

# **Comments on Three Papers on Banking and the Macroeconomy**

**John V. Duca**

**Associate Director of Research and Vice President**

**Federal Reserve Bank of Dallas\***

**Adjunct Professor**

**Southern Methodist University**

**\* The views expressed are those of the author, and are not necessarily those of the Federal Reserve Bank of Dallas or of the Federal Reserve System.**

# “Is Bank Debt Special for the Transmission of Monetary Policy? Evidence from the Stock Market”

by Ippolito, Ozdagli, and Perez

- Paper provides cross-sectional evidence regarding the extent to which floating rate debt exposes nonfinancial firms to interest rate shocks.
- Previous papers find heterogeneity in effects of monetary policy shocks: small firm borrowing, performance, stock prices hurt more by tighter monetary policy, in line with broad external finance channel. Paper isolates floating-rate bank credit channel on firms via existing debt. Floating rate debt 1/3 total debt entire sample, 45% for bank borrowers. High correlation bank debt and floating rate debt—short-term nonbank debt less likely to be floating rate.
- Empirically demonstrates stock price reaction to monetary policy surprises is an increasing function of bank debt/total assets with many controls and interactive variables for other factors (size, leverage, market-to-book ratios, cash flow, clustering by industry, industry or firm fixed effects, instrument for bank debt,...). Robust findings: use of bank (floating rate) debt not short-term debt matters. Similar results for bank debt/total debt—it's not leverage.
- Consistent with main hypothesis, little effect on firm stock prices of bank debt or floating rate debt for firms reporting that they hedged interest rate risk. Robust to controlling for tax considerations affecting hedging.
- The more financially constrained hedge less even though their stock price hurt more by negative monetary policy shocks than less constrained.

# “Is Bank Debt Special for the Transmission of Monetary Policy? Evidence from the Stock Market” by Ippolito, Ozdagli, and Perez

- Paper’s findings raise interesting economic efficiency issues:
  - Why do banks offer more floating-rate debt than nonbank financial firms?
  - Wouldn’t it be more efficient if sophisticated banks took on the interest rate risk than nonfinancial firms with floating rate debt. Perhaps the opposite occurs as banks already face more interest rate risk or it’s easy to hedge rate risk with standard derivatives or owes to complicated interactions credit, interest rate, and business cycle risk.
- Innovative study of the *cross-section* effects of the bank debt channel. But the topic is related to a small, old macro literature on loan commitments and floating interest rates, and how they could alter the impact of monetary policy:
  - Duca and VanHoose (*JMCB*, 1990); Woodford (*JME*, 1996), both entitled “Loan Commitments and Optimal Monetary Policy.”
  - IS function more rate sensitive the more floating rate debt used—especially since use of commitments doubled, cross section study finds evidence consistent with this channel

