



**Research Department: Current Staff  
January 2010**

**Loretta J. Mester – Senior Vice President and Director of Research**

Joined Bank staff in September 1985.

**Education**

Ph.D. Economics, Princeton University, 1985

M.A. Economics, Princeton University, 1983

B.A. Mathematics and Economics, summa cum laude, Barnard College of Columbia University, 1980

**Concurrent Positions**

Adjunct Professor of Finance, The Wharton School, University of Pennsylvania

Fellow of the Wharton Financial Institutions Center, The Wharton School, University of Pennsylvania

Member of the Finance Department Advisory Council, Fox School of Business and Management, Temple University

Associate Editor: *Journal of Financial Intermediation; Journal of Money, Credit and Banking; Journal of Financial Services Research; Journal of Economics and Business; Research in Banking and Finance; Journal of Financial Stability*

Editorial Board Member: *International Journal of Banking, Accounting, and Finance*

Member: Association of the *International Journal of Central Banking*

Founding Member and Director of the Financial Intermediation Research Society

Associate Economist for the Federal Open Market Committee, 2002–2003; 2005–2006, 2008–2009.

**Previous Experience**

Visiting Reserve Bank Officer, Division of Monetary Affairs, Board of Governors of the Federal Reserve System, August 2009 – November 2009

Adjunct Professor of Finance, Stern School, New York University, 9/1995-6/1996 and 9/1997-6/1998

Special Membership on the Graduate Faculty, University of Maryland, 4/1996-4/1998

Member of Three-Person External Review Committee, Research Activities, Bank of Finland, 7/2004-2/2005

Member of Two-Person External Review Committee, Research Activities, National Bank of Hungary, 10/2007-3/2008

Former Editor, *Journal of Banking and Finance*, 7/2001-12/2007

Former Editor, *Journal of Productivity Analysis*, 11/1995-11/2001

## Primary Interests

Financial institutions and markets; regulation and policy; monetary policy

## Journal Publications

“Central Bank Institutional Structure and Effective Central Banking: Cross-Country Empirical Evidence” (with Iftekhar Hasan), *Comparative Economic Studies*, 50 (December 2008), pp. 620-645.

“Competitive Effects of Basel II on U.S. Bank Credit Card Lending” (with William Lang and Todd Vermilyea), *Journal of Financial Intermediation*, 17 (October 2008), pp. 478-508.

“Introduction to the Special Issue on Financing Community Reinvestment and Development,” *Journal of Economics and Business*, 60 (January/February 2008), pp. 1-12.

“Transactions Accounts and Loan Monitoring” (with Leonard Nakamura and Micheline Renault), *Review of Financial Studies*, 20 (May 2007), pp. 529-56.

“Switching Costs and Adverse Selection in the Market for Credit Cards: New Evidence” (with Paul S. Calem and Michael B. Gordy), *Journal of Banking and Finance*, 30 (2006), pp. 1653-85.

“Credit Card Rates and Consumer Search” (with Mitchell Berlin), *Review of Financial Economics*, 13 (2004), pp. 179-98.

“Retail Credit Risk Management and Measurement: An Introduction to the Special Issue” (with Mitchell Berlin), *Journal of Banking and Finance*, 28 (2004), pp. 721-25.

“Explaining the Dramatic Changes in Performance of U.S. Banks: Technological Change, Deregulation, and Dynamic Changes in Competition” (with Allen N. Berger), *Journal of Financial Intermediation*, 12 (2003), pp. 57-95.

“Do Bankers Sacrifice Value to Build Empires? Managerial Incentives, Industry Consolidation, and Financial Performance” (with Joseph P. Hughes, William W. Lang, Choon-Geol Moon, and Michael Pagano), *Journal of Banking and Finance*, 23 (2003), pp. 417-47.

“Lender Liability and Large Investors” (with Mitchell Berlin), *Journal of Financial Intermediation*, 10 (2001), pp. 108-137.

“Are Scale Economies in Banking Elusive or Illusive? Evidence Obtained by Incorporating Capital Structure and Risk-Taking into Models of Bank Production” (with Joseph P. Hughes and Choon-Geol Moon), *Journal of Banking and Finance*, 25 (December 2001), pp. 2169-2208.

“Introduction: Special Issue on the Banking and Finance Workshop” (with Anthony Saunders), *Journal of Financial Services Research*, 19 (2001), pp. 93-97.

“Recovering Risky Technologies Using the Almost Ideal Demand System: An Application to U.S. Banks” (with Joseph P. Hughes, William Lang, and Choon-Geol Moon), *Journal of Financial Services Research*, 18 (October 2000), pp. 5-27.

“Deposits and Relationship Lending” (with Mitchell Berlin), *Review of Financial Studies*, 12 (Fall 1999), pp. 579-607.

“The Dollars and Sense of Bank Consolidation” (with Joseph Hughes, William Lang, and Choon-Geol Moon), *Journal of Banking and Finance*, 23 (February 1999), pp. 291-324.

“On the Profitability and Cost of Relationship Lending” (with Mitchell Berlin), *Journal of Banking and Finance*, 22 (August 1998), pp. 873-97.

“Intermediation and Vertical Integration” (with Mitchell Berlin), *Journal of Money, Credit and Banking*, 30 (August 1998), pp. 873-97.

- “Bank Capitalization and Cost: Evidence of Scale Economies in Risk Management and Signaling” (with Joseph P. Hughes), *Review of Economics and Statistics*, 80 (May 1998), pp. 314-25.
- “Inside the Black Box: What Explains Differences in the Efficiencies of Financial Institutions?” (with Allen N. Berger), *Journal of Banking and Finance*, 21 (July 1997), pp. 895-947.  
Reprinted in Patrick T. Harker and Stavros A. Zenios, eds., *Performance of Finance Institutions*. Cambridge: Cambridge University Press, 2000; also reprinted in Maximilian J.B. Hall, ed., *The Regulation and Supervision of Banks*. Cheltenham, UK: Edward Elgar, 2000.
- “Measuring Efficiency at U.S. Banks: Accounting for Heterogeneity Is Important,” *European Journal of Operational Research*, 98 (April 1997), pp. 230-42.
- “Efficient Banking Under Interstate Branching” (with Joseph Hughes, William Lang, and Choon-Geol Moon), *Journal of Money, Credit, and Banking*, 28 (November 1996), pp. 1043-71.  
Reprinted in Maximilian J.B. Hall, ed., *The Regulation and Supervision of Banks*. Cheltenham, UK: Edward Elgar, 2000.
- “A Study of Bank Efficiency Taking into Account Risk-Preferences,” *Journal of Banking and Finance*, 20 (July 1996), pp. 1025-45.
- “Consumer Behavior and the Stickiness of Credit Card Interest Rates” (with Paul Calem), *American Economic Review*, 85 (December 1995), pp. 1327-36.
- “When Does the Prime Rate Change?” (with Anthony Saunders), *Journal of Banking and Finance*, 19 (August 1995), pp. 743-64.
- “Comments on Borrower and Neighborhood Racial and Income Characteristics and Financial Institution Mortgage Application Screening,” *Journal of Real Estate Finance and Economics*, 9 (November 1994), pp. 241-43.
- “A Positive Analysis of Bank Closure” (with George J. Mailath), *Journal of Financial Intermediation*, 3 (June 1994), pp. 272-99.
- “Why Are Credit Card Rates Sticky?” *Economic Theory*, 4 (May 1994), pp. 505-30.
- “Further Evidence Concerning Expense Preference and the Fed,” *Journal of Money, Credit and Banking*, 26 (February 1994), pp. 125-45.
- “A Quality- and Risk-Adjusted Cost Function for Banks: Evidence on the ‘Too-Big-to-Fail’ Doctrine” (with Joseph P. Hughes), *Journal of Productivity Analysis*, 4 (September 1993), pp. 293-315.  
Reprinted in Maximilian J.B. Hall, ed., *The Regulation and Supervision of Banks*. Cheltenham, UK: Edward Elgar, 2001.
- “Comments on ‘Determinants of Bank Efficiency,’” *Journal of Banking and Finance*, 17 (April 1993), pp. 407-9.
- “Efficiency in the Savings and Loan Industry,” *Journal of Banking and Finance*, 17 (April 1993), pp. 267-86.
- “Perpetual Signaling with Imperfectly Correlated Costs,” *The RAND Journal of Economics*, 23 (Winter 1992), pp. 548-563.
- “Debt Covenants and Renegotiation” (with Mitchell Berlin), *Journal of Financial Intermediation*, 2 (June 1992), pp. 95-133. (Winner of D.P. Jacobs Prize)
- “Traditional and Nontraditional Banking: An Information-Theoretic Approach,” *Journal of Banking and Finance*, 16 (June 1992), pp. 545-66.
- “Agency Costs Among Savings and Loans,” *Journal of Financial Intermediation*, 1 (June 1991), pp. 257-78.

“Testing for Expense Preference Behavior: Mutual Versus Stock Savings and Loans,” *RAND Journal of Economics*, 20 (Winter 1989), pp. 273-76.

“Viability in Multiproduct Industries,” *Economic Letters*, 31 (December 1989), pp. 273-76.

“Multiple Market Contact Between Savings and Loans,” *Journal of Money, Credit, and Banking*, 19 (November 1987), pp. 538-49.

“A Multiproduct Cost Study of Savings and Loans,” *Journal of Finance*, 42 (June 1987), pp. 423-45.

### **Other Publications**

“Discussion of a New Metric for Banking Integration in Europe,” in *Europe and the Euro*, ed. Alberto Alesina and Francesco Giavazzi, NBER Research Book, University of Chicago Press, pp. 246-253, forthcoming.

“Efficiency in Banking: Theory and Evidence” (with Joseph P. Hughes), invited chapter for *Oxford Handbook of Banking*, Oxford University Press: Oxford, UK, eds. Allen Berger, Philip Molyneux, and John Wilson, forthcoming.

“Changes in the Use of Electronic Means of Payment: 1995-2007,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2009).

To be reprinted as Table 1146 in the *Statistical Abstract of the United States*, U.S. Census Bureau, 2010.

“Optimal Industrial Structure in Banking,” invited chapter for *Handbook of Financial Intermediation*, North Holland, ed. Around Boot and Anjan Thakor, 2008, Chapter 5, pp. 133-62.

“Innovation and Regulation in Financial Markets: A Summary of the 2007 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2008), pp. 35-41.

“Financing Community Development: Learning from the Past, Looking to the Future: Summary of the 2007 Federal Reserve System Community Affairs Research Conference,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2008), pp. 34-50.

“Magyar Nemzeti Bank Research Evaluation Report 2008” (with László Halpern), National Bank of Hungary, March 2008.

“Economic Growth and Development: Perspectives for Policymakers: A Summary of the 2006 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2007), pp. 30-39.

“Some Thoughts on the Evolution of the Banking System and the Process of Financial Intermediation,” *Economic Review*, Federal Reserve Bank of Atlanta (First and Second Quarters 2007), pp. 67-75.

“Fiscal Imbalance: Problems, Solutions, and Implications: A Summary of the 2005 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2006), pp. 31-39.

“Working as a Research Economist at the Federal Reserve Bank of Philadelphia,” invited article for the Symposium on Research Careers Outside of Academia, *Newsletter of the Committee on the Status of Women in the Economics Profession (CSWEP)*, Spring/Summer 2006, pp. 8-9.

“Changes in the Use of Electronic Means of Payment: 1995-2004,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2006), pp. 26-30.

Reprinted as Table 1172 in the *Statistical Abstract of the United States*, U.S. Census Bureau, 2007 and 2008, and as Table 1155 in *Statistical Abstract of the United States*, U.S. Census Bureau, 2009

“Core Inflation as a Predictor of Total Inflation” (with N. Neil K. Khettry), *Research Rap – Special Report*, Federal Reserve Bank of Philadelphia, April 26, 2006, pp. 1-20.

“Challenges and Opportunities in a Global Economy: Perspectives on Outsourcing, Exchange Rates, and Free Trade, A Summary of the 2004 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2005), pp. 36-48.

“Bank of Finland Research Evaluation Report 2004” (with Philip R. Lane and Juuso Välimäki), Bank of Finland, December 2004.

“Was Job Quality ‘Job One’ in the Tri-State Region’s Economic Recovery?” (with William Olney), Federal Reserve Bank of Philadelphia *Regional Highlights*, Special Issue, December 2004, pp. 1-25.

“Managing the Recovery in Uncertain Times: A Summary of the 2003 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2004), pp. 44-56.

“Changes in the Use of Electronic Means of Payment: 1995-2001,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2003), pp. 18-20.

Reprinted as Table 1186 in the *Statistical Abstract of the United States*, U.S. Census Bureau, 2003, p.750.

“Crises, Contagion, and Coordination: A Summary of the 2002 Philadelphia Fed Policy Forum,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2003), pp. 8-15.

“The Philadelphia Fed Policy Forum: Three Questions for Monetary Policymakers,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2002), pp. 6-13.

“Is the Personal Bankruptcy System Bankrupt?” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2002), pp. 31-44.

“A Summary of the Conference on Consumer Transactions and Credit,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2001), pp. 44-56.

“Changes in the Use of Electronic Means of Payment,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2001), pp. 10-12.

Reprinted in the *Statistical Abstract of the United States*, U.S. Census Bureau (2002).

“Are Scale Economies in Banking Elusive or Illusive? Evidence Obtained by Incorporating Capital Structure and Risk-Taking into Models of Bank Production” (with Joseph P. Hughes and Choon-Geol Moon), synopsis of working paper, *The Changing Financial Industry Structure and Regulation: Bridging States, Countries, and Industries; Proceedings of a Conference on Bank Structure and Competition*, Chicago: Federal Reserve Bank of Chicago (May 2000), pp. 233-64.

“The Changing Nature of the Payments System: Should New Players Mean New Rules?” Federal Reserve Bank of Philadelphia *Business Review* (March/April 2000), pp. 3-26.

“Credit Scoring and Securitization of Small Business Loans: Discussion Comments,” *Business Access to Capital and Credit: A Federal Reserve System Research Conference* (March 1999), pp. 650-62.

“Banking Industry Consolidation: What’s a Small Business to Do?” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1999), pp. 3-16.

Abstract of “Inside the Black Box: What Explains Differences in the Efficiencies of Financial Institutions,” *Contemporary Finance Digest*, 2 (Summer 1998), pp. 70-71.

