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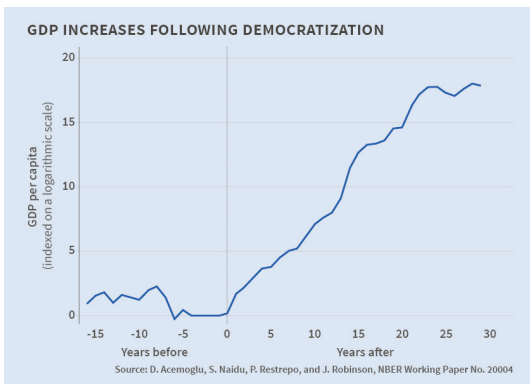
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International Finance and Macroeconomics

Jeffrey A. Frankel

In the years since the severe global financial crisis of 2008,¹ macroprudential policies have attracted interest as a potential additional set of tools to complement ordinary monetary policy, a possible means of counteracting financial market excesses and subsequent crashes.

In the six years since my [last report](#),² members of the International Finance and Macroeconomics Program have written over 600 working papers. Many have been published subsequently in leading journals. There is not space here to summarize all or most of them. Instead, I will concentrate on recent research on international macroprudential regulation. All of the working papers in the International Finance and Macroeconomics Program can be found on the program's publications page, <http://www.nber.org/papersbyprog/IFM.html>.

We have long had microprudential regulation of banks and securities markets. But macroprudential thinking begins with the observation that the whole of the financial system is more than the sum of the parts. A *micro*-prudential regulation might, for example, limit the loan-to-value ratio for individual mortgages or set capital minimums for individual lenders at levels that are figured by taking the probability of housing price fluctuations as exogenous. Thus it is a “partial equilibrium” approach. A *macro*-prudential approach recognizes that housing prices are endogenous, and that during a credit-fueled housing boom, the probability of a crash is greater and so regulations on individual borrowers and lenders may need to be set more stringently.

Financial regulators need to think about business cycle fluctuations, and macroeconomic policy-makers need to think about financial regulation. It is not just banks and private financial institutions that were led by a micro perspective into thinking that default probabilities were independent across households, and that therefore treated mortgage-backed securities as virtually riskless. Some regulatory agencies also neglected the correlation across borrowers and so underestimated

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the possibility that many mortgages could fail simultaneously in a housing downturn.

This survey of recent NBER research on international macroprudential policies is divided into four distinct areas: (1) national prudential policies that address macroeconomic issues in the sense of varying over the business cycle; (2) macroprudential regulation that focuses on the composition of debt, for example treating foreign debt as carrying an extra risk beyond that of domestic debt and perhaps restricting mortgage borrowing in foreign currency more than in domestic currency; (3) a precautionary approach to the national balance sheet with regard, in particular, to foreign exchange reserves; and (4) global liquidity conditions and coordination issues. This survey places some emphasis on findings from emerging markets.

1. Cross-country Differences in the Use of Macroprudential Policies

One root source of capital market imperfections is the need for borrowers to have collateral in order to prove their creditworthiness.³ A debtor who is up against a collateral constraint may be forced to sell assets (“fire sale”), driving down the market price and thereby putting other borrowers up against their own constraints. Javier Bianchi and Enrique Mendoza show how overborrowing carries a pecuniary externality because private agents do not internalize how the price of assets used for collateral responds to collective borrowing decisions.⁴ Their model suggests that financial innovation may have played a role in the financial crisis of 2008–09.⁵

Many observers warn of the moral hazard dangers of bailing out creditors or lenders in a financial crisis. But if the time-consistent system features government intervention during the deleveraging phase of the cycle, it is appropriate to take this into account beforehand. Restrictions or taxes on overborrowing during the boom phase of the cycle will reduce the likelihood or pay the costs of bailouts during the bust phase. In theory, taxes on debt and dividends that vary with the stage of the cycle can offset the overborrowing externality.⁶

Wall Street is connected to Main Street. Financial market imperfections can interact with the provisions of standard macro mod-

els in which labor markets and goods markets do not always clear. The collateral constraint acts as a financial accelerator, magnifying economic downturns. Monetary policy may not be adequate to combat the recession that results during the deleveraging phase, especially if the nominal interest rate cannot fall enough because of a liquidity trap, more specifically the zero lower bound.⁷ In this context, central banks may be able, in place of monetary policy, to use *ex ante* macroprudential policies such as debt limits and mandatory insurance requirements during the boom phase. These policies can offset the overborrowing externality.⁸

