Publications and Other Research
2012

Federal Reserve Bank of New York
Research and Statistics Group

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Federal Reserve Bank of New York
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February 2013

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Introduction

The Federal Reserve Bank of New York's Research and Statistics Group produces several publications of interest to business and banking professionals, policymakers, academics, and the general public.

This catalogue lists the 2012 releases in our chief research series:

- *Economic Policy Review*
  an online policy-oriented journal focusing on economic and financial market issues
- *Current Issues in Economics and Finance*
  concise studies of topical economic and financial issues; available only online
- *Second District Highlights*
  a regional supplement to *Current Issues*
- *Liberty Street Economics*
  a blog that enables our economists to engage with the public on diverse issues quickly and frequently
- *Staff Reports*
  technical papers intended for publication in leading economic and finance journals; available only online

We also offer other series of interest to readers:

- *EPR Executive Summaries*
  online versions of selected *Economic Policy Review* articles, in abridged form
- *Research Update*
  an online quarterly newsletter providing summaries of studies and listings of recent publications in our research series
- *The Research Group of the Federal Reserve Bank of New York*
  A guide for economists interested in joining the Group, as well as an overview of our staff, structure, and functions

Members of the Group also publish in many economic and finance journals, conference volumes, and scholarly books. A list of these publications begins on page 36.

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Economic Policy Review

The *Economic Policy Review* is an online policy-oriented research journal that focuses on macroeconomic, banking, and financial market topics.

EPR articles are available at **www.newyorkfed.org/research/epr**.

Volume 18

No. 1, March 2012

Settlement Liquidity and Monetary Policy Implementation—Lessons from the Financial Crisis

Morten L. Bech, Antoine Martin, and James McAndrews

The U.S. dollar clearing and settlement system received little attention during the recent financial crisis, mainly because it performed reliably, processing record volumes and values of trades made in stressed financial markets. This article shows how Federal Reserve policy measures aimed at providing liquidity and stability to the financial system during and after the crisis had a major impact on settlement liquidity and thus on the efficiency of clearing and settlement system activity. The measures led to a substantial decrease in daylight overdrafts extended by the Federal Reserve and a quickening of settlement relative to the precrisis period. The decrease in daylight overdrafts reduced credit risk for the Federal Reserve, and the earlier time at which payments settled suggests important efficiency gains as well as diminished operational risks. Interestingly, both improvements were the focus of the revisions to the Federal Reserve's Payment System Risk policy, adopted in late 2008 and implemented in March 2011. To a large extent, the desired outcome had been achieved ahead of the policy change. The authors explain that as the amount of reserves available to the banking system and the opportunity cost of holding such reserves are at the center of any framework for implementing monetary policy, the recent experience offers important lessons for policy going forward.
EPR Executive Summary available

The Microstructure of the TIPS Market

Michael J. Fleming and Neel Krishnan

The potential advantages from the introduction of Treasury inflation-protected securities (TIPS) in 1997 have not been fully realized, mainly because TIPS are less liquid than nominal Treasury securities. The lack of liquidity is thought to adversely affect TIPS prices relative to prices of nominal securities, offsetting the benefits that come from TIPS having no inflation risk. Despite the importance of TIPS liquidity and the market's large size, there is virtually no quantitative evidence on the securities' liquidity. This article sheds light on this phenomenon using novel tick data from the interdealer market. The authors identify several features of the TIPS market also present in the nominal securities market, but some unique features as well. As in the nominal market, there is a marked difference in trading activity between the most recently issued ("on-the-run") and previously issued ("off-the-run") securities, as trading drops sharply when securities go off the run. In contrast to the nominal market, there is little difference in bid-ask spreads or quoted depth between these securities, but there is a difference in the incidence of posted quotes. These results suggest that trading activity and quote incidence may be better cross-sectional measures of liquidity in the TIPS market than bid-ask spreads or quoted depth. Intraday patterns of trading activity are broadly similar in both markets, but

TIPS activity peaks somewhat later, likely reflecting differences in the use and ownership of these securities. Announcement effects also differ between markets, with TIPS auction results and CPI releases eliciting particularly strong increases in trading activity, likely indicating these announcements' special importance to TIPS valuation.
EPR Executive Summary available

Subprime Foreclosures and the 2005 Bankruptcy Reform

Donald P. Morgan, Benjamin Iverson, and Matthew Botsch

This article presents arguments and evidence suggesting that the bankruptcy abuse reform (BAR) of 2005 may have been one contributor to the destabilizing surge in subprime foreclosures. Before BAR took effect, overly indebted borrowers could file bankruptcy to free up income to pay their mortgage by having their credit card and other unsecured debts discharged. BAR eliminated that option for better-off filers through a means test and other requirements, thus making it harder to save one's home by filing bankruptcy. By way of evidence, the authors show that the impact of BAR was greater in U.S. states where one would expect it to have a larger impact—namely, in states with high bankruptcy exemptions. Filers in low-exemption states were not very protected before BAR, so they were less likely to be affected by the reform. The authors estimate that for a state with an average home equity exemption, the subprime foreclosure rate after BAR rose 11 percent relative to average before the reform; given the number of subprime mortgages in the United States, that figure translates into 29,000 additional subprime foreclosures per quarter nationwide attributable to BAR.
EPR Executive Summary available

No. 2, July 2012

Special Issue: The Evolution of Banks and Financial Intermediation

The Evolution of Banks and Financial Intermediation: Framing the Analysis*

Nicola Cetorelli, Benjamin H. Mandel, and Lindsay Mollineaux

Regulation's Role in Bank Changes

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The Rise of the Originate-to-Distribute Model and the Role of Banks in Financial Intermediation

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A Structural View of U.S. Bank Holding Companies*

Dafna Avraham, Patricia Selvaggi, and James Vickery

Evolution and Heterogeneity among Larger Bank Holding Companies: 1994 to 2010

Adam Copeland

No. 3, November 2012

Housing Busts and Household Mobility: An Update

Fernando Ferreira, Joseph Gyourko, and Joseph Tracy

Interest in the relationship between household mobility and financial frictions, especially frictions associated with negative home equity, has

*A top download in 2012.

grown following the recent boom and bust in U.S. housing markets. With prices falling 30 percent nationally, negative equity greatly expanded across many markets. More recently, the decline in mortgage rates along with various policy interventions to encourage refinancing at historically low rates suggest the need to also revisit mortgage interest rate lock-in effects, which are likely to become important once Federal Reserve interest rate policy normalizes. In this article, the authors update their estimates (from Ferreira, Gyourko, and Tracy [2010]) of the impact of three financial frictions—negative equity, mortgage interest rate lock-in, and property tax lock-in—on household mobility. By adding 2009 American Housing Survey (AHS) data to their sample, the authors incorporate the effect of more recent house price declines. They also create an improved measure of permanent moves in response to Schulhofer-Wohl's (2011) critique of their earlier work. The authors' updated estimates corroborate their previous results: Negative equity reduces household mobility by 30 percent, and $1,000 of additional mortgage or property tax costs lowers mobility by 10 to 16 percent. Schulhofer-Wohl's finding of a zero or a slight positive correlation between mobility and negative equity appears to be due to a large fraction of false positives, as his coding methodology tends to misclassify almost half of the additional moves it identifies relative to the authors' measure of permanent moves. This also makes his mobility measure dynamically inconsistent, as many transitions originally classified as a move are reclassified as a nonmove when additional AHS data become available. The article concludes by suggesting directions for future research, including potential improvements to measures of household mobility.
EPR Executive Summary available

Key Mechanics of the U.S. Tri-Party Repo Market

Adam Copeland, Darrell Duffie, Antoine Martin, and Susan McLaughlin

During the 2007-09 financial crisis, it became apparent that weaknesses existed in the design of the U.S. tri-party repo market that could rapidly elevate and propagate systemic risk. This article describes key mechanics of the market, focusing on two that have contributed to its weaknesses and impacted market reform efforts: the collateral allocation and "unwind" processes. The authors explain that collateral allocation in the tri-party repo market involves considerable dealer intervention, which can slow settlement processing. The length of time required to allocate collateral has in fact been a significant obstacle to market reform. Another impediment to reform is the unwind process, or the settlement of expiring and continuing repos that occurs before new ones can be settled and continuing ones can be "rewound." The intraday funding required as a result of the unwind process creates potentially perverse dynamics that increase market fragility and financial system risk. Indeed, a reengineering of the tri-party repo settlement process to be much less reliant on intraday credit is a main goal of current market reform. The authors argue that streamlining the collateral allocation process and eliminating the time gap associated with the unwind could minimize market risk and assist in the reform efforts.
EPR Executive Summary available

