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Credit market shocks and economic fluctuations: Evidence from corporate bond and stock markets ☆

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ABSTRACT

To identify disruptions in credit markets, research on the role of asset prices in economic fluctuations has focused on the information content of various corporate credit spreads. We re-examine this evidence using a broad array of credit spreads constructed directly from the secondary bond prices on outstanding senior unsecured debt issued by a large panel of nonfinancial firms. An advantage of our "ground-up" approach is that we are able to construct matched portfolios of equity returns, which allows us to examine the information content of bond spreads that is orthogonal to the information contained in stock prices of the same set of firms, as well as in macroeconomic variables measuring economic activity, inflation, interest rates, and other financial indicators. Our portfolio-based bond spreads contain substantial predictive power for economic activity and outperform—especially at longer horizons—standard default-risk indicators. Much of the predictive power of bond spreads for economic activity is embedded in securities issued by intermediate-risk rather than high-risk firms. According to impulse responses from a structural factor-augmented vector autoregression, unexpected increases in bond spreads cause large and persistent contractions in economic activity. Indeed, shocks emanating from the corporate bond market account for more than 30 percent of the forecast error variance in economic activity at the two- to four-year horizon. Overall, our results imply that credit market shocks have contributed significantly to US economic fluctuations during the 1990–2008 period.

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1. Introduction

After markets for securitized credit products collapsed dramatically in the second half of 2007, growth in a number of industrialized economies slowed markedly, suggesting that disruptions in financial markets can have important macroeconomic consequences. The fact that sharp and sudden deteriorations in financial conditions are typically followed by a prolonged period of economic weakness is a feature of a growing number of economic downturns in the US and

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abroad. During periods of credit market turmoil, financial asset prices, owing to their forward-looking nature, are especially informative of linkages between the real and financial sides of economy: movements in asset prices can provide early-warning signals for such economic downturns and can be used to gauge the degree of strains in financial markets.

Past research on the role of asset prices in signaling future economic conditions and in propagating economic fluctuations has emphasized the information content of default-risk indicators such as corporate credit spreads—the difference in yields between various corporate debt instruments and government securities of comparable maturity—for the state of the economy and risks to the economic outlook.[1] In a recent paper, Philippon (2008) provided a theoretical framework in which the predictive content of corporate bond spreads for economic activity—absent any financial frictions—reflects a general decline in economic fundamentals stemming from a reduction in the expected present value of corporate cash flows prior to a cyclical downturn. Rising credit spreads can also reflect disruptions in the supply of credit resulting from the worsening in the quality of corporate balance sheets or from the deterioration in the health of financial intermediaries that supply credit—the financial accelerator mechanism emphasized by Bernanke et al. (1999). In this context, a contraction in credit supply causes asset values to fall, incentives to default to increase, and yield spreads on private debt instruments to widen before economic downturns, as lenders demand compensation for the expected increase in defaults.

In terms of forecasting macroeconomic conditions, the empirical success of this vein of research is considerable. Nevertheless, results vary substantially across different financial instruments underlying the credit spreads under consideration as well as across different time periods. For example, the spread of yields between nonfinancial commercial paper and comparable-maturity Treasury bills—the so-called paper-bill spread—has lost much of its forecasting power since the early 1990s.[2] In contrast, yield spreads based on indexes of high-yield corporate bonds, which contain information from markets that were not in existence prior to the mid-1980s, have done particularly well at forecasting output growth during the previous decade, according to Gertler and Lown (1999) and Mody and Taylor (2004). Stock and Watson (2003b), however, found mixed evidence for the high-yield spread as a leading indicator during this period, largely because it falsely predicted an economic downturn in the autumn of 1998. This dichotomy of findings is perhaps not surprising, because as financial markets evolve, the information content of specific financial assets prices may change as well. The fragility of results may also reflect the fact that this research has generally relied on a single credit spread index, rather than on multiple indexes reflecting a broad cross-section—in terms of both default risk and maturity—of private debt instruments.

In addition to focusing on a single credit spread index, researchers often ignore the information content of other asset prices when evaluating the forecasting ability of different default-risk indicators. Although it is straightforward to control for the general level of equity prices in such analysis, it is usually not possible to obtain equity valuations of the borrowers whose debt securities are used to construct the credit spreads under consideration.[3] Such information could potentially be used to distinguish movements in corporate credit spreads that are due to general trends in financial asset prices associated with a given class of borrowers from the movements in spreads that are specifically related to developments in credit markets.

When assessing the information content of corporate credit spreads for economic activity, it is also important to control accurately for the maturity structure of the underlying credit instruments. The widely used paper-bill spreads, for example, are based on short maturity instruments—typically between one and six months—whereas the specific maturity structure of corporate bond spread indexes such as the high-yield spread or Baa–Aaa spread—though much longer—is not generally known. In general, short-term credit instruments reflect near-term default risk, whereas longer maturity instruments are likely better at capturing expectations about future economic conditions one to two years ahead, a forecast horizon typically associated with business cycle fluctuations. Thus, a correct assessment of the ability of credit spreads to forecast at business cycle frequencies likely requires careful attention to the maturity structure of securities used to construct credit spreads.

This paper considers credit spreads constructed directly from monthly data on prices of senior unsecured corporate debt traded in the secondary market over the 1990–2008 period, issued by about 900 US nonfinancial corporations. In contrast to many other corporate financial instruments, long-term senior unsecured bonds represent a class of securities with a long history containing a number of business cycles, an attribute that is most useful in the valuation process of debt instruments. In addition, the rapid pace of financial innovation over the past 20 years has not affected the basic structure of these securities. Thus, the information content of spreads constructed from yields on senior unsecured corporate bonds

[1] The predictive content of various corporate credit spreads for economic activity has been analyzed, among others, by Stock and Watson (1989), Friedman and Kuttner (1998), Duca (1999), Emery (1999), Gertler and Lown (1999), Ewing et al. (2003), Mody and Taylor (2004), and Mueller (2007). In addition, Stock and Watson (2002b) have pointed out the ability of credit spreads to forecast economic growth using dynamic factor analysis, and King et al. (2007) found that corporate bond spread indexes contain important information about the near-term likelihood of a recession. In a related vein, an extensive empirical literature has emphasized the extent to which the slope of the yield curve—the so-called term spread—provides a signal for forecasting economic growth or for assessing the near-term risk of recession; see, for example, Dotsey (1998), Estrella and Hardouvelis (1991), Estrella and Mishkin (1998), and Hamilton and Kim (2002). More recent work on this topic includes Ang et al. (2006) and Wright (2006). A comprehensive review of the literature on the role of asset prices in forecasting macroeconomic outcomes is provided by Stock and Watson (2003a).

[2] Indeed, Thoma and Gray (1998) and Emery (1999) argued that the predictive content of the paper-bill spread may reflect one-time events.

[3] Fama (1981), Harvey (1989), Stock and Watson (1989, 1999), and Estrella and Mishkin (1998) examined the predictive content of various stock price indexes for economic activity and compared it to other financial and nonfinancial indicators.