

Research Update

These papers by Philadelphia Fed economists, analysts, and visiting scholars represent preliminary research that is being circulated for discussion purposes.

The views expressed in these papers are solely those of the authors and should not be interpreted as reflecting the views of the Federal Reserve Bank of Philadelphia or Federal Reserve System.

Recall and Unemployment

The authors document in the Survey of Income and Program Participation covering 1990–2013 that a surprisingly large share of workers return to their previous employer after a jobless spell and experience very different unemployment and employment outcomes than job switchers. The probability of recall is much less procyclical and volatile than the probability of finding a new employer. The authors add to a quantitative, and otherwise canonical, search-and-matching model of the labor market a recall option, which can be activated freely following aggregate and job-specific productivity shocks. Recall and search effort significantly amplify the cyclical volatility of new job-finding and separation probabilities.

Supersedes Working Paper 14–3/R. Working Paper 17–29. Shigeru Fujita, Federal Reserve Bank of Philadelphia Research Department; Giuseppe Moscarini, Yale University and National Bureau of Economic Research.

Do Non-Compete Covenants Influence State Startup Activity? Evidence from the Michigan Experiment

This paper examines how the enforceability of employee non-compete agreements affects the entry of new establishments and jobs created by these new firms. The author uses a panel of startup activity for the U.S. states for the period 1977 to 2013. He exploits Michigan’s inadvertent policy reversal in 1985 that transformed the state from a non-enforcing to an enforcing state as a quasi-natural experiment to estimate the causal effect of enforcement on startup activity. His findings offer little support for the widely held view that enforcement of non-compete agreements negatively affects the entry rate of new firms or the rate of jobs created by new firms. In a difference-in-difference analysis, the author finds that a 10 percent increase in enforcement led to an increase

of about 1 percent to about 3 percent in the startup job creation rate in Michigan and, in general, to essentially no change in the startup entry rate. Extending his analysis to consider the effect of increased enforcement on patent activity, the author finds that enforcement had differential effects across technological classifications. Importantly, increased enforcement had a positive and significant effect on the number of quality-adjusted mechanical patents in Michigan, the most important patenting classification in that state.

Working Paper 17–30. Gerald A. Carlino, Federal Reserve Bank of Philadelphia Research Department.

The Role of Startups for Local Labor Markets

The authors investigate the dynamic response of local U.S. labor markets to increased job creation by new firms and compare the effects to overall labor demand shocks. To account for both dynamic and spatial dependence the authors develop a spatial panel VAR that builds on recent advances in the VAR literature to identify structural shocks using external instruments. They find that startup shocks have a small but persistent effect on local employment through population growth. Population growth, in turn, is largely driven

by immigration. The authors also investigate how the responses differ by local characteristics such as population density. Finally, they show that startups are not closely linked to innovation.

Working Paper 17–31. Gerald Carlino, Federal Reserve Bank of Philadelphia Research Department; Thorsten Drautzburg, Federal Reserve Bank of Philadelphia Research Department.

Localized Knowledge Spillovers: Evidence from the Spatial Clustering of R&D Labs and Patent Citations

Patent citations are a commonly used indicator of knowledge spillovers among inventors, while clusters of research and development labs are locations in which knowledge spillovers are particularly likely to occur. In this paper, the authors assign patents and citations to newly defined clusters of American R&D labs to capture the geographic extent of knowledge spillovers. Their tests show that the localization of knowledge spillovers, as measured via patent citations, is strongest at small spatial scales and diminishes rapidly with distance. On average, patents within a cluster are about three to six times more likely to cite an inventor in the same cluster than one in a control group. At the same time, the strength of knowledge spillovers varies widely between clusters. The results are robust to the specification of patent technological categories, the method of citation matching and alternate cluster definitions.

Supersedes Working Paper 16–25.

Working Paper 17–32. Kristy Buzard, Syracuse University; Gerald A. Carlino, Federal Reserve Bank of Philadelphia Research Department; Robert M. Hunt, Federal Reserve Bank of Philadelphia Payment Cards Center; Jake K. Carr, The Ohio State University; Tony E. Smith, University of Pennsylvania.

Spatial Commitment Devices and Addictive Goods: Evidence from Removal of Slot Machines from Bars

Commitment device theory suggests that temptations to consume addictive goods could be reduced by the regulatory removal of geographically close environmental cues. The authors provide new evidence on this hypothesis using a quasi-natural experiment, in which gambling regulators removed slot machines from some, but not all, neighborhood bars. The authors find that the removal of slot machines reduced personal bankruptcies of close neighbors (within 100 meters) but not neighbors slightly farther away. This is consistent with the removal of neighborhood slots serving as an effective spatial commitment device, which reduced close neighbors' temptation to gamble, thus allowing them to avoid bankruptcy.