The Federal Reserve's Term Asset-Backed Securities Loan Facility

Adam Ashcraft, Allan Malz, and Zoltan Pozsar

The securitization markets for consumer and business asset-backed securities (ABS) and commercial mortgage-backed securities (CMBS), which supply a substantial share of credit to consumers and small businesses, came to a near-complete halt in the fall of 2008, as investors responded to a drastic decline in funding liquidity by curtailing their participation in these markets. In response, the Federal Reserve introduced the TALF program, which extended term loans collateralized by securities to buyers of certain high-quality ABS and CMBS, as part of a broad array of emergency liquidity measures intended to avert lasting harm to the economy. This article describes the TALF program and operations in detail, explains how the terms and conditions of the TALF were intended to restore market liquidity while limiting the risk of loss to the public, and assesses the efficacy of the program. The authors find that, while it is hard to isolate the effect of the TALF, the facility is likely to have made a significant contribution to restoring liquidity in 2009 and 2010.

EPR Executive Summaries

Visit our website for concise summaries of *Economic Policy Review* articles.

Our online series *EPR Executive Summaries* condenses many of the articles published in the *Review*. Readers will find timely, policy-oriented write-ups that are easy to absorb.

The summaries make the technical research of New York Fed economists more accessible to policymakers, educators, business leaders, and others. The series is designed to foster a fuller understanding of our research among those who are in a position to put our ideas and findings to work.

Summaries are available for many articles published since 2002.

www.newyorkfed.org/research/epr/executive_summary.html

Current Issues in Economics and Finance

Current Issues in Economics and Finance offers concise studies of topical economic and financial issues.

Second District Highlights—a regional supplement to *Current Issues*—covers important financial and economic developments in the Federal Reserve System's Second District.

Both series are available online only at www.newyorkfed.org/research/current_issues.

Volume 18

No. 1, 2012

Why Is the U.S. Share of World Merchandise Exports Shrinking?

Benjamin R. Mandel

As the U.S. share of the world goods trade slips from its level in the 1980s and 1990s, concerns have arisen that the productivity of U.S. exporters has not been growing as fast as that of foreign firms selling similar products. However, an analysis of industry-level trade data suggests that two other factors explain much of the drop in export share: the changing composition of the products traded internationally and the diminished share of U.S. GDP in global output. Declining relative productivity may have played a role in the early 2000s, but it has not been a large factor across industries over the longer term. Overall, there is little evidence of a broad-based decline in the nation's ability to compete in global markets.

No. 2, 2012

Policy Initiatives in the Global Recession: What Did Forecasters Expect?

Carlos Carvalho, Stefano Eusepi, and Christian Grisse

The global recession of 2008-09 led to monetary and fiscal policy responses by central banks and government authorities that were often unconventional in size and scope. A study of expansionary measures employed during the recession suggests that overall, the policies were likely effective in shaping the outlook for a recovery, as forecasters raised their expectations of inflation and GDP growth after the policies' implementation. From this perspective, the policies stimulated economic activity and prevented deflationary pressures during the financial crisis.

No. 3, 2012

The Evolution of Treasury Cash Management during the Financial Crisis

Paul J. Santoro

The U.S. Treasury and the Federal Reserve System have long enjoyed a close relationship, each helping the other to carry out certain statutory responsibilities. This relationship proved beneficial during the 2008-09 financial crisis, when the Treasury altered its cash management practices to facilitate the Fed's dramatic expansion of credit to banks, primary dealers, and foreign central banks.

No. 4, 2012

Robust Capital Regulation

Viral Acharya, Hamid Mehran, Til Schuermann, and Anjan Thakor

Regulators and markets can find the balance sheets of large financial institutions difficult to penetrate, and they are mindful of how under-capitalization can create incentives to take on excessive risk. This study proposes a novel framework for capital regulation that addresses banks' incentives to take on excessive risk and leverage. The framework consists of a special capital account in addition to a core capital requirement. The special account would accrue to a bank's shareholders as long as the bank is solvent, but would pass to the bank's regulators—rather than its creditors—if the bank fails. By design, this special account thus limits risk taking, but ensures that creditors' disciplining incentives are preserved.

No. 5, 2012

Market Declines: What Is Accomplished by Banning Short-Selling?*

Robert Battalio, Hamid Mehran, and Paul Schultz

In 2008, U.S. regulators banned the short-selling of financial stocks, fearing that the practice was helping to drive the steep drop in stock prices during the crisis. However, a new look at the effects of such restrictions challenges the notion that short sales exacerbate market downturns in this way. The 2008 ban on short sales failed to slow the decline in the price of financial stocks; in fact, prices fell markedly over the two weeks in which the ban was in effect and stabilized once it was lifted. Similarly, following the downgrade of the U.S. sovereign credit rating in 2011—another notable period of market stress—stocks subject to short-selling restrictions performed worse than stocks free of such restraints.

No. 6, 2012

The American Recovery and Reinvestment Act of 2009: A Review of Stimulus Spending in New York and New Jersey

James Orr and John Sporn

The ARRA stimulus package was designed to spur economic and employment growth in response to a deepening U.S. recession and the weakened fiscal conditions of many state governments. An analysis of the local allocation of ARRA funds shows that the $35 billion of stimulus spending in New York was relatively concentrated in expanded funding for Medicaid, while a large share of the $12 billion allocated to New Jersey went to extending unemployment insurance benefits. While ARRA funding supplemented tax revenues in both states in fiscal years 2010 and 2011, the program's spending components are winding down, and New York and New Jersey can no longer rely on these federal transfers when preparing their budgets.

Second District Highlights

*A top download in 2012.

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No. 7, 2012

Job Polarization and Rising Inequality in the Nation and the New York–Northern New Jersey Region

Jaison R. Abel and Richard Deitz

Since the 1980s, employment opportunities in both the United States and the New York–northern New Jersey region have become increasingly polarized. While technological advances and globalization have created new jobs for workers at the high end of the skill spectrum and largely spared the service jobs of workers at the low end, these forces have displaced many jobs involving routine tasks—traditionally the sphere of middle-skill workers. Moreover, these same forces have pushed up wages for high-skill workers disproportionately, contributing to increased wage inequality. The rise in inequality has been especially sharp in downstate New York and northern New Jersey, where the wage gap is now markedly larger than in the nation.

Second District Highlights

No. 8, 2012

How Severe Was the Credit Cycle in the New York–Northern New Jersey Region?

Jaison R. Abel and Richard Deitz

U.S. households accumulated record-high levels of debt in the 2000s and then began a process of deleveraging following the Great Recession and financial crisis. However, the magnitude of these swings in the use of credit varied considerably within the United States. An analysis of trends in household debt over the past decade shows that compared with the nation as a whole, the New York–northern New Jersey region experienced a relatively mild "credit cycle," although pockets of financial stress exist.

Second District Highlights

No. 9, 2012

To Buy or Not to Buy? The Changing Relationship between Manhattan Rents and Home Prices*

Jason Bram

Much of the nation has experienced steep declines in housing prices in recent years. In Manhattan, however, apartment sales prices did not fall as sharply. A study of price-rent ratios in the New York City borough concludes that, while apartment rents are driven by supply and demand forces, apartment sales prices are driven in part by speculative factors, and they sometimes rise or fall to levels incommensurate with prevailing rents. Manhattan price-rent ratios, although off their 2008 highs, are still up dramatically over the past two decades, suggesting less financial "value" today in an apartment purchase there.

Second District Highlights

*A top download in 2012.

Liberty Street Economics

Our *Liberty Street Economics* blog, launched in 2011, provides a way for our economists to engage with the public on diverse issues quickly and frequently. The blog typically publishes new economic posts on Mondays and Wednesdays. It publishes reader comments and author responses with the goal of generating dialogue with the public.

