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Diverging monetary policies,
global capital flows, and financial stability

Risk taking and interest rates: Evidence from two decades in the global syndicated loan markets

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The standard disclaimer applies

Structure of paper

- Introduction & Motivation
- Literature review
- Two risk-taking channels of monetary policy
- Key features of syndicated loan market
- Loan spreads as *ex ante* measures of credit risk
- Data: Sources, required cleaning, aggregation, economic significance
- Empirical strategy
- Estimation results
- Implications for financial stability issues
- Conclusion

Risk-Taking Channel of Monetary Policy

- Monetary policy may work, in part, by altering investors' incentives to take risk (credit risk, price risk, etc.)
- How much does investors' willingness to take risk vary with interest rates?
- Two risk-taking channels
  - Cost of short-term funds: The lower the interest rate on short-term funds, the more willing some investors appear to be to take on additional risk
  - Yields on longer-term safe assets: If these yields decline, some investors may be tempted to "reach for yield" by holding more risky (less-safe) assets
- Note: The two channels are not mutually exclusive

Asset risks. Quantifying credit risk

- Most assets are at least somewhat risky
- Many risk categories/classifications
  - price risk (market risk)
  - credit risk
  - liquidity risk
  - operational risk, legal risk, and many more
- These risks need not be independent of each other in an economic sense
- Main form risk of bank loans, esp. syndicated bank loans: Credit risk
- Two components of credit risk
  - probability of default
  - loss given default
- SPR $\approx$ PD $\times$ LGD: Loan spread (SPR) is approx. equal to product of probability of default (PD) and loss given default (LGD)

Why study spreads embedded in syndicated bank loans?

- Can identify both the ultimate lenders and the ultimate borrowers
- Plentiful information about loan terms and risk characteristics of borrowers
- Lenders: predominantly banks and BHCs, but also finance companies, securities dealers, investment funds, etc
- Study focuses on loans originated in U.S. dollars & indexed to a U.S. dollar LIBOR rate
- Controls for variables such as state of credit cycle (CDS spreads), European sov. debt crisis, lender risk aversion (see also below), lender fixed effects
- Aim: Ceteris paribus-type analysis of relationship between loan spreads and two interest rates

Pre-crisis period, 1995:Q1 to 2007:Q2

Focus: Estimation of β_{FF} and β_{10yrT}

Lenders	Borrowers	n	β_{FF}	β_{10yrT}
All	All	23306	-0.029^{***}	0.002
Most-Active	All	1350	-0.035^{***}	-0.021
All	w/ outst. IG debt	3141	-0.039	0.151^{*}
All	Non-US	12004	-0.036^{***}	-0.004
Non-US	All	11476	-0.035^{***}	-0.012
Non-US	Non-US	10747	-0.041^{***}	-0.007

Source: Tables 4, 6, 8, 10, 12, 14

Post-crisis period, 2009:Q3 to 2013:Q4

Focus: Estimation of β_{10yrT}; β_{FF} is not identified separately and thus cannot be estimated, as Fed funds rate was nearly constant (and close to 0) during this period

Lenders	Borrowers	n	β_{10yrT}
All	All	5935	-0.100^{*}
Most-Active	All	1656	-0.166^{***}
All	w/ outstanding IG debt	1627	0.047
All	Non-US	3845	-0.179^{**}
Non-US	All	3689	-0.141^{**}
Non-US	Non-US	3420	-0.171^{*}

Source: Tables 5, 7, 9, 11, 13, 15

Findings

- Cost of funds channel appears to dominate during pre-crisis period:
- Across the sample set choices, a 1 percentage point decline in the Fed funds rate is associated with a 3.5 bp increase in loan spreads.
- Yield-on-safe-assets channel appears to dominate during post-crisis period:
- Across the sample set choices, a 1 percentage point decline in yield on the 10-year Treasury note is associated with a 13–14 bp increase in loan spreads
- Authors are careful not to claim that the volume of risky loans varies inversely with interest rates

General comments

- Topic of inquiry — risk-taking channel — is very interesting and relevant for policy makers
- Spreads on syndicated bank loans are economically relevant and lend themselves to econometric analysis
- My remaining comments focus on
  - general econometric concerns
  - specification testing and parameter constancy tests
  - implications for monetary policy
- General suggestion on terminology: Call the interest rates “U.S. dollar interest rates” rather than “U.S. interest rates”
  - Fed funds and U.S. Treasuries are traded and priced globally; they are not determined exclusively by U.S. economic conditions and Federal reserve policy actions

Econometric modeling concerns

- Regressor that proxies for influence of market volatility on loan spreads: Squared VIX, or VIX^2
- VIX: Options-derived ("risk-neutral") measure of expected near-term volatility of U.S. share prices
  - Advantage: forward-looking measure
  - Disadvantage: implicitly, make assumption that term structure of volatility is constant over time
- Alternatively, use longer-horizon volatility measures, e.g., swaptions, in the regressions?
- VIX^2: variance risk premium. Why squared? May want to try VIX directly — "volatility risk premium" — or include both VIX and VIX^2 as regressors
- VIX is not a pure measure of investor risk aversion, depends both on risk and risk aversion
- Is the Federal funds rate the best measure of funding costs? Maybe try 3-mo or 12-mo LIBOR?

Econometric modeling concerns, cont'd

- How to interpret the regression results for the subsample that includes only borrowers with outstanding investment-grade debt (pos. point est. of coeff.)
- How well are the regression equations specified?
- Consider showing some specification tests, e.g., Durbin-Watson (serial correlation in errors), Jarque-Bera (non-normality of errors)
- Authors perform "half" of parameter-constancy tests: Show β_{FF} and β_{10yrTR} for selected subsamples—but not for their complements
- Suggestion: Report Chow tests of parameter constancy across pairs of subsamples, both for all regression coefficients as well as just for β_{FF} and β_{10yrT}

Econometric modeling concerns, cont'd

- Suggestions for additional tests of parameter constancy
  - Pre-crisis period quite long, lots of data: split it into two subperiods, e.g., before and after the recession of 2000/2001
  - Split the groups of "non-US lenders" and "non-US borrowers" into finer subgroups, e.g., European and non-European borrowers (and lenders)

Implications for monetary policy

- Is information available about quantitative impact of risk-taking channels on bank loan volumes?
- How should central banks incorporate increased understanding of risk-taking channels?
  - E.g., move interest rate targets less than they would otherwise see fit to do?
  - Assign a greater, or different, role to macro-prudential regulaton?
  - Impact on understanding of how central banks (and other government and supra-national institutions) should coordinate their policies?