Financial market shocks can be transmitted to the real economy through the banking sector in particular.⁹ Standard bank regulations to reduce risk include¹⁰ capital requirements, a limit on leverage, dividend taxes, liquidity requirements,¹¹ deposit insurance,¹² stress tests,¹³ ongoing supervision of financial institutions,¹⁴ and minimum reserve requirements. Pablo Federico, Carlos Végh, and Guillermo Vuletin find that developing countries use reserve requirements countercyclically far more than advanced countries do (see Figure 1), probably as

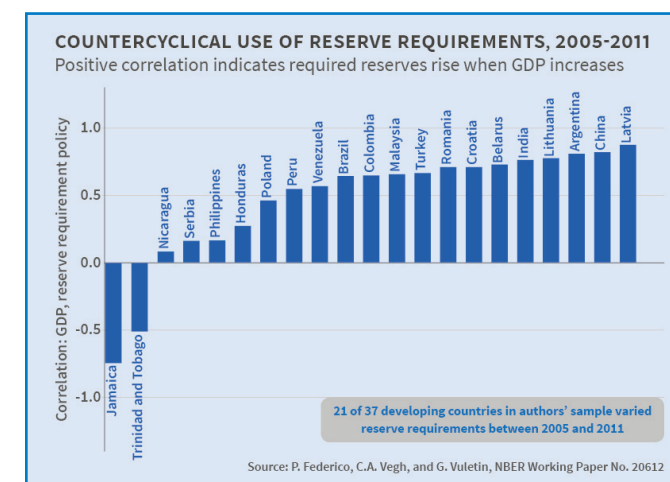


Figure 1

a substitute for monetary policy which is diverted, for example, by the need to raise interest rates in recessions in order to defend the currency.¹⁵

Booms in real estate lending and house prices bubbles, which can originate in loose credit market condi-

tions imported from abroad, materially heighten the risk of financial crises.¹⁶ Some countries have had success using regulations in the housing sector to discourage households from excessive mortgaging. The regulations include maximum ratios of debt service-to-income (DSTI) and loan-to-value (LTV). These become “macroprudential” when they are raised or lowered with the cycle.¹⁷

2. Macroprudential Regulation in Emerging Markets

Models of financial market imperfections, overborrowing, crises, and macroprudential regulation were considered appropriate for emerging markets¹⁸ long before the financial crisis of 2008 impelled most economists to contemplate them seriously for advanced countries. Some of the same lessons and models that international economists developed to explain the emerging markets’ sudden stops of the 1990s, for example, could be applicable to Europe and the U.S. as well.¹⁹ Korea, in particular, has had some success with macroprudential measures that vary over the cycle.²⁰

• Regulation of Foreign Liabilities

In open economies, prudential regulation cannot be imposed domestically without regard to the international activities of financial institutions. In some cases, authorities may decide to treat foreign debt as carrying extra risk beyond that of domestic liabilities and may, for example, set higher reserve requirements for banks’ foreign-currency deposits than for domestic deposits.

The tightening of capital requirements or other regulations on domestic banks in one country may cause a “leak” abroad, in the sense that some of the projects that might previously have been funded by domestic banks may now be financed from abroad.²¹ This



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suggests one justification for capital controls. Charles Engel, in a survey of macroprudential policy under high capital mobility, concludes that the leakage may justify international coordination of prudential policy, as under the Basel III agreement.²²

- **Capital Flow Management Policies Include Macroprudential and Capital Controls**

Although the theory of pecuniary externalities offers an explanation why financial markets do not always deliver the best outcomes and so why macroprudential regulation might be justified, a finer-grained analysis is needed if the conclusions are to be of practical use. What is different about the danger of overborrowing internationally as opposed to domestically? What is different about controls on international capital flows as opposed to domestic prudential regulation?