“What’s the Point of Credit Scoring?” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1997).

Reprinted on the *Public Affairs Information Service*; in Mishkin, Frederic S., *1999 Readings to Accompany the Economics of Money, Banking, and Financial Markets* (Fifth Edition). Addison Wesley Longman, Inc, 1999.

“Repealing Glass-Steagall: The Past Points the Way to the Future,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1996), pp. 3-18.

“Safety in Numbers? Geographic Diversification and Bank Insolvency Risk” (with Joseph P. Hughes, William Lang, and Choon-Geol Moon), *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 1996), pp. 202-218, and Federal Reserve Bank of Philadelphia, Working Paper 96-14 (May 1996).

“Comments on Part Five: Competitive Interpenetration: Banking, Commerce and Nonbank Activities,” in *Universal Banking Financial System Design Reconsidered*, A. Saunders and I. Walter, eds., Irwin: Chicago (1996), pp. 541-49.

“Recovering Banking Technologies When Managers Are Not Risk-Neutral” (with Joseph Hughes, William Lang, and Choon-Geol Moon), *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 1995), pp. 49-68.

“There's More Than One Way to Sell a Security: The Treasury's Auction Experiment,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1995), pp. 3-17.

“Evidence on the Objectives of Bank Managers” (with Joseph P. Hughes), *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 1994), pp. 496-500.

“How Efficient Are Third District Banks?” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1994), pp. 3-18.

“Economies of Scale and Scope,” in *Financial Institutions Management: A Modern Perspective*, by Anthony Saunders, Richard D. Irwin: Chicago, IL (1994); second edition (1997); third edition (2000), p. 299.

“Banking and Commerce: A Dangerous Liaison?” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1992).

Reprinted in *Readings on Financial Institutions and Markets*, ed., P. Rose, Richard D. Irwin (1993 and 1994); in *The Financial Institutions and Markets Reader*, Kolb Publishing Co.: Miami, FL (1993); in *Financial Institutions and Markets*, ed., J. Madura, West Publishing Co. (1995).

“Curing Our Ailing Deposit-Insurance System,” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1990), pp. 13-24.

Reprinted in *Bank Management and Regulation*, eds., A. Saunders, G. Udell, and L. White, Bristlecone Books, Mayfield Publishing Co.: Mountain View, CA (1992); in *The Commercial Bank Management Reader*, Kolb Publishing Co: Miami, FL. (1992); in *Readings on Financial Institutions and Markets*, ed., P. Rose, Richard D. Irwin (1995).

“The Costs of Traditional and Nontraditional Banking,” *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 1990), pp. 170-74.

“Owners vs. Managers: Who Controls the Bank?” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1989), pp. 13-23.

Reprinted in R. Kolb, *Financial Institutions and Markets: A Reader*, Kolb Publishing Co.: Miami, FL (1991); in *The Commercial Bank Management Reader*, Kolb Publishing Co: Miami, FL (1992); in *The Financial Institutions and Markets Reader*, Kolb Publishing Co: Miami FL (1993).

“Going, Going, Gone: Setting Prices with Auctions,” Federal Reserve Bank of Philadelphia *Business Review* (March/April 1988), pp. 3-13.

Reprinted in L. Gillette and D. Jansen, *Study Guide and Readings to Accompany Bayes' Managerial Economics*, Econotex Publishing Co: College Station, TX, June (1989); excerpted in R. Kolb and R. Rodriguez, *Financial Management*, D.C. Heath and Co: Lexington, MA (1991); in W. Boyes and M. Melvin, *Microeconomics*, Houghton Mifflin Co: Boston (October 1990); in J. Mikesell, *Fiscal Administration, Analysis, and Applications for the Public Sector*, Brooks/Cole Publishing Co; Pacific Grove, CA (Summer 1990).

“Production of Financial Services: Scale and Scope Economies,” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1987), pp. 15-25.

Reprinted in *The Management and Regulation of Depository Institutions*, eds., A. Saunders, G. Udell, and L. White, Bristlecone Books, Mayfield Publishing Co.: Mountain View CA (1992).

“The Effects of Multiple Market Contact on Savings and Loan Behavior,” (abstract) *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 1986), pp. 171-73.

## **Working Papers and Manuscripts**

“Core Inflation as a Predictor of Total Inflation” (with Ted Crone, Neil Khettry, and Jason Novak), Federal Reserve Bank of Philadelphia, Working Paper 08-9, April 2008.

“Applying Efficiency Measurement Techniques to Central Banks,” Federal Reserve Bank of Philadelphia, Working Paper 03-13 (July 2003).

“Optimal Financial Contracts for Large Investors: The Role of Lender Liability” (with Mitchell Berlin), Federal Reserve Bank of Philadelphia, Working Paper 00-1 (February 2000).

“Efficiency and Productivity Change in the U.S. Commercial Banking Industry: A Comparison of the 1980s and 1990s” (with Allen N. Berger), Federal Reserve Bank of Philadelphia, Working Paper 97-5/R (May 1997, November 1997).

“Recovering Technologies that Account for Generalized Managerial Preferences: An Application to Non-Risk-Neutral Banks” (with Joseph P. Hughes, William Lang, and Choon-Geol Moon), Federal Reserve Bank of Philadelphia, Working Paper 95-8/R (August 1994, revised August 1996).

“Bank Managers’ Objectives” (with Joseph P. Hughes), Federal Reserve Bank of Philadelphia, Working Paper 94-8/R (original draft December 1992, revised August 1994); Wharton Financial Institutions Center Working Paper 94-15.

“Risk-Taking at U.S. Thrifts: Modeling Risk-Indicative, Endogenous Interest Rates” (with Joseph P. Hughes, Choon-Geol Moon, and William Lang), manuscript (November 1993, revised October 1994).

“Financial Intermediation as Vertical Integration” (with Mitchell Berlin), Federal Reserve Bank of Philadelphia, Working Paper 93-3 (January 1993).

“Who Changes the Prime Rate?” (with Anthony Saunders), Federal Reserve Bank of Philadelphia, Working Paper 90-26 (November 1990).

## **Current Research**

Agency problems in credit markets

Loan pricing

Productive efficiency in financial institutions

Theory of financial intermediation

Core inflation

## Policy Section

### **Michael Dotsey – Vice President and Senior Economic Policy Advisor**

Joined Bank staff in May 2002.

#### **Education**

Ph.D. Economics, University of Rochester, 1983

M.A. Economics, University of Rochester, 1979

M.B.A. Finance, University of Chicago, 1975

B.A. Business, University of Chicago, 1974

#### **Concurrent Position**

Associate Editor: *International Journal of Central Banking*

#### **Previous Experience**

Vice President, Federal Reserve Bank of Richmond, July 1988-April 2002

Visiting Professor, Fuqua School of Business, Duke University, Fall 1997 and Fall 1998

Visiting Instructor, Fuqua School of Business, Duke University, October 1997-December 1997

Visiting Associate Professor, University of Rochester, September 1987-May 1988

Instructor, Rochester Institute of Technology, September 1979-June 1980

Instructor, State University of New York at Oswego, September 1978-1979

Teaching Assistant, University of Rochester, 1978

#### **Journal Publications**

“Nontraded Goods, Market Segmentation, and Exchange Rates” (with Margarida Duarte), *Journal of Monetary Economics* (September 2008), pp. 1129-42.

“Pricing, Production, and Persistence” (with Robert G. King), *Journal of the European Economic Association* (September 2006).

“Implications of State-Dependent Pricing for Dynamic Macroeconomic Models” (with Robert G. King), *Journal of Monetary Economics* (January 2005), pp. 213-42.

“The Behavior of the Real Rate of Interest” (with Carl Lantz and Brian Scholl), *Journal of Money, Credit, and Banking* (February 2003).

“Should a Monetary Policy Maker Look at Money” (with Andreas Hornstein), *Journal of Monetary Economics* (April 2003).

“Inflation Uncertainty and Growth in a Cash-in-Advance Economy” (with Pierre-Daniel Sarte), *Journal of Monetary Economics* (June 2000), pp. 631-57.

“State Dependent Pricing and the General Equilibrium Dynamics of Money and Output” (with Robert G. King and Alex Wolman), *Quarterly Journal of Economics* (May 1999).

“On the Welfare Cost of Inflation in General Equilibrium” (with Peter Ireland) *Journal of Monetary Economics* (February 1996), p. 29-47.

“Liquidity Effects and Transactions Technologies” (with Peter Ireland), *Journal of Money, Credit and Banking*, (November 1995), pp. 1441-57.

- “Some Unpleasant Supply Side Arithmetic,” *Journal of Monetary Economics* (June 1994), pp. 507-24.
- “How Well Do Linear Approximation Methods Work? The Production Tax Case” (with Ching-Sheng Mao), *Journal of Monetary Economics* (February 1992), pp. 25-58.
- “Open Market Operations in Australia: A U.S. Perspective,” *Economic Record* (September 1991).
- “The Economic Effects of Production Taxes in a Stochastic Growth Model,” *American Economic Review* (December 1990), pp. 1168-82.
- “Monetary Control under Alternative Operating Procedures,” *Journal of Money, Credit, and Banking* (August 1989) pp. 273-90.
- “The Demand for Currency in the United States,” *Journal of Money, Credit, and Banking* (February 1988), pp. 22-39.
- “Monetary Policy, Secrecy, and Federal Funds Rate Behavior,” *Journal of Monetary Economics* (November 1987) pp. 463-74.
- “Wealth Effects of Open Market Operations and the Consequence for Optimal Monetary Policy,” *Journal of Monetary Economics* (March 1986), pp. 225-38.
- “Informational Implications of Interest Rate Rules” (with R. G. King), *American Economic Review* (March 1986), pp. 33-42.
- “The Use of Electronic Funds Transfers to Capture the Effects of Cash Management Practices on the Demand for Demand Deposits: A Note,” *Journal of Finance* (December 1985), pp. 1493-1504.
- “Is There an Operational Interest Rate Rule?” *American Economic Review* (June 1985), pp. 552-56.
- “Monetary Instruments and Policy Roles in a Rational Expectations Environment” (with R. G. King), *Journal of Monetary Economics* (September 1983), pp. 357-82.
- Other Publications**
- “Commitment Versus Discretion in Monetary Policy,” Federal Reserve Bank of Philadelphia *Business Review*, forthcoming.
- “Commitment Versus Discretion in Monetary Policy” (with Charles I Plosser), *Annual Report* (2007), Federal Reserve Bank of Philadelphia.
- “Implementation of Optimal Monetary Policy,” Federal Reserve Bank of Richmond *Economic Quarterly* (Spring 2006), pp. 113-34.
- “A Review of Inflation Targeting in Developed Countries,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2006), pp. 10-20.
- “The Relationship Between Capacity Utilization and Inflation,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2005), pp 8-17.
- “How the Fed Affects the Economy: A Look at Systematic Monetary Policy,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2004), pp. 6-15.
- “Structure from Shocks,” Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 2002).
- “Pitfalls in Interpreting Tests of Backward Looking Pricing in New Keynesian Models,” Federal Reserve Bank of Richmond *Economic Quarterly* (Winter 2002).
- “Is Money Useful in the Conduct of Monetary Policy” (with Carl Lantz and Lawrence Santucci), Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 2002), pp. 23-48.

- “The Importance of Systematic Monetary Policy Economics,” Federal Reserve Bank of Richmond *Economic Quarterly* (Summer 1999), pp. 41-60.
- “The Predictive Content of the Interest Rate Term Spread for Future Economic Growth,” Federal Reserve Bank of Richmond, *Economic Quarterly* (Summer 1998).
- “Investing in Equities: Can It Help Social Security?” Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 1997).
- “Signal Extraction,” in *Business Cycles and Depressions*, David Glasner, ed., Garland Publishing (1997).
- “Some Not So Unpleasant Monetarist Arithmetic,” Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 1996).
- “Changing Policy Orientation in the United States,” *Monetary Policy in an Integrated World Economy*, Kiel Conference Proceedings (1996).
- “Was the Disinflation of the Early 1980s Anticipated?” Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 1995).
- “The Rational Expectations Hypothesis of the Term Structure, Monetary Policy, and Time Varying Term Premia,” Federal Reserve Bank of Richmond *Economic Quarterly* (Winter 1995).
- “M2 and Monetary Policy: A Critical Review of the Recent Debate” (with Christopher Otrok), Federal Reserve Bank of Richmond *Economic Quarterly* (Winter 1994).
- “Oil Shocks, Monetary Policy, and Economic Activity” (with Milton Reid), Federal Reserve Bank of Richmond *Economic Review* (July/August 1992).
- “Monetary Policy and Operating Procedures in New Zealand,” Federal Reserve Bank of Richmond *Economic Review* (September/October 1991).
- “Reforming Deposit Insurance: Lessons from the Savings and Loan Crisis” (with Tony Kuprianov), Federal Reserve Bank of Richmond *Economic Review* (March/April 1990).
- “An Examination of International Trade Data in the 1980s,” Federal Reserve Bank of Richmond *Economic Review* (March/April 1989).
- “Rational Expectations and the Business Cycle” (with R. G. King), in *The New Palgrave: A Dictionary of Economic Theory and Doctrine* and in Federal Reserve Bank of Richmond *Economic Review* (March/April 1988).
- “The Australian Money Market and the Operations of the Reserve Bank of Australia: A Comparative Analysis,” Federal Reserve Bank of Richmond *Economic Review* (September/October 1987).
- “Japanese Monetary Policy, a Comparative Analysis,” *Bank of Japan Monetary and Economic Studies* 4 (October 1986) and in Federal Reserve Bank of Richmond *Economic Review* (November/December 1986).
- “Controversy over the Federal Budget Deficit: A Theoretical Perspective,” Federal Reserve Bank of Richmond *Economic Review* (September/October 1985).
- “An Investigation of Cash Management Practices and Their Effects on the Demand for Money,” Federal Reserve Bank of Richmond *Economic Review* (September/October 1984).
- “An Examination of Implicit Interest Rates on Demand Deposits,” Federal Reserve Bank of Richmond *Economic Review* (September/October 1983).
- “Money Market Mutual Funds and Monetary Control” (with S. Englander and J. Partlan), Federal Reserve Bank of New York *Quarterly Review* (Winter 1981-82).

**Working Papers and Manuscripts**

“How Important Is the Currency Denomination of Exports in Open-Economy Models?” (with Margarida Duarte), Federal Reserve Bank of Philadelphia, Working Paper 09-32, November, 2009.