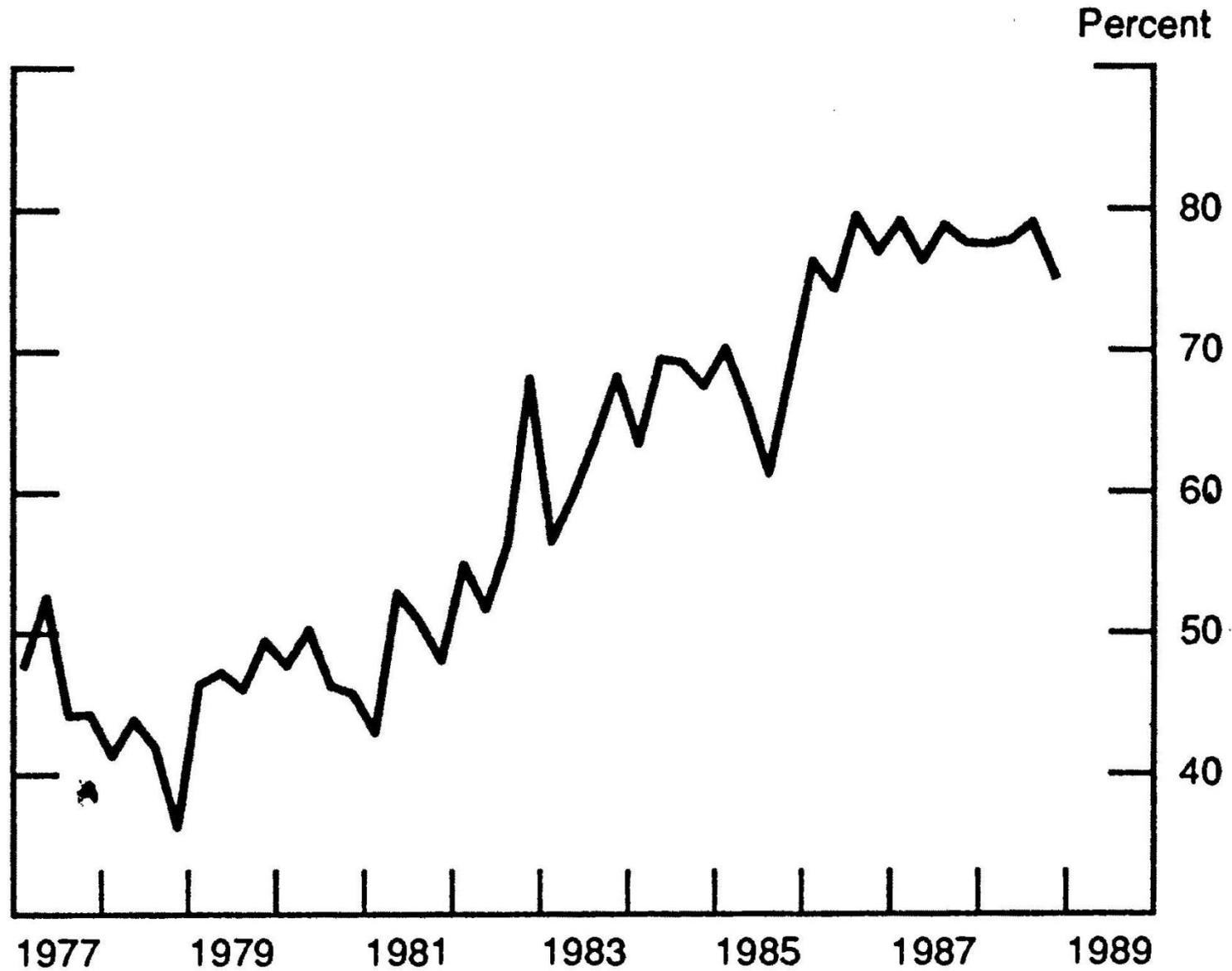


FIG. 1. Commitment Share of G &amp; H from Extension with Maturity under One Year

# “Is Bank Debt Special for the Transmission of Monetary Policy? Evidence from the Stock Market” by Ippolito, Ozdagli, and Perez

- Paper’s findings raise interesting economic efficiency issues:
  - Why do banks offer more floating-rate debt than nonbank financial firms?
  - Wouldn’t it be more efficient if sophisticated banks took on the interest rate risk than nonfinancial firms with floating rate debt. Perhaps the opposite occurs as banks already face more interest rate risk or it’s easy to hedge rate risk with standard derivatives or owes to complicated interactions credit, interest rate, and business cycle risk.
- Innovative study of *cross-section* effects of bank debt channel. But related to a small, old macro literature on loan commitments and floating interest rates, and how they could alter the impact of monetary policy:
  - Duca and VanHoose (*JMCB*, 1990); Woodford (*JME*, 1996), both entitled “Loan Commitments and Optimal Monetary Policy.”
  - IS function more rate sensitive the more floating rate debt used—especially since use of commitments doubled, cross section study finds evidence consistent with this channel
- Rise in commitment lending followed Fed shifted away from money targeting, perhaps because shift lowered interest rate volatility and—along with improved financial technology gave rise to financial innovation. Also a regulatory crackdown on duration risk after the S&Ls became troubled? But new liquidity coverage rules under DFA could alter banks’ relative willingness to offer fixed rate vs. floating rate commitments. Explicitly qualify findings against the regulatory and technological environment and consider how new regulations may alter practices.

**A very impressive study whose findings are even more interesting viewed in the context of how U.S. financial architecture has evolved.**

# “Capital Requirements in a Quantitative Model of Banking Industry Dynamics” by Corbae & D’Erasmus

- Ambitious and innovative initiative to model the impact of capital requirements on total loan volume, industrial structure of banking, and relative impact of monetary policy on weak versus stronger (capitalized) banks in an endogenized banking sector
- A very impressive framework in which optimizing depositors, borrowers, competitive banking sector, and a dominant banking sub-sector interact. Changes in regulation affect interest rate margins on loans, aggregate bank lending, and the structure of the banking industry. Framework finds that monetary policy’s effects vary by condition of banks, affecting dividend and lending policies.
- These are *major* innovations in how to model financial intermediation and the paper greatly advances the literature.
- To make these major advances the paper makes several assumptions, and the paper should acknowledge where some future work needs to be done. I have some minor suggestions for tweaking the calibration and argue the paper should qualify its contribution for the effects of shadow banking

