emphasis shifted to the distinction between internal and external funding. The bone of contention here has been whether informational imperfections (frictions) in financial markets are such as to drive a quantitatively significant wedge between the two sources of funding, or indeed between different forms of external funding. In other words, how significant are the "broad credit" (or "balance sheet") and "bank lending" channels compared with the interest rate channel, defined to include any inter-temporal substitution and wealth (permanent income) effects on expenditures?[4] This literature has drawn strength from major advances in the formal theory of contracts in the presence of asymmetric information. In spirit, the approach is intellectually closer to the loanable funds theory of the interest rate, in so far as it focuses more on flows than stocks.

The changing characteristics of the financial system have recently encouraged a shift of focus in the analysis from the role of monetary controls to that of prudential controls in the transmission mechanism, especially to that of capital regulation. A few decades back, a variety of restrictions were in place in several countries on intermediaries' balance sheets as part of credit allocation and overall credit control policies. Over time, as these restrictions were lifted, the only constraint receiving attention became minimum reserve requirements. This was viewed as an integral part of the bank lending channel, with shifts in the non-bank public's portfolios between capital market instruments (bonds) and reservable deposits seen as impinging on the supply of bank lending. More recently, with the increasing influence of minimum capital requirements on bank behaviour, a growing literature has started to consider the corresponding implications for the transmission mechanism based on the differential cost of equity funding (the "bank capital" channel).

In this paper, taking as a starting point a brief overview of the work on the interaction between capital regulation, the business cycle and the transmission mechanism, we offer some broader reflections on the characteristics of the transmission mechanism in light of the evolution of the financial system. The analysis is very much of a speculative, exploratory nature. We do not develop any new specific model or present new econometric evidence, but simply highlight what appear to us as under-researched aspects of the issues.

1.1. We put forward three general observations.

First, the influence of capital regulation and supervision on the behaviour of the financial system and on the characteristics of the business cycle has arguably been increasing. This in part reflects the higher risk-sensitivity of the minimum capital threshold and the more pervasive impact of the corresponding framework on how financial firms measure, manage and price risks. Together, these factors suggest that the role of prudential constraints in the transmission mechanism of monetary policy may be growing.

Second, more generally, insufficient attention appears to have been paid so far in the transmission mechanism to the link between monetary policy and the perception and pricing of risk by economic agents—what might be termed the "risk-taking channel". Both directly and indirectly, changes in interest rates and the characteristics of the central bank's reaction function can influence risk-taking, by impinging on perceptions of risks and risk tolerance. We will argue that it is in the context of the risk-taking channel that notions of "liquidity", best thought of as the ease with which perceptions of value can be turned into purchasing power, acquire added significance. The self-reinforcing link between liquidity and risk-taking could potentially have a material effect on the strength of the transmission of monetary policy impulses, akin to a "multiplier" effect. In turn, the importance of measures of risk and valuation points to the relevance of accounting practices in shaping the transmission. To be sure, our point is not, and *cannot* be, that the risk-taking channel is the most important channel of monetary policy; far from it. It is simply that its exploration would give us a fuller understanding of the transmission mechanism, especially as its prominence is likely to have increased in the wake of financial liberalisation and innovation and of changes in prudential frameworks.

Finally, against this background, significant aspects of the overall shape of the transmission mechanism can potentially be missed if the risk-taking channel is not incorporated in the central bank's reaction function. The argument is that there is an endogenous interaction between the reaction function and the cumulative strength and shape of the transmission chain. Most of the time, the risk-taking channel should be expected to act purely as a "persistence-enhancing" mechanism, qualitatively akin to a kind of "financial accelerator". But under some conditions, especially if risk is underestimated and individual incentives are not aligned with desirable outcomes in the aggregate, the self-stabilising properties of the economy may not suffice to guarantee a fully benign increase in persistence. If so, one potential concern is that failure by the central bank to take into account the build-up of risks in the financial system and to properly assess the policy stance in the light of the mechanisms just described could occasionally have unwelcome implications on the broader dynamics of the financial system, the economy and inflation. As a result, even "locally linear" effects could contribute to "globally non-linear" dynamics in the economy, in the form of boom–bust cycles, possibly accompanied by serious financial strains—a form of (unconditionally) low-probability but high-cost outcomes.

A fuller understanding of these issues is quite challenging. The work on the interaction between prudential regulation and the transmission mechanism is still rather limited and some of it actually deals with "risk" only tangentially. The work on the interaction between monetary policy and risk-taking is equally limited, despite some welcome progress in recent years. As far as we are aware, there is no analysis of the implications of accounting for the transmission mechanism, although a number of basic elements to explore it are in place. And the current generation of benchmark dynamic stochastic general equilibrium (DSGE) models has had difficulties embedding a financial sector, let alone endogenising the

view of the transmission mechanism is more multifaceted. For example, Laidler (1999, 2002) distinguishes between the "money channel" and the "credit channel" of monetary expansion. The "credit channel" refers to the first-round effects of a cut in interest rates, that directly influence spending plans and are implemented through borrowing from the banking system; the "money channel" refers to the secondary effects on expenditure of the excess supply of money that is created as a by-product of bank lending, regarded as a form of "buffer stock" adjustment towards an underlying portfolio equilibrium. The strength of the money channel is seen as weaker to the extent that banks adjust their non-monetary liabilities. If the credit channel harks back to Wicksell, the money channel has intellectual antecedents in Fisher and Hawtrey.

[4] See, for instance, Bernanke and Blinder (1988), Bernanke and Gertler (1995), Stein (1998), Kashyap and Stein (1994, 2000), Fazzari et al. (1988), Hubbard (1998). For cross-country work examining the impact of financial structure on the transmission mechanism paying particular attention to some of these aspects, see BIS (1995), Borio (1997) and Angeloni et al. (2003). The focus here on these channels, of course, does not exhaust the literature, but simply points to its central tendency. For example, for an analysis that focuses more on the transactions role of bank deposits, while still building on informational imperfections, see Diamond and Rajan (2006).