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VITA

- Economist, Federal Reserve Bank of Dallas
- D.Phil. Economics - University of Oxford (2011)
- M.Phil. Economics - University of Oxford (2007)
- M.A. (hons) Economics - University of St. Andrews (2005)

RESEARCH

Heterogeneous Bank Lending Responses to Monetary Policy: New Evidence from a Real-Time Identification

With *Christopher Bowdler* and *John C. Bluedorn*, forthcoming International Journal of Central Banking.

We present new evidence on how heterogeneity in banks interacts with monetary policy changes to impact bank lending, at both the bank and the U.S. state level. Using an exogenous policy measure identified from narratives on FOMC intentions and real-time economic forecasts, we find much stronger dynamics and greater heterogeneity in U.S. bank lending responses than that found in previous research based on realized federal funds rate changes. Our findings suggest that studies using realized monetary policy changes confound the monetary policy's effects with those of changes in expected macrofundamentals. In fact, estimates from identified monetary policy changes lead to a reversal of U.S. states' ranking by credit's sensitivity to policy. We also extend Romer and Romer (2004)'s identification scheme, and expand the time and balance sheet coverage of the U.S. banking sample.

Bank Leverage and Regulatory Regimes: Evidence from the Great Depression and Great Recession

With *Gary G. Richardson* and *Patrick Van Horn*, American Economic Review, Papers and Proceedings, May 2016, Vol. 106, No. 5, pp. 538-52.

Deposit Interest Rate Ceilings as Credit Supply Shifters: Bank Level Evidence on the Effects of Regulation Q

Published in Journal of Banking and Finance, December 2015, Volume 61, Pages 316-326.

Shocks emanating from and propagating through the banking system have recently gained interest in the macroeconomics literature, yet they are not a feature unique to the 2008/09 financial crisis. Banking disintermediation shocks occurred frequently during the Great Inflation era due to fixed deposit rate ceilings. I estimate the effect of deposit rate ceilings inscribed in Regulation Q on the transmission of federal funds rate changes to bank level credit growth using a historic bank level data set spanning half a century from 1959 to 2013 with about two million observations. Measures of the degree of bindingness of Regulation Q suggest that individual banks' lending growth was smaller the more binding the legally fixed rate ceiling. Interaction terms with monetary policy suggest that the policy impact on bank level credit growth was non-linear at the ceiling "kink" and significantly larger when rate ceilings were in place. At the bank level, short-term interest rates exceeding the legally fixed deposit rate ceilings identify bank loan supply shifts that disappeared with deposit rate deregulation and thus weakened the credit channel of monetary transmission since the early 1980s.

Firm Growth and Firm Size

With *Christian Helmers* and *Mark Rogers* in Applied Economics Letters, Volume 17, Issue 16, 2010

This article analyses the growth rates of the complete population of UK-registered firms for the period 2001 to 2005. We estimate Gibrat's law – that growth rates are independent of firm size – by deciles of the firm size distribution. Whether we are able to reject Gibrat's law varies across deciles. We also show how estimates vary according to the measure of firm size, time period and sample selection.

Why Does the FDIC Sue?

With *Ken Okamura*, Federal Reserve Bank of Dallas Working Paper 1601, revise and resubmit at the Journal of Corporate Finance.

Cases the Federal Deposit Insurance Corporation (FDIC) pursues against the directors and officers of failed commercial banks for (gross) negligence are important for the corporate governance of U.S. commercial banks. These cases shape the kernel of bank corporate governance, as they guide expectations of bankers and regulators. Ours is the first empirical study of such legal cases that define the limits of acceptable behavior under financial distress. We examine the differences in behavior of all 408 U.S. commercial banks that were taken into receivership between 2007 - 2012. Sued banks had different balance sheet dynamics in the three years prior to failure. These generally larger banks were faster growing, obtained riskier funding and were more "optimistic". We find evidence that the behavior of bank boards adjusts in an out-of-sample set of banks. Our results suggest the FDIC does not only pursue "deep pockets", but sets corporate governance standards for all banks by suing negligent directors and officers.

Economic Policy Uncertainty and the Credit Channel: Aggregate and Bank Level U.S. Evidence over Several Decades

With *Michael D. Bordo* and *John V. Duca*, NBER Working Paper 22021, revise and resubmit at the Journal of Financial Stability

Economic policy uncertainty affects decisions of households, businesses, policy makers and financial intermediaries. We first examine the impact of economic policy uncertainty on aggregate bank credit growth. Then we analyze commercial bank entity level data to gauge the effects of policy uncertainty on financial intermediaries' lending. We exploit the cross-sectional heterogeneity to back out indirect evidence of its effects on businesses and households. We ask (i) whether, conditional on standard macroeconomic controls, economic policy uncertainty affected bank level credit growth, and (ii) whether there is variation in the impact related to banks' balance sheet conditions; that is, whether the effects are attributable to loan demand or, if impact varies with bank level financial constraints, loan supply. We find that policy uncertainty has a significant negative effect on bank credit growth. Since this impact, unlike the effect of real macroeconomic drivers, varies meaningfully with some bank characteristics—particularly the overall capital-to-assets ratio and bank asset liquidity—loan supply factors at least partially (and significantly) help determine the influence of policy uncertainty. Because other studies have found important macroeconomic effects of bank lending growth on the macro-economy, our findings are consistent with the possibility that high economic policy uncertainty may have slowed the U.S. economic recovery from the Great Recession by restraining overall credit growth through the bank lending channel.