# Comments/Suggestions: “Capital Requirements in a Quantitative Model of Banking Industry Dynamics”

- **Minor comments regarding calibration**
  - Study calibrates deposit rates 1976-2012. Omit Reg Q subsample ('76-81), money targeting regime (high volatility), and pre-Volcker disinflation era (start in 1984).
  - Paper focuses on the tier 1-to-risk weighted asset ratio rising from 4 to 6%; Ignores total capital ratio and 1% above to be well capitalized – needed to expand; also access to Tier 2 capital might be limited—6% total min ratio + 1 % for well-capitalized plus a 1% buffer implies 8% tier 1 ratio for large banks in Fig 1. Effective regulatory K ratio on C&I loans 8% not 4% under Basel II & I, 5.5% pre-Basel 1—may affect the estimates. Calibrate to 1990-2012?
- **Comment regarding the set-up of the model:**
  - Model allows dominant & fringe banks to fail; in crisis, some failing banks were closed while some SIFIs were not allowed to fail. The calibration and set up for gauging the past *may* be off for dominant banks. “Dominant-bank exit is not observed along the equilibrium path,” p 26.
- **Regulatory Arbitrage with Shadow Banks or Securities Markets is Omitted:**
  - Assumption likely needed to simplify the model enough to solve. But model focuses within banking industry, ignoring regulatory arbitrage (mkt share of shadow bank or securities mkts)
  - Model calibrated to a sample in which (C&I) regulatory arbitrage incentives shifted:

## Absolute total K ratios

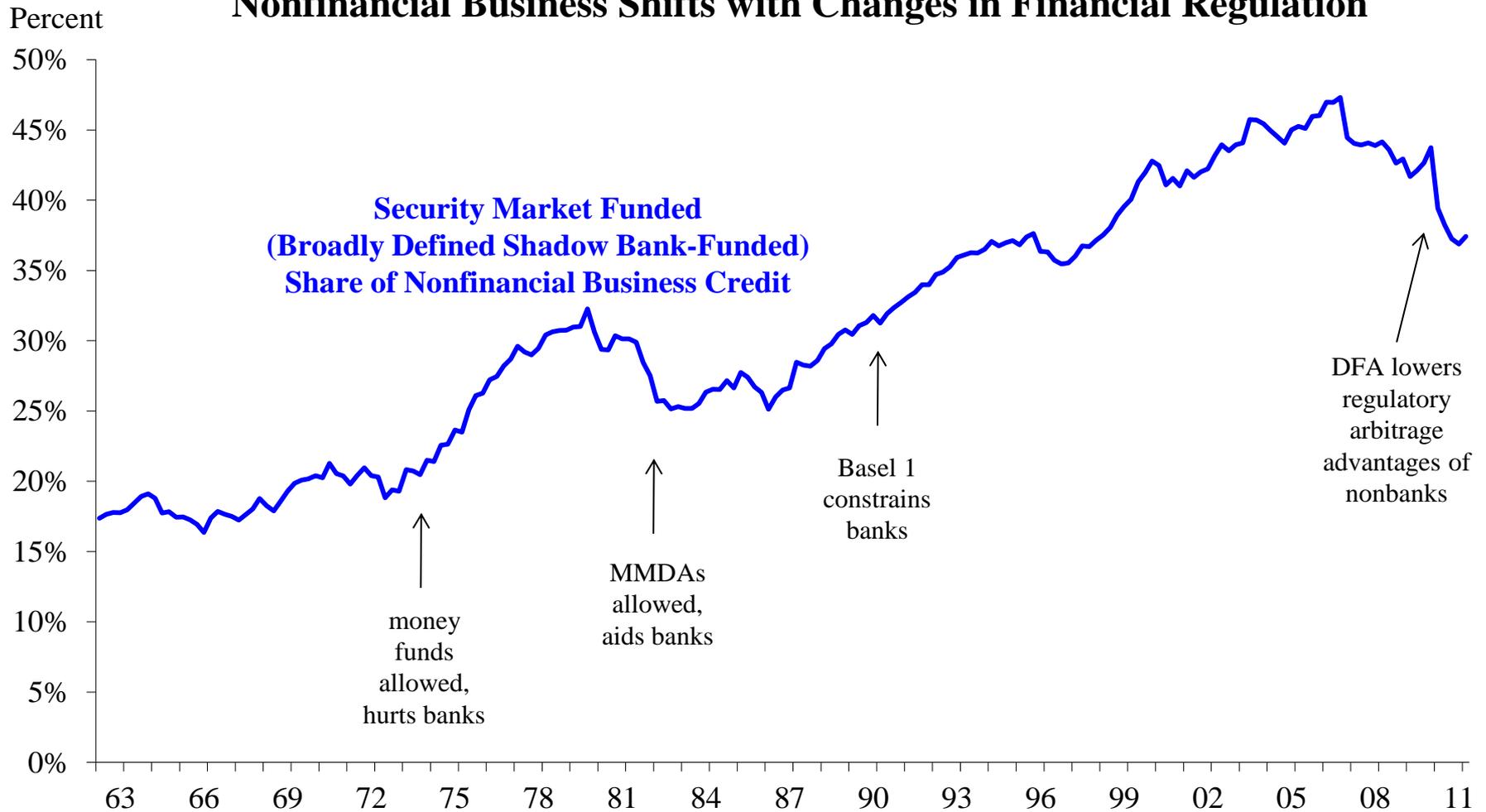
- PreBasel 1: 5.5 % total capital vs. 0 for shadow:
- Basel I/II 8% total K loans in portfolio vs. 0% securitized;
- DFA: 10.5% total K (8% plus 2.5% conservation buffer)  
vs 5% loss position on securitized loans under stress tests