Visit the blog at **libertystreeteconomics.newyorkfed.org/**.

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Rebecca Hellerstein and Menno Middeldorp

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Adam Copeland, Todd Keister, and Parinitha Sastry

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Andreas Fuster and David Lucca

Research Update

Research Update is a quarterly newsletter designed to keep you informed about the Research Group's current work. The online newsletter—which complements this catalogue—offers summaries of selected studies and listings of recent articles and papers in our research series.

Research Update also reports on other news within the Group, including:

- staff publication in outside journals,
- information on our most popular papers and blog posts,
- presentations by economists at academic conferences and industry gatherings,
- upcoming conferences at the Federal Reserve Bank of New York, and
- new publications and services.

The publication is available at **www.newyorkfed.org/research/research_update**.

The Research Group of the Federal Reserve Bank of New York

The Research Group of the Federal Reserve Bank of New York is our annual guide for economists interested in joining our team. It offers an overview of our research and policy work and describes the distinctive culture and resources of the Research and Statistics Group.

The guide also describes the responsibilities of our seven research functions, identifies our current staff of economists, and highlights the economists' research interests and recent publications.

The guide is available at **www.newyorkfed.org/research/research_group/index.html**.

Staff Reports

The *Staff Reports* series features technical research papers designed to stimulate discussion and elicit comments. The papers are intended for eventual publication in leading economic and finance journals.

The series is available only at **www.newyorkfed.org/research/staff_reports**.

Macroeconomics and Growth

No. 535, January 2012

Optimal Target Criteria for Stabilization Policy

Marc P. Giannoni and Michael Woodford

This paper considers a general class of nonlinear rational-expectations models in which policy-makers seek to maximize an objective function that may be household expected utility. Giannoni and Woodford show how to derive a target criterion that is 1) consistent with the model's structural equations, 2) strong enough to imply a unique equilibrium, and 3) optimal, in the sense that a commitment to adjust the policy instrument at all dates so as to satisfy the target criterion maximizes the objective function. The proposed optimal target criterion is a linear equation that must be satisfied by the projected paths of certain economically relevant "target variables." While the projected path of the economy requires information about its current state, the target criterion itself can be stated without reference to a complete description of the state of the world. The authors illustrate the application of the method to a nonlinear DSGE model with staggered price settings, in which the objective of policy is to maximize household expected utility.

No. 536, January 2012

Heterogeneous Inflation Expectations, Learning, and Market Outcomes

Carlos Madeira and Basit Zafar

Using the panel component of the Michigan Survey of Consumers, Madeira and Zafar show that individuals, in particular women and ethnic minorities, are highly heterogeneous in their expectations of inflation. The authors estimate a model of inflation expectations based on learning from experience that also allows for heterogeneity in both private information and updating. Their model vastly outperforms existing models of inflation expectations in explaining the heterogeneity in the data. The study finds that women, ethnic minorities, and less educated individuals have a higher degree of heterogeneity in their private information, and are also slower to update their expectations. In addition, it shows that personal income forecasts are positively related to subjective inflation expectations. During the 2000s, consumers believed inflation to be more persistent in the short term, but temporary fluctuations in inflation have had less effect on income and long-term inflation expectations. Finally, the study finds evidence that sticky expectations and the heterogeneity of new information received by consumers generate higher markups and inflation.

No. 537, January 2012

The Hitchhiker's Guide to Missing Import Price Changes and Pass-Through

Etienne Gagnon, Benjamin R. Mandel, and Robert J. Vigfusson

A large body of empirical work has found that exchange rate movements have only modest effects on inflation. However, the response of an import price index to exchange rate movements may be underestimated because some import price changes are missed when constructing the index. The authors investigate downward biases that arise when items experiencing a price change are especially likely to exit or to enter the index. They show that, in theoretical pricing models, entry and exit have different implications for the timing and size of these biases. Using Bureau of Labor Statistics microdata, the paper derives empirical bounds on the magnitude of these biases and constructs alternative price indexes that are less subject to selection effects. The analysis suggests that the biases induced by selective exits and entries do not materially alter the literature's view that pass-through to U.S. import prices is low over the short- to medium-term horizons that are most useful for forecasting and differentiating among economic models.

No. 543, January 2012

The Price Is Right: Updating of Inflation Expectations in a Randomized Price Information Experiment

Olivier Armantier, Scott Nelson, Giorgio Topa, Wilbert van der Klaauw, and Basit Zafar

This paper investigates how consumers form and update their inflation expectations using a unique "information" experiment embedded in a survey. The authors elicit respondents' expectations for future inflation, then randomly provide a subset of respondents with inflation-relevant information, and finally re-elicit inflation expectations from all respondents. This design creates unique panel data that allow them to identify the effects of new information on respondents' inflation expectations. The authors find that respondents revise their inflation expectations in response to information, and do so meaningfully: revisions are proportional to the strength of the information signal, and inversely proportional to the precision of prior inflation expectations. They also find systematic differences in updating across demographic groups and by question wording, underscoring how different types of information may be more or less relevant for different groups, and how the observed impact of information may depend on methods used to elicit inflation expectations.

No. 546, February 2012

Optimal Interest Rate Rules and Inflation Stabilization versus Price-Level Stabilization

Marc P. Giannoni

Giannoni compares the properties of interest rate rules such as simple Taylor rules and rules that respond to price-level fluctuations—called Wicksellian rules—in a basic forward-looking model. By introducing appropriate history dependence in policy, Wicksellian rules perform better than optimal Taylor rules in terms of welfare and robustness to alternative shock processes, and they are less prone to equilibrium indeterminacy. A simple Wicksellian rule augmented with a high degree of interest rate inertia resembles a robustly optimal rule—that is, a monetary policy rule that implements the optimal plan and is also completely robust to the specification of exogenous shock processes.

No. 550, February 2012

An Empirical Study of Trade Dynamics in the Fed Funds Market

Gara Afonso and Ricardo Lagos

This study uses minute-by-minute daily transaction-level payments data to document the cross-sectional and time-series behavior of the estimated prices and quantities negotiated by commercial banks in the fed funds market. The authors study the frequency and volume of trade, the size distribution of loans, the distribution of bilateral fed funds rates, and the intraday dynamics of the reserve balances held by commercial banks. They find evidence of the importance of the liquidity provision achieved by commercial banks that act as de facto intermediaries of fed funds.

No. 560, May 2012

How "Unconventional" Are Large-Scale Asset Purchases?

Carlo Rosa

Rosa examines the impact of large-scale asset purchases (LSAPs) on U.S. asset prices using an event study with intraday data. Estimation results show that the LSAP news has economically large and highly significant effects on asset prices, even after controlling for the surprise component of the Fed's conventional target rate decision and communication about its future path of policy. Rosa documents that the cumulative financial market impact of the Fed's LSAP program is equivalent to an unanticipated cut in the federal funds target rate that ranges between zero (for three-month yields) and 197 basis points (for ten-year yields), with the response of stock prices and foreign exchanges lying within this interval. These point estimates, however, are surrounded by considerable uncertainty. By looking at the cross-asset reactions, the author concludes that, for most U.S. asset prices, the effects of asset purchases are not statistically different from an unanticipated cut in the fed funds target rate.

No. 567, August 2012

Intermediary Leverage Cycles and Financial Stability

Tobias Adrian and Nina Boyarchenko

Adrian and Boyarchenko develop a theory of financial intermediary leverage cycles in the context of a dynamic model of the macroeconomy. The interaction between a production sector, a financial intermediation sector, and a household sector gives rise to amplification of fundamental shocks that affect real economic activity. The model features two state variables that represent the dynamics of the economy: the net worth and the leverage of financial intermediaries. The leverage of the intermediaries is procyclical, owing to risk-sensitive funding constraints. Relative to an economy with constant leverage, financial intermediaries generate higher output and consumption growth and lower consumption volatility in normal times, but at the cost of systemic solvency and liquidity risks. The authors show that tightening intermediaries' risk constraints affects the systemic risk-return trade-off by lowering the likelihood of systemic crises at the cost of higher pricing of risk. Their model thus represents a conceptual framework for cyclical macroprudential policies within a DSGE model.