Why Are Big Bank Getting Bigger?

With *Ricardo T. Fernholz*, Federal Reserve Bank of Dallas Working Paper 1604, under review.

The U.S. banking sector has become substantially more concentrated since the 1990s, raising questions about both the causes and implications of this consolidation. To address these questions, we use nonparametric empirical methods for dynamic power law distributions to analyze the bank size distribution. We show that this distribution is shaped entirely by two factors - the reversion rates (a measure of cross-sectional mean reversion) and idiosyncratic volatilities of assets for different size-ranked banks. Using quarterly data for subsidiary commercial banks and thrifts and their parent bank-holding companies dating back to 1960, we estimate the two factors and show that the main drivers of higher concentration differ for these three types of financial intermediaries. In particular, the greater concentration of U.S. bank-holding company assets is a result of decreased mean reversion, while the greater concentration of both U.S. commercial bank and thrift assets is a result of increased idiosyncratic volatility, especially at the top of the distribution. The contrast of this result suggests that diversification through non-banking activities has reduced the idiosyncratic asset volatilities of the largest bank-holding companies.

Leverage, Liability, and Commercial Banks: Evidence from the Booms before the Great Depression and Great Recession

With *Gary G. Richardson* and *Patrick Van Horn*, under review.

The regulatory framework for commercial banks evolved over the 20th century. During the boom before the Great Depression, capital requirements for commercial banks were low and fixed. Bankers faced double liability. Failing banks were not bailed out. During the boom before the Great Recession, capital requirements were proportional to risk-weighted assets. Bankers faced limited liability. Banks deemed too big to fail received bailouts. Across these regimes, we compare banks' capital choices using balance-sheet data. We document how the largest institutions' choices changed over the business cycle. During the Roaring 20s, the largest banks increased capital holdings as asset prices rose to unprecedented levels. During the boom from 2002 to 2007, the largest institutions kept capital levels near regulatory minimums. Our results suggest that more market discipline would have induced the largest U.S. banks to hold greater capital buffers prior to the financial crisis of 2008.

POLICY

Federal Reserve Bank of Dallas - *Financial Insights (2015)*: Too Small to Succeed? Community Banks in a New Regulatory Environment

FRB Dallas - *Economic Letter (2015)*: Liquidity Mismatch Helps Predict Bank Failure and Distress

FRB Dallas - *Economic Letter (2014)*: Weakly Capitalized Banks Slowed Lending Recovery After Recession

FRB Dallas - *2012 Annual Report (2013)*: Regulatory Burden Rising

FRB Dallas - *National Economic Update (January 2012)*: Effects of Debt-Ceiling Scare and Euro Crisis Appear Temporary

FRB Dallas - *National Economic Update (December 2011)*: News Is Positive at Home, but Europe Looms

SCHOLARSHIPS AND AWARDS

- Rhodes Scholarship (Germany and St. John's College, 2005)
- Nizbet Prize in Economics of the University of St. Andrews (2005)
- Zawadzki Prize in Monetary Economics of the University of St. Andrews (2005)

NON-ACADEMIC EXPERIENCE

European Central Bank Economist Intern Fall 2009

Frankfurt, Germany

Research on bank failure probability models in the ECB Financial Stability Division.

International Monetary Fund Economist Intern Summer 2009

Washington DC, USA

Research on the credit channel of monetary transmission in the Euro Area in the IMF European Division.

Lehman Brothers Inc. Summer Associate Summer 2008

London, England

Research on the credit channel and credit conditions indices in Global Economics (Fixed Income).

Roland Berger Strategy Consultants Summer Associate Summer 2006

Hamburg, Germany

Merger transaction, business restructuring in Restructuring and Corporate Finance Practice.

Ernst & Young (Corporate Finance) Intern Summer 2005

Berlin, Germany

Mergers and acquisitions in Energy, Chemicals and Utilities.

A.T. Kearney Inc. Intern Summer 2004

Berlin, Germany

Strategic sourcing and increasing procurement effciency of an industrial conglomerate.

Deutscher Bundestag Intern Summer 2002

Berlin, Germany

Temporary work as a research assistant in the lower chamber of the German parliament.