“On the Implementation of Markov-Perfect Interest Rate and Money Supply Rules: Global Uniqueness and Local Uniqueness” (with Andreas Hornstein), Federal Reserve Bank of Philadelphia, Working Paper 08-30 (December 2008).

“Interest Rate Versus Money Supply Instruments: On the Implementation of Markov-Perfect Time Consistent Monetary Policy” (with Andreas Hornstein), Federal Reserve Bank of Philadelphia, Working Paper 07-27, (September 2007).

“Nontraded Goods, Market Segmentation, and Exchange Rates” (with Margarida Duarte), Federal Reserve Bank of Philadelphia, Working Paper 06-9 (May 2006).

“Pricing, Production, and Persistence” (with Robert G. King), Federal Reserve Bank of Philadelphia, Working Paper 05-04 (February 2005).

“Implications of State-Dependent Pricing for Dynamic Macroeconomic Models” (with Robert G. King), Federal Reserve Bank of Philadelphia, Working Paper 05-02 (February 2005).

“Pricing, Production, and Persistence” (with Robert G. King), NBER, Working Paper 8407 (August 2002).

“Structure from Shocks,” Federal Reserve Bank of Richmond, Working Paper 99-6 (August 1999).

“Interest Rate Rules and Nominal Determinacy” (with John Boyd), manuscript, Federal Reserve Bank of Richmond (August 1993).

“The Effects of Fiscal Policy in a Neoclassical Growth Model” with Ching Sheng Mao, Federal Reserve Bank of Richmond, Working Paper 94-3, (February 1994).

“Interest Rates and Monetary Policy” (with R. G. King), presented at 1983 Econometric Society Meetings.

## Real-Time Data Research Center

### **D. Keith Sill – Assistant Vice President and Director of the Real-Time Data Research Center**

Joined Bank staff in September 1991.

#### **Education**

Ph.D., University of Virginia, 1992

M.A., University of Virginia, 1987

B.S., Ohio State University, 1982

#### **Previous Experience**

Instructor, University of Virginia

Graduate Intern, Board of Governors of the Federal Reserve System, Washington, DC

#### **Primary Interests**

Monetary economics; financial markets; macroeconometrics

#### **Journal Publications**

“DSGE Model-based Forecasts of Non-Modeled Variables” (with Frank Schorfheide and Maxym Kryshko), *International Journal of Forecasting*, forthcoming 2010.

“Monetary Policy, Oil Shocks and TFP: Accounting for the Decline in U.S. Volatility” (with Sylvain Leduc), *Review of Economic Dynamics*, 10 (2007), pp. 595-614.

“Self-Fulfilling Expectations and the Inflation of the 1970s: Evidence from the Livingston Survey” (with Sylvain Leduc and Tom Stark), *Journal of Monetary Economics*, (54) 2007, pp. 433-59.

“A Quantitative Analysis of Oil-Price Shocks, Systematic Monetary Policy, and Economic Downturns” (with Sylvain Leduc), *Journal of Monetary Economics*, 51 (2004), pp. 781-808.

“Sectoral Shocks and Metropolitan Employment Growth” (with Gerald Carlino and Robert H. DeFina), *Journal of Urban Economics*, 50 (2001), pp. 396-417.

“Regional Income Fluctuations: Common Trends and Common Cycles” (with Gerald Carlino), *Review of Economics and Statistics*, 83 (3) (August 2001), pp. 446-56.

“An Empirical Investigation of Money Demand: Evidence from a Cash-in-Advance Model,” *Canadian Journal of Economics*, 31 (1998), pp. 125-47.

“Macroeconomic Risk and the Determination of Expected Returns on Stocks,” *Managerial Finance*, 21:7 (1995), pp. 43-56.

#### **Other Publications**

“The Evolution of the World Income Distribution,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2008).

“The Macroeconomics of Oil Shocks,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2007).

“What Accounts for the Postwar Decline in Economic Volatility,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2004).

“Widening the Wage Gap: The Skill Premium and Technology,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2002).

“The Gains from International Risk-Sharing,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2001).

“Understanding Asset Values: Stock Prices, Exchange Rates, and the ‘Peso Problem,’” Federal Reserve Bank of Philadelphia *Business Review* (September/October 2000).

“Forecasts, Indicators, and Monetary Policy,” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1999).

“Exchange Rates, Monetary Policy Regimes, and Beliefs” (with Jeffrey Wrase), *International Advances in Economic Research* (1998).

“Restructuring During Recessions: A Silver Lining in the Cloud?” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1998).

“The Economic Benefits and Risks of Derivative Securities,” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1997).

“The Cyclical Volatility of Interest Rates,” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1996).

“Managing the Public Debt,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1994).

“Predicting Stock-Market Volatility,” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1993).

### **Working Papers and Manuscripts**

“The Long and Large Decline in State Employment Growth Volatility,” (with Gerald Carlino and Robert DeFina), Federal Reserve Bank of Philadelphia, Working Paper 09-09 (April 2009).

“Macroeconomic Volatility and the Equity Premium,” Federal Reserve Bank of Philadelphia, Working Paper 06-01 (January 2006).

“Solving and Simulating a Simple Open-Economy Model with Markov-Switching Driving Processes and Rational Learning” (with Jeff Wrase), Federal Reserve Bank of Philadelphia, Working Paper 99-14 (October 1999).

“Exchange Rates and Monetary Policy Regimes in Canada and the U.S.” (with Jeff Wrase), Federal Reserve Bank of Philadelphia, Working Paper 99-13 (October 1999).

“Exchange Rates, Monetary Policy Regimes, and Beliefs” (with Jeff Wrase), Federal Reserve Bank of Philadelphia, Working Paper 99-6 (June 1999).

“Regional Employment Dynamics,” Federal Reserve Bank of Philadelphia, Working Paper 97-28 (December 1997).

“Some Monetary Policy Implications of Increasing Consumption Variety,” Federal Reserve Bank of Philadelphia, Working Paper 95-28.

“Money, Output, and the Cyclical Volatility of the Term Structure,” Federal Reserve Bank of Philadelphia, Working Paper 94-14.

“Macroeconomic Risk and Treasury Bill Pricing: An Application of the FACTOR-ARCH Model,” Federal Reserve Bank of Philadelphia, Working Paper 93-25.

## Monetary and Macroeconomics Section

### **Kei-Mu Yi – Vice President and Economist**

Joined Bank staff in January 2004.

#### **Education**

Ph.D., University of Chicago, 1990

M.A., University of Chicago, 1985

B.S., Massachusetts Institute of Technology, 1983

#### **Previous Experience**

Federal Reserve Bank of New York, International Research Function

Research Officer, June 2002–December 2003

Senior Economist, June 1998–June 2002

Economist, August 1996–June 1998

University of Milan and University of Turin, Summer School in Trade, Industrialisation and Development

Lecturer, June 2006

Columbia University, School of International and Public Affairs

Adjunct Professor, Summer 2002, Summer 2003

New York University, Department of Economics

Adjunct Associate Professor, Spring 2000, Spring 2002

University of Virginia, Department of Economics

Visiting Assistant Professor, July 1994–January 1995

University of Iowa, Department of Economics

Visiting Assistant Professor, January 1994–July 1994

Rice University, Department of Economics

Assistant Professor, July 1990–June 1998

Instructor, July 1989–June 1990

Board of Governors of the Federal Reserve System, International Finance Division

Intern, September 1986–January 1987

#### **Journal Publications**

“Can Multi-Stage Production Explain the Home Bias in Trade?” Federal Reserve Bank of Philadelphia, WP 08-12R, forthcoming *American Economic Review* (March 2010).

“A Tale of Two States: West Bengal and Maharashtra” (with A. Lahiri), *Review of Economic Dynamics* (July 2009), pp. 523-542.

“Can the Standard International Business Cycle Model Explain the Relation Between Trade and Comovement?” (with A. Kose), *Journal of International Economics* (February 2006), pp. 267-95.

“Vertical Specialization and Three Facts about U.S. International Trade,” (with H. Chen and M. Kondratowicz), *North American Journal of Economics and Finance* (March 2005), pp. 35-59.

“Why Is Manufacturing Trade Rising Even as Manufacturing Output Is Falling?” (with R. Bergoeing, T. Kehoe, and V. Strauss-Kahn), *American Economic Review Papers and Proceedings* (May 2004), pp. 134-38.

“Can Vertical Specialization Explain the Growth of World Trade?” *Journal of Political Economy* (February 2003), pp. 52-102.

“The Nature and Growth of Vertical Specialization in World Trade” (with D. Hummels and J. Ishii), *Journal of International Economics* (June 2001), pp. 75-96.

“Can World Real Interest Rates Explain Business Cycles in a Small Open Economy?” (with W. Blankenau and A. Kose), *Journal of Economic Dynamics and Control* (June 2001), pp. 867-89.

“International Trade and Business Cycles: Is Vertical Specialization the Missing Link?” (with A. Kose), *American Economic Review Papers and Proceedings* (May 2001), pp. 371-75.

“Asia Crisis Postmortem: Where Did the Money Go and Did the United States Benefit?” (with E. VanWincoop), Federal Reserve Bank of New York *Economic Policy Review* (September 2000), pp. 51-70.

Reprinted in M. Tcha and C-S Suh, eds., *The Korean Economy at the Crossroads*, New York: RoutledgeCurzon (2003). Earlier version appears in *International Financial Markets and the Implications for Monetary and Financial Stability*, BIS Conference Papers, Vol. 8 (March 2000).

“Vertical Specialization and the Changing Nature of World Trade” (with D. Hummels and D. Rapoport), Federal Reserve Bank of New York *Economic Policy Review* (June 1998), pp. 79-99.

“Is There Endogenous Long Run Growth? Evidence from the U.S. and the U.K.” (with N. Kocherlakota), *Journal of Money, Credit, and Banking* (May 1997), pp. 235-62.

“Consumer Durables, Permanent Terms of Trade Shocks, and the Recent U.S. Trade Deficits” (with J. Sadka), *Journal of International Money and Finance* (October 1996), pp. 797-811.

“A Simple Time Series Test of Endogenous vs. Exogenous Growth Models: An Application to the United States” (with N. Kocherlakota), *Review of Economics and Statistics* (February 1996), pp. 126-34.

“Can Convergence Regressions Distinguish Between Endogenous and Exogenous Growth Models?” (with N. Kocherlakota), *Economics Letter* (August 1995), pp. 211-15.

“Can Government Purchases Explain the Recent United States Net Export Deficits?” *Journal of International Economics* (November 1993), pp. 201-25.

### **Other Publications**

“China’s Emergence as a Manufacturing Juggernaut: Is it Overstated?” (with B. Kianian), Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2009).

“International Trade: Why We Don’t Have More of It” (with E. Ostapik), Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2007).

“What Will the Next Export Boom Look Like? Some Hints from the late 1980s,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2006).

Review of *Barriers to Riches* by Stephen L. Parente and Edward C. Prescott, *Journal of International Economics* (May 2003).

Review of *Fragmentation*, ed. by Sven W. Arndt and Henryk Kierzkowski, *Journal of Economic Literature* (December 2002).

“Curbing Unemployment in Europe: Are There Lessons from Ireland and the Netherlands?” (with C. Tille), *FRBNY Current Issues in Economics and Finance*, 7(5) (May 2001).

“The Effects of a Booming Economy on the U.S. Trade Deficit” with S. Papaioannou, *FRBNY Current Issues in Economics and Finance*, 7(2) (February 2001).

Discussion of “Revealing Comparative Advantage: Chaotic or Coherent Patterns Across Time and Sector and U.S. Trading Partner?” by David Richardson and Chi Zhang, in *Topics in Empirical International Economics: A Festschrift in Honor of Robert E. Lipsey*, NBER Conference Volume, University of Chicago Press: Chicago (2001).

Review of *Private Behavior and Government Policy in Interdependent Economies*, ed. by A.S. Courakis and M.P. Taylor, *Journal of Money, Credit, and Banking* (May 1993).

### **Working Papers and Manuscripts**

“How Much of South Korea’s Growth Miracle Can be Explained by Trade Policy?” (with M. Connolly), Federal Reserve Bank of Philadelphia, Working Paper 09-19 (June 2009).

“A Tale of Two States: West Bengal and Maharashtra” (with A. Lahiri), Federal Reserve Bank of Philadelphia, Working Paper 06-16 (June 2006).

“Language and Location” (with A. John), April 2001.

“Research Output by Federal Reserve System Economists Employed as of January 1997” (with D. Rapoport), September 1997.

“Language, Learning, and Location” (with A. John), Federal Reserve Bank of New York, Staff Report 26, June 1997.

“The Growth of World Trade” (with J. Ishii), Federal Reserve Bank of New York, Research Paper 9718, May 1997.

“Capital Accumulation or Technological Progress? Evidence from Korean Trade Flows, 1963-1990” (with M. Chen), June 1995.

“The Role of Real Interest Rates in Explaining Trade Balance Movements in Small Open Economies” (with S. Gaudin), November 1993.

“CTM: A User’s Guide” (with J. Walker and B. Honoré), University of Chicago, 1985.

## George A. Alessandria – Senior Economic Advisor and Economist

Joined Bank staff in 2004.

### Education

Ph.D. Economics, University of Pennsylvania, 2000

M.A. Economics, University of Pennsylvania, 1996

B.A. Economics, with distinction, and Mathematics, Duke University, 1992

### Experience

Visiting Lecturer, Princeton, Fall 2009

Research Department, Federal Reserve Bank of Philadelphia, 07/2004 to present

Visiting Assistant Professor, Finance Department, Wharton, University of Pennsylvania, 2003-04 (academic year)

Visiting Assistant Professor, Department of Economics, Stern School of Business, NYU, 2002-03 (academic year)

Assistant Professor, Department of Economics, The Ohio State University, 2000-2004

### Journal Publications

“Inventories, Lumpy Trade, and Large Devaluations” (with J. Kaboski and V. Midrigan), *American Economic Review*, forthcoming.

“Consumer Search, Price Dispersion, and International Relative Price Fluctuations,” *International Economic Review*, 50(3) (August 2009), pp. 803-29.

“Trade and the (Dis) Incentive to Labor Market Reform,” (with Alain Delacroix), *Journal of International Economics*, 75(1) (May 2008), pp. 155-66.

