With the collapse of the housing boom and the steep rise in unemployment, the nation’s homeownership rate has fallen from its 2004–06 peak of 69 percent to 67.2 percent—essentially a reversion to its 2000 level. In “The Homeownership Gap” (Current Issues in Economics and Finance, vol. 16, no. 5), authors Andrew Haughwout, Richard Peach, and Joseph Tracy raise the question, How large will the decline in the homeownership rate ultimately prove to be?

To address this question, the authors propose the concept of a “homeownership gap” as a gauge of the downward pressure on the homeownership rate. They define the homeownership gap as the difference between the official homeownership rate tabulated by the Census Bureau and an “effective” rate that excludes owners who are in a negative equity position—that is, owners whose outstanding mortgage balance exceeds the value of their house.

The number of negative equity mortgage holders has climbed sharply in recent years and, by the authors’ estimate, now exceeds 6 million. Demonstrating that these households would have to boost their savings by “formidable amounts” to retain their home or to purchase a new home, Haughwout, Peach, and Tracy conclude that many will convert to renters over time. Thus, the authors suggest, an effective homeownership measure that excludes these households from the count of owner-occupied homes may serve as a useful guide to the future path of the official rate.

For the nation, the effective rate of homeownership calculated by the authors is 5.6 percentage points below the Census Bureau’s rate. For certain metropolitan areas hit hard by the boom and bust in the housing market—Las Vegas, Miami, and Phoenix—the effective rate falls short of the official rate by a dramatic 20 to 39 percentage points.

Addressing some of the broader social implications of the changes they examine, Haughwout, Peach, and Tracy suggest that a falling homeownership rate may give rise to a large set of residents who have less of a stake in the long-run outlook for their homes and communities. In particular, cities with a very large share of negative equity households may see a “decline in citizen participation in local affairs, with a concomitant loss of vigilance over the quality and efficiency of public services and institutions.”

In an appendix to their article, the authors consider the extent to which public policy initiatives

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such as mortgage modification can help to reduce foreclosures and make it possible for negative equity homeowners to save for a new house. They conclude that the effectiveness of mortgage modification programs will vary with their structure: Programs that reduce the principal balance on the mortgage will be appreciably more useful in supporting homeownership than those that simply lower the interest rate or extend the term of the loan.

The Commercial Paper Funding Facility and the Financial Crisis

In the wake of the Lehman Brothers bankruptcy in September 2008, the Federal Reserve established the Commercial Paper Funding Facility (CPFF) to stabilize a commercial paper market experiencing liquidity and funding disruptions that threatened to worsen the financial crisis.

A new study by Tobias Adrian, Karin Kimbrough, and Dina Marchioni describes the creation of the CPFF and the performance of the facility during the crisis (“The Federal Reserve's Commercial Paper Funding Facility,” *Economic Policy Review*, forthcoming). It also considers the economics of the CPFF in the context of the broader financial system and the Federal Reserve’s traditional role of “lender of last resort.”

The authors explain that the commercial paper market was subject to considerable strain in the weeks following Lehman’s bankruptcy. An unprecedented flight to quality by investors from high-yielding to Treasury money market funds ensued, greatly disrupting the ability of commercial paper issuers to roll over their short-term liabilities. Redemption demands accelerated, and investors became increasingly reluctant to buy commercial paper. As a result, a growing percentage of outstanding paper had to be refinanced each day, interest rates on longer term paper rose dramatically, and the volume of outstanding paper declined sharply.

These problems had the potential to restrict the economic activities of commercial paper issuers, according to Adrian, Kimbrough, and Marchioni. Furthermore, because a large amount of outstanding paper was issued or sponsored by financial intermediaries, the difficulties faced by the institutions placing the paper hampered their ability to meet the credit needs of U.S. businesses and households.