No. 569, August 2012

A New Look at Second Liens

Donghoon Lee, Christopher Mayer, and Joseph Tracy

The authors use data from credit reports and deed records to better understand the extent to which second liens contributed to the housing crisis by allowing buyers to purchase homes with small down-payments. Second liens in the form of home equity lines of credit (HELOCs) were originated to relatively high-quality borrowers, and originations were declining near the peak of the housing boom. By contrast, characteristics of closed-end second liens (CES) were worse on all of these dimensions. Default rates of second liens are generally similar to that of the first lien on the same home, although HELOCs perform better than CES. Finally, the study shows that delinquency rates on second liens, especially HELOCs, have not declined as quickly as those on most other types of credit, raising a potential concern for lenders with large portfolios of second liens on their balance sheets.

No. 574, October 2012

The Forward Guidance Puzzle

Marco Del Negro, Marc Giannoni, and Christina Patterson

With short-term interest rates at the zero lower bound, forward guidance has become a key tool for central bankers, and yet we know little about its effectiveness. Standard medium-scale DSGE models tend to grossly overestimate the impact of forward guidance on the macroeconomy—a phenomenon the authors call the “forward guidance puzzle.” They explain why this is the case and describe one approach to addressing this issue.

No. 581, November 2012

Forecasting through the Rear-View Mirror: Data Revisions and Bond Return Predictability

Eric Ghysels, Casidhe Horan, and Emanuel Moench

Real-time macroeconomic data reflect the information available to market participants, whereas final data—containing revisions and released with a delay—overstate the information set available to them. This study documents that the in-sample and out-of-sample Treasury return predictability is significantly diminished when real-time as opposed to revised macroeconomic data are used. In fact, much of the predictive information in macroeconomic time series is due to the data revision and publication lag components.

No. 583, November 2012

Discussion of “An Integrated Framework for Multiple Financial Regulations”

Tobias Adrian

A 2012 paper by Goodhart, Kashyap, Tsomocos, and Vardoulakis (GKTV) proposes a dynamic general equilibrium framework that provides a conceptual—and to some extent quantitative—framework for the analysis of macroprudential policies. The distinguishing feature of GKTV’s paper relative to any other on macroprudential policy is its study of a setting with multiple financial frictions that permits the analysis of multiple macroprudential policy tools at the same time. The modeling approach includes various market failures such as incomplete markets with heterogeneous agents, fire-sale externalities, and margin spirals, all of which provide rationales for policies designed to improve welfare. In GKTV’s model, liquidity ratios are found to be more efficient preemptive tools than capital ratios or loan-to-value ratios. However, these liquidity ratios need to be relaxed in times of crises in order to reduce adverse effects from fire-sale externalities. It remains to be seen how robust these findings are in alternative, fully dynamic settings. Furthermore, GKTV's approach does not address the tension between micro- and macro-prudential objectives, and the timing of the buildup and release of policies is not specified precisely.

No. 586, December 2012

Importers, Exporters, and Exchange Rate Disconnect

Mary Amiti, Oleg Itskhoki, and Jozef Konings

Large exporters are simultaneously large importers. This paper shows that this pattern is key to understanding low aggregate exchange rate pass-through as well as the variation in pass-through across exporters. First, the authors develop a theoretical framework that combines variable markups due to strategic complementarities and endogenous choice to import intermediate inputs. The model predicts that firms with high import shares and high market shares have low exchange rate pass-through. Second, they test and quantify the theoretical mechanisms using Belgian firm-product-level data with information on exports by destination and imports by source country. The study confirms that import intensity and market share are the prime determinants of pass-through in the cross-section of firms. A small exporter with no imported inputs has a nearly complete pass-through of more than 90 percent, while a firm at the 95th percentile of both import intensity and market share distributions has a pass-through of 56 percent, with the marginal cost and markup channels playing roughly equal roles. The largest exporters are simultaneously high-market-share and high-import-intensity firms, which helps explain the low aggregate pass-through and exchange rate disconnect observed in the data.

International

No. 541, January 2012

House Price Booms, Current Account Deficits, and Low Interest Rates

Andrea Ferrero

One of the most striking features of the period before the Great Recession is the strong positive correlation between house price appreciation and current account deficits, not only in the United States but also in other countries that have subsequently experienced the highest degree of financial turmoil. A progressive relaxation of credit standards can rationalize this empirical observation. Lower collateral requirements facilitate access to external funding and drive up house prices. The current account turns negative because households borrow from the rest of the world. At the same time, however, the world real interest rate counterfactually increases. Nominal interest rates departing from a standard monetary policy rule in leveraged economies, as well as foreign exchange rate pegs in saving countries, help reconcile a demand-based explanation of house price booms and current account deficits with the evidence on real interest rates.

No. 542, January 2012

Crime, House Prices, and Inequality: The Effect of UPPs in Rio

Claudio Frischtak and Benjamin R. Mandel

Frischtak and Mandel use a recent policy experiment in Rio de Janeiro, the installation of permanent police stations in low-income communities (or *favelas*), to quantify the relationship between a reduction in crime and the change in the prices of nearby residential real estate. Using a novel data set of detailed property prices from an online classifieds website, the authors find that the new police stations (called UPPs) had a substantial effect on the trajectory of property values and certain crime statistics since the beginning of the program in late 2008. They also find that the extent of inequality among residential prices decreased as a result of the policy. Both of these empirical observations are consistent with a dynamic model of property value in which historical crime rates have persistent effects on the price of real estate.

No. 584, December 2012

Exchange Rate Pass-Through, Markups, and Inventories

Adam Copeland and James A. Kahn

A large body of research has established that exporters do not fully adjust their prices across countries in response to exchange rate movements, but instead allow their markups to vary. But while markups are difficult to observe directly, this paper shows that inventory-sales ratios provide an observable counterpart. It then finds evidence that inventory-sales ratios of imported vehicles respond to exchange rate movements to a degree consistent with pass-through on the order of 50 to 75 percent, on the high end of the range found in the literature.

Microeconomics

No. 538, January 2012

Precarious Slopes? The Great Recession, Federal Stimulus, and New Jersey Schools

Rajashri Chakrabarti and Sarah Sutherland

Chakrabarti and Sutherland exploit unique panel data and trend-shift analysis to analyze how New Jersey school finances were affected during the Great Recession and the ARRA federal stimulus period. Their results show strong evidence of downward shifts in both revenue and expenditure following the recession. Federal stimulus seemed to have helped in 2010; however, both revenue and expenditure still declined. While total revenue declined, the various components of revenue did not witness symmetric changes. The infusion of funds with the federal stimulus occurred simultaneously with statistically and economically significant cuts in state and local financing, especially the former. The authors' results also show a compositional shift in expenditures in favor of categories that are linked most closely to instruction, while several noninstruction categories, including transportation and utilities, declined. Heterogeneity analysis shows that high-poverty and urban districts sustained the largest falls in the postrecession era, with Abbott Districts specifically falling the furthest from prerecession trends.

No. 552, February 2012

former. The authors' results also show a compo Workforce Skills across the Urban-Rural Hierarchy

Jaison R. Abel, Todd M. Gabe, and Kevin Stolarick

This paper examines differences in the skill content of work throughout the United States, ranging from densely populated city centers to isolated and sparsely populated rural areas. To do so, the authors classify detailed geographic areas into categories along the entire urban-rural hierarchy. An occupation-based cluster analysis is then used to measure the types of skills available in the regional workforce, which allows for a broader measure of human capital than is captured by conventional measures. The authors find that the occupation clusters most prevalent in urban areas—scientists, engineers, and executives—are characterized by high levels of social and resource-management skills, as well as the ability to generate ideas and solve complex problems. By contrast, the occupation cluster former. The authors' results also show a compo s that are most prevalent in rural areas—machinists, makers, and laborers—are among the lowest in terms of required skills. These differences in the skill content of work shed light on the pattern of earnings observed across the urban-rural hierarchy.