Macroprudential regulations and capital controls have come to be grouped together as Capital Flow Management policies, which have been found capable of reducing financial fragility.²³ Distinguishing between macroprudential regulation (to limit leverage) and capital controls (to induce precautionary behavior) is potentially important. Anton Korinek has argued that the latter may be relevant only for those emerging market countries in which foreign-currency debt could render devaluation contractionary.²⁴

- **Capital Controls with Fixed Exchange Rates**

The theory of overborrowing as a pecuniary externality can help update the traditional point that capital controls can be used to insulate a pegged-currency country from external shocks.²⁵ Controls can be used to reduce capital inflows in boom times and then reversed in bad times, like an umbrella that one uses only when it is raining. Another analogy, introduced by Michael Klein, is gates that can be opened or closed with the cycle (Brazil, South Korea) versus walls that are

up permanently (China and India).²⁶ Of course capital controls²⁷ also have drawbacks, such as raising firms' cost of capital²⁸ or lacking enforceability.²⁹

- **Regulation to Influence Liability Composition**

Some kinds of regulation aim to alter the composition, rather than the total level, of foreign liabilities. Capital controls may, for example, seek to alter the *maturity composition* of liabilities, reducing short-term capital flows that are prone to sudden reversals.³⁰ Another concern is the *currency composition* of liabilities. Emerging market countries have in the past borrowed abroad primarily in dollars or other foreign currencies, rather than in their own currency. In the case of bank borrowing, such short-term foreign exchange liabilities are an example of the “non-core” funding sources (i.e., sources other than customer deposits) that

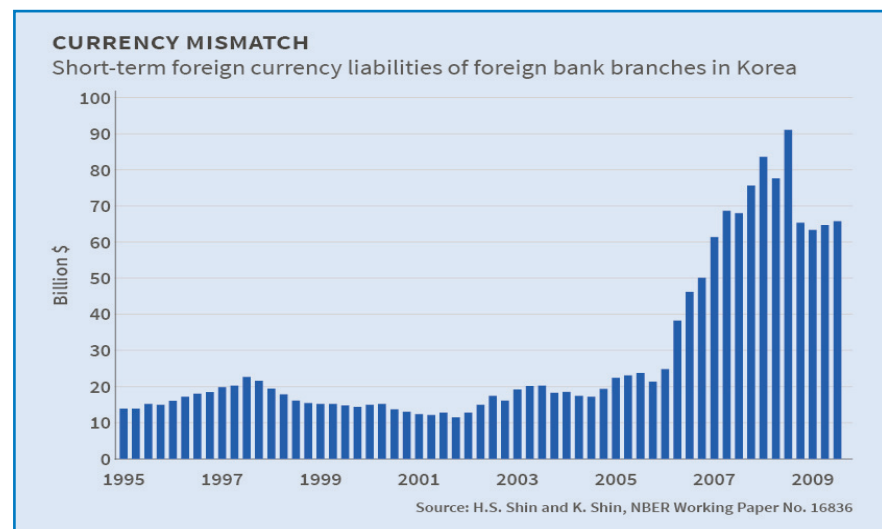


Figure 2

banks increasingly turn to in a credit boom.³¹ In 1994–2001, a currency mismatch led to contractionary balance sheet effects when emerging market currencies were forced to devalue. After that experience, many countries sought to reduce this sort of vulnerability in their balance sheets by avoiding unhedged foreign currency liabilities.³² (Illustrated in Figure 2.)

One study of 51 emerging market economies over the period 1995–2008 suggests that some countries were able to use foreign currency-related prudential measures, domestic prudential measures, and financial-sector capital controls to reduce both the share of foreign exchange lending in total domestic bank credit and the share of portfolio debt in total external liabilities, which enhanced their resilience when the financial crisis hit in 2008–09.³³

3. The Role of Reserves and the Precautionary Approach to the National Balance Sheet

A broader definition of macroprudential policies would include other efforts to strengthen the national balance sheet, such as increased holdings of foreign exchange reserves by the central bank, as precautions to reduce financial fragility.

- **Foreign Exchange Reserves**

In the decade following the crises of the 1990s, central banks in emerging markets increased their foreign exchange reserves. One important reason was the precautionary motive: They believed it would help protect their countries against the worst effects of a financial or balance of payments crisis.³⁴

This belief was tested in the global financial crisis, a common shock experienced by all countries. Some studies have found that countries holding a high level of foreign exchange reserves indeed tended to come through 2008–09 in better shape than others.³⁵ (See Figure 3 on next page.) In particular, countries that had a high ratio of foreign exchange reserves to external borrowing were not hit as badly as