To support the orderly functioning of the commercial paper market, in October 2008 the Federal Reserve introduced the Commercial Paper Funding Facility. The facility enabled the Fed to finance the purchase of highly rated unsecured and asset-backed commercial paper. It operated as a lender-of-last resort liquidity backstop for eligible U.S. issuers of commercial paper, with the goal of addressing temporary liquidity distortions in the market. The liquidity backstop assured issuers and investors that firms could roll over their maturing paper. The CPFF thus allowed issuers to engage in term lending funded by commercial paper issuance, which in turn enhanced the ability of financial intermediaries to extend crucial credit to businesses and households.

The authors observe that the CPFF’s ability to provide liquidity to a particular market, as opposed to a certain set of institutions, helped the Federal Reserve extend its reach beyond depository institutions—a critical factor given the primacy of nondeposit institutions in the commercial paper market. They also emphasize that the facility did not address the solvency of issuing firms. Rather, it focused on shielding the allocation of real economic investment from liquidity distortions created by the run on high-yielding money market instruments triggered by the Lehman bankruptcy. Issuance to the CPFF was secured by collateral and subject to a penalty rate, and the rate was calibrated to protect the Federal Reserve from potential credit losses.

The study also explains that the CPFF made a strong contribution to the Fed balance sheet,
generating roughly $5 billion in net fee income over its lifetime. (The CPFF was designed to be a temporary liquidity facility; accordingly, it expired on February 1, 2010.) The profits, which the Federal Reserve transferred to the Treasury, “ultimately helped reduce the financial burden on taxpayers,” note Adrian, Kimbrough, and Marchioni. “Taxpayers also benefited from the facility’s role in potentially preventing commercial paper issuers from being forced into bankruptcy, an event that could have distorted real investment decisions.”

The article is available at www.newyorkfed.org/research/epr/forthcoming/1006adri.pdf.

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- Understanding the Securitization of Subprime Mortgage Credit,” by Adam B. Ashcraft and Til Schuermann (Staff Reports, no. 318, March 2008) – 3,400 downloads

SSRN website, second-quarter 2010:
- “Understanding the Securitization of Subprime Mortgage Credit,” by Adam B. Ashcraft and Til Schuermann (Staff Reports, no. 318, March 2008) – 582 downloads

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New Titles in the Staff Reports Series

The following new staff reports are available at www.newyorkfed.org/research/staff_reports.

Macroeconomics and Growth

No. 442, April 2010
Short-Run Fiscal Policy: Welfare, Redistribution, and Aggregate Effects in the Short and Long Run
Sagiri Kitao

This paper quantifies the effects of two short-run fiscal policies—a temporary tax cut and a temporary rebate transfer—that are intended to stimulate economic activity. A reduction in income taxation provides immediate incentives to work and save more, raising aggregate output and consumption. A temporary rebate is mostly saved and increases consumption marginally. Both policies improve the overall welfare of households, and the rebate policy especially benefits low-income households. In the long run, however, the debt accumulated to finance the stimulus and a higher tax to service the debt can crowd out capital and reduce output and consumption, causing welfare to deteriorate.

No. 451, May 2010
Subsidizing Job Creation in the Great Recession
Sagiri Kitao, Ayşegül Şahin, and Joseph Song

Kitao, Şahin, and Song analyze the effects of various labor market policies on job creation, job destruction, and employment. The framework of Mortensen and Pissarides (2003) is used to model the dynamic interaction between firms and workers and to simulate their responses to alternative policies. The equilibrium model is calibrated to capture labor market conditions at the end of 2009, including the unemployment, inflow, and outflow rates by workers of different educational attainment. The authors consider the equilibrium effects of a hiring subsidy, a payroll tax reduction, and an employment subsidy. While calibrating parameters that characterize these policies, they try to mimic the policies in the Hiring Incentives to Restore Employment (HIRE) Act of 2010. They find that a hiring subsidy and a payroll tax deduction, as in the HIRE Act, can stimulate job creation in the short term, but can cause a higher equilibrium unemployment rate in the long term. Employment subsidies succeed in lowering the unemployment rate permanently, but the policy entails high fiscal costs.