No. 556, March 2012

The Supply Side of the Housing Boom and Bust of the 2000s

Andrew Haughwout, Richard W. Peach, John Sporn, and Joseph Tracy

Much has been written about the demand side of the boom and subsequent bust in housing construction and prices over the 2000s, in particular, the innovations in mortgage finance and the loosening of underwriting standards that greatly expanded the pool of potential homebuyers. The authors take a closer look at developments on the supply side of the housing market. Following a short literature review, they begin with a descriptive review of housing production, sales, and prices at the national, regional, and state levels. They then look at developments in the homebuilding industry over this period. They also take a closer look at land markets using a quarterly price index for metropolitan statistical areas with both elastic and inelastic housing supplies across the United States. An important question is to what extent the supply side of the market contributed to the boom/bust dynamics. A second question is whether the significant changes in the industrial organization of the homebuilding industry exacerbated or ameliorated this supply impact.

No. 558, April 2012

How Deeply Held Are Anti-American Attitudes among Pakistani Youth? Evidence Using Experimental Variation in Information

Adeline Delavande and Basit Zafar

This paper investigates how attitudes toward the United States are affected by the provision of information. Delavande and Zafar use an experimentally generated panel of attitudes, obtained by providing urban Pakistanis with fact-based statements describing the United States in either a positive or negative light. Anti-American sentiment is high and heterogeneous in their sample at the baseline. The authors find that revised attitudes are, on average, significantly different from baseline attitudes, indicating that providing information had a meaningful effect on U.S. favorability. Observed revisions are a consequence of both the salience of already-known information and information acquisition that leads to a convergence in attitudes across respondents with different priors. This analysis provides evidence that 1) public opinions are not purely a cultural phenomenon and are malleable, and 2) the tendency of respondents to ignore information not aligned with their priors can be overcome. These findings make the case for dissemination of accurate information about various aspects of the Pakistan-U.S. relationship in order to improve opinions toward the United States.

No. 562, June 2012

Payment Changes and Default Risk: The Impact of Refinancing on Expected Credit Losses

Joseph Tracy and Joshua Wright

The authors analyze the relationship between changes in borrowers' monthly mortgage payments and future credit performance. This relationship is important for the design of an internal refinance program such as the Home Affordable Refinance Program (HARP). Tracy and Wright use a competing risk model to estimate the sensitivity of default risk to downward adjustments of borrowers' monthly mortgage payments for a large sample of prime adjustable-rate mortgages. Applying a 26 percent average monthly payment reduction that they estimate would result from refinancing under HARP, the authors find that the cumulative five-year default rate on prime conforming adjustable-rate mortgages with loan-to-value ratios above 80 percent declines by 3.8 percentage points. If they assume an average loss given a default of 35.2 percent, this lower default risk implies reduced credit losses of 134 basis points per dollar of balance for mortgages that refinance under HARP.

No. 565, August 2012

Housing Markets and Residential Segregation: Impacts of the Michigan School Finance Reform on Inter- and Intra-District Sorting

Rajashri Chakrabarti and Joydeep Roy

Chakrabarti and Roy study the impact of the Michigan school finance reform of 1994 (Proposal A) on spatial segregation. The reform was a state initiative intended to equalize per-pupil expenditures between Michigan school districts and reduce the role of local financing. The authors find that Proposal A was responsible for increases in the value of housing stock in the lowest-spending school districts, and for improvements in several socioeconomic indicators in these districts, implying a decline in neighborhood sorting. They also find that the reform affected dispersion of incomes and educational attainment within school districts, increasing within-district heterogeneity in the lowest-spending school districts while decreasing the same in the highest-spending districts. However, there is continued high demand for residence in the highest-spending communities, suggesting the importance of neighborhood peer effects ("local" social capital) and implying that even a comprehensive government aid program can fail to make a large impact on residential segregation.

No. 566, August 2012

Mismatch Unemployment

Ayşegül Şahin, Joseph Song, Giorgio Topa, and Giovanni L. Violante

The authors develop a framework where mismatch between vacancies and job seekers across sectors translates into higher unemployment by lowering the aggregate job-finding rate. They use this framework to measure the contribution of mismatch to the recent rise in U.S. unemployment by exploiting two sources of cross-sectional data on vacancies, JOLTS and HWOL, a new database covering the universe of online U.S. job advertisements. Mismatch across industries and occupations explains at most one-third of the total observed increase in the unemployment rate, whereas geographical mismatch plays no apparent role. The share of the rise in unemployment explained by occupational mismatch is increasing in the education level.

No. 572, September 2012

Doing Well by Doing Good? Community Development Venture Capital

Anna Kovner and Josh Lerner

This paper examines the investments and performance of community development venture capital (CDVC). Kovner and Lerner find substantial differences between CDVC and traditional venture capital investments: CDVC investments are far more likely to be in nonmetropolitan regions and in regions with little prior venture capital activity. Moreover, CDVC is likely to be in earlier-stage investments and in industries outside the venture capital mainstream that have lower probabilities of successful exit. Even after the authors control for this unattractive transaction mix, the probability of a CDVC investment being successfully exited is lower. One benefit of CDVCs may be their effect in bringing traditional VC investment to underserved regions: When the study controls for the presence of traditional VC investments, each additional CDVC investment results in an additional 0.06 new traditional VC firms in a region.

No. 573, September 2012

Abbott and Bacon Districts: Education Finances during the Great Recession

Rajashri Chakrabarti and Sarah Sutherland

This study exploits rich panel data and trend-shift analysis to analyze how school finances in the Abbott and Bacon School Districts in New Jersey, as well as the high-poverty districts in general, were affected during the Great Recession and the American Recovery and Reinvestment Act federal stimulus period. The authors' analysis shows downward shifts in revenue and expenditure per pupil during the post-recession era in all three groups of districts. However, the Abbott Districts showed the sharpest declines in both revenue and expenditure relative to preexisting trends. Of importance, the Abbott Districts were the only group in the analysis to show statistically significant negative shifts in instructional expenditure (the expenditure category most closely related to student learning), even with the federal stimulus. Declines in noninstructional categories were also the most prominent in these districts. With comparably less declines in state and federal aid, the Bacon Districts maintained spending across the board at higher levels than the other groups.

No. 582, November 2012

Payment Size, Negative Equity, and Mortgage Default

Andreas Fuster and Paul S. Willen

Surprisingly little is known about the importance of mortgage payment size for default, as efforts to measure the treatment effect of rate increases or loan modifications are confounded by borrower selection. Fuster and Willen study a sample of hybrid adjustable-rate mortgages that have experienced large rate reductions over the past years and are largely immune to these selection concerns. They show that interest rate changes dramatically affect repayment behavior. The authors' estimates imply that cutting a borrower's payment in half reduces his hazard of becoming delinquent by about two-thirds, an effect that is approximately equivalent to lowering the borrower's combined loan-to-value ratio from 145 to 95 (holding the payment fixed). These findings shed light on the driving forces behind default behavior and have important implications for public policy.

No. 587, December 2012

Agglomeration and Job Matching among College Graduates

Jaison R. Abel and Richard Deitz

Abel and Deitz study one potential source of urban agglomeration economies: better job matching. Focusing on college graduates, they construct two direct measures of job matching based on how well an individual's job corresponds to his or her college education. Consistent with matching-based theories of urban agglomeration, the authors find evidence that larger and thicker local labor markets help college graduates find better jobs by increasing both the likelihood and quality of a match. They then assess the extent to which better job matching of college-educated workers increases individual-level wages and thereby contributes to the urban wage premium. While the study finds that college graduates with better job matches do indeed earn higher wages on average, the contribution of such job matching to aggregate urban productivity appears to be relatively modest.

Banking and Finance

No. 539, January 2012

Corporate Governance of Financial Institutions

Hamid Mehran and Lindsay Mollineaux

Mehran and Mollineaux identify the tension created by the dual demands of financial institutions to be value-maximizing entities that also serve the public interest. The authors highlight the importance of information in addressing the public's desire for banks to be safe yet innovative. Regulators can choose several approaches to increase market discipline and information production. First, they can mandate information production outside of markets through increased regulatory disclosure. Second, they can directly motivate potential producers of information by changing their incentives. Traditional approaches to bank governance may interfere with the information content of prices. Thus, the lack of transparency in the banking industry may be a symptom rather than the primary cause of bad governance. The study provides the examples of compensation and resolution. Reforms that promote the quality of security prices through information production can improve the governance of financial institutions. Future research is needed to examine the interactions between disclosure, information, and governance.