Working Paper 17–34. Vyacheslav Mikhed, Federal Reserve Bank of Philadelphia Payment Cards Center; Barry Scholnick, University of Alberta; Hyungsuk Byun, Government of Alberta.

Land-Use Regulations, Property Values, and Rents: Decomposing the Effects of California Coastal Act

Land-use regulations can lower real estate prices by imposing costs on property owners, but may raise prices by restricting supply and generating amenities. The authors study the effects of the California Coastal Act, one of the nation's most stringent land-use regulations, on prices and rents for multifamily housing units. The Coastal Act applies to a narrow section of the California coast, allowing the authors to compare properties on either side of the jurisdictional boundary. The Coastal Act offers several advantages for measuring the effects of land-use regulations, including plausible exogeneity of the boundary location, which the authors confirm using historical data on boundary placement, and orthogonality of the boundary to other jurisdictional divisions. Extending previous studies, the authors decompose the effects of the regulation into a local effect, the net price effect of restrictions on the subject property and its immediate neighbors, and an external effect, the value of amenities generated by restrictions on all properties within the regulated area. Data on multifamily housing rents are used to isolate the effect of restrictions on adjacent properties (the neighbor effect). The authors' analysis of multifamily housing prices reveals local and external effects of approximately +8% and +5%, respectively. The rent analysis indicates a zero neighbor effect, which suggests that the local benefits of the Coastal Act have not yet materialized but are expected to in the future. This interpretation of the authors' results is supported by additional evidence on building ages and assessed building and land values.

Working Paper 17–33. Christopher Severen, Federal Reserve Bank of Philadelphia Research Department; Andrew J. Plantinga, University of California, Santa Barbara.

Screening & Adverse Selection in Frictional Markets

The authors incorporate a search-theoretic model of imperfect competition into a standard model of asymmetric information with unrestricted contracts. They characterize the unique equilibrium, and use their characterization to explore the interaction between adverse selection, screening, and imperfect competition. The authors show that the relationship between an agent's type, the quantity he trades, and the price he pays is jointly determined by the severity of adverse selection and the concentration of market power. Therefore, quantifying the effects of adverse selection requires controlling for market structure. The authors also show that increasing competition and reducing informational asymmetries can decrease welfare.

Supersedes Working Paper 16–10.

Working Paper 17–35. Benjamin Lester, Federal Reserve Bank of Philadelphia Research Department; Ali Shourideh, Carnegie Mellon University; Venky Venkateswaran, New York University Stern School of Business; Ariel Zetlin-Jones, Carnegie Mellon University.

First-Time Homebuyers: Toward a New Measure

Existing data sources show divergent estimates of the number of homes purchased by first-time homebuyers as a share of all home purchases. In this paper, the authors use a new data set to construct a time series of the share of first-time homebuyers. This series, based on the Federal Reserve Bank of New York Equifax Consumer Credit Panel (CCP), shows a significant decline in this share, particularly for young households, which is consistent with the decline in homeownership in this age cohort since the early 2000s.

Working Paper 17–36. Arthur Acolin, University of Washington; Paul Calem, Federal Reserve Bank of Philadelphia Supervision, Regulation, and Credit Department; Julapa Jagtiani, Federal Reserve Bank of Philadelphia Supervision, Regulation, and Credit Department; Susan Wachter, University of Pennsylvania Wharton School.

Measuring the “Free” Digital Economy Within the GDP and Productivity Accounts

The authors develop an experimental methodology that values “free” digital content through the lens of a production account and is consistent with the framework of the national accounts. The authors build upon the work in Nakamura, et al. (2016) by combining marketing- and advertising-supported content and find that the impact of “free” digital content on U.S. gross domestic product (GDP) has accelerated in recent years, particularly since 2005. However, the explosion in “free” digital content is partially offset by a decrease in “free” print content like newspapers. Including these, real GDP growth would grow at 1.53 percent a year from 2005 to 2015 rather than the official growth rate of 1.42 percent, a tenth of a percent faster. Thus, there is a substantive impact on 2005 to 2015 real growth, even when we do not measure the full consumer surplus benefits of free goods. In addition, from 1995 to 2005, real GDP growth, including “free” content, would grow 0.07 percentage point faster, and in the earlier period, from 1929 to 1995, 0.01 percentage point faster. The authors further find that the personal consumption expenditures (PCE) and core PCE deflators would have risen about 0.1 percentage point more slowly from 2005 to 2015. To analyze the impact of “free” content on measured private business total factor productivity (TFP) growth, the authors account for inputs of “free” content used in production. They find that TFP would grow faster by 0.07 percentage point per year from 2005 to 2014 and faster by 0.07 percentage point from 1995 to 2005.

Working Paper 17–37. Leonard Nakamura, Federal Reserve Bank of Philadelphia Research Department; Jon Samuels, Bureau of Economic Analysis; Rachel Soloveichik, Bureau of Economic Analysis.