No. 455, June 2010
State-Dependent Pricing under Infrequent Information: A Unified Framework
Marco Bonomo, Carlos Carvalho, and René Garcia

Bonomo, Carvalho, and Garcia characterize optimal state-dependent pricing rules under various forms of infrequent information. In all models, infrequent price changes arise from the existence of a lump-sum “menu cost.” The authors entertain various alternatives for the source and nature of infrequent information, and show that, in all cases, optimal pricing rules are both time- and state-dependent, characterized by “trigger strategies” that depend on the time elapsed since the last date when information was fully factored into the pricing decision. After considering the case in which information arrives infrequently for exogenous reasons, they address pricing problems in which gathering and processing information also entails a lump-sum cost. When the information and adjustment costs must be incurred simultaneously, the optimal pricing policy is a fixed-price time-dependent rule. When the costs are dissociated, the optimal rule features price stickiness and inattentiveness. Finally, the authors consider versions of the price-setting problems in which firms continuously entertain partial information. They characterize the optimal pricing rules and provide numerical solution algorithms and examples in a unified framework.

International

No. 446, May 2010
Global Banks and International Shock Transmission: Evidence from the Crisis
Nicola Cetorelli and Linda S. Goldberg

Global banks played a significant role in transmitting the 2007-09 financial crisis to emerging-market economies. Cetorelli and Goldberg examine adverse liquidity shocks on main developed-country banking systems and their relationships to emerging markets across Europe, Asia, and Latin America, isolating loan supply from loan demand effects. Loan supply in emerging markets across Europe, Asia, and Latin America was affected significantly through three
separate channels: 1) a contraction in direct, cross-border lending by foreign banks; 2) a contraction in local lending by foreign banks’ affiliates in emerging markets; and 3) a contraction in loan supply by domestic banks, resulting from the funding shock to their balance sheets induced by the decline in interbank, cross-border lending. Policy interventions, such as the Vienna Initiative introduced in Europe, influenced the lending-channel effects on emerging markets of shocks to head-office balance sheets.

**Microeconomics**

*No. 443, April 2010*

**The Effect of Question Wording on Reported Expectations and Perceptions of Inflation**

Wändi Bruine de Bruin, Wilbert van der Klaauw, Julie S. Downs, Baruch Fischhoff, Giorgio Topa, and Olivier Armantier

Public expectations and perceptions of inflation may affect economic decisions, and have subsequent effects on actual inflation. Therefore, survey measures of such expectations can be of great importance. The authors use an Internet-based survey of consumers and randomly assign respondents to questions about "prices in general" as well as the "rate of inflation" and "prices you pay." Reported expectations and perceptions were higher and more dispersed for "prices in general" than for the "rate of inflation," with "prices you pay" and "prices in general" showing similar response patterns. Compared with questions about the "rate of inflation," questions about "prices in general" and "prices you pay" focused respondents relatively more on personal price experiences—and elicited expectations that were more strongly correlated with the expected price increases for food and transportation, which were relatively large and likely salient, but not with the expected price increases for housing, which were relatively small and likely less salient. The results have implications for survey measures of inflation expectations.

*No. 450, May 2010*

**Is Economics Coursework, or Majoring in Economics, Associated with Different Civic Behaviors?**

Sam Allgood, William Bosshardt, Wilbert van der Klaauw, and Michael Watts

Using data collected from students who attended one of four public universities, the authors investigate the relationship between economics coursework and civic behavior after graduation. They find that undergraduate coursework in economics is strongly associated with political party affiliation and with donations to candidates or parties, but not with the decision to vote or not vote. Nor is studying economics correlated with the likelihood (or intensity) of volunteering. Finally, the authors extend earlier studies that address the link between economics coursework and attitudes on public policy issues, finding that graduates who studied more economics usually reported attitudes closer to those expressed in national surveys of U.S. economists. Interestingly, the authors find the public policy attitudes of business majors to be more like those of general majors than of economics majors.