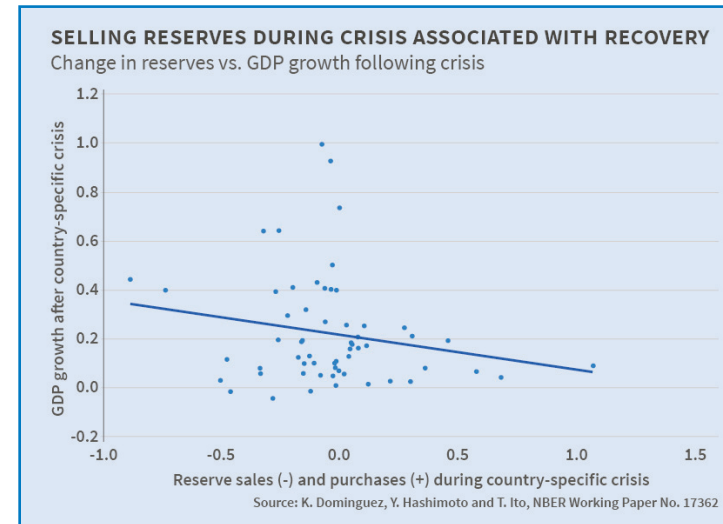


Figure 3

those with a low ratio.³⁶ Again in 2013, countries that had been holding more reserves seemed better able to withstand the shock of higher U.S. interest rates that was associated with suggestions of a less-expansionary monetary policy.³⁷ Some other studies, however, have found less evidence of an effect.³⁸

- **Alternatives also include Reserves and Appreciation**

A complete set of alternative policies for managing a capital boom would include not just capital flow management policies but also conventional countercyclical macroeconomic actions such as tightening monetary policy, tightening fiscal policy,³⁹ and allowing the currency to appreciate.⁴⁰ How authorities manage a boom has a big influence on a country's vulnerability to subsequent adverse shocks.

4. Revisions in the Trilemma, Global Liquidity Conditions, and International Coordination

A long-standing principle in international macroeconomics, often associated with Robert Mundell, goes by

the name of “the Impossible Trinity.” Also called the “trilemma,” the proposition states that even though a country might wish to have a fixed exchange rate, highly integrated financial markets, and the ability to set its own monetary policy, it cannot have all three.

The logic is simple. If there are no differences between the domestic currency and foreign currencies and no barriers to the cross-border movement of capital, then the domestic interest rate is tied to the world interest rate, and so the country cannot set its own interest rate. (In terms of Figure 4, no

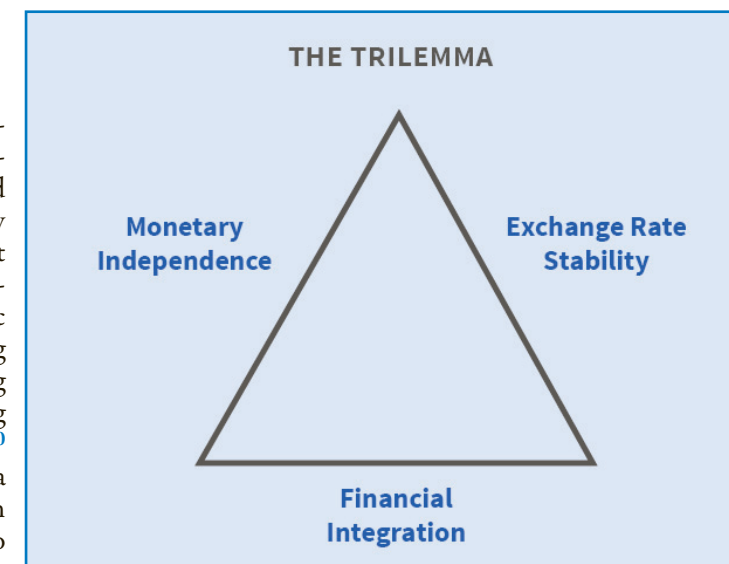


Figure 4

point exists that is on all three sides of the triangle at once.)

This principle helps explain the travails of the eurozone. Member countries have found it difficult to live with central bank policies that are no longer tailored to their own economic circumstances.⁴¹ It also

helps explain past crises such as currency crashes in emerging markets. When the Federal Reserve has raised interest rates, for example, it has sometimes forced Mexico to choose between an unwanted tightening of its own monetary conditions and an unwanted abandonment of the peso's peg to the dollar. This area of research is of particular interest at a time when quantitative easing by the Federal Reserve has come to an end and many observers are concerned that an expected increase in U.S. interest rates might once again reverse the flow of finance to emerging countries and trigger new crises.