“Do Sunk Costs of Exporting Matter for Net Export Dynamics?” (with Horag Choi), *Quarterly Journal of Economics*, 122(1) (February 2007).

“Endogenous Financial Intermediation and Real Effects of Capital Account Liberalization,” (with Jun Qian), *Journal of International Economics*, 67(1) (September 2005), pp. 97-128.

“International Deviations From The Law Of One Price: The Role of Search Frictions and Market Share,” *International Economic Review*, 45(4) (November 2004), pp. 1263-1291.

### Working Papers

“Pricing to Market and the Failure Absolute PPP” (with J. Kaboski), revision requested, *American Economic Journal: Macroeconomics*.

“Establishment Heterogeneity, Exporter Dynamics, and the Effects of Trade Liberalization” (with Horag Choi), revision requested, *Econometrica*.

“Do Falling Iceberg Costs Account for US Export Growth?” (with Horag Choi).

“The Role of Exporting and Trade for Entry over the Business Cycle” (with Horag Choi).

### Current Research

Job turnover and international trade

Exporter dynamics after large devaluations

Trade collapses: An inventory adjustment?

Distribution networks, international business cycles, and the dynamics of international trade

Price dispersion and the business cycle

## Satyajit Chatterjee – Senior Economic Advisor and Economist

Joined Bank staff in September 1991.

### Education

Ph.D., University of Rochester, 1986

M.A., Delhi University, India, 1980

B.A., Delhi University, India, 1978

### Concurrent Position

Associate Editor: *Macroeconomic Dynamics*

### Previous Experience

Assistant Professor, University of Iowa

Lecturer in Economics, Delhi University

### Primary Interests

Aggregate implications of microeconomic consumer behavior; consumer credit and bankruptcy; innovation and entrepreneurship; economic geography; sovereign debt and default

### Journal Publications

“A Finite-Life, Private Information Theory of Unsecured Consumer Debt” (with D. Corbae and J-V Rios-Rull), *Journal of Economic Theory*, 142(1) (2008), pp. 149-77.

“A Quantitative Theory of Unsecured Consumer Credit with Risk of Default,” (with D. Corbae, M. Nakajima, and J-V. Rios-Rull) *Econometrica*, 75(6) (November 2007), 1525-1589.

“On the Welfare Cost of Great Depression Unemployment (with Dean Corbae),” *Journal of Monetary Economics*, 54(6), 2007, pp.1529-44.

“Urban Density and the Rate of Invention” (with G. Carlino and R. Hunt), *Journal of Urban Economics*, 61(3), 2006, pp. 389-415.

“Employment Deconcentration: A New Perspective on America’s Postwar Urban Evolution” (with Gerald Carlino), *Journal of Regional Science*, 42 (2002), pp. 455-75.

“Aggregate Metropolitan Employment Growth and Deconcentration of Metropolitan Employment” (with Gerald Carlino), *Journal of Monetary Economics*, 48 (2001).

“Minimum Consumption Requirements: Implication for Growth and Distribution” (with B. Ravikumar), *Macroeconomic Dynamics*, 3 (1999), pp. 482-505.

“Money and Finance in a Model of Costly Commitment” (with Dean Corbae), *Journal of Monetary Economics*, 37 (1996).

“Valuation Equilibria with Transactions Costs” (with Dean Corbae), *American Economic Review Papers and Proceedings* (May 1995).

“Transitional Dynamics and the Distribution of Wealth in a Neoclassical Growth Model,” *Journal of Public Economics*, 54 (1994).

“Strategic Complementarity in Business Formation: Aggregate Fluctuations and Sunspot Equilibria” (with Russell Cooper and B. Ravikumar), *Review of Economic Studies* (October 1993).

“Endogenous Market Participation and the General Equilibrium Value of Money” (with Dean Corbae), *Journal of Political Economy* (June 1992).

“A Neoclassical Model of Seasonal Fluctuations” (with B. Ravikumar), *Journal of Monetary Economics*, 29:1 (February 1992).

“Multiplicity of Equilibria and Fluctuations in Dynamic Imperfectly Competitive Economies” (with Russell Cooper), *American Economic Review Papers and Proceedings* (May 1989).

### **Other Publications**

“The Peopling of Macroeconomics: Microfoundations of Aggregate Consumer Spending,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2009).

“The Economic Logic of Fresh Start,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2008).

“Ores and Scores: Two Remarkable Cases of How Competition Engendered Productivity Miracles,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2005).

“Agglomeration Economies: The Spark that Ignites a City?” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2003).

“The Taylor Curve and the Unemployment Inflation Tradeoff,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2002).

“Why Does Countercyclical Monetary Policy Matter?” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2001).

Reprinted in *Boletín, Centro De Estudios Monetarios Latino Americanos* 47 (4) (October-December 2001).

“From Cycles to Shocks: Progress in Business-Cycle Theory,” Federal Reserve Bank of Philadelphia *Business Review* (March/April 2000).

“Real Business Cycles: A Legacy of Countercyclical Policies?” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1999).

Reprinted in *The Region*, Federal Reserve Bank of Minneapolis (March 1999) and *The Credit and Financial Management Review* 5(4) (Fourth Quarter 1999).

Comment on “Inflation, Financial Markets, and Capital Formation” (by S. Choi, B.D. Smith and J.H. Boyd), *Federal Reserve Bank of St. Louis Review* 78 (3) 1996, pp. 38-39.

“Taxes, Homeownership, and the Allocation of Residential Real Estate Risks,” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1996).

“Productivity Growth and the American Business Cycle,” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1995).

“Making More Out of Less: The Recipe for Long-Term Economic Growth,” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1994).

“Leaning Against the Wind: Is There a Case for Seasonal Smoothing of Interest Rates?” Federal Reserve Bank of Philadelphia *Business Review* (March/April 1993).

Comment on “Price and Output Stability Under Alternative Monetary Policy Rules,” (by J.E. Gagnon and R.W. Tryon) *Operating Procedures and the Conduct of Monetary Policy*, Board of Governors of the Federal Reserve System, [Proceedings] no. 1 pt. 2, (1993).

“Multiplicity of Equilibria and Fluctuations in Dynamic Imperfectly Competitive Economies” (with Russell Cooper), *American Economic Review Papers and Proceedings* (May 1989).

### **Working Papers and Manuscripts**

“A Competitive Theory of Credit Scoring” (with Dean Corbae and Jose-Victor Rios-Rull) manuscript, November 2009.

“Insuring College Failure Risk” (with Felicia Ionescu), Federal Reserve Bank of Philadelphia, Working Paper (forthcoming).

“Foreclosures and House Price Dynamics: A Quantitative Analysis of the Mortgage Crisis and the Foreclosure Prevention Policy” (with Burcu Eyigungor), Federal Reserve Bank of Philadelphia, Working Paper 09-22.

“Maturity, Indebtedness and Default Risk,” (with Burcu Eyigungor), Federal Reserve Bank of Philadelphia, Working Paper 09-02.

“Spinoffs and the Market for Ideas” (with Esteban Rossi-Hansberg), Federal Reserve Bank of Philadelphia, Working Paper 08-26.

“A Quantitative Assessment of the Role of Agglomeration Economies in the Spatial Concentration of US Employment,” Federal Reserve Bank of Philadelphia, Working Paper 06-20.

### **Current Research**

Theory of credit scores

Idiosyncratic risk and consumption dynamics

General equilibrium implications of agglomeration economies

Entrepreneurship and innovation

Sovereign debt and default

Consumer credit and bankruptcy

## **James M. Nason – Senior Economic Advisor and Economist**

Joined Bank staff in November 2009.

### **Education**

Ph.D., University of Wisconsin, Madison, 1987

M.P.P., University of Michigan, 1981

A.B., University of Michigan, 1979

### **Concurrent Position**

Associate Editor: *Journal of Applied Econometrics*

### **Previous Experience**

Policy Advisor and Research Economist, Research Department, Federal Reserve Bank of Atlanta, September 2007–October 2009

Associate Policy Advisor and Research Economist, Research Department, Federal Reserve Bank of Atlanta, August 2003–August 2007

Associate Professor, Department of Economics, University of British Columbia, Vancouver, BC, Canada, July 1995–December 2003

Assistant Professor, Department of Economics, University of British Columbia, Vancouver, BC, Canada, July 1989–June 1995

Economist, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, DC, October 1987–August 1989

Analyst, Tax Analysis Division, Congressional Budget Office, Washington, DC, January 1982–August 1983

Associate, ICF, Inc., Washington, DC, July–December 1981

### **Primary Interests**

Macroeconomics: business-cycle fluctuations, monetary economics

International economics: open economy macroeconomics, international finance

Finance: asset pricing

### **Journal Publications**

“Great Moderation(s) and US Interest Rates: Unconditional Evidence” (with G.W. Smith), *The B.E. Journal of Macroeconomics*, 8 (Contributions, 2009), Article 30.

“Identifying the New Keynesian Phillips Curve” (with G.W. Smith), *Journal of Applied Econometrics*, 23 (2008), pp. 525–551.

“The Present-Value Model of the Current Has Been Rejected: Round up the Usual Suspects” (with J.H. Rogers), *Journal of International Economics*, 68 (2006), pp. 159–187.

“Common Trends and Cycles in Canada: Who Knew What’s Going On?” (with B.G. Scott and E.C. Wakerly), *Canadian Journal of Economics*, 39 (2006), pp. 320–347.

“Long-Run Monetary Neutrality and Long-Horizon Regressions” (with P.J. Coe), *Journal of Applied Econometrics*, 19 (2004), pp. 355–373.

“Choosing the Best Volatility Models: The Model Confidence Set Approach” (with P.R. Hansen and A. Lunde), *Oxford Bulletin of Economics and Statistics*, 65 (S1, 2003), pp. 839–861.

“The Long-Horizon Regression Approach to Monetary Neutrality: How Should the Evidence Be Interpreted?” (with P.J. Coe), *Economics Letters*, 78 (2003), pp. 351–356.

“Investment and the Current Account in the Short Run and the Long Run” (with J.H. Rogers), *Journal of Money, Credit, and Banking*, 34 (2002), pp. 967–986.

“Testing for Structural Breaks in Cointegrated Relationships” (with G.W. Gregory and D. Watt), *Journal of Econometrics*, 71 (1996), 321–341.

“Output Dynamics in Real Business Cycle Models” (with T. Cogley), *American Economic Review*, 85 (1995), pp. 492–511.

“Effects of the Hodrick-Prescott Filter on Trend and Difference Stationary Time Series: Implications for Business Cycle Research” (with T. Cogley), *Journal of Economic Dynamics and Control*, 19 (1995), pp. 253–278.

“Testing the Implications of Long-Run Neutrality for Monetary Business Cycle Models” (with T. Cogley), *Journal of Applied Econometrics*, 9 (1994), pp. S37–S70.

“Impulse Dynamics and Propagation Mechanisms in a Real Business Cycle Model” (with T. Cogley), *Economic Letters*, 43 (1993), pp. 77–81.

“Nonparametric Exchange Rate Prediction” (with F.X. Diebold), *Journal of International Economics*, 28 (1990), pp. 315–332.

### **Other Publications**

“Phillips Curve: Lessons from Single-Equation Estimation” (with G.W. Smith), in Hornstein, A. (ed.), *The New Keynesian Phillips Curve*, *Economic Quarterly*, Federal Reserve Bank of Richmond, 94 (Fall 2008), pp. 361–395.

“Introduction: Journal of Econometrics special issue honoring the research contributions of Charles R. Nelson” (with T. Cogley and S.N. Durlauf), *Journal of Econometrics*, 146, 199–201.

“Simple versus Optimal Rules as Guides to Policy” (with W.A. Brock, S.N. Durlauf, and G. Rondina), *Journal of Monetary Economics, Carnegie-Rochester Conference Series on Public Policy: Issues in Current Monetary Policy Analysis*, November 10–11, 2006, 54 (2007), pp. 1372–1396.

“The McKenna Rule and U.K. World War I Finance” (with S.P. Vahey), *American Economic Review, Papers and Proceedings*, 97(2, 2007), pp. 290–294.

“Government Budget Constraint,” (with E.M. Leeper) in Blume, L. and Durlauf, S.N. (eds.), *The New Palgrave Dictionary of Economics*, second edition (2008), Palgrave Macmillan, Ltd. Houndsmills, England.

“Instability in U.S. Inflation: 1967–2005,” *Economic Review* Federal Reserve Bank of Atlanta (2006Q2), pp. 39–59.

“Taste Shocks, Asset Prices, and Business Cycles”, in Glasner, D. (ed.), *Business Cycles and Depressions: An Encyclopedia* (1997), Garland Publishing, Inc., NY, NY.

“What Makes Aggregate Fluctuations in Canada Different?” (with C.M. Betts), in Poloz, S.S. (ed.), *Economic Behavior and Policy Choice Under Price Stability* (1994), Bank of Canada, Ottawa, Canada.

### **Working Papers and Manuscripts**

“UK World War I and Interwar Data for Business Cycle and Growth Analysis” (with S.P. Vahey), July 2009, 35 pages, submitted to *The Economic Journal*.

“Business Cycle Implications of Internal Habit Formation for New Keynesian Models,” (with T. Kano), June 2009, 87 pages (includes appendix).

“The Model Confidence Set” (with P.R. Hansen and A. Lunde), May 2009, 58 pages, resubmitted to *Econometrica*.

“Information Criteria for Impulse Response Function Matching Estimation of DSGE Models” (with A.R. Hall, A. Inoue, and B. Rossi), September 2009, 52 pages, resubmitted to the *Journal of Econometrics* (for a special issue that honors the 25th anniversary of the GMM estimator).

“Exchange Rates and Fundamentals: A Generalization” (with J.H. Rogers), May 2008, manuscript, 51 pages, revise and resubmit at the *International Economic Review*.

### **Current Research**

Inflation persistence

Financial intermediation and business cycle analysis

Labor market frictions and monetary policy

Housing, long-run growth, and the U.S. business cycle

Fiscal policy

## **Roc Armenter – Senior Economist**

Joined Bank in September 2008.

### **Education**

Ph.D. Economics, Northwestern University, 2004

M.A. Economics, GPEM, Universitat Pompeu i Fabra, 1999

B.A. Economics, Universitat Pompeu i Fabra, 1998

### **Previous Experience**

International Research Function, Federal Reserve Bank of New York,  
Economist, 2004 –2008.