*No. 453, June 2010*

**Bayesian Social Learning, Conformity, and Stubbornness: Evidence from the AP Top 25**

Daniel F. Stone and Basit Zafar

The recent nonexperimental literature on social learning focuses on showing that observational learning exists, that is, individuals do indeed draw inferences by observing the actions of others. Stone and Zafar take this literature a step further by analyzing whether individuals are Bayesian social learners. Using data from the Associated Press (AP) U.S. College Football Poll, a weekly subjective ranking of the top twenty-five teams, they find that peer rankings: 1) are informative, as conditioning on them improves the accuracy of their estimated Bayesian posterior rankings in a nontrivial way, and 2) influence the way voters adjust their rankings, but the influence is less than the Bayesian amount. Voters’ revisions are closer
to Bayesian when the ranked team loses compared with when it wins, which the authors attribute to losses being less ambiguous and more salient signals. They find evidence of significant voter heterogeneity, and that voters are less responsive to peer rankings after they have been on the poll a few years.

No. 454, June 2010
Can Subjective Expectations Data Be Used in Choice Models? Evidence on Cognitive Biases
Basit Zafar

This paper examines the extent to which cognitive biases plague subjective data, specifically addressing: 1) whether cognitive dissonance affects the reporting of beliefs, and 2) whether individuals exert sufficient mental effort when probed about their subjective beliefs. Using a unique panel data set of undergraduates that contains their subjective expectations about outcomes specific to different majors in their choice set, Zafar finds no evidence of cognitive biases systematically affecting the reporting of beliefs: By analyzing patterns of belief updating, he rules out cognitive dissonance being a serious concern in the current setting. Moreover, there seems to be no systematic (nonclassical) measurement error in the reporting of beliefs. In the reported beliefs for the various majors, Zafar finds no systematic patterns in mental recall of previous responses or in the extent of rounding. Comparison of subjective beliefs with objective measures suggests that students have well-formed expectations. Overall, the results paint a favorable picture of the use of subjective expectations data in choice models.

Banking and Finance
No. 444, April 2010
Repo Runs
Antoine Martin, David Skeie, and Ernst Ludwig von Thadden

This paper develops a model of financial institutions that borrow short-term and invest in long-term marketable assets. Because these financial intermediaries perform maturity transformation, they are subject to runs. The authors endogenize the profits of an intermediary and derive distinct liquidity and solvency conditions that determine whether a run can be prevented. They first characterize these conditions for an isolated intermediary and then generalize them to the case in which the intermediary can sell assets to prevent runs. The sale of assets can eliminate runs if the intermediary is solvent but illiquid. However, because of cash-in-the-market pricing, this becomes less likely as more intermediaries face problems. In the limit, in case of a general market run, no intermediary can sell assets to forestall a run, and the original solvency and liquidity constraints are again relevant for the stability of financial institutions.

No. 445, April 2010
Deferred Compensation, Risk, and Company Value: Investor Reactions to CEO Incentives
Chenyang Wei and David Yermack

Many commentators have suggested that companies pay top executives with deferred compensation, a type of incentive known as inside debt. Recent SEC disclosure reforms greatly increased the transparency of deferred compensation. Wei and Yermack investigate stockholder and bondholder reactions to companies’ initial reports of their CEOs’ inside debt positions in early 2007, when new disclosure rules took effect. They find that bond prices rise, equity prices fall, and the volatility of both securities drops upon disclosures by firms whose CEOs have sizable defined benefit pensions or deferred compensation. Similar changes in value occur for credit default swap spreads and exchange-traded options. The results indicate a reduction in firm risk, a transfer of value from equity toward debt, and an overall destruction of enterprise value when a CEO’s deferred compensation holdings are large.