Research questions abound. Does the trilemma mean that emerging markets should turn back the clock on capital controls? Does it mean that the movement toward floating exchange rates is the answer? Are intermediate regimes such as managed floating more workable than the corner choices?⁴² Do floating

rates in fact insulate countries from foreign interest rates as advertised? Do macroprudential regulations offer a solution? Or is there a new need for international policy coordination across central banks so that the Federal Reserve, for example, would take emerging markets' interests into account when it sets interest rates?

- **Do Floating Rates Really Insulate?**

In some theoretical models, capital market imperfections may prevent floating rates from performing the shock absorption role claimed in traditional macroeconomic analysis. Some, such as Emmanuel Farhi and Iván Werning, find that in such circumstances taxation of capital flows can be welfare-improving.⁴³ Others find that capital controls are of limited help.⁴⁴

• U.S. Financial Conditions, Global Liquidity, and World Capital Flows

Hélène Rey finds that one global factor explains an important part of the cross-sectional variance of risky asset returns around the world. This time-varying global factor can be interpreted as the perceived importance of risk, as reflected in measures of volatility such as the VIX — often referred to as the “fear index.”⁴⁵ U.S. monetary policy is, in turn, a driver of this global factor and of international credit flows and leverage.⁴⁶ As an example of “reach for yield,” the carry trade entails short-term capital flows from low interest rate countries such as the U.S. to high interest rate countries such as the emerging markets.⁴⁷

Traditional textbook theory under the trilemma says that floating exchange rates help insulate small countries against global financial factors such as U.S. monetary conditions, with each country choosing the monetary policy that suits its own economic conditions. But transmission of liquidity and risk effects may invalidate this insulation proposition.⁴⁸ After all, many countries with floating exchange rates suffered effects of the U.S.-originated global financial crisis in 2008–09. Macroprudential regulations might reduce vulnerability to such liquidity and risk shocks. The issue is very relevant in 2015, as fears rise that coming increases in U.S. interest rates might trigger emerging market crises as in the past.

• Interest Rates at the Zero Lower Bound

A particular version of the monetary independence problem may arise when countries are seeking to ease monetary policy in the presence of a liquidity trap. For example, interest rates may already be at the zero lower bound, as has been the case in Japan since the late 1990s and other major countries since 2009. If the textbook theory is right, currency depreciation

offers another channel for monetary stimulus besides the interest rate. But if floating exchange rates in fact do not allow sufficient monetary independence, again there may be a role for capital flow management measures. Some argue that, in a global economy with open financial markets, the problem of the zero lower bound introduces a new dimension to the international policy trilemma.⁴⁹

• Central Bank Coordination

Another response to the problem of spillovers from U.S. monetary policy to emerging market countries is a call from emerging market leaders like Raghuram Rajan, Governor of the Reserve Bank of India, for the major central banks to coordinate monetary policy with an eye toward international repercussions. Of course the mandate of the Federal Reserve, and of other central banks, is to act to promote the best interest of its own economy.⁵⁰ But that need not rule out taking into account international repercussions of monetary policy moves or coordinating with other countries.⁵¹ Macroprudential policies may themselves need to be coordinated internationally.⁵²

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Political Institutions and Comparative Development

Daron Acemoglu and James A. Robinson

A great deal of evidence suggests that different patterns of economic development are causally related to differences in economic institutions. Countries that create inclusive and secure property rights and the rule of law grow, while those that do not stagnate or decline.¹