No. 544, February 2012

Defaults and Losses on Commercial Real Estate Bonds during the Great Depression Era

Tyler Wiggers and Adam B. Ashcraft

Wiggers and Ashcraft employ a unique data set of public commercial real estate (CRE) bonds issued during the Great Depression era (1920-32) to determine their frequency of default and total loss given default. Default rates on these bonds far exceeded those originated in subsequent periods. The authors' results confirm that making loans with higher loan-to-value ratios results in higher rates of default and loss. These results also support the business cycle's significance to the performance of CRE assets. Despite the large number of defaults in the early 1930s, the losses, which typically occurred after 1940, are comparable to those for contemporary loans, largely due to the rapid recovery of the economy from the Depression. This finding has relevance today, as numerous entities have a large amount of subperforming CRE assets to work out. While the data point to better loss performance the quicker a problem loan is worked out, this may not hold true when there is a rapid recovery around the corner.

No. 545, February 2012

Follow the Money: Quantifying Domestic Effects of Foreign Bank Shocks in the Great Recession

Nicola Cetorelli and Linda S. Goldberg

Foreign banks pulled significant funding from their U.S. branches during the Great Recession. Cetorelli and Goldberg estimate that the average-sized branch experienced a 12 percent net internal fund "withdrawal," with the fund transfer disproportionately bigger for larger branches. This internal shock to the balance sheets of U.S. branches of foreign banks had sizable effects on their lending. On average, for each dollar of funds transferred internally to the parent, branches decreased lending supply by about forty to fifty cents. However, the extent of the lending effects was very different across branches, depending on their precrisis modes of operation in the United States.

No. 547, February 2012

Long-Term Debt Pricing and Monetary Policy Transmission under Imperfect Knowledge

Stefano Eusepi, Marc Giannoni, and Bruce Preston

This paper explores the effects of monetary policy under imperfect knowledge and incomplete markets. In this environment, the expectations hypothesis of the yield curve need not hold, a situation called unanchored financial market expectations. Whether or not financial market expectations are anchored, the private sector's imperfect knowledge mitigates the efficacy of optimal monetary policy. Under anchored expectations, slow adjustment of interest rate beliefs limits scope to adjust current interest rate policy in response to evolving macroeconomic conditions. Imperfect knowledge represents an additional distortion confronting policy, leading to greater inflation and output volatility relative to rational expectations. Under unanchored expectations, current interest rate policy is divorced from interest rate expectations. This permits aggressive adjustment in current interest rate policy to stabilize inflation and output. However, unanchored expectations are shown to raise significantly the probability of encountering the zero lower bound constraint on nominal interest rates. The longer the average maturity structure of the public debt, the more severe the constraint.

No. 548, February 2012

Leverage and Asset Prices: An Experiment

Marco Cipriani, Ana Fostel, and Daniel Houser

This is the first paper to test the asset pricing implication of leverage in a laboratory. The authors show that as theory predicts, leverage increases asset prices: When an asset can be used as collateral (that is, when the asset can be bought on margin), its price goes up. This increase is significant, and quantitatively close to what theory predicts. However, important deviations from the theory arise in the laboratory. First, the demand for the asset shifts when it can be used as a collateral, even though agents do not exhaust their purchasing power when collateralized borrowing is not allowed. Second, the spread between collateralizable and noncollateralizable assets does not increase during crises, in contrast to what theory predicts.

No. 549, February 2012

Trade Dynamics in the Market for Federal Funds

Gara Afonso and Ricardo Lagos

Afonso and Lagos develop a model of the market for federal funds that explicitly accounts for its two distinctive features: banks have to search for a suitable counterparty, and once they have met, both parties negotiate the size of the loan and the repayment. The theory is used to answer a number of positive and normative questions: What are the determinants of the fed funds rate? How does the market reallocate funds? Is the market able to achieve an efficient reallocation of funds? The authors also use the model for theoretical and quantitative analyses of policy issues facing modern central banks.

No. 553, March 2012

The Private Premium in Public Bonds

Anna Kovner and Chenyang Wei

This paper is the first to document the presence of a private premium in public bonds. Kovner and Wei find that spreads are 31 basis points higher for public bonds of private companies than for bonds of public companies, even after controlling for observable differences, including rating, financial performance, industry, bond characteristics, and issuance timing. The estimated private premium rises to 40 to 50 basis points when a propensity matching methodology is used or when the authors control for fixed issuer effects. Despite the premium pricing, bonds of private companies are no more likely to default or be downgraded than are public bonds. They do not have worse secondary-market performance or higher credit default swap spreads nor are they necessarily less liquid. Bond investors appear to discount the value of privately held equity. The effect does not come only from the lack of a public market signal of asset quality, because very small public companies also pay high spreads.

No. 555, March 2012

Securities Lending

Paul C. Lipson, Bradley K. Sabel, and Frank M. Keane

This study, originally released in August 1989 as part of a Federal Reserve Bank of New York series on the U.S. securities markets, examines loans of Treasury and agency securities in the domestic market. It highlights some important institutional characteristics of securities loan transactions, in particular, the common use of agents to arrange the terms of the loans. While the authors note that this characteristic sets securities lending apart from most repurchase agreement (repo) transactions, which occur bilaterally between a borrower and a lender, they observe that repo and securities loan transactions ultimately serve the same important economic purpose—to cover short positions used for hedging or arbitrage in related cash markets. The data used here, though largely informal, were provided by knowledgeable market participants.

No. 557, March 2012

An Analysis of OTC Interest Rate Derivatives Transactions: Implications for Public Reporting*

Michael Fleming, John Jackson, Ada Li, Asani Sarkar, and Patricia Zobel

This paper examines the over-the-counter interest rate derivatives (IRD) market in order to inform the design of post-trade price reporting. The analysis uses a novel transaction-level data set to examine trading activity, the composition of market participants, levels of product standardization, and market-making behavior. The authors find that trading activity in the IRD market is dispersed across a broad array of product types, currency denominations, and maturities, leading to more than 10,500 observed unique product combinations. While a select group of standard instruments trade with relative frequency and may provide timely and pertinent price information for market participants, many other IRD instruments trade infrequently and with diverse contract terms, limiting the impact on price formation from the reporting of those transactions. Nonetheless, the authors find evidence of dealers hedging rapidly after large interest rate swap trades, suggesting that, for this product, a price-reporting regime could be designed in a way that does not disrupt market-making activity.

No. 559, April 2012

Shadow Banking Regulation*

Tobias Adrian and Adam B. Ashcraft

Shadow banks conduct credit intermediation without direct, explicit access to public sources of liquidity and credit guarantees. Shadow banks contributed to the credit boom in the early 2000s and collapsed during the financial crisis of 2007-09. Adrian and Ashcraft review the rapidly growing literature on shadow banking and provide a conceptual framework for its regulation. Since the financial crisis, regulatory reform efforts have been aimed at strengthening the stability of the shadow

*A top download in 2012.

banking system. They review the implications of these reform efforts for shadow funding sources including asset-backed commercial paper, tri-party repurchase agreements, money market mutual funds, and securitization. Despite significant efforts by lawmakers, regulators, and accountants, the authors find that progress in achieving a more stable shadow banking system has been uneven.

No. 561, May 2012

Estimating a Structural Model of Herd Behavior in Financial Markets

Marco Cipriani and Antonio Guarino

Cipriani and Guarino develop a new methodology for estimating the importance of herd behavior in financial markets. Specifically, they build a structural model of informational herding that can be estimated with financial transaction data. In the model, rational herding arises because of information-event uncertainty. The authors estimate the model using 1995 stock market data for Ashland Inc., a company listed on the New York Stock Exchange. Herding occurs often and is particularly pervasive on certain days. In an information-event day, on average, 2 percent (4 percent) of informed traders herd-buy (-sell). In 7 percent (11 percent) of information-event days, the proportion of informed traders who herd-buy (-sell) is greater than 10 percent. Herding causes important informational inefficiencies, amounting, on average, to 4 percent of the asset's expected value.

