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Monetary policy flexibility, risk management, and financial disruptions☆

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ABSTRACT

This paper argues that the monetary policy that is appropriate during an episode of financial market disruption is likely to be quite different than in times of normal market functioning. When financial markets experience a significant disruption, a systematic approach to risk management requires policymakers to be preemptive in responding to the macroeconomic implications of incoming financial market information, and decisive actions may be required to reduce the likelihood of an adverse feedback loop. The central bank also needs to exhibit flexibility—that is, less inertia and gradualism than would otherwise be typical—not only in moving decisively to reduce downside risks arising from a financial market disruption, but also in being prepared to take back some of that insurance in response to a recovery in financial markets or an upward shift in inflation risks.

In this paper, I would like to consider the rationale for greater flexibility in monetary policy during periods of financial disruptions. I first will discuss why financial market disruptions can pose significant risks to the macroeconomy. Then I will explain how the science of monetary policy can help provide a conceptual framework for a systematic approach to managing these risks, and I will briefly discuss how that framework can be useful for understanding the course of Federal Reserve policy over the past few months.

1. Financial disruptions and macroeconomic risk

Before considering the appropriate policy response to strains in financial markets, it is essential to consider the sources of these strains and the potential consequences for the macroeconomy. In general, the U.S. financial system is an efficient mechanism for channeling funds to individuals or corporations with worthy investment opportunities, because the financial markets are highly competitive and provide strong incentives for collecting and processing information.

Although financial markets and institutions deal with large volumes of information, some of this information is by nature asymmetric; that is, one party to a financial contract (typically the lender) has less accurate information about the likely distribution of outcomes than does the other party (typically the borrower). Historically, banks and other financial

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intermediaries have played a major role in reducing the asymmetry of information, partly because these firms tend to have long-term relationships with their clients. Recent years have witnessed the development of new types of financial institutions and of new markets for trading financial products, and these innovations have had the potential (not always realized) to contribute to the efficient flow of information.

The continuity of this information flow is crucial to the process of price discovery—that is, the ability of market participants to assess the fundamental worth of each financial asset. During periods of financial distress, however, information flows may be disrupted and price discovery may be impaired. As a result, such episodes tend to generate greater uncertainty, which contributes to higher credit spreads and greater reluctance to engage in market transactions.

As I noted in Mishkin (2007a) financial disruptions are associated with two distinct types of risk: *valuation risk* and *macroeconomic risk*. Valuation risk refers to the extent that market participants become more uncertain about the returns on a specific asset, especially in cases where the security is highly complex and its underlying creditworthiness is relatively opaque. In the current crisis, for example, this type of risk has been central to the repricing of many structured credit products, as investors have struggled to understand how potential losses in subprime mortgages might filter through the various layers of securities linked to these loans.

While valuation risk is relevant for individual investors, monetary policymakers are concerned with macroeconomic risk. In particular, strains in financial markets can spill over to the broader economy and have adverse consequences on output and employment. Furthermore, an economic downturn tends to generate even greater uncertainty about asset values, which could initiate an adverse feedback loop in which the financial disruption restrains economic activity; such a situation could lead to greater uncertainty and increased financial disruption, causing a further deterioration in macroeconomic activity, and so on. This phenomenon is generally referred to as the financial accelerator (Bernanke & Gertler, 1989; Bernanke, Gertler, & Gilchrist, 1996, 1999).

The quality of balance sheets of households and firms comprise a key element of the financial accelerator mechanism, because some of the assets of each borrower may serve as collateral for its liabilities. The use of collateral helps mitigate the problem of asymmetric information, because the borrower's incentive not to engage in excessive risk-taking is strengthened by the threat of losing the collateral: If a default does occur, the lender can take title to the borrower's collateral and thereby recover some or all of the value of the loan. However, a macroeconomic downturn tends to diminish the value of many forms of collateral, thereby exacerbating the impact of frictions in credit markets and reinforcing the propagation of the adverse feedback loop.

2. Risk management and the science of monetary policy

Given that a financial market disruption can pose significant risks to the macroeconomy, risk management is crucial in formulating the appropriate response of monetary policy. Unfortunately, most existing studies of optimal monetary policy have completely abstracted from considerations of macroeconomic risk, because these studies use specific formulations or approximations which imply that the design of the optimal monetary policy does not depend on the magnitude or direction of uncertainty facing the economy—an implication referred to as certainty equivalence.

In particular, the standard textbook approach to analyzing optimal monetary policy utilizes a *linear-quadratic* (LQ) framework, in which the equations describing the dynamic behavior of the economy are *linear* and the objective function specifying the goals of policy is *quadratic*. For example, in light of the dual mandate, monetary policy is often characterized as seeking to minimize a loss function comprising the squared value of the inflation gap (that is, actual inflation minus desired inflation) and the squared value of the output gap (that is, actual output minus potential output).

Under these assumptions, the optimal policy is certainty equivalent: This policy can be characterized by a linear time-invariant response to each shock, and the magnitude of these responses does not depend on the variances or any other aspect of the probability distribution of the shocks. In such an environment, optimal monetary policy does not focus on risk management. Furthermore, when financial market participants and wage and price setters are relatively forward-looking, the optimal policy under commitment is characterized by considerable inertia (sometimes also referred to as gradualism).[1]

Indeed, the actual course of monetary policy over the past quarter-century has typically been very smooth in the United States as well as in many other industrial economies. For example, the Federal Reserve has usually adjusted the federal funds rate in increments of 25 or 50 basis points (that is, 1/4 or 1/2 percentage point) and sharp reversals in the funds rate path have been rare. Numerous empirical studies have characterized monetary policy using Taylor-style rules in which the policy rate responds to the inflation gap and the output gap; these studies have generally found that the fit of the regression equation is improved by including a lagged interest rate that reflects the smoothness of the typical adjustment pattern.[2]

While an LQ framework may provide a reasonable approximation to how monetary policy should operate under fairly normal circumstances, this approach is less likely to be adequate for thinking about monetary policy when the risk of poor

[1] The now-classic textbook on this topic is Woodford (2003). See also Goodfriend and King (1997), Rotemberg and Woodford (1997), Clarida, Galí, and Gertler (1999), King and Wollman (1999), Erceg, Henderson, and Levin (2000), Benigno and Woodford (2003), Giannoni and Woodford (2005), Levin, Onatski, Williams, and Williams (2005), and Schmitt-Grohé and Uribe (2005).

[2] Clarida, Galí, and Gertler (1998, 2000), Sack (2000), English, Nelson, and Sack (2003), Smets and Wouters (2003), Levin et al. (2005), and further discussion is in Bernanke (2004).