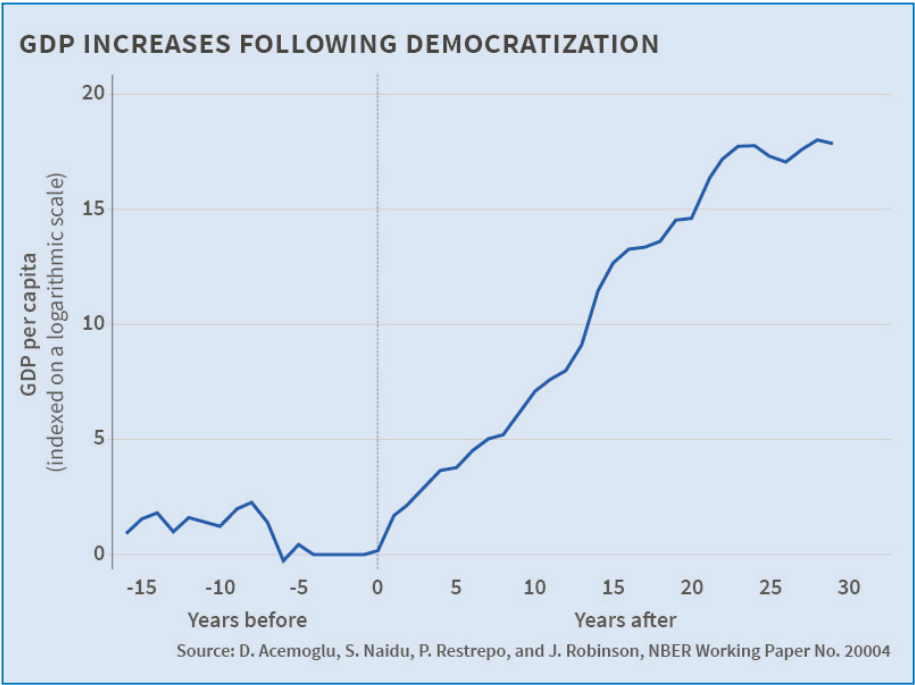
But why do economic institutions vary so much across, and even within, countries? Though there are different approaches to this question, a central one emphasizes that economic institutions (conceived broadly to include economic policies) are outcomes of processes of collective choice. Such choices are shaped by the political institutions that distribute power, aggregate preferences and interests, place constraints, and determine the payoffs to different strategies in the political process.

This perspective suggests that there

ought to be evidence of systemic relationships between political institutions, economic institutions and policies, and economic outcomes.

Perhaps the largest research effort has gone into investigating the impact of democracy on economic growth. There is obviously a strong correlation between levels of GDP per capita and the extent of democracy, yet at the same time theoretical work suggests that not all the mechanisms unleashed by moving political institutions from autocratic to democratic are positive for economic growth.

Democratization tends to shift power away from narrow elites towards the mass of people. That can favor redistribution, the provision of public goods in society,² and expansion of the role of the state in society. These very processes may or may not be good for eco-



nomic growth. Redistribution can lead to distortions and disincentives,³ or it can stimulate growth.⁴ The same is true of the expansion of the size or role of the state. Finally, democratic political competition can be very clientelistic, mitigating against the provision of public goods. There is also obviously a considerable amount of heterogeneity in this process. Dictatorships and democracies alike vary greatly in their institutional architecture—such as in the extent of checks and balances⁵—and societies that have ostensibly democratic politics may have political power concentrated in the hands of a small group of economic elites or bureaucrats.

Despite this evident heterogeneity, it is interesting to ask what the average effect of moving from autocratic to democratic political institutions is on economic policies and institutions and on economic growth. We do that in our paper with Suresh Naidu and Pascual Restrepo.⁶ Ours is hardly the first study of this relationship but, interestingly, the conventional wisdom has been that democratization has at best small positive effects on economic growth. Our paper shows that this “non result” is driven by the complicated dynamics of GDP around democratization.

It is a robust fact that democratizations are often precipitated by recessions and negative economic shocks. Clearly, unless one controls for this properly, one can easily make a spurious inference about the impact of democracy. We control for this using two different strategies. The first is to control for lags of GDP in linear regressions. The second is to adapt to our panel context the semi-parametric time-series estimators proposed by Joshua Angrist and Guido Kuersteiner,⁷ and Angrist, Óscar Jordà, and Kuersteiner,⁸ which use propensity score-based matching methods to correct for the effects of GDP dynamics. Beyond this problem lies the question of identification. In addition to controlling for a full set of country and year fixed effects, we address this issue with an instrumental-variables (IV) strategy. We develop an instrument for democracy

based on regional waves of democratizations and reversals.

Our identification assumption is that democratization in a country spreads to other nondemocratic countries in the same region, but does not have a direct differential impact on economic growth in these countries, at least conditional on lagged levels of country and regional GDP and various covariates that could be correlated with country-level GDP at the year, region, and initial regime level.