## Relative total K ratios

- 5.5% total K incentive
- 8.0% total K incentive
- 5.5% total K incentive

So Dodd-Frank arguably affects bank loan market share—consistent with results from an empirical model of shadow banks share of short-term business credit 1963-2013. Calibration model may miss some of these regulatory arbitrage effects

# Broadly Defined Security (Shadow Bank) Funded Share of Nonfinancial Business Shifts with Changes in Financial Regulation



Sources: Financial Accounts of the U.S., author's calculations, and modified from "What Drives the Shadow Banking System in the Short- and Long-Runs?," John V. Duca, Federal Reserve Bank of Dallas Working Paper No. 1401, February 2014.

# **“Capital Requirements in a Quantitative Model of Banking Industry Dynamics” by Corbae & D’Erasmus**

**Even with the qualification that future papers could address regulatory arbitrage issues regarding shadow banks, this excellent paper makes a major modeling contribution.**

# “When Credit Dries Up: Job Losses in the Great Recession” by Bentolila, Jansen, Jimenez, Ruano

- Excellent study that uses unusually complete Spanish data to disentangle the partial equilibrium feedback effect of weak banks on lending and employment .
- Controls: local conditions, loan relationships/applications, firm conditions, *inter alia*
- Addresses endogeneity: hard to identify pre-crisis which banks became weak; closely match firms with weak versus other banks; firms with highest 30% exposure to weak banks the treated group. Also used credit committed as an IV for estimating nonRE loan effects; tested loan rejection and loan size effects of weak bank tie on firms.
- Address whether firms picked banks with lax standards using instrumental variables (1988 municipal branch share of weak banks; bank real estate exposure in 2000—very large effects). Employment effects small but significant for surviving firms with weak bank links; much larger including job losses at failed firms linked to weak bank links.
- Qualitative results robust to using link to weak banks in 2000/02, and IV (top 30% banks exposed to real estate in 2006). Matching suppresses pre-existing trend differences between treated & control firms, statistically significant though smaller weak bank link.
- Effects of weak bank link are larger on financially weaker firms—akin to 1<sup>st</sup> paper’s finding that interest rate channel of floating rate debt hurts weak firms more
- While not offering GE effects, shows literature may overstate weak bank effects by not controlling for firm characteristics. Weak bank link significantly affect firm survival, but this may not be as general as suggested: Spain’s job laws may amplify this channel.

# Minor Comments/Suggestions: “When Credit Dries Up: Job Losses in the Great Recession”

- Analysis suggests a role for weaker credit standards. Report average firm characteristics at weak vs. control banks: formal tests?
  - Earlier (p. 10) report pre-crisis loan application acceptance rates 6.5% higher at weak than healthy banks, but 6.3% lower at weak post-crisis
  - Using firm characteristics, do data allow testing to see if pre- (post-) crisis credit standards weaker (tougher) at “weak banks” or at cajas (savings banks) versus other banks (assess loan acceptance rates for firms with weak characteristics)?
- Analysis suggests a role for the governance structure of lenders:
  - “Only a subset of the banks, all but one of them savings banks (...cajas) needed to be rescued by the State,” p. 2. Also, RE exposure correlated with weak banks.
  - Unclear whether the governance structure was among covariates modeling likelihood of becoming a weak bank. (If so, please indicate it clearly).
  - Risk ratings are uncorrelated with future probability of becoming weak (being rescued). But were ratings on caja securitization issues higher because investors saw a higher chance of being protected if a caja failed than if a non-caja failed?
  - Is it possible to test if the findings hold up among non-caja borrowing firms by including selection controls—or is the number of non-caja “weak” banks too small?
  - Echoes of the US savings & loan crisis--but whose resolution began in an expansion.

But these are *minor possible* refinements for an excellent paper.

# Three Highly Relevant, Well-Done Studies

- The first provides cross-sectional evidence regarding the extent to which floating rate debt exposes nonfinancial firms to interest rate shocks
- The second paper examines how bank capital regulation alters composition of the banking industry, bank loan volume and the relative impact of monetary policy on well- versus less well-capitalized banks
- The third paper isolates the partial equilibrium impact of how damage to the banking system feeds back onto the real economy in the form of job losses, using some incredible Spanish data.