No. 563, July 2012

Federal Reserve Liquidity Provision during the Financial Crisis of 2007-2009

Michael J. Fleming

This paper examines the Federal Reserve's unprecedented liquidity provision during the financial crisis of 2007-09. It first reviews how the Fed provides liquidity in normal times. It then explains how the Fed's new and expanded liquidity facilities were intended to enable the central bank to fulfill its traditional lender-of-last-resort role during the crisis while mitigating stigma, broadening the set of institutions with access to liquidity, and increasing the flexibility with which institutions could tap such liquidity. The study then assesses the growing empirical literature on the effectiveness of the facilities and provides insight as to where further research is warranted.

No. 564, July 2012

The Minimum Balance at Risk: A Proposal to Mitigate the Systemic Risks Posed by Money Market Funds*

Patrick E. McCabe, Marco Cipriani, Michael Holscher, and Antoine Martin

This paper introduces a proposal for money market fund (MMF) reform that could mitigate systemic risks arising from these funds by protecting shareholders, such as retail investors, who do not redeem quickly from distressed funds. The proposal would require that a small fraction of each MMF investor's recent balances, called the minimum balance at risk (MBR), be demarcated to absorb losses if the fund is liquidated. Most regular transactions in the fund would be unaffected, but redemptions of the MBR would be delayed for thirty days. A key feature of the proposal is that large redemptions would subordinate a portion of an investor's MBR, creating a disincentive to redeem if the fund is likely to have losses. In normal times, when the risk of MMF losses is remote, subordination would have little effect on incentives. The authors use empirical evidence, including new data on MMF losses from the U.S. Treasury and the Securities and Exchange Commission, to calibrate an MBR rule that would reduce the vulnerability of MMFs to runs and protect investors who do not redeem quickly in crises.

*A top download in 2012.

No. 570, September 2012

Pricing TIPS and Treasuries with Linear Regressions

Michael Abrahams, Tobias Adrian, Richard K. Crump, and Emanuel Moench

This study presents an affine term structure model for the joint pricing of Treasury Inflation-Protected Securities (TIPS) and Treasury yield curves that adjusts for TIPS' relative illiquidity. The authors' estimation using linear regressions is computationally very fast and can accommodate unspanned factors. The baseline specification with six principal components extracted from Treasury and TIPS yields, in combination with a liquidity factor, generates negligibly small pricing errors for both real and nominal yields. Model-implied expected inflation provides a better prediction of actual inflation than breakeven inflation. The value of the deflation floor calculated from the model is generally small in magnitude, but it spiked during the recent crisis.

No. 571, September 2012

Information Acquisition and Financial Intermediation

Nina Boyarchenko

This paper considers the problem of information acquisition in an intermediated market, where the specialists have access to superior technology for acquiring information. These informational advantages of specialists relative to households lead to disagreement between the two groups, changing the shape of the intermediation-constrained region of the economy and increasing the frequency of periods when the intermediation constraint binds. Acquiring the additional information is, however, costly to the specialists, making them less likely to decrease their risky asset holdings when the intermediation constraint binds. Boyarchenko shows that this behavior leads the equity capital constraint to bind more frequently, making asset prices in the economy more volatile. She finds empirical evidence consistent with these predictions.

No. 575, October 2012

Assessing the Quality of "Furfine-Based" Algorithms

Olivier Armantier and Adam Copeland

To conduct academic research on the federal funds market—historically one of the most important financial markets in the United States—some empirical economists have used market-level measures published by the Markets Group of the Federal Reserve Bank of New York. To obtain more disaggregate data, some researchers have relied on a separate source of information: individual transactions inferred indirectly from an algorithm based on the work of Furfine (1999). To date, however, the accuracy of this algorithm has not been formally established. This paper conducts a test aimed at assessing the algorithm's ability to correctly identify individual overnight fed funds transactions conducted by two banks that are among the most active in the fed funds market. The results are discouraging. The authors estimate the average type I and type II errors from 2007 to 2011 to be 81 percent and 23 percent, respectively. Furthermore, they argue that these errors 1) apply to almost half of the algorithm's output, 2) introduce systematic biases, and 3) may not subside when the algorithm's output is aggregated. Their results therefore raise serious concerns about the appropriateness of using the algorithm's output to study the fed funds market. Because the Markets Group relies on a different source of data than the algorithm output, the authors' results have no bearing on the Group's understanding of the fed funds market and its calculation of market-level measures, including the effective fed funds rate.

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No. 576, October 2012

Banking across Borders

Friederike Niepmann

This paper develops and tests a theoretical model that allows for the endogenous decision of banks to engage in international and global banking. International banking, where banks raise capital in the home market and lend it abroad, is driven by differences in factor endowments across countries. In contrast, global banking, where banks intermediate capital locally in the foreign market, arises from differences in country-level bank efficiency. Together, these two driving forces determine the foreign assets and liabilities of a banking sector. The model provides a rationale for the observed rise in global banking relative to international banking. Its key predictions regarding the cross-country pattern of foreign bank asset and liability holdings are strongly supported by the data.

No. 578, October 2012

Have Financial Markets Become More Informative?

Jennie Bai, Thomas Philippon, and Alexi Savov

The finance industry has grown. Financial markets have become more liquid. Information technology has improved. But have prices become more informative? Using stock and bond prices to forecast earnings, Bai, Philippon, and Savov find that the information content of market prices has not increased since 1960. The magnitude of earnings surprises, however, has increased. A baseline model predicts that as the efficiency of information production increases, prices become more disperse and covary more strongly with future earnings. The forecastable component of earnings improves capital allocation and serves as a direct measure of welfare. The authors find that this measure has remained stable. A model with endogenous information acquisition predicts that an increase in fundamental uncertainty also increases informativeness as the incentive to produce information grows. Uncertainty has indeed increased outside of the S&P 500, but price informativeness has not.

No. 579, October 2012

When Is There a Strong Transfer Risk from the Sovereigns to the Corporates? Property Rights Gaps and CDS Spreads

Jennie Bai and Shang-Jin Wei

When a sovereign faces the risk of debt default, it may be tempted to expropriate the private sector. This may be one reason why international investment in private companies has to take into account sovereign risk. But the likelihood of sovereign risk transferring to corporates and increasing their risk of default may be mitigated by legal institutions that provide strong property rights protection. Using a novel credit default swap (CDS) data set covering government and corporate entities across thirty countries, Bai and Wei study both the average strength of the transfer risks and the role of institutions in mitigating such risks. They find that 1) sovereign risk on average has a statistically and economically significant influence on corporate credit risks (all else equal, a 100 basis point increase in the sovereign CDS spread leads to an increase in corporate CDS spreads of 71 basis points); 2) the sovereign-corporate relation varies across corporations, with state-owned companies exhibiting a stronger relation with the sovereign; and 3) the presence of strong property rights institutions, however, tends to weaken the connection. In contrast, contracting institutions (offering protection of creditor rights or minority shareholder rights) do not appear to matter much in this context.

No. 580, October 2012

Shadow Banking: A Review of the Literature

Tobias Adrian and Adam B. Ashcraft

Adrian and Ashcraft provide an overview of the rapidly evolving literature on shadow credit intermediation. The shadow banking system consists of a web of specialized financial institutions that conduct credit, maturity, and liquidity transformation without direct, explicit access to public backstops. The lack of such access to sources of government liquidity and credit backstops makes shadow banks inherently fragile. Much of shadow banking activities is intertwined with the operations of core regulated institutions such as bank holding companies and insurance companies, thus creating a source of systemic risk for the financial system at large. The authors review fundamental reasons for the existence of shadow banking, explain the functioning of shadow banking institutions and activities, discuss why shadow banks need to be regulated, and review the impact of recent reform efforts on shadow banking credit intermediation.

No. 589, December 2012

No Good Deals—No Bad Models

Nina Boyarchenko, Mario Cerrato, John Crosby, and Stewart Hodges

Faced with the problem of pricing complex contingent claims, investors seek to make their valuations robust to model uncertainty. The authors construct a notion of a model-uncertainty-induced utility function and show that model uncertainty increases investors' effective risk aversion. Using this utility function, they extend the "no good deals" methodology of Cochrane and Saá-Requejo (2000) to compute lower and upper good-deal bounds in the presence of model uncertainty. The authors illustrate the methodology using some numerical examples.

