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Duration of bankruptcy proceedings and monetary policy effectiveness ☆

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ABSTRACT

A common assumption in well-known costly-state-verification frameworks is that when a borrower defaults, creditors receive a payoff immediately (after incurring bankruptcy costs). While this assumption enhances tractability, it is unrealistic given the considerable delays in the actual practice of bankruptcy. In this paper, I identify the duration of bankruptcy proceedings as an additional source of friction in financial markets and investigate the relationship between this friction and the effectiveness of monetary policy by using U.S. state-level data. Consistent with the commonly-observed positive relationship between the degree of standard financial frictions and the amplitude of macroeconomic responses, I find that U.S. monetary policy is most effective in states with longer bankruptcy proceedings.

1. Introduction

Following the breakthrough studies on asymmetric information, led by Akerlof (1970), a large number of studies have relaxed the assumptions of the Modigliani–Miller theorem and investigated the role that financial frictions play in the amplification and propagation of macroeconomic shocks to the economy. Some of these studies (Gilchrist et al., 2009; Bernanke and Gertler, 1989; Bernanke et al., 1999; Carlstrom and Fuerst, 1997; Prescott and Townsend, 1984; Townsend, 1979) introduce financial frictions in the form of state verification costs that banks face when they agree on a loan contract. These costs, more commonly known as monitoring costs, are interpreted as the auditing, legal and asset liquidation costs incurred when there is a bankruptcy. According to the usual costly state verification framework, if a borrower defaults, banks liquidate the assets of the borrower, incur monitoring costs and recover a fraction of the bad loan. A common assumption here is that loan recovery is within the same period (usually one quarter).

In this paper, I identify the duration of bankruptcy proceedings as an additional source of friction in financial markets and empirically investigate the relationship between this friction and the effectiveness of monetary policy. In doing so, I choose to use U.S. state-level data instead of cross-country data and focus on monetary policy for two main reasons. First,

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this approach allows me to avoid the difficulties in identifying, measuring and comparing the effects of monetary policy shocks across countries at different stages of development. By using state-level data, I reasonably assume that the states are subject to a common monetary policy shock, generated by a common central bank. Second, there is a well-documented literature on the credit channel of monetary transmission in the U.S. that provides a useful guidance for identifying monetary policy shocks in the U.S. and measuring their effect on economic activity (see for example, Gertler and Gilchrist, 1993).

My main finding is that U.S. monetary policy is more effective in states with longer bankruptcy proceedings. The results are obtained by following a two-stage empirical approach. In the first stage, I measure the impact of monetary policy shocks on states' personal income by using a Structural Vector Autoregressive (SVAR) model. In this model, I compute forecast error variance decompositions (FEVD) and measure the impact of monetary policy as the forecast-error variance of state income gap generated by monetary policy shocks. In the second stage, I test whether the duration of bankruptcy proceedings is related to this impact of monetary policy. At this stage, I construct a unique measure of bankruptcy duration, the case turnover ratio, by using U.S. Federal Courts' state-level case load statistics. The estimated coefficient value corresponding to this variable in my baseline regressions reveal that the duration of bankruptcy is not only significant statistically but also economically. The results, for example, imply that if the state with the lowest turnover ratio, Delaware, were to increase its turnover ratio to the level observed in the state with the median value, Maryland, monetary policy shocks' share in the total output fluctuations in Delaware would be approximately 3.7% smaller. This effect is large given that the average value of the FEVD share of monetary policy shocks in the sample is 10.8%.

The research in this paper is motivated by the stark contrast between the assumption of immediate loan recovery and the actual practice of bankruptcy throughout the world. According to the World Bank's Doing Business reports, for example, the average number of years to enforce a contract of unpaid debt is 3.03 years (sample period, 2004–2011; 181 countries).[1] Although the average duration is higher for developing and less-developed economies (3.35 years), the duration in advanced economies is certainly not negligible (2.02 years).[2]

Similar conclusions can be drawn by investigating U.S. foreclosure proceedings. Data from the clerk of the courts for the main counties in every state, and real estate agencies RealtyTrac, All Foreclosure, indicate that the average duration of foreclosure proceedings is 188.9 days. Turning to more general business filings, the type of bankruptcy that is filed determines whether and/or how fast creditors seize the assets of a borrower who defaults on her debt. There is evidence, albeit, showing that recovery is certainly not immediate. For example, in the U.S. bankruptcy is filed through Chapters 7, 11, 12 and 13. While Chapters 11, 12 and 13 insulate the borrowers from the creditors by giving them more time to repay, providing a repayment plan and allowing them to reorganize their debt, under Chapter 7 the assets are liquidated by the court. Although, in comparison to the other chapters, Chapter 7 is filed more often and it takes a shorter time to close a case filed under this chapter (according to the data from Administrative Office of the U.S. Courts, approximately 70% of the bankruptcy cases filed between March, 2001 to March, 2011 were done through Chapter 7), between 2007 and 2010 the average time to close a case under Chapter 7 was 155 days. The corresponding duration for Chapters 11 and 13 were 284 and 334 days, respectively.

Empirical evidence and theoretical findings further imply that these delays caused by the bankruptcy process can be related to business cycles. For example, there is a well-documented literature (Acharya et al., 2007; Altman et al., 2005; Chen, 2010), suggesting that it is unrealistic to assume that recovery rates are independent of real economic activity, especially in emerging market economies with volatile business cycles. More recent studies, focusing on the supply side of credit markets, further indicate that financial frictions become more binding during recessions/crises and magnify the effects of shocks (e.g. Kollmann, 2012; Davis, 2011; Gertler and Karadi, 2011; Adrian and Shin, 2010; Curdia and Woodford, 2010; Gertler and Kiyotaki, 2010; Meh and Moran, 2010; Brunnermeier and Pedersen, 2009; Hellwig, 2009). In these studies financial constraints become more binding because banks become more leveraged as their net worth decreases. In studies focusing on the demand side (e.g. Bernanke et al., 1999; Carlstrom and Fuerst, 1997), financial constraints similarly become more binding as the borrower's leverage increases. Aysun (2011) provides cross-country evidence supporting this aspect of financial frictions.

Evidence more directly related to the financial friction in this paper also suggests that economic activity, through its impact on the rate of bankruptcy filings, can affect the degree of frictions. For example, LoPucki (2005), investigating a single court, finds that an increase in the number of days in bankruptcy is the result of high filing rates. Similarly, Federal Judicial Workload Statistics that reports the number of filings during the year and the number of pending cases at the ends of the years, generally indicates a positive relationship and suggests that lawyers and judges devote less time to each case when they are overworked. Finally, data from the Administrative Office of the U.S. Courts suggest a similar positive relationship at the aggregate level. According to the annual statistics, the total number of bankruptcy filings in years 2007, 2008, 2009 and 2010 were approximately 0.7, 0.9, 1.2, 1.5 million, respectively. The mean time interval between filing and closing for consumer cases (averaged across Chapters 7, 11, and 13) for years 2007–2010 were 155, 277, 393 and 512 days, respectively.

[1] These reports are based on the methodology of Djankov et al. (2008).

[2] Djankov et al. (2003) provide further empirical evidence for imperfect contract enforcement using data from 109 countries.