

Discussion of “Credit Risk and the Macroeconomy: Evidence from an Estimated DSGE Model” by Gilchrist, Ortiz, and Zakrajsek

Marvin Goodfriend
Carnegie Mellon University
June 4-5, 2009

Outline

- Summary of Findings
- Financial Friction as Credit-Risk Bearing
- Money and Banking
- Monetary Policy at the Zero Bound
- Reinterpreting Forecasting Success of the Corporate Credit Spread

Summary of Paper

- Evidence of relationship between financial factors and real economy
- Medium-risk, long-maturity corporate credit spread highly informative for future economic activity
- Substantial fraction of cyclical fluctuations in output and investment attributed to disturbances *originating* in financial sector
- Estimated NK-DSGE model with financial sector captures much of *historical narrative* regarding conduct of monetary policy

Modeling Financial Frictions

- Agency problems—asymmetric information or moral hazard—link borrower financial health to real activity
- Borrowers post collateral and maintain stake in project financed with external funds
- External finance premium negatively related to collateral and borrower net worth
- Broad “credit channel” modeled here

Modeling Financial Frictions

- Medium-risk, long-maturity corporate credit spreads, among other contenders, found to be highly informative for future economic activity
- Proxy for unobservable external finance premium
- Size and fluctuation in corporate credit spread is interpreted as rationally expected probability of default and loss given default—“credit risk”
- Check whether ex post experience of default and loss given default can plausibly account quantitatively for level and range of fluctuation of credit spreads

Money and Banking

- Financial frictions give rise to demand for narrow and broad liquidity services
- Narrow liquidity services provided by bank reserves, currency, and transactions deposits
- Broad liquidity services provided by above and by short-term time deposits, certificates of deposit, commercial paper, Treasury bills, money market mutual fund shares...
- Demand for broad liquidity services evident in fact that US public holds over 1 GDP of wealth in such financial assets in spite of low 1 to 2 percent average real yield

Money and Banking

- Arbitrage between loan market and asset market means bank loan rate reflects risk-adjusted return on assets
- Deposit rate settles below loan rate by a spread reflecting “implicit broad liquidity services yield”
- “External finance premium” in banking reflected in spread between interest rate on bank loans and rate on bank deposits
- EFP component of loan rate covers marginal cost of managing and monitoring bank loans (collateral, net worth)

Money and Banking

- In equilibrium, representative household funds bank deposits by borrowing from banks
- Money and banking equilibrium reflects loan production technology interacting with bank deposit demand (as a function of implicit broad liquidity services yield)
- Interest rate spreads in banking ordinarily reflect ex ante precautions against credit risk
- Shocks to demand for broad liquidity services and cost of loan production (interacting with collateral values, bank capital, increased uncertainty about default) upset banking equilibrium

Money and Banking

- OBSERVATION: Credit risk borne in banking by charging borrower to pay for screening, managing, and monitoring loans, and by taking collateral and imposing strict covenants ex ante---to prevent default ex post
Credit risk borne in corporate bond market by allowing for ex post default---borrower pays risk premium ex ante to compensate lender on average over time for incurring default ex post
Model of financial frictions must reconcile coexistence of money and banking with corporate bond market
Must explain coexistence and link both means of dealing with credit risk at the margin

Monetary Policy at the Zero Bound

- Narrow liquidity services provided by reserves, currency, demand deposits satiated at zero bound on interest rate policy
- Demand for broad liquidity services not satiated—high opportunity cost of broad liquidity in credit turmoil reflected in “flight to safety” and elevated term premium in interbank and other markets
- Reserves and short-term securities perfect substitutes at zero bound
- Monetary policy stimulates economic activity at zero bound if CB injects bank reserves by purchasing relatively illiquid assets such as long-term treasury bonds

Monetary Policy at Zero Bound

- CB increase in stock of broadly liquid financial assets acts on following margins:
 - Expanded broad money stock brings down “marginal broad liquidity services yield” and activates portfolio rebalancing
 - Public induced to acquire non-monetary assets that have higher explicit return; prices of nonmonetary assets bid up to restore required return differential
 - Higher asset prices raise collateral values and net worth of households, and bring elevated credit spreads back down

Monetary Policy at Zero Bound

- Higher asset prices and reduced credit spreads stimulate desired consumption out of current income and help revive investment
- Alternatively, newly created reserves used by public to pay off bank loans
- Encourage extension of new loans by reducing risk-weighted assets and by making available organizational banking resources to manage new lending
- Banking system positioned to lend to those still in need, doing so expands broad money stock

Monetary Policy at Zero Bound

- Implementation Problems:
 - At the zero bound, monetary policy must exert leverage through broad monetary aggregate larger than GDP
 - Large, sustained reserve increase in the trillions (likely) needed to exert significant stimulus

