



Securitization and the balance sheet channel of monetary transmission

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ABSTRACT

This paper shows that the balance sheet channel of monetary transmission is stronger for US banks that securitize their assets. This finding is different, in spirit, from the widely-found negative relationship between financial development and the strength of the lending channel of monetary transmission. Focusing on the balance sheet channel, and using bank-level observations, we find that securitizing banks are more sensitive to borrowers' balance sheets and that monetary policy has a greater impact on this sensitivity for securitizing banks. The optimality conditions from a simple partial equilibrium framework suggest that the positive effects of securitization on policy effectiveness could be due to the high sensitivity of security prices to policy rates.

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1. Introduction

The current consensus in the monetary economics literature is that the high rate of financial innovation in the past four decades has decreased the US Federal Reserve Bank's (Fed) ability to affect the real economy by using its policy tools (more commonly referred to as the monetary transmission mechanism). A majority of the studies in this literature investigates the lending channel of monetary transmission and finds that financial development and innovation have decreased banks' cost of generating loanable funds, and thus have limited the scope for monetary policy.¹ In this paper, we focus on the balance sheet channel of monetary transmission and investigate how the strength of this channel is affected by asset-backed securitization. Our findings show that the balance

sheet channel is stronger for banks that securitize some of their assets (one aspect of financial innovation). These findings suggest that the usual negative relationship between monetary policy effectiveness and financial innovation may only be limited to some channels of monetary transmission and may be reversed for one important channel – the balance sheet channel. The rapid growth observed in securitization activities in the past two decades highlights the economic significance of this finding and the importance of investigating how the various channels of monetary transmission and the overall effectiveness of monetary policy are affected.²

The balance sheet channel operates through borrowers' balance sheets: The Fed, by affecting the strength of these balance sheets, and the lenders' sensitivity to balance sheets, can have an impact on the loans extended to the real sector. Thus, according to the balance sheet channel of monetary transmission, the Fed affects the demand side of the financial market. In contrast, according to the lending channel of monetary transmission, the Fed affects the supply side of the financial market. Although the opportunities that new financial instruments such as asset-backed securities provide for raising funds on the supply side of the financial market are now well-known, to the best of our knowledge, it has not yet been

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¹ These studies find that with deeper and more global financial markets and with new financial instruments, monetary policy has become less effective. For example, Kashyap and Stein (2000) find that larger banks, with easier access to external funds, are less affected by monetary policy. Morgan et al. (2004) and Ashcraft (2006) also reach similar conclusions. Loutskina and Strahan (2009) focus on financial innovation and find a negative relationship between securitization and banks' supply of loans. Olivero et al. (2011) investigate the role of competition in the banking sector in Asia and Latin America and find that a higher degree of competition weakens the lending channel and therefore the effectiveness of monetary policy.

² For example, our calculations using data from the Securities Industry and Financial Markets Association show that the amount of asset-backed securitizations outstanding has increased from 4.2% of GDP in 1995 to 18.5% in 2008.

explored how securitization may affect the balance sheet channel. There are, however, some studies that investigate how securitization affects the riskiness of banks and thus has implications for the balance sheet channel. The conclusions drawn from these studies are conflicting. On the one hand, some studies (e.g. Greenbaum and Thakor, 1987) predict and some studies (e.g. Altunbas et al., 2009) empirically find that securitization decreases the riskiness of a bank's portfolio by limiting its exposure to bad loans. To the extent that the amount of bad loans is affected by economic conditions, this would suggest that banks become less sensitive to economic fluctuations.³ On the other hand, some recent empirical studies (Uzun and Webb, 2007; Adrian and Shin, 2009, 2010; Sarkisyan et al., 2010; Cardone-Riportella et al., 2010) find that factors such as the retention of credit risk of securitized assets (through recourse arrangements) and the effect of asset prices on banks' balance sheets generate a positive relationship between securitization and the riskiness of banks. Faced with higher risk, these banks are also found to show more sensitivity to economic conditions that affect credit risk and asset prices. By demonstrating a higher sensitivity to economic conditions (balance sheet strength) for securitizing banks, our results support the latter of these predictions. The additional and more central insight drawn from our results, however, is that the Fed's monetary policy has a larger effect on securitizing banks' sensitivity to economic conditions compared to banks that do not securitize their assets.