Northwestern University

Teaching Assistant, Graduate Macroeconomics, 2001-2002

*Distinguished Teaching Award*, Northwestern University, 2002

Universitat Pompeu Fabra

Teaching Assistant, various courses, 1998-1999.

C.E.T.E.C.

Lecturer, Econometrics, 1998-1999.

### **Journal Publications**

“Of Nutters and Doves” (with Martin Bodenstein), *The B.E. Journal of Macroeconomics*, 9(1), 2009, art. 35.

“A Note on Incomplete Factor Taxation,” *Journal of Public Economics*, 92 (10-11) (2008), pp. 2275-81.

“A General Theory (and Some Evidence) of Expectation Traps in Monetary Policy,” *Journal of Money, Credit and Banking*, 40 (5), 2008, pp. 867-96.

“Time-Consistent Fiscal Policy and Heterogeneous Agents,” *Review of Economic Dynamics*, 10 (1) (2007), pp. 31-54.

“Can the U.S. Monetary Policy Fall (Again) in an Expectation Trap?” (with Martin Bodenstein), *Macroeconomic Dynamics*, 12 (5), pp. 664 -93.

“Equilibrium Selection through Incomplete Information in Coordination Games: An Experimental Study” (with Antonio Cabrales and Rosemarie Nagel), *Experimental Economics*, 10 (3) (2007), pp. 221-34.

### **Working Papers and Manuscripts**

“Economies of Scale and the Size of Exporters” (with Miklos Koren), 2008.

“Random State Verification in Dynamic Mirrleesian Economies” (with Thomas Mertens), 2009.

“Intertemporal Distortions in the Second Best” (with Stefania Albanesi), NBER Working Paper 13629 and CEPR Discussion Paper 6577, 2007.

“Understanding Capital Taxation in Ramsey Models” (with Stefania Albanesi), 2007.

“A Balls-and-Bins Model of Trade” (with Miklos Koren), 2007.

“Credible Redistribution Policy and Skilled Migration” (with Francesc Ortega), 2007.

“Credible Redistributive Policies and Migration across the US” (with Francesc Ortega), 2007.

“Endogenous Productivity and Development Accounting” (with Amartya Lahiri), *Federal Reserve Bank of New York Staff Reports* n.258, 2006.

“Sustainable Monetary Policy and Inflation Expectations,” 2006.

“Does the Time Inconsistency Problem Make Flexible Exchange Rates Look Worse than You Think?” (with Martin Bodenstein), *Federal Reserve Bank of New York Staff Reports* no. 230 ( 2005).

“Redistribution, Time Consistent Fiscal Policy and Representative Democracy,” 2004.

## Shigeru Fujita – Senior Economist

Joined Bank staff in August 2004.

### Education

Ph.D. Economics, University of California–San Diego, 2004

B.A. Economics, Yokohama National University, 1993

### Previous Experience

Teaching Assistant, University of California–San Diego, 2000-2004

Instructor (Introductory Macroeconomics), UC San Diego, Summer 2003

Summer Intern, World Bank, Summer 2002

Economist, Bank of Japan, 4/93-6/2000

### Primary Interests

Macroeconomics; labor economics; applied econometrics

### Journal Publications

“Job Matching and Propagation” (with Garey Ramey) *Journal of Economic Dynamics and Control*, 31(11) (2007), pp. 3671–98.

“The Cyclicalities of Separation and Job Finding Rates” (with Garey Ramey) *International Economic Review*, 50 (2) (2009), pp. 415-430.

“Dynamics of Worker Flows and Vacancies: Evidence from the Sign Restriction Approach,” *Journal of Applied Econometrics*, (forthcoming).

### Other Publications

“What Do Worker Flows Tell Us About Cyclical Fluctuations in Employment?” *Business Review* (Second Quarter 2007).

“Creative Destruction and Aggregate Productivity Growth” *Business Review* (Third Quarter 2008).

### Working Papers and Manuscripts

“Worker Flows and Job Flows: A Quantitative Investigation” (with Makoto Nakajima), Federal Reserve Bank of Philadelphia, Working Paper 09-33.

“Time-Varying Capital Requirements in a General Equilibrium Model of Liquidity Dependence” (with Francisco Covas), Federal Reserve Bank of Philadelphia, Working Paper 09-23.

“The Private Risk Premium and Aggregate Uncertainty in a Model of Uninsurable Investment Risk” (with Francisco Covas), Federal Reserve Bank of Philadelphia, Working Paper 07-30.

“The Cyclicalities of Job Loss and Hiring,” (with Garey Ramey), Federal Reserve Bank of Philadelphia, Working Paper 06-17.

“The Cyclicalities of Worker Flows: New Evidence from the SIPP” (with Chris Nekarda and Garey Ramey), Federal Reserve Bank of Philadelphia, Working Paper 07-5.

“Vacancy Persistence,” Federal Reserve Bank of Philadelphia, Working Paper 04-23.

### Current Research

“Demographics and Labor Market Dynamics” (with Garey Ramey)

“Separation Rate, Earnings Losses, and Turbulence”

## **Pablo A. Guerron – Economist**

Joined Bank staff in August 2009.

### **Education**

Ph.D. Economics, Northwestern University, 2006

M.Sc. Economics, Centro de Investigacion y Docencia Economicas, Mexico, 2001

B.Sc. Electronic Engineering, Escuela Politecnica Nacional, Ecuador, 1998

### **Previous Experience**

Assistant Professor, North Carolina State University, 2006–2009

Visiting Assistant Professor of Economics, Instituto Tecnologico de Monterey, Ecuador, 2006–2008

Visiting Scholar, Federal Reserve Bank of Atlanta, August 2007, April 2008

Visiting Scholar, Department of Economics, Duke University, April 2007–May 2008

Manager, Electro-Ecuatoriana, Elevators Division, Ecuador, 1998–1999, 2002

### **Primary Interests**

Macroeconomics; monetary economics; international finance, time series

### **Journal Publications**

“Refinements on Macroeconomic Modeling: The Role of Non-Separability and Heterogeneous Labor Supply,” *Journal of Economic Dynamics and Control*, 32 (2008), pp. 3613–3630.

“Money Demand Heterogeneity and the Great Moderation,” *Journal of Monetary Economics*, 56 (2009), pp. 255–266.

“What You Match Does Matter: The Effects of Data on DSGE Estimation,” May, 2009 Forthcoming, *Journal of Applied Econometrics*.

“The New Macroeconometrics: A Bayesian Approach,” (with Jesus Fernandez-Villaverde and Juan Rubio-Ramirez) January 2009, Forthcoming *Handbook of Applied Bayesian Analysis*.

### **Working Papers and Manuscripts**

“Risk Matters: The Real Effects of Volatility,” (with Jesus Fernandez-Villaverde, Juan Rubio-Ramirez, and Martin Uribe) April, 2009, NBER working paper 14875 (Revise and resubmit, AER).

“The Implications of Inflation in an Estimated New-Keynesian Model,” September 2008 (revise and resubmit *JEDC*).

“Do Uncertainty and Technology Drive Exchange Rates?” October 2009 (submitted).

“Economic Development and Heterogeneity in the Great Moderation among the States” (with Thomas Grennes and Asli Leblebicioglu) September 2009 (submitted).

“The Spread of Credit Crunches in Developed Small Open Economies,” October 2009.

“Frequentist Inference in Weakly Identified DSGE Models,” July 2009 (with Atsushi Inoue and Lutz Kilian).

“Financial Innovations: An Alternative Explanation to the Great Moderation,” January 2008.

“Why do Central Bankers Intervene in the FX market? Some New Empirical Evidence,” December 2006.

### **Current Research**

Fortune versus Virtune: Stochastic Volatility and Parameter Drifting in US Data (with Jesus Fernandez-Villaverde and Juan Rubio-Ramirez).

A Structural Approach to Regional Business Cycles in U.S. (with Jerry Carlino).

International Business Cycles in Estimated DSGE Models.

Zero Bound in Non-Linear DSGE Models (with Jesus Fernandez-Villaverde and Juan Rubio-Ramirez).

## **Keith Kuester – Economist**

Joined Bank staff in August 2008.

### **Education**

Dr. rer. pol. in Economics, Goethe University, Frankfurt, Germany, 2006  
M.Sc., Financial Economics and Econometrics, University of Essex, UK, 2001

### **Previous Experience**

Economist, Monetary Policy Strategy Division, European Central Bank 9/06–7/2008

### **Primary Interests**

Macroeconomics and monetary economics; labor economics; applied macroeconometrics

### **Journal Publications**

"The Role of Labor Markets for Euro Area Monetary Policy" (with Kai Christoffel and Tobias Linzert), *European Economic Review*, forthcoming.

"Insurance Policies for Monetary Policy for the Euro Area" (with Volker Wieland), *Journal of the European Economic Association*, forthcoming.

"The Elasticity of the Unemployment Rate with Respect to Benefits" (with Kai Christoffel), *Economics Letters*, 102(2) (2009), pp. 102-105.

"Is the New Keynesian Phillips Curve Flat?" (with G. Müller and S. Stölting), *Economics Letters*, 103(1) (2009), pp. 39-41.

"Resuscitating the Wage Channel in Models with Unemployment Fluctuations" (with Kai Christoffel), *Journal of Monetary Economics*, 55(5) (2008), pp. 865-87.

"Value-at-Risk Prediction: A Comparison of Alternative Strategies" (with Stefan Mittnik and Marc Paoletta), *Journal of Financial Econometrics*, 4(1) (2006), pp. 53-89.

"Optimal Monetary Policy Rules for the Euro Area" (with Alistair Dieppe and Peter McAdam), *Journal of Common Market Studies*, 43(3) (2005), pp. 507–37.

### **Working Papers and Manuscripts**

"The (Un)importance of Unemployment Fluctuations for the Welfare Cost of Business Cycles" (with Philip Jung), Working Paper 08-31/R, April 2009.

"Inflation Dynamics with Labour Market Matching: Assessing Alternative Specifications" (with Kai Christoffel, James Costain, Gregory de Walque, Tobias Linzert, Stephen Millard, and Olivier Pierrard), Working Paper 09-6, March 2009.

"Real Price and Wage Rigidities in a Model with Matching Frictions," European Central Bank, Working Paper 720 (2006).

## **Makoto Nakajima – Economist**

Joined Bank staff in August 2008.

### **Education**

Ph.D., Economics, University of Pennsylvania, August 2004

M.A., Economics, University of Pennsylvania, May 2000

B.A., International Relations, University of Tokyo, March 1994

### **Previous Experience**

Assistant Professor of Economics, University of Illinois at Urbana-Champaign, August 2004–August 2008

UIUC, Ph.D., Topics course: Computational Methods in Macroeconomics (2004, 2006, 2007, 2008)

UIUC, Undergraduate course: Intermediate Macroeconomics (2005, 2006, 2007, 2008)

Economist, Middle East and CIS Division, Japan Bank for International Cooperation, 2000-2001

Loan Officer, African and South European Division, Export-Import Bank of Japan, 1994-1996

### **Journal Publications**

“A Quantitative Theory of Unsecured Consumer Credit with Risk of Default,” (with Satyajit Chatterjee, Dean Corbae, and José-Víctor Ríos-Rull), *Econometrica*, 75(6), November 2007, 1525-1589.

### **Other Publications**

“Default and Aggregate Fluctuations in Storage Economies,” (with José-Víctor Ríos-Rull), in *Frontiers in Applied General Equilibrium Modelling*, T. Kehoe, T.N. Srinivasan, and J. Whalley, eds., Cambridge, UK: Cambridge University Press, 2005.

### **Working Papers and Manuscripts**

“Home Equity Withdrawal in Retirement” (with Irina A. Telyukova).

“Rising Indebtedness and Hyperbolic Discounting: A Welfare Analysis.”

“Worker Flows and Job Flows: A Quantitative Investigation” (with Shigeru Fujita).

“Equilibrium Default and Temptation.”

“Optimal Capital Income Taxation with Housing.”

“Business Cycles in the Equilibrium Model of Labor Market Search and Self-Insurance.”

“Rising Earnings Instability, Portfolio Choice, and Housing Prices.”

“Bankruptcy Filings and Aggregate Fluctuations in Growth Economies” (with José-Víctor Ríos-Rull).

## Banking and Financial Markets

### **Mitchell Berlin – Vice President and Economist**

Joined Bank staff in July 1995.

#### **Education**

Ph.D. University of Pennsylvania, 1986

B.A. University of Chicago, 1977

#### **Previous Experience**

Assistant Professor, Finance Department, New York University

Assistant Professor, Finance Department, Indiana University

#### **Primary Interests**

Financial institutions; financial contracting; regulation

#### **Journal Publications**

“Credit Card Rates and Consumer Search” (with Loretta J. Mester), *Review of Financial Economics*, 13 (2004).

“Lender Liability and Large Investors” (with Loretta J. Mester), *Journal of Financial Intermediation*, 10 (April 2001).

“Deposits and Relationship Lending” (with Loretta J. Mester), *Review of Financial Studies*, 12 (Fall 1999).

“Intermediation and Vertical Integration” (with Loretta J. Mester), *Journal of Money, Credit, and Banking*, 30 (August 1998, Part 2).

“On the Profitability and Cost of Relationship Lending” (with Loretta J. Mester), *Journal of Banking and Finance*, 22 (August 1998).

“Bank Equity Stakes in Borrowing Firms and Financial Distress” (with Kose John and Anthony Saunders), *Review of Financial Studies*, 8 (Fall 1996).

“Debt Covenants and Renegotiation” (with Loretta J. Mester), *Journal of Financial Intermediation*, 2 (June 1992).

“Deposit Insurance Reform: What Are the Issues and What Needs to Be Fixed?” (with Anthony Saunders and Gregory Udell), *Journal of Banking and Finance*, 12 (March 1991).

“Bond Covenants and Delegated Monitoring” (with Jan Loeys), *Journal of Finance*, 43 (June 1988).

Reprinted in *Studies in Financial Institutions: Commercial Banks*, eds., C. James and C. Smith, McGraw Hill, New York (1994).

#### **Other Publications**

“Financial Intermediary Structure,” in Arnoud Boot and Anjan Thakor (eds.) *Handbook of Financial Intermediation and Banking*, North Holland: Elsevier, 2008.

“Recent Developments in Consumer Research and Credit,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2008).

“Dancing with Wolves: Syndicated Loans and the Economics of Multiple Lenders,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2007).