Focusing on a dichotomous variable which classifies regimes as either democratic or not based primarily on whether or not a country has free and fair elections with universal suffrage, our central estimates suggest that a country which switches from autocracy to democracy achieves about 20 percent higher GDP per capita over roughly 30 years. We also investigate some of the mechanisms via which this may happen and find broadly consistent positive estimates for the effect of democracy on tax-to-GDP ratio and primary school enrollment rates.

But, as already noted, there is much more to the variation in political institutions than differences in democracy. Indeed, the quantitative magnitude of the results discussed above shows that the main institutional difference between poor and rich countries is most likely not that the former tend to be undemocratic while the latter are democratic. Our study, like most, uses a minimalist definition of democracy which leaves out detailed features of the constitutions of countries that help determine the strength of checks and balances and constraints on the use of power.⁹ Moreover, how a given set of formal political institutions functions varies greatly across societies.

Finally, and equally importantly, there are major differences across and within nations in the way the state is organized. Having a state with “capacity” — to regulate, implement and govern, to establish order, monopolize force, and raise revenues — is potentially an important prerequisite for



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economic growth. A large social science literature suggests that many facets of modernity are consequences of the development of states, including not just economic growth¹⁰ but also identities¹¹ and values.¹²

To see why the nature of the state might be an important determinant of comparative development, consider the following famous puzzle identified by Robert Lucas:

“In 1960 the Philippines and South Korea had about the same standard of living as measured by their per-capita GDPs of about \$640 U.S. (measured in 1975 prices). The two countries were similar in many other respects.... In both countries, all boys of primary school age were in school, and almost all girls, but only about a quarter of secondary school age children were in school. Only 5 percent of Koreans in their early twenties were in college, as compared to 13 percent in the Philippines. Twenty-six percent of Philippine GDP was generated in agriculture, and 28 percent in industry. In Korea, the comparable numbers were 37 and 20 percent.”¹³

Despite all these similarities, a radical economic divergence ensued. Lucas’ explanation is based on differential patterns of learning by doing and human capital accumulation related to openness. Human capital certainly accumulated a lot faster in Korea, but from our perspective Lucas’ discussion of what was different about Korea and the Philippines in 1960 is very narrow. A huge unmentioned difference was that Korea was able to lay claim to a long history of centralized, bureaucratized, state authority with a homogeneous national identity. The Philippines was not.

Though we often take for granted that states have “capacity,” this is in fact missing in many less-developed parts of the world. And there are large challenges to pinpointing the role of state capacity in promoting economic development. State capacity is multi-dimensional, and we have few theories how political capacity, fiscal capacity, and bureaucratic capacity co-vary or are determined. They obviously may be influenced by devel-

opment or by other factors, such as the nature of society (think of homogeneous Korea). Thus there are problems of both reverse causality and endogeneity to be addressed before we can say convincingly that state capacity plays a causal role in promoting economic development.

In joint work with Camilo García-Jimeno, we study the effect of state capacity of Colombian municipalities on public goods provision and development outcomes.¹⁴ We conceptualize state capacity as the presence of state functionaries and agencies. This represents a central aspect of what Michael Mann calls the “infrastructural power” of the state.¹⁵ Colombia provides an ideal laboratory for such an investigation because there is a wide diversity of development and public good outcomes across Colombian municipalities. For example, the proportion of the population above the poverty line in the 2005 census and average secondary school enrollment 1992–2002 vary from near zero to 100 percent.

Our data exhibit strong positive correlations between our basic measures of state capacity and both public good provision and development outcomes. But are these indicative of a causal relationship? To address this question, we develop an identification strategy based on the history of Colombian state formation. In particular, we focus on two variables: the historical presence of colonial state officials and agencies in 1794 and the location of the colonial “royal roads” network. This network has disappeared and thus provides an attractive source of variation in the historical presence of the state and the cost of building and expanding local state capacity, especially when we control for distance to current roads. There is indeed a positive correlation between the number of colonial state employees at the municipality level and the same measure today. Since the state-building strategy of the colonial authorities was quite unrelated to subsequent republican state-building aims, this historical data creates an appealing source of variation.

Yet reverse causality and omitted

variables biases are not the only challenges to estimating the impact of state capacity on development. We argue that local state capacity in one municipality is likely to create spillovers on public good provision and economic outcomes, and even on state capacity development, in neighboring municipalities. We formulate a simple, empirically operational model of such spillovers and develop an econometric strategy for identifying them. Our results reveal fairly large spillovers across municipalities and also non-trivial strategic effects whereby greater state capacity in one municipality induces an increase in the state capacity of neighboring municipalities.