Monetary Policy at Zero Bound

- Implementation Problems (continued):
 - Large monetary expansion at zero bound effective only if public confident that CB will expand reserves *by as much and for as long as needed* to act against contraction
 - Credibility of aggressive monetary stimulus depends, in turn, on public's belief that CB is *confident of independence to exit promptly and aggressively from zero bound* if need be to contain inflation
 - Credibility to act in either direction tied to credibility to act in both directions

Reinterpreting Forecasting Success of the Spread

- Paper concludes:
 - Substantial fraction of cyclical fluctuations in output and investment can be attributed to disturbances *originating* in financial sector
 - Estimated NK-DSGE model with financial sector captures much of *historical narrative* regarding conduct of monetary policy
- I would like to suggest an alternative interpretation motivated by question: How could Fed have overlooked such a powerful predictive tool for fluctuations in economic activity?

Reinterpreting Forecasting Success of the Spread

- Clue to answer is on page 13 of the paper where authors report inclusion of their corporate credit spread “eliminates any predictive content of the term spread and the real federal funds rate” in forecasting regressions for output and investment
- Suggests might be possible to explain predictive content of the credit spread in large part as reflecting Fed’s own policy actions
- Misleading attribution of explanatory power to shocks originating in financial markets possible if Fed policy rule omits relevant conditioning input variables
- Perspective gets support from following aspects of historical narrative regarding monetary policy

Reinterpreting Forecasting Success of the Spread

- The 1981-82 recession result of deliberate Fed action to bring about the Volcker disinflation, also induced great financial market distress
- Run-up to 1990-1 recession initiated by 1987 “inflation scare” in bond markets associated with the Louvre Accord and October 1987 crash, inflation allowed to rise from around 4 to around 5.5 percent by 1990. Greenspan moved federal funds rate from 6 to 7 percent range to nearly 10 percent in March 1989
- Property market crisis in late 1980s
- Modest increase in the “spread” prior to the 1990-1 recession due to monetary tightening against inflation and financial distress originating in property markets (Recession might not have occurred without invasion of Kuwait.)
- The reduction in the “spread” to 1993 reflective of the easing of the real funds rate to zero in response to the “jobless recovery”

Reinterpreting Forecasting Success of the Spread

- Post 1996 period marked by “death of inflation” following successful Fed actions against the 1994 “inflation scare,” increase in trend productivity growth, East Asian currency crisis of 1997, Russian default in summer 1998, LTCM crisis of autumn 1998, and unsustainable asset price appreciation
- These developments conspired to keep the Fed from moving the federal funds rate up preemptively against the “boom” during the late 1990s
- By 1999 Fed felt paralyzed, moved fed funds rate up modestly, waited for collapse
- Insufficiently preemptive Fed allows sharp increase in “spread” in 1999 to forecast collapse of equity prices and recession potential (NBER might not have declared recession in 2001 if not for 9/11.)

Reinterpreting Forecasting Success of the Spread

- Fed pushed funds rate down to 1 percent in mid-2003 as inflation fell to 1 percent, to act against deflation evident in unit labor costs (surprisingly high productivity growth in conjunction with weak labor market and slow wage growth)
- Sharp fall in the “spread” in this period reflects deliberate easing of monetary policy against mini-deflation scare

Reinterpreting Forecasting Success of the Spread

- Fed moved rates steadily higher to 5 ¼ percent by mid-2006, rate increases proved insufficient given the surprising strength and breadth of the appreciation of house prices
- “Spread” moved slightly above historic mean by mid-2006 as house prices peaked
- House prices regarded as overvalued, distress expected in the subprime sector, but believed manageable, plausibly diversified in capital markets
- “Spread” shot up in beginning of 2008 around the Bear Stearns collapse when evident that distress not diversified but concentrated in banking system

Reinterpreting Forecasting Success of the Spread

- Sharp jump of “spread” in early 2008 signaled major contraction coming, though not obvious in the spring and summer of 2008
- “Spread” prediction proved accurate when financial chaos in September and October 2008 precipitated severe contraction of output and employment beginning in late 2008, the most severe since World War II

Reinterpreting Forecasting Success of the Spread

- To sum up---On basis of this *narrative* it does not appear that a substantial fraction of cyclical fluctuations in output and investment can be attributed to disturbances *originating* in financial sector
- Only sharp 2008 increase in “spread” seems clearly attributable to disturbance originating in financial sector (although property market crisis in late 1980s may be another instance)
- Otherwise, fluctuations in the “spread” can be understood in terms of Fed interest rate policy—whether insufficiently preemptive, deliberately restrictive, or deliberately expansionary
- Narrative suggests financial factors captured by the “spread” acted largely as *financial accelerator* rather than an *originator* of macroeconomic fluctuations