“Debt Maturity: What Do Economists Say? What Do CEOs Say?” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2006).

“True Confessions: Should Banks Be Required to Disclose More?” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2004).

“Introduction to the Special Issue on the Conference on Retail Credit Risk Management and Measurement,” with Loretta J. Mester, *Journal of Banking and Finance* (2004).

“Comments on Jonathan Scott’s ‘Small Business and the Value of Community Financial Institutions,’” *Journal of Financial Services Research* (June 2004).

“Trade Credit: Why Do Production Firms Act as Financial Intermediaries?” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2003).

“Should Business Bankruptcy Be a One-Chapter Book?” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2002).

“‘We Control the Vertical’: Three Theories of the Firm,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2001).

“Why Don’t Banks Take Stock?” Federal Reserve Bank of Philadelphia *Business Review* (May/June 2000).

“Jack of All Trades? Product Diversification in Nonfinancial Firms,” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1999).

“That Thing Venture Capitalists Do,” Federal Reserve Bank of Philadelphia *Business Review* (January/ February 1998).

“For Better and for Worse: Three Lending Relationships,” Federal Reserve Bank of Philadelphia *Business Review* (November/December 1996).

“Securitization,” in *The New Palgrave Dictionary of Banking and Finance*, ed., J. Eatwell, Macmillan Press, New York (1993).

“Banking Reform: An Overview of the Restructuring Debate,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1988).

“Bank Loans and Marketable Securities: How Do Financial Contracts Control Borrowing Firms?” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1987).

“Loan Commitments: Insurance Contracts in a Risky World,” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1986).

### **Working Papers and Manuscripts**

“Courts and Contractual Innovation: A Preliminary Analysis” (with Yaron Leitner), Federal Reserve Bank of Philadelphia, Working Paper 05-27/R (December 2005).

“Collateral and Competition” (with Alexander Butler), Federal Reserve Bank of Philadelphia, Working Paper 02-22 (December 2002).

“Public versus Private Debt: Confidentiality, Control, and Product Markets” (with Alexander Butler), Federal Reserve Bank of Philadelphia, Working Paper 96-17 (September 1996).

“Financial Intermediation as Vertical Integration” (with Loretta J. Mester), Federal Reserve Bank of Philadelphia, Working Paper 93-3.

“Financing, Commitment, and Entry Deterrence” (with Paul Calem), Federal Reserve Bank of Philadelphia, Working Paper 87-8.

### **Current Research**

Competition and loan contracts

Good banks/bad banks  
Optimal financial claims for informed investors  
The welfare effects of securitization

## Cyril Monnet – Senior Economic Advisor and Economist

Joined Bank staff in September 2007.

### Education

Ph.D. Economics, University of Minnesota, U.S., 2001

M.Phil. Economics, University of Essex, U.K., 1997

M.A. Economics, with distinction, University of Essex, U.K., 1995

B.A. Economics, University of Geneva, Switzerland, 1994

### Previous Experience

Senior Economist, Directorate General Research, European Central Bank, 2006-2007

Economist, Directorate General Research, European Central Bank, 2001-2006

Research Assistant, Research Department, FRB Minneapolis, 1999-2001

Teaching Instructor, University of Minnesota, 1998-1999

John Weatherall Distinguished Fellow, Economics Department, Queen's University, September 2009

Visiting Economist, Research Department, FRB New York, December 2005-March 2006

Visiting Economist, Research Department, FRB Cleveland, October-November 2005

### Primary Interests

Design of institutions; theory of money; banking

### Journal Publications

“The Welfare Effects of Incentive Schemes” (with Adam Copeland), forthcoming in the *Review of Economic Studies* (2008).

“Monetary Policy in a Channel System” (with Aleksander Berentsen), *Journal of Monetary Economics*, 55(6) (2008), pp. 1067-1080.

“Optimal Payment Services” (with Will Roberds), *Journal of Monetary Economics*, 55(8) (2008), pp. 1428-1440.

“A Dynamic Model of Settlement” (with Thor Koepl and Ted Temzelides), *Journal of Economic Theory*, 142(1) (2008), pp. 233-246.

“Why do financial systems differ? History matters,” (with Erwan Quintin), *Journal of Monetary Economics*, 54 (2007), pp. 1002-1017.

“Guess What: It’s the Settlements! Vertical Integration as a Barrier to Efficient Exchange Consolidation” (with Thor Koepl), *Journal of Banking and Finance*, 31(10) (2007), pp. 3013-3033.

“Private vs Public Money,” *International Economic Review*, 47(3) (2006), pp. 951-960.

“Contracts and Money Revisited,” (with Antoine Martin) *Topics in Macroeconomics*, 6(1) (2006).

“Optimal Contracts in a Dynamic Costly State Verification Model” (with Erwan Quintin) *Economic Theory*, 26(4) (2005), pp. 867-885.

“Measuring European Financial Integration” (with Lieven Baele, Annalisa Ferrando, Peter Hördahl, and Elizaveta Krylova), *Oxford Review of Economic Policy*, 20(4) (2004), pp. 509-530.

“Money and Interest Rates” (with Warren Weber), *Quarterly Review of the Federal Reserve Bank of Minneapolis*, (2001).

**Working Papers and Manuscripts**

“A Dynamic Model of the Payment System”(with Thor Köppl and Ted Temzelides), revise and resubmit at the *Review of Financial Studies* (2008).

“The Emergence and Future of Central Counterparties” (with Thor Köppl), (2009).

“Banking: A Mechanism Design Approach” (with Fabrizio Mattesini and Randall Wright), (2009).

“Money Talks” (with Marie Hoerova and Ted Temzelides), (2009).

“Efficient Institutions” (with Thor Köppl and Erwan Quintin) (2008).

“Monetary Policy Implementation: A Comparative Analysis” (with Antoine Martin), (2008).

“Counterfeiting and Inflation,” (2006) mimeo.

“Bankruptcies in Credit Chains” (with Frederic Boissay), (2003).

“Money and Payments: a Modern Perspective” (with Cornelia Holthausen), Working Paper, European Central Bank, (2003).

“Costly Banknote Issuance and Interest Rates Under the U.S. National Banking System” (with Antoine Martin and Warren E. Weber) Working Paper 601, Federal Reserve Bank of Minneapolis (2000).

**Current Research**

“Implementing Monetary Policy with No Reserve” (with Cornelia Holthausen and Flemming Wurtz).

“Channel System under Asymmetric Information” (with Florian Heider and Marie Hoerova).

“How to Best Prevent Default? Collateral or Reputation” (with Aleks Berentsen).

## Wenli Li – Economic Advisor and Economist

Joined Bank staff in May 2003.

### Education

Ph.D. Economics, University of Minnesota, 1997

M.A. Economics, University of Minnesota, 1994

B.S. Management Information Systems, Tsinghua University, 1990

### Primary Interests

Consumer credit; financial intermediations; contract theory

### Journal Publications

“Skill Shortages and Labor Market Outcomes in Central Europe” (with Zuzana Brixova and Tarif Yousef), *Economic System*, 33(1) (March 2009), pp. 45-59.

“Fresh Start or Head Start? The Effect of Filing for Personal Bankruptcy on the Labor Supply,” *Journal of Financial Services Research*, (June 2007), pp. 132-52.

“The Life-Cycle Effects of House Price Changes” (with Rui Yao), *Journal of Money, Credit, and Banking*, 39(6) (September 2007), pp. 1375-1409.

“U.S. Consumer Bankruptcy Choice: The Importance of General Equilibrium Effects” (with Pierre-Daniel Sarte), *Journal of Monetary Economics* (April 2006), pp. 613-31.

“Progressive Taxation and Long-Run Growth (with Pierre-Daniel Sarte), *American Economic Review*, 94 (5) (December 2004), pp. 1705-16.

“Credit Market Frictions and their Direct Effects on U.S. Manufacturing Fluctuations” (with Pierre-Daniel Sarte), *Journal of Economic Dynamics and Control*, 28 (3) (December 2003), pp. 419-43.

“Firm-Specific Learning and the Investment Behavior of Large and Small Firms” (with John Weinberg), *International Economic Review*, 44 (2) (May 2003), pp. 599-626.

“On the Differential Impact of the Asian Crisis on the World Economy: A General Equilibrium Perspective” (with Xinshen Diao and Erinc Yeldan), *Pacific Economic Review*, 7 (3) (October 2002), pp. 519-43.

“Entrepreneurship and Government Subsidies: A General Equilibrium Analysis,” *Journal of Economic Dynamics and Control*, 26 (11) (September 2002), pp. 1815-44.

“Dynamic Employment and Hours Effects of Government Spending Shocks” (with Mingwei Yuan), *Journal of Economic Dynamics and Control*, 24 (8) (July 2000), pp. 1233-63.

### Other Publications

“Residential Housing and Personal Bankruptcy,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2009), pp. 19-29.

“What Do We Know About Chapter 13 Personal Bankruptcy Filings?” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2007), pp.19-26.

“Your House Has Doubled in Price? Don’t Uncork the Champagne Yet!” (with Rui Yao), Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2006), pp.25-34.

“Moving Up: Recent Trends in Homeownership Rates and Mortgage Indebtedness,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter, 2005), pp. 26-34.

“To Forgive or Not to Forgive: An Analysis of U.S. Consumer Bankruptcy Choices,” Federal Reserve Bank of Richmond *Economic Quarterly* (Spring 2001), pp. 1-22.

“How the Asian Crisis Affected the World Economy: A General Equilibrium Perspective,” (with Xinshen Diao and Erinc Yeldan) Federal Reserve Bank of Richmond *Economic Quarterly* (Spring 2000), pp. 35-59.

“Government Loan, Guarantee and Grant Programs: An Evaluation,” Federal Reserve Bank of Richmond *Economic Quarterly* (Fall 1998), pp.25-51.

### **Working Papers and Manuscripts**

“Mortgage Default, Foreclosure, and Bankruptcy” (with Michelle White), NBER Working Paper W15472.

“Housing over Time and over the Life-cycle: A Structural Estimation” (with Haiyong Liu and Rui Yao), Federal Reserve Bank of Philadelphia, Working Paper 09-7.

“The Homeownership Experience of Households in Bankruptcy” (with Sara W Carroll), Federal Reserve Bank of Philadelphia, Working Paper 08-14.

“The Anatomy of Chapter 13 Personal Bankruptcy” (with Hulya Eraslan and Pierre-Daniel Sarte), Federal Reserve Bank of Philadelphia, Working Paper 7-31.

## Ronel Elul – Senior Economist

Joined Bank staff in June 2003.

### Education

Ph.D. Economics, Yale University, 1995

Diploma (Mathematical Statistics and Operations Research), University of Cambridge, 1988

B.A. Applied Mathematics, University of California, Berkeley, 1987

### Concurrent Position

Adjunct Associate Professor of Finance, The Wharton School, University of Pennsylvania

### Previous Experience

Visiting Assistant Professor, Finance Department, The Wharton School, University of Pennsylvania, August 2002–June 2003, August 1999–June 2000

Assistant Professor, Department of Economics, Brown University, July 1994–June 2002

Visiting Assistant Professor, Finance Department, NYU-Stern School, Fall 2000

Consultant in Fixed-Income Analytics, Kidder, Peabody & Co., NY, 1990–1993

### Journal Publications

“What Triggers Mortgage Default?” *American Economic Review: Papers and Proceedings*, forthcoming.

“Collateral, Credit History and the Financial Decelerator,” *Journal of Financial Intermediation*, forthcoming.

“Bankruptcy Exemptions, Credit History, and the Mortgage Market” (with Souphala Chomsisengphet), *Journal of Urban Economics*, 59(1) (January 2006), pp. 171-88.

“Forum-Shopping and Personal Bankruptcy” (with N. Subramanian), *Journal of Financial Services Research*, 21(3) (June 2002), pp. 233-55.

“Will You Marry Me? A Perspective on the Gender Gap” (with J. Silva-Reus and O. Volij), *Journal of Economic Behavior and Organization*, 49(4) (December 2002), pp. 549-72.

“Effectively Complete Equilibria – a Note,” *Journal of Mathematical Economics*, 32(1) (August 1999), pp. 113-19.

“Welfare-Improving Financial Innovation with a Single Good,” *Economic Theory*, 13(1) (January 1999), pp. 25-40.

“Financial Innovation, Precautionary Saving and the Risk-free Rate,” *Journal of Mathematical Economics*, 27(1) (February 1997), pp 113-31.

“Welfare Effects of Financial Innovation in Incomplete Markets Economies with Several Consumption Goods,” *Journal of Economic Theory*, 65(1) (February 1995), pp. 43-78.

### Other Publications

“Review of *The Color of Credit*,” *Economic Journal*, 114:499 (November 2004).

“Regulating Short Sales,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2009).

“Liquidity Crises,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2008).

“Residential Mortgage Default,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2006).

“The Economics of Asset Securitization,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2005).

**Working Papers and Manuscripts**

“Securitization and Mortgage Default,” Federal Reserve Bank of Philadelphia, Working Paper 09-21 (September 2009).

“Bankruptcy: Is It Enough to Forget or Must We Also Forgive?” (with Piero Gottardi), Federal Reserve Bank of Philadelphia, Working Paper 07-10 (March 2007).

## **Yaron Leitner – Senior Economist**

Joined Bank staff in June 2001.

### **Education**

Ph.D. Finance, Northwestern University, 2001

M.S. Technion, Israel Institute of Technology, 1995

B.S. Technion, Israel Institute of Technology, 1992

### **Primary Interests**

Financial contracting; corporate finance; banking; law and finance

### **Journal Publications**

“Financial Networks: Contagion, Commitment, and Private-Sector Bailouts,” *Journal of Finance* (December 2005).

### **Working Papers and Manuscripts**

“Why Do Markets Freeze?” (with Philip Bond), Federal Reserve Bank of Philadelphia, Working Paper 09-24 (September 2009).

“Inducing Agents to Report Hidden Trades: A Theory of an Intermediary,” Federal Reserve Bank of Philadelphia, Working Paper 09-10 (April 28, 2009).

“Courts and Contractual Innovations: A Preliminary Analysis” (with Mitchell Berlin), Federal Reserve Bank of Philadelphia, Working Paper 05-27/R (December 2005).

### **Other Publications**

“Convertible Securities and Venture Capital Finance,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2009).

“Stock Prices and Business Investment,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2007).