In our attempt to investigate the relationship between securitization and the balance sheet channel, we face several obstacles that also explain the scarce body of work. The first and most challenging of these is the separation of the lending channel from the balance sheet channel. Specifically, the lack of loan-level data makes it impossible to determine to what extent banks' decisions to increase/decrease the amount of lending are driven by banks' liquidity positions or by the strength of their borrowers' balance sheets. This drawback also raises an issue related to the choice of proxies that measure the importance of balance sheets in loan deals. Second, although measures for the stance of monetary policy are available for a long time period, data on the amount of banks' securitized assets are available for a relatively shorter time period. The third obstacle is the difficulty in measuring the effects of securitization on the balance sheet channel that are independent of other bank-specific characteristics that may be correlated with the amount of securitization. For example, banks that securitize their assets are often considerably larger than banks that don't securitize. The final difficulty is related to the choice of using bank level securitization data or data on the securitization of the bank holding company (BHC) that the banks are affiliated with.

Although the severity of some of these issues demands a cautious interpretation of our results, we take several steps to address these concerns and mostly find a positive relationship between securitization and the strength of the balance sheet channel. In measuring the strength of the balance sheet channel we follow the methodology of Ashcraft and Campello (2007) to control for the lending channel and compare the behavior of small banks that are affiliated with the same BHC. Under the reasonable assumption that banks affiliated with the same BHC have access to similar internal capital markets, we are able to shut down the lending channel and measure the strength of the balance sheet channel independently.⁴ The focus on smaller banks is a critical feature of this methodology. Indeed, without loan-level data, the strong ties that these banks have with local small businesses (see Strahan and Weston, 1998; Berger and Black, 2011) is what allows us to capture the effect that local economic conditions, strongly re-

lated to the balance sheet strength of small businesses, may have on bank lending. It also allows us to determine how monetary policy could affect the sensitivity to the strength of balance sheets – i.e., the balance sheet channel. The reasonable assumption we make here is that balance sheets are stronger (weaker) in a state that is experiencing an expansion (recession).

Most of our data are from the Federal Reserve's Call Reports of Condition and Income. The bank level data are quarterly and publicly available from the first quarter of 1976 to the first quarter of 2010 and have a large cross section dimension. The data on securitization, however, are only available after the first quarter of 2001. Given this constraint, we mostly exploit the cross section dimension of our data when measuring the balance sheet channel. Although using data from this time period and the corresponding estimation strategy has several advantages, we also use data prior to 2001 to check whether banks that securitize behave differently in the earlier time period.

Finally, we follow several approaches to control for bank-specific characteristics that may be correlated with securitization; we measure securitization both at the bank level and at the BHC level; and we use different measures for policy stance to check the sensitivity of our results. The results, although mixed, generally suggest a positive relationship between securitization and the strength of the balance sheet channel. More specifically, we find that securitizing banks are not only more sensitive to borrower balance sheets but are more affected by monetary policy. These results demonstrate the importance of securitization for overall monetary policy effectiveness and suggest that the developments that may affect the growth/deepening of the securitization market (such as stricter regulation following the recent crisis) should be considered in monetary policy formulation.⁵

In the second half of the paper, we build a partial equilibrium framework, similar in spirit to the well-known bank run model of Diamond and Dybvig (1983) to investigate why securitized banks can be more sensitive to the strength of borrowers' balance sheets and to monetary policy. We include monetary policy into this framework by assuming that the amount of bad loans and security prices are affected by policy rates. These assumptions play a critical role in the relationship between securitization and the balance sheet channel. The optimization conditions indicate that when the degree of securitization is high, the effect of monetary policy on the price of securities, despite the smaller exposure to bad loans, can be the main determinant of the higher sensitivity to monetary policy and to the strength of balance sheets.

In the next section, we detail our empirical strategy. Section 3 describes the data and presents some summary statistics. Section 4 presents our empirical results. In Section 5 we discuss our partial equilibrium model. Section 6 concludes.

2. Identifying the balance sheet channel of monetary transmission

As mentioned above, to measure the independent effects of borrowers' balance sheet strength on the amount of loans

³ For example, Ashcraft and Campello (2007) find, using bank level data, that the fraction of bad loans are higher during economic downturns.

⁴ Studies such as Houston et al. (1997), Campello (2002), and de Haas and van Lelyveld (2010) find that internal capital markets are functioning effectively in the banking industry.

⁵ Note that the balance sheet channel of monetary transmission not only operates through monetary policy's effects on balance sheet sensitivities but also through its effect on the strength of the balance sheets themselves. Thus by measuring the effect of monetary policy on the sensitivity to balance sheets we are only able to capture one feature of the balance sheet channel. This feature of the balance sheet channel is also the focus in empirical studies such as Gertler and Gilchrist (1994), Ashcraft and Campello (2007) and Angelopoulou and Gibson (2009). Although loan-level data is needed to measure the full strength of the balance sheet channel, our approach would not be unreasonable if monetary policy mostly has symmetric effects on the balance sheets of borrowers. Throughout the paper, we thus refer to the effect of monetary policy on banks' balance sheet sensitivities as the balance sheet channel, although we are only focusing on one aspect of this channel.

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