No. 447, May 2010
Quantifying the Benefits of a Liquidity-Saving Mechanism
Enghin Atalay, Antoine Martin, and James McAndrews

This paper attempts to quantify the benefits associated with operating a liquidity-saving mechanism (LSM) in Fedwire, the large-value payment system of the Federal Reserve. Calibrating the model of Martin and McAndrews (2008), the authors find that potential gains are large compared with the likely cost of implementing an LSM, on the order of hundreds of thousands of dollars per day.
No. 448, May 2010

**Design of Contingent Capital with a Stock Price Trigger for Mandatory Conversion**
Suresh Sundaresan and Zhenyu Wang

A security robust to price manipulation must have a unique equilibrium, but the proposal for banks to issue contingent capital that must convert into common equity when the banks' stock price falls below a specified threshold, or "trigger," does not in general lead to a unique equilibrium in equity and contingent capital prices. For a unique equilibrium to exist, mandatory conversion cannot transfer value between equity holders and contingent capital investors. This necessary condition for unique equilibrium is usually not satisfied by contingent capital with a fixed coupon rate; however, contingent capital with a floating coupon rate is shown to have a unique equilibrium if the coupon rate is set equal to the risk-free rate. This structure of contingent capital anchors its value to par throughout the time before conversion, making it implementable in practice. Although contingent capital with a unique equilibrium is robust to price manipulation, the no-value-transfer condition may preclude it from generating the desired incentives for bank managers and demand from investors.

No. 449, May 2010

**MBS Ratings and the Mortgage Credit Boom**
Adam Ashcraft, Paul Goldsmith-Pinkham, and James Vickery

The authors study credit ratings on subprime and Alt-A mortgage-backed-securities (MBS) deals issued between 2001 and 2007, the period leading up to the subprime crisis. The fraction of highly rated securities in each deal is decreasing in mortgage credit risk (measured either ex ante or ex post), suggesting that ratings contain useful information for investors. However, the authors also find evidence of significant time variation in risk-adjusted credit ratings, including a progressive decline in standards around the MBS market peak between the start of 2005 and mid-2007. Conditional on initial ratings, they observe underperformance (high mortgage defaults and losses and large rating downgrades) among deals with observably higher risk mortgages based on a simple ex ante model and deals with a high fraction of opaque low-documentation loans. These findings hold over the entire sample period, not just for deal cohorts most affected by the crisis.

No. 456, June 2010

**Executive Compensation and Risk Taking**
Patrick Bolton, Hamid Mehran, and Joel Shapiro

This paper studies the connection between risk taking and executive compensation in financial institutions. A theoretical model of shareholders, debt-holders, depositors, and an executive suggests that: 1) in principle, excessive risk taking (in the form of risk shifting) may be addressed by basing compensation on both stock price and the price of debt (proxied by the credit default swap spread), but 2) shareholders may be unable to commit to designing compensation contracts in this way and indeed may not want to because of distortions introduced by either deposit insurance or naive debtholders. The paper provides an empirical analysis suggesting that debt-like compensation for executives is believed by the market to reduce risk for financial institutions.

Quantitative Methods

No. 452, May 2010

**Bootstrapping Density-Weighted Average Derivatives**
Matias D. Cattaneo, Richard K. Crump, and Michael Jansson

Employing the "small-bandwidth" asymptotic framework of Cattaneo, Crump, and Jansson (2009), this paper studies the properties of several bootstrap-based inference procedures associated with a kernel-based estimator of density-weighted average derivatives proposed by Powell, Stock, and Stoker (1989). In many cases, the validity of bootstrap-based inference procedures is found to depend crucially on whether the bandwidth sequence satisfies a particular (asymptotic linearity) condition. An exception to this rule occurs for inference procedures involving a studentized estimator that employs a "robust" variance estimator derived from the "small-bandwidth" asymptotic framework. The results of a small-scale Monte Carlo experiment are found to be consistent with the theory and indicate in particular that sensitivity with respect to the bandwidth choice can be ameliorated by using the "robust" variance estimator.
Papers Presented


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