“Using Collateral to Secure Loans,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2006).

“Legal Uncertainty and Contractual Innovation,” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2005).

“Liquidity and Exchanges, or Contracting with the Producers,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2004).

“A Lifeline for the Weakest Link? Financial Contagion and Network Design,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2002).

Reprinted in *IEEE Engineering Management Review* (Second Quarter 2003).

## **Rocco Huang – Economist**

Joined Bank staff in September 2007.

### **Education**

Ph.D. Finance, University of Amsterdam, 2007

M.Phil. Economics, Cambridge University, 2003

B.A. Economics, Nankai University, 2002

### **Concurrent Position**

Fellow, Wharton Financial Institutions Center, University of Pennsylvania

### **Primary Interests**

Corporate finance; financial intermediation

### **Journal Publications**

“Evaluating the Real Effect of Bank Branching Deregulation: Comparing Contiguous Counties Across U.S. State Borders,” *Journal of Financial Economics*, 87(3) (March 2008): 678-705.

“Tolerance for Uncertainty and the Growth of Informationally Opaque Industries,” *Journal of Development Economics*, 87(2) (October 2008): 333-53.

“Distance and Trade: Disentangling Unfamiliarity Effects and the Transport Cost Effects,” *European Economic Review*, 51(1) (January 2007): 161-81.

### **Working Papers and Manuscripts**

“Creditor Control of Free Cash Flow”

“Internal Capital Markets and Corporate Politics in a Banking Group” (with Zacharias Sautner and Martijn Cremers)

“The Dark Side of Bank Wholesale Funding” (with Lev Ratnovski)

“How Committed Are Bank Lines of Credit? Evidence from the Subprime Mortgage Crisis”

## Regional and Microeconomics Section

### **Leonard I. Nakamura – Assistant Vice President and Economist**

Joined Bank staff in September 1988.

#### **Education**

Ph.D., Princeton University, 1986

M.A., Princeton University, 1983

B.A., Swarthmore College, 1969

#### **Concurrent Position**

Member, Board of Editors, *Review of Income and Wealth*.

#### **Previous Experience**

Economist, The Conference Board

Economist, Citibank

Assistant Professor, Rutgers University

#### **Primary Interests**

Monetary theory and policy; financial institutions; information economics

#### **Journal Publications**

“The Housing Bubble and a New Approach to Accounting for Housing in a CPI” (with W. Erwin Diewert and Alice O. Nakamura), *Journal of Housing Economics*, forthcoming.

“Intangible Investment and National Income Accounting: Measuring a Scientific Revolution.” *Review of Income and Wealth*, forthcoming.

“Rents Have Been Rising, Not Falling, in the Postwar Period,” (with Theodore M. Crone and Richard Voith), *Review of Economics and Statistics*, forthcoming.

“Transactions Accounts and Loan Monitoring,” (with Loretta Mester and Micheline Renault), *Review of Financial Studies*, 20 (May 2007), pp. 529-556.

Review of Carl W. Biven’s *Jimmy Carter’s Economy: Policy in an Age of Limits*, in *Journal of Economic Literature*, 42, June 2004, 515-516.

“Measuring Housing Services Inflation” (with Theodore M. Crone and Richard Voith), *Journal of Economic and Social Measurement*, 26 (2000).

“The Measurement of Retail Output and the Retail Revolution,” *Canadian Journal of Economics*, 32 (2) (April 1999) 408-425.

“Branch Banking and the Geography of Bank Pricing” (with Paul Calem), *Review of Economics and Statistics*, 80, (November 1998).

“New Directions in Information and Screening in Real Estate Finance” (with William W. Lang), *Journal of Real Estate Finance and Economics* (July 1996).

“‘Flight to Quality’ in Bank Lending and Economic Activity” (with William W. Lang), *Journal of Monetary Economics* (August 1995).

“Information and Screening in Real Estate Finance: An Introduction” (with William W. Lang), *Journal of Real Estate Finance and Economics*, 9 (November 1994).

“Recent Research in Commercial Banking: Information and Lending,” *Financial Markets, Institutions and Instruments*, 2 (December 1993).

“A Model of Redlining” (with William W. Lang), *Journal of Urban Economics*, 33 (March 1993).

“Entry-Detering Debt” (with James J. McAndrews), *Journal of Money, Credit and Banking* (February 1992).

“The Dynamics of Credit Markets in a Model with Learning” (with William W. Lang), *Journal of Monetary Economics* (October 1990).

“Information Losses in a Dynamic Model of Credit” (with William W. Lang), *Journal of Finance* (July 1989).

### **Other Publications**

“The Mismeasured Personal Saving Rate Is Still Useful: Using Real-Time Data in Forecasting,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2008).

“Hedonic Estimates of the Cost of Housing Services: Rental and Owner-Occupied Units,” (with Theodore M. Crone and Richard P. Voith) *Conference Volume: International Conference on Index Number Theory*, Vancouver, BC, 2008.

“National Income Accounts,” *International Encyclopedia of the Social Sciences*, 2<sup>nd</sup> edition. New York: Macmillan, 2007, pp. 397-405.

“Gimme Shelter! Rents Have Risen, Not Fallen, Since World War II” Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2007).

“Underestimating Advertising: Innovation and Unpriced Entertainment,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2005).

“CEOs, Clerks, and Computers and the Rise of Competition in the Late 20th Century,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2004).

“Banking and Finance in Argentina in the Period 1900-35” (with Carlos E. J. M. Zarazaga), in Gerardo della Paolera and Alan M. Taylor, eds., *A New Economic History of Argentina*, Cambridge University Press, 2003.

“A Trillion Dollars a Year in Intangible Investment and the New Economy,” in John R. M. Hand and Baruch Lev, eds., *Intangible Assets*, Oxford University Press, 2003.

“Education and Training in an Era of Creative Destruction,” in William J. Stull and Nicholas Sanders, eds., *The School-to-Work Movement: Origins and Destinations*, Praeger, 2003.

“Let a Hundred Flowers Bloom! Decentralization and Innovation,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2003).

“Investing in Intangibles: Is a Trillion Dollars Missing from GDP?” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2001).

“Economics and the New Economy: The Invisible Hand Meets Creative Destruction,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 2000).

“Intangibles: What Put the New in the New Economy?” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1999).

“Economic Growth in Argentina in the Period 1900-1930: Some Evidence from Stock Market Returns” (with Carlos E.J.M. Zarazaga), in John H. Coatsworth and Alan M. Taylor, *Latin America and the World Economy Since 1800*, Harvard University Press, 1998, 247-270.

“Is the U.S. Economy Really Growing Too Slowly? Maybe We’re Measuring Growth Wrong,” Federal Reserve Bank of Philadelphia *Business Review* (March/April 1997).

“Measuring Inflation in a High-Tech Age,” Federal Reserve Bank of Philadelphia *Business Review* (November/December 1995).

“Small Borrowers and the Survival of the Small Bank: Is Mouse Bank Mighty or Mickey?” Federal Reserve Bank of Philadelphia *Business Review* (November/December 1994).

“Information Externalities: Why Lending May Sometimes Need a Jump Start,” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1993).

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Reprinted in *The Commercial Bank Management Reader*, Robert W. Kolb, ed., Kolb, FL (1992); in Ohio Savings and Loan League *Record*.

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Reprinted in *Financial Institutions and Markets: A Reader*, R. W. Kolb, ed., Kolb, FL (1991); in *The Commercial Bank Management Reader*, R. W. Kolb, ed., Kolb, FL (1992); in *The Examiner* 15 #2 (Fall 1990), *Ohio Record*, 47 #1, (January/February 1991).

“Energy and Pollution Effects on Productivity: A Putty-Clay Approach” (with John G. Myers), in John Kendrick and Beatrice Vaccara, eds., *New Developments in Productivity Measurement and Analysis*, NBER Studies in Income and Wealth vol. 44, University of Chicago, Chicago (1980).

“Data Adequacy for Productivity Analysis: A Case Study of the Primary Paper Industry” (with John G. Myers), in Panel to Review Productivity Statistics, National Research Council, *Measurement and Interpretation of Productivity*, National Academy of Sciences, Washington, DC (1979).

*Saving Energy in Manufacturing: The Post-Embargo Record* (with John G. Myers), Ballinger, Cambridge, MA (1978).

*Energy Consumption in Manufacturing* (with John G. Myers and others), Ballinger, Cambridge, MA (1974).

### **Working Papers and Manuscripts**

“Intangible Investment and National Income Accounting: Measuring a Scientific Revolution,” Working Paper 09-11 (May 2009).

“Rents Have Been Rising, Not Falling, in the Postwar Period,” (with Theodore M. Crone and Richard Voith), Federal Reserve Bank, Working Paper 08-28 (October 2008).

“Intangible Investment and National Income Accounting,” Federal Reserve Bank, Working Paper 08-23 (October 2008).

“Mismeasured Personal Saving and the Permanent Income Hypothesis,” Federal Reserve Bank of Philadelphia, Working Paper 07-8 (March 2007).

“National Income Accounts,” Federal Reserve Bank of Philadelphia, Working Paper No. 06-11 (June 2006).

“The CPI for Rents: A Case of Understated Inflation” (with Theodore M. Crone and Richard Voith), Federal Reserve Bank of Philadelphia, Working Paper No. 06-7 (January 2006).

- “Transactions Accounts and Loan Monitoring” (with Loretta Mester and Micheline Renault), Federal Reserve Bank of Philadelphia, Working Paper No. 05-14 (June 2005).
- “Advertising, Intangible Assets, and Unpriced Entertainment,” Federal Reserve Bank of Philadelphia, Working Paper No. 05-11 (May 2005).
- “Benchmark Revisions and the U.S. Personal Saving Rate” (with Tom Stark), Federal Reserve Bank of Philadelphia, Working Paper No. 05-6 (April 2005).
- “Hedonic Estimates of the Cost of Housing Services: Rental- and Owner-Occupied Units” (with Theodore M. Crone and Richard Voith), Federal Reserve Bank of Philadelphia, Working Paper No. 04-22 (October 2004).
- “What Is the U.S. Gross Investment in Intangibles? (At Least) One Trillion Dollars a Year!” Federal Reserve Bank of Philadelphia, Working Paper No.01-15 (October 2001).
- “Measuring American Rents: A Revisionist History” (with Theodore M. Crone and Richard Voith), Federal Reserve Bank of Philadelphia, Working Paper No.01-8 (July 2001).
- “Banking and Finance in Argentina in the Period 1900-35” (with Carlos E.J.M. Zarazaga), Federal Reserve Bank of Philadelphia, Working Paper No. 01-7 (June 2001).
- “Education and Training in an Era of Creative Destruction,” Federal Reserve Bank of Philadelphia, Working Paper No. 00-13/R (March 2001).
- “Is U.S. Economic Performance Really That Bad?” Federal Reserve Bank of Philadelphia, Working Paper No. 95-21/R.
- “Recent Research on Commercial Banking: Information and Lending,” Federal Reserve Bank of Philadelphia, Working Paper No. 93-24.
- “The Impact of Branch Banking on Pricing and Service Availability: Theory and Evidence” (with Paul Calem), Federal Reserve Bank of Philadelphia, Working Paper No. 93-23.
- “Loan Screening Within and Outside of Customer Relationships,” Federal Reserve Bank of Philadelphia, Working Paper No. 93-15 (June 1993).
- “Bank Branching” (with Bruno M. Parigi), Federal Reserve Bank of Philadelphia, Working Paper No. 92-18.
- “Optimal Acceptance Policies for Journals” (with Sherrill Shaffer), Federal Reserve Bank of Philadelphia, Working Paper No. 91-15.
- “Delegated Monitoring with Diseconomies of Scale,” Federal Reserve Bank of Philadelphia, Working Paper No. 91-9.
- “Housing Appraisals and Redlining” (with William W. Lang), Federal Reserve Bank of Philadelphia, Working Paper No. 91-3.
- “Worker Debt with Bankruptcy” (with James McAndrews), Federal Reserve Bank of Philadelphia, Working Paper No. 91-2.
- “Reforming Deposit Insurance When Banks Conduct Loan Workouts and Runs Are Possible,” Federal Reserve Bank of Philadelphia, Working Paper No. 90-30.
- “Optimal Bank Closure for Deposit Insurers” (with William W. Lang), Federal Reserve Bank of Philadelphia, Working Paper 90-12.
- “The Dynamics of Credit Markets in a Model with Learning” (with William W. Lang), Federal Reserve Bank of Philadelphia, Working Paper No. 89-23.

“Entry-Deterring Debt” (with James J. McAndrews), Federal Reserve Bank of Philadelphia, Working Paper No. 89-15.

“Learning in the Marketplace: Free Entry Is Free Riding” (with William W. Lang), Federal Reserve Bank of Philadelphia, Working Paper No. 89-13.

“Loan Workouts and Commercial Bank Information: Why Banks Are Special,” Federal Reserve Bank of Philadelphia, Working Paper No. 89-11.

“Customer Credit, Financial Intermediaries and Real Income: Preliminary Evidence That Credit Matters,” Rutgers University, Working Paper (October 1987).

### **Current Research**

Mismeasurement of output and productivity

New economy: Theory and measurement

Banking

## **Gerald A. Carlino – Senior Economic Advisor and Economist**

Joined Bank staff in January 1981.

### **Education**

Ph.D., University of Pittsburgh, 1976

M.A., University of Pittsburgh, 1975

B.A. Philosophy and B.A. Economics, University of Pittsburgh, 1972

### **Concurrent Position**

Associate Editor, *Journal of Regional Science*

### **Previous Experience**

Adjunct Professor, Wharton School, University of Pennsylvania

Adjunct Associate Professor of Finance, The Wharton School, University of Pennsylvania

Adjunct Lecturer in Economics, Temple University

Assistant Professor of Economics, University of Missouri at St. Louis

Assistant Professor of Economics, University of Missouri at Kansas City

Assistant Professor of Economics, Florida International University

Teaching Fellow, University of Pittsburgh

### **Primary Interests**

Urban and regional economics; macroeconomics

### **Journal Publications**

“Urban Density and the Rate of Innovation” (with Robert Hunt and Satyajit Chatterjee), *Journal of Urban Economics*, 61 (2007), pp 389-419.

“Compensating Differentials and the Social Benefits of the NFL: Reply” (with N. Ed Coulson), *Journal of Urban Economics*, 60 (2006), pp. 132-38.

