



Monetary policy and corporate default[☆]

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ABSTRACT

When a corporation issues debt with a fixed nominal coupon, the real value of future payments decreases with the price level. Forward-looking corporate default decisions therefore depend on monetary policy through its impact on expected inflation. We build a general equilibrium economy with deadweight bankruptcy costs that demonstrates how nominal rigidities in corporate debt create an important role for monetary policy even in the absence of standard nominal frictions such as staggered price setting in the output market. Under a passive nominal interest rate peg, the direct effects of a negative productivity shock combine with deflation to produce strong incentives for corporate default. A debt-deflationary spiral results when there are real costs of financial distress. Inflation targeting eliminates this amplification mechanism but full inflation targeting requires permitting the nominal interest rate to depend explicitly on credit market conditions.

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1. Introduction

The financial crisis of 2007/2008 and subsequent global recession has had a severe impact on both the default rates and credit spreads of firms. According to Moody's (Emery et al., 2009), the global default rate on speculative grade debt reached 13% in 2009, close to the previous high of 15.4% set in 1933, as shown in Fig. 1. Credit spreads similarly surged during the recent financial crisis, with the Baa–Aaa spread reaching a peak of just under 3.5% in 2008–2009. The last time the Baa–Aaa spread surpassed this level was also during the 1930's, as shown in Fig. 2. Hence, from the perspective of credit conditions, the recent recession has been the worst since the Great Depression.

While the nominal interest rate declined with GDP during both the recent crisis and the Great Depression, the behavior of inflation has been markedly different. During the period 2007–2009 inflation has declined, but any deflation has, so far, been negligible as seen in Panel A of Fig. 3. By contrast, the 1930's were marked by substantial deflation. The decline in real GDP during the recent crisis has also been on a much smaller scale than during the Great Depression as shown in Panel B of Fig. 3. A vast literature studies the impact of monetary policy on inflation and output,¹ and a growing subset of this work develops links between monetary policy and the microfoundations of corporate default and credit spreads.²

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¹ See for example Woodford (2003) and Gali (2008).

² See, for example, Curdia and Woodford (2010) who model credit spreads in a monetary economy where default on single-period household debt is exogenously specified. Christiano et al. (2009) develop a high-dimensional dynamic stochastic general equilibrium model where unexpected variations in inflation impact the distribution of wealth across agents due to a nominal rigidity in debt contracts. Bernanke et al. (1999) embed a financial accelerator model of output fluctuations into a New Keynesian monetary economy.

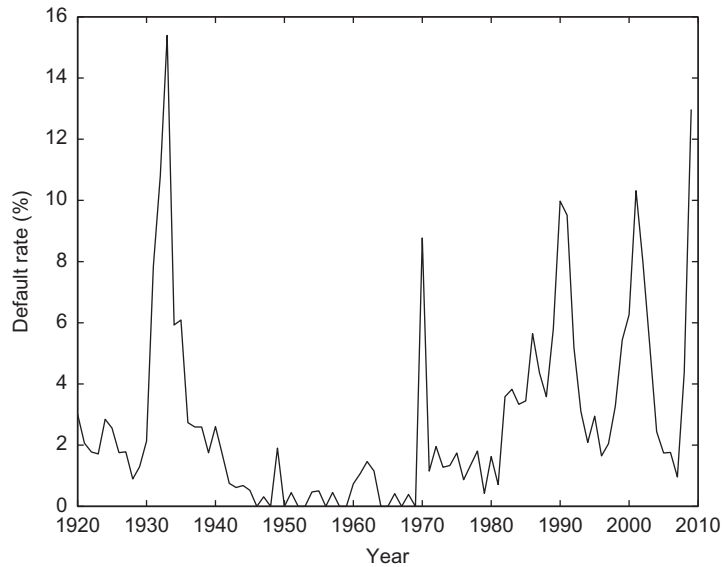


Fig. 1. Global speculative grade default rates, 1920–2009. The figure shows the percentage annual global default rate for speculative grade debt from 1920 until 2009, using data from Moody's (see Exhibit 5 in Emery et al., 2009).

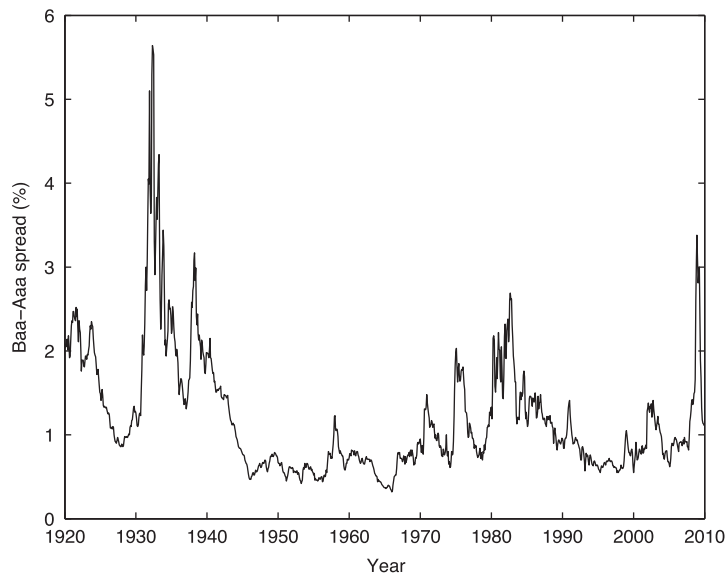


Fig. 2. Baa–Aaa credit spread, 1919–2009. The figure shows the spread (in annualized percentage units) between Baa and Aaa Moody's rated debt from 1919 until 2010.

In this paper we build on the observation that fixed-rate corporate obligations are typically denominated in nominal dollars, and are often long-lived. Hence a decrease in expected inflation, due for example to a monetary policy shock, increases the incentives of a corporation to default. We consider a cross-section of heterogeneous firms whose output depends on systematic as well as idiosyncratic productivity shocks. Following Merton (1974), Fischer et al. (1989), and Leland (1994), firms optimally issue perpetual risky debt to take advantage of a tax benefit to debt. They choose to default when the present value of coupon payments to bond holders is greater than the present value of future dividends.

The corporate finance literature emphasizes substantial costs of financial distress, in the range of 5–20% of firm value for firms ranging from investment grade to bankrupt.³ Our model correspondingly permits that in the event of default,

³ These costs involve both direct expenses of bankruptcy and a variety of indirect effects that impair operating activities in the neighborhood of distress. The real costs of financial distress have been estimated in different settings by Warner (1977), Cutler and Summers (1988), Weiss (1990), Andrade and Kaplan (1998), Bris et al. (2006), Almeida and Philippon (2007), and Van Binsbergen et al. (2010).

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