No. 590, December 2012

Liquidity, Volatility, and Flights to Safety in the U.S. Treasury Market: Evidence from a New Class of Dynamic Order Book Models

Robert Engle, Michael Fleming, Eric Ghysels, and Giang Nguyen

This study proposes a new class of dynamic order book models that allow the authors to 1) study episodes of extreme low liquidity and 2) unite liquidity and volatility in one framework through which their joint dynamics can be examined. Liquidity and volatility in the U.S. Treasury securities market are analyzed around the time of economic announcements, throughout the recent financial crisis, and during flight-to-safety episodes. The authors document that Treasury market depth declines sharply during the crisis, accompanied by increased price volatility, but that trading activity seems unaffected until after the Lehman Brothers bankruptcy. Their models' key finding is that price volatility and depth at the best bid and ask prices exhibit a negative feedback relationship and that each becomes more persistent during the crisis. Lastly, the study characterizes the Treasury market during flights to safety as having much lower market depth, along with higher trading volume and greater price uncertainty.

Quantitative Methods

No. 540, January 2012

Is Increased Price Flexibility Stabilizing? Redux

Saroj Bhattarai, Gauti Eggertsson, and Raphael Schoenle

The authors study the implications of increased price flexibility on aggregate output volatility in a DSGE model. First, using a simplified version of the model, they show analytically that the results depend on the shocks driving the economy and the systematic response of monetary policy to inflation: More flexible prices amplify the effect of demand shocks on output if interest rates do not respond strongly to inflation, while higher flexibility amplifies the effect of supply shocks on output if interest rates are very responsive to inflation. Next, the authors estimate a medium-scale DSGE model using post–WWII U.S. data and Bayesian methods and, conditional on the estimates of structural parameters and shocks, ask: Would the U.S. economy have been more or less stable had prices been more flexible than they were historically? Their main finding is that increased price flexibility would have been destabilizing for output and employment.

No. 551, February 2012

Deficits, Public Debt Dynamics, and Tax and Spending Multipliers

Matthew Denes, Gauti Eggertsson, and Sophia Gilbukh

Cutting government spending on goods and services increases the budget deficit if the nominal interest rate is close to zero. This is the message of a simple but standard New Keynesian on DSGE model calibrated with Bayesian methods. The cut in spending reduces output and thus—holding rates for labor and sales taxes constant—reduces revenues by even more than what is saved by the spending cut. Similarly, increasing sales taxes can increase the budget deficit rather than reduce it. Both results suggest limitations of "austerity measures" in low interest rate economies to cut budget deficits. Running budget deficits can by itself be either expansionary or contractionary for output, depending on how deficits interact with expectations about the long run in the model. If deficits trigger expectations of 1) lower long-run government spending, 2) higher long-run sales taxes, or 3) higher future inflation, they are expansionary. If deficits trigger expectations of higher long-run labor taxes or lower long-run productivity, they are contractionary.

No. 554, March 2012

DSGE Model-Based Forecasting

Marco Del Negro and Frank Schorfheide

DSGE models use modern macroeconomic theory to explain and predict comovements of aggregate time series over the business cycle and to perform policy analysis. Del Negro and Schorfheide explain how to use the models for all three purposes—forecasting, storytelling, and policy experiments—and review their forecasting record. They also provide their own real-time assessment of the forecasting performance of the Smets and Wouters (2007) model data up to 2011, compare it with Blue Chip and Greenbook forecasts, and show how it changes as they augment the standard set of observables with external information from surveys (nowcasts, interest rate forecasts, and expectations for long-run inflation and output growth). The authors explore methods of generating forecasts in the presence of a zero-lower-bound constraint on nominal interest rates and conditional on counterfactual interest rate paths. Finally, they perform a postmortem on DSGE model forecasts of the Great Recession and show that forecasts from a version of the Smets-Wouters model augmented by financial frictions, and using spreads as an observable, compare well with Blue Chip forecasts.

No. 568, August 2012

Do Informal Referrals Lead to Better Matches? Evidence from a Firm's Employee Referral System

Meta Brown, Elizabeth Setren, and Giorgio Topa

The limited nature of data on employment referrals in large business and household surveys has so far impeded efforts to understand the relationships among employment referrals, match quality, wage trajectories, and turnover. Using a new firm-level data set that includes explicit information on whether a worker at a company was referred by a current employee, the authors can provide rich detail on these empirical relationships for a single U.S. corporation and test various predictions of theoretical models of labor market referrals. Their results align with the following predictions: 1) referred candidates are more likely to be hired, 2) referred workers experience an initial wage advantage, 3) the wage advantage dissipates over time, 4) referred workers have longer tenure in the firm, and 5) the variances of the referred and nonreferred wage distributions converge over time. The richness of the data allows the authors to analyze the role of referrer-referee relationships, and the size and diversity of the corporation permit analysis of referrals at a wide variety of skill and experience levels.

No. 577, October 2012

On Bounding Credit Event Risk Premia

Jennie Bai, Pierre Collin-Dufresne, Robert S. Goldstein, and Jean Helwege

Reduced-form models of default that attribute a large fraction of credit spreads to compensation for credit event risk typically preclude the most plausible economic justification for such risk to be priced—namely, a "contagious" response of the market portfolio during the credit event. When this channel is introduced within a general equilibrium framework for an economy comprised of a large number of firms, credit event risk premia have an upper bound of just a few basis points and are dwarfed by the contagion premium. The authors provide empirical evidence supporting the view that credit event risk premia are minuscule.

No. 585, December 2012

Rare Shocks, Great Recessions

Vasco Cúrdia, Marco Del Negro, and Daniel L. Greenwald

The authors estimate a DSGE model in which rare, large shocks can occur, but replace the commonly used Gaussian assumption with a student's *t*-distribution. Results from the Smets and Wouters (2007) model estimated on the usual set of macroeconomic time series over the 1964-2011 period indicate that 1) the Student's *t*-specification is strongly favored by the data, even when one allows for low-frequency variation in the volatility of the shocks, and 2) the estimated degrees of freedom are quite low for several shocks that drive U.S. business cycles, implying an important role for rare, large shocks. This result holds even if the Great Recession is excluded from the sample. The authors also show that inference about low-frequency changes in volatility—and, in particular, inference about the magnitude of the Great Moderation—is different once they allow for fat tails.

No. 588, December 2012

The Measurement and Behavior of Uncertainty: Evidence from the ECB Survey of Professional Forecasters

Robert Rich, Joseph Song, and Joseph Tracy

Rich, Song, and Tracy use matched point and density forecasts of output growth and inflation from the ECB Survey of Professional Forecasters to derive measures of forecast uncertainty, forecast dispersion, and forecast accuracy. They construct uncertainty measures from aggregate density functions as well as from individual histograms. The uncertainty measures display countercyclical behavior, and there is evidence of increased uncertainty for output growth and inflation since 2007. The results also indicate that uncertainty displays a very weak relationship with forecast dispersion, corroborating the findings of other recent studies indicating that disagreement is not a valid proxy for uncertainty. In addition, the authors find no correspondence between movements in uncertainty and predictive accuracy, suggesting that time-varying conditional variance estimates may not provide a reliable proxy for uncertainty. Last, using a regression equation that can be interpreted as a (G)ARCH-M-type model, they find limited evidence of linkages between uncertainty and levels of inflation and output growth.

Outside Journals

Members of the Research and Statistics Group publish in a wide range of economic and finance journals, conference volumes, and scholarly books.

Published in 2012

Macroeconomics and Growth

Olivier Armantier, Giorgio Topa, and Wilbert van der Klaauw
"The Effect of Question Wording on Consumers' Reported Inflation Expectations," with Wändi Bruine de Bruin, Julie S. Downs, and Baruch Fischhoff. *Journal of Economic Psychology* 33, no. 4 (August): 749-57.

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"Cyclical Precautionary Saving and Monetary Policy," with Pawel Zabczyk. European Central Bank *Research Bulletin* 16, Summer: 7-9.

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"Measuring Inflation Expectations," with Wändi Bruine de Bruin and Simon Potter. *Annual Review of Economics*.

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"The Private Equity Advantage: Leveraged Buyout Firms and Relationship Banking," with Victoria Ivashina. *Review of Financial Studies*.

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