“How Strong is Co-Movement in Employment over the Business Cycle? Evidence from State/Sector Data” (with Robert DeFina), *Journal of Urban Economics*, 55 (2004), pp. 298-315.

“Compensating Differentials and the Social Benefits of the NFL” (with N. Ed Coulson), *Journal of Urban Economics*, 56 (2004), pp. 25-50.

“Employment Deconcentration: A New Perspective on America’s Postwar Urban Revolution” (with Satyajit Chatterjee), *Journal of Regional Science*, 42 (2002).

“Sectoral Shocks and Metropolitan Employment Growth” (with Keith Sill and Robert DeFina), *Journal of Urban Economics*, 50 (2001).

“Aggregate Metropolitan Employment Growth and the Deconcentration of Metropolitan Employment” (with Satyajit Chatterjee), *Journal of Monetary Economics*, 48 (2001).

“Regional Income Fluctuations: Common Trends and Common Cycles” (with Keith Sill), *Review of Economics and Statistics*, 83(3) (August 2001).

“The Differential Effects of Monetary Policy: Evidence from the U.S. States and Regions” (with Robert DeFina), *Journal of Regional Science*, 39 (1999).

“The Differential Regional Effects of Monetary Policy” (with Bob DeFina), *Review of Economics and Statistics*, 80 (1998).

“Testing Neoclassical Convergence in Regional Incomes and Earnings” (with Len Mills), *Regional Science and Urban Economics*, 26 (1996).

“Convergence and the U.S. States: A Time Series Analysis” (with Len Mills), *Journal of Regional Science*, 36 (1996).

“Are U.S. Regional Incomes Converging? Reply” (with Len Mills), *Journal of Monetary Economics*, 38 (1996).

“Regional Income Dynamics” (with Robert DeFina), *Journal of Urban Economics*, 37 (1995).

“The Effects of Exchange Rate and Relative Productivity Changes on U.S. Industrial Output at the State Level” (with Richard Voith and Brian Cody), *Urban Studies*, 32 (1994).

“Are U.S. Regional Incomes Converging: A Time Series Analysis” (with Len Mills), *Journal of Monetary Economics*, 32 (1993).

“Accounting for Differences in Aggregate State Productivity” (with Richard Voith), *Regional Science and Urban Economics* (January 1993).

“The Concentration/Conduct Relationship in Bank Deposit Markets” (with Paul Calem), *Review of Economics and Statistics* (May 1991).

“Urban Agglomeration Economies in the Presence of Technical Change” (with Paul Calem), *Journal of Urban Economics* (January 1991).

“Regional Impacts of Exchange Rate Movements” (with Brian Cody and Richard Voith), *Regional Science Perspectives*, 20 (1990).

“Interregional Flows of Funds as a Measure of Economic Integration in the United States” (with Richard Lang), *Journal of Urban Economics* (July 1989).

“Comparisons of Agglomeration or What Chinitz Really Said: Reply,” *Urban Studies* (February 1987).

“The Determinants of County Growth” (with Edwin S. Mills), *Journal of Regional Science* (February 1987).

“Is There a Role for Public Policy in Regional Economic Growth?” (with Edwin S. Mills), *Modeling and Simulation* (1985).

“Declining City Productivity and the Growth of Rural Regions: A Test of Alternative Explanations,” *Journal of Urban Economics* (July 1985).

“Do Metropolitan Areas Matter?” (with Edwin S. Mills), *Modeling and Simulation* (1984).

“Manufacturing Agglomeration Economies as Returns to Scale: A Production Function Approach,” *Papers, Regional Science Association* (1982).

“Interest Rate Effects and Intertemporal Consumption,” *Journal of Monetary Economics* (March 1982).

“Contrasts in Agglomeration: New York and Pittsburgh: Reconsidered,” *Urban Studies* (October 1980).

“Increasing Returns to Scale in Metropolitan Manufacturing,” *Journal of Regional Science* (August 1979).

### **Other Publications**

“Beautiful City,” (with Albert Saiz), Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2009). pp. 10-17.

“What Explains the Quantity and Quality of Local Inventive Activity?” (with Robert Hunt), *Brookings-Wharton Papers on Urban Affairs* (2009), pp. 65-109.

“The Geography of Research and Development Activity in the U.S.,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2008), pp. 1-11.

“The Great Moderation in Economic Volatility: A View from the States,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2007), pp. 11-19.

“Macroeconomic Analysis Using Regional Data: An Application to Monetary Policy” (with Robert DeFina), in Richard Arnott and Daniel McMillen, eds., *A Companion to Urban Economics*, Oxford: Blackwell-Synergy, pp. 440-459, (2006) with Robert DeFina.

Comments on Tart Watson’s paper Metropolitan Growth, Inequality and Neighborhood Segregation,” in Gary Burtless and Janet Rothenberg Pack, eds, *Brookings-Wharton papers on Urban Affairs*, Washington: Brookings Institution Press, pp.46-48 (2006).

“The Economic Role of Cities in the 21<sup>st</sup> Century,” Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2005). pp. 9-15.

“Should Cities Be Ready for Some Football? Assessing the Social Benefits of Hosting an NFL Team” (with Ed Coulson), Federal Reserve Bank of Philadelphia *Business Review* (Second Quarter 2004), pp. 7-17.

“A Confluence of Events? Explaining Fluctuations in Local Employment,” Federal Reserve Bank of Philadelphia *Business Review* (First Quarter 2003), pp. 6-12.

“Knowledge Spillovers: Cities’ Role in the New Economy,” Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2001), pp. 17-26.

“From Centralization to Deconcentration: People and Jobs Spread Out,” Federal Reserve Bank of Philadelphia *Business Review* (November/December 2000), pp. 15-27.

“Monetary Policy and the U.S. States and Regions: Some Implications for European Monetary Union” (with Robert DeFina), in J. Von Hagen and C. Waller (eds.) *Regional Aspects of Monetary Policy in Europe*, Kluwer Academic Publishers (2000).

“Do States Respond Differently to Changes in Monetary Policy?” (With Bob DeFina), Federal Reserve Bank of Philadelphia *Business Review* (July/August 1999).

“Trends in Metropolitan Employment Growth,” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1998).

“Regional Economics: Separating Trends from Cycles” (with Keith Sill), *Business Review* (May/June 1997).

“Does Monetary Policy Have Differential Regional Effects?” (with Robert DeFina), Federal Reserve Bank of Philadelphia *Business Review* (March/April 1996).

“Do Education and Training Lead to Faster Growth in Cities?” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1995).

“Highways and Education: The Road to Productivity?” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1993).

“Are Regional Per Capita Earnings Diverging?” Federal Reserve Bank of Philadelphia *Business Review* (March/April 1992).

“Should States Fear the Effects of a Changing Dollar?” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1990).

“Dynamics of County Growth” (with Edwin S. Mills), in *Advances in Spatial Theory and Dynamics*, Ake Anderson, David Batten, Borje Johansson, and Peter Nijkamp, eds., *Studies in Regional and Urban Economics*, No. 20 (New York: Elsevier/North-Holland, 1989).

“What Can Output Measures Tell Us About Deindustrialization in the Nation and Its Regions?” Federal Reserve Bank of Philadelphia *Business Review* (January/February 1989).

“Productivity in Cities: Does City Size Matter?” Federal Reserve Bank of Philadelphia *Business Review* (November/December 1987).

“Do Regional Wages Differ?” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1986).

“Do Public Policies Affect Growth?” Federal Reserve Bank of Philadelphia *Business Review* (July/August 1985).

“New Employment Growth Trends: The U.S. and the Third District,” Federal Reserve Bank of Philadelphia *Business Review* (September/October 1983).

“From Centralization to Deconcentration: Economic Activity Spreads Out,” Federal Reserve Bank of Philadelphia *Business Review* (May/June 1982).

*Economies of Scale in Manufacturing Location: Theory and Measurement* (Leiden, The Netherlands: Martinus Nijhoff, 1978).

### **Working Papers and Manuscripts**

“The Geography of Research and Development Activity in the U.S.,” (with Kristy Buzard), Working Paper 09-16, August 2009.

“The Long and Large Decline in State Employment Growth Volatility” (with Robert DeFina and Keith Sill), Federal Reserve Bank of Philadelphia, Working Paper 09-12 (August 2009).

“City Beautiful” (with Albert Saiz), Federal Reserve Bank of Philadelphia, Working Paper 08-22 (September 2008).

“Innovation Across U.S. Industries: The Effects of Urbanization and Localization” (with Robert Hunt), Federal Reserve Bank of Philadelphia, Working Paper 07-28 (October 2007).

“On the Stability of Employment Growth: A Postwar View from the U.S. States” (with Robert DeFina and Keith Sill), Federal Reserve Bank of Philadelphia, Working Paper 04-21/R (October 2004).

“Postwar Period Changes in Employment Volatility: New Evidence from State/Industry Panel Data” (with Robert DeFina and Keith Sill), Federal Reserve Bank of Philadelphia, Working Paper 03-18 (August 2003).

“How Strong Is Co-Movement in Employment Over the Business Cycle? Evidence from State/Industry Data” (with Robert H. DeFina), Federal Reserve Bank of Philadelphia, Working Paper 03-5 (March 2003).

“The Cyclical Behavior of State Employment During the Postwar Period” (with Robert DeFina and Keith Sill), Federal Reserve Bank of Philadelphia, Working Paper 02-14 (September 2002).

“Inflationary Expectations and the Consumer” (with Robert DeFina), Federal Reserve Bank of Philadelphia, Working Paper 84-1.

“Employing a Variable Sales Tax Mechanism for Macroeconomic Stabilization,” Federal Reserve Bank of Philadelphia, Working Paper (February 1981).

### **Current Research**

Knowledge spillovers in cities

Time series analysis of regional growth issues

Regional growth

## Jason Faberman – Senior Economist

Joined Bank staff in June 2007.

### Education

Ph.D., University of Maryland, College Park, 2003

M.S., University of Maryland, College Park, 2000

B.S., Lehigh University, 1998

B.A., Lehigh University, 1998

### Previous Experience

U.S. Bureau of Labor Statistics

Research Economist, June 2003–June 2007

Economist, June 2000–June 2003

University of Maryland, College Park, Department of Economics

Adjunct Professor, January 2006–June 2007

### Research Interests

Labor economics (micro and macro); employment and firm dynamics; urban growth and agglomeration

### Journal Publications

“Business Volatility, Job Destruction and Unemployment” (with Steven Davis, John Haltiwanger, Ron Jarmin, and Javier Miranda), forthcoming, *American Economic Journals: Macroeconomics*, 2010.

“The Flow Approach to Labor Markets: New Data Sources and Micro-Macro Links” (with Steven Davis and John Haltiwanger), *Journal of Economic Perspectives*, 20:3 (Summer 2006), pp. 3-24.

### Other Publications

“Adjusted Estimates of Worker Flows and Job Openings in JOLTS” (with Steven Davis, John Haltiwanger, and Ian Rucker), in *Labor in the New Economy*, Katharine Abraham, Michael Harper, James Spletzer (eds.), Chicago Press, forthcoming 2010.

“Studying the Labor Market with the Job Openings and Labor Turnover Survey,” in *Producer Dynamics: New Evidence from Micro Data*, Timothy Dunne, J. Bradford Jensen, and Mark J. Roberts (eds.), Chicago Press (2008), pp. 83-108.

“Studying the Labor Market with BLS Labor Dynamics Data” (with Zhi Boon, Charles Carson, and Randy Ilg), *Monthly Labor Review* (February 2008), pp. 3-15.

“Analyzing the JOLTS Hires and Separations Data,” *2005 Proceedings of the American Statistical Association*.

“Business Employment Dynamics,” (with James Spletzer, Akbar Sadeghi, Richard Clayton, and David Talan), *Monthly Labor Review* (April 2004), pp 29-42.

“Job Flows, Establishment Characteristics, and Labor Market Dynamics in the U.S. Rust Belt Region,” *Monthly Labor Review* (September 2002), pp. 3-10.

“Longitudinal Analysis of Economic Impacts: A Case Study of the Rust Belt,” *2002 Proceedings of the American Statistical Association*.

“Job Creation and Job Destruction within Washington and Baltimore,” *Monthly Labor Review* (September 2001), pp. 24-31.

### Working Papers and Manuscripts

“The Establishment-Level Behavior of Vacancies and Hiring” (with Steven Davis and John Haltiwanger), Federal Reserve Bank of Philadelphia, Working Paper No. 09-14 (July 2009).

“Firm Selection, Industry Dynamics and Urban Agglomeration” (with Matthew Freedman).

“Revisiting the Elasticity of Labor Supply with Household Production.”

“Quits, Worker Recruitment, and Firm Growth: Theory and Evidence” (with Éva Nagypál), Federal Reserve Bank of Philadelphia, Working Paper 08-13 (June 2008).

“Job Flows, Jobless Recoveries, and the Great Moderation,” Federal Reserve Bank of Philadelphia, Working Paper 08-11 (May 2008).

“The Relationship Between the Establishment Age Distribution and Urban Growth,” Federal Reserve Bank of Philadelphia, Working Paper 07-18 (July 2007).

## **Jeffrey Lin – Economist**

Joined Bank staff in August 2007.

### **Education**

Ph.D. Economics, University of California, San Diego, 2007

M.A. Economics, University of California, San Diego, 2004

B.A. Economics and Mathematical Methods in the Social Sciences, magna cum laude, Northwestern University, 2001

### **Primary Interests**

Economic geography; labor economics; technological change

### **Journal Publications**

“Precision, Bias, and Uncertainty for State Population Forecasts: An Exploratory Analysis of Time Series Models” (with Jeff Tayman and Stanley K. Smith), *Population Research and Policy Review*, 26(3) (2007): 347-69.

“Gentrification and Transit in Northwest Chicago,” *Journal of the Transportation Research Forum*, in *Transportation Quarterly*, 56(4) (2002): 175-91.

### **Working Papers and Manuscripts**

“Technological Adaptation, Cities, and New Work,” Federal Reserve Bank of Philadelphia, Working Paper 09-17.

“Thick-Market Effects and Churning in the Labor Market: Evidence from U.S. Cities” (with Hoyt Bleakley), Federal Reserve Bank of Philadelphia, Working Paper 07-23.

### **Current Research**

“Portage: Path Dependence and Increasing Returns in U.S. History” (with Hoyt Bleakley)