The theory of how state capacity in one municipality should affect that in other jurisdictions is ambiguous. When one municipality can free-ride on the investments of neighboring localities, a high spending level in one location may reduce the optimal outlay in adjoining jurisdictions. When greater state capacity in one jurisdiction makes it less costly to build such capacity in adjoining jurisdictions, or raises the benefits of such outlays, then greater spending in one location will be associated with higher outlays in neighboring jurisdictions.

Theoretically, how these strategic effects should work out is unclear. If municipalities free-ride on their neighbors’ investments, state capacity choices will be strategic substitutes. Conversely, if municipalities find it harder or less beneficial to build state capacity when it is missing in their neighborhood, they will be strategic complements. We incorporate these strategic aspects by modeling the building of state capacity as a network game. We then estimate the parameters of this model, exploiting both the network structure and the exogenous sources of variation discussed above.

Our benchmark estimates imply, for example, that moving all municipalities below median state capacity to the median will have a “partial equilibrium” direct effect (holding the level of state capacity of all municipalities above the median constant) of reducing the median poverty rate by 3 percentage

points, increasing the median coverage rate of public utilities (electricity, aqueduct and sewage) by 4 percentage points, and increasing the median secondary school enrollment rate by 3 percentage points. About 57 percent of these impacts is due to a direct effect, while 43 percent is due to network spillovers. The “full equilibrium” effect is very different, however. Once we take into account the equilibrium responses to the initial changes in local state capacity in the network, median coverage rate of public utilities increases 10 percentage points, the median fraction of the population in poverty falls by 11 percentage points, and median secondary school enrollment rates increase by over 26 percentage points. These large impacts, which are entirely due to network effects, highlight not only the central role that state capacity plays in economic development but also the importance of taking the full equilibrium effects into account.

Much remains to be done in understanding theoretically and empirically how political institutions shape development. Clearly other forms of state capacity need to be investigated and the external validity of our results probed. Also important is to consider how different political institutions interact.

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The Economics of Happiness

John F. Helliwell

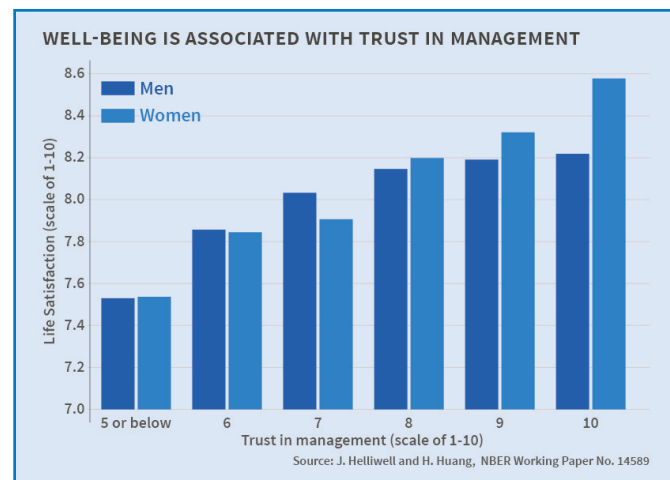
This emerging field broadens economic analysis by using measures of subjective well-being to help address a core issue in economics — how to make best use of scarce resources — by redefining “best use.” It is now more than 40 years since Richard Easterlin first advocated using measures of subjective well-being to judge the quality of life.¹ I came to see the necessity of such a broadening only after seeing that it was inadequate to assess the consequences of democracy² and of social capital³ solely in terms of their linkages to economic growth.

Measures of subjective well-being seemed like natural candidate measures of welfare. But to understand and assess their suitability required a broader disciplinary perspective. A useful starting point was to see if life satisfaction assessments from around the world supported Aristotle’s prediction that people would report higher life satisfaction if they had better life circumstances, in the form of family, friends, good health, and sufficient material means, while also being supported from the one side by positive emotions and on the other by a sense of life purpose. Aristotle’s presumptions were supported remarkably well by World Values Survey data, with two-level modeling revealing the joint importance of individual and national-level variables.⁴ The fact that life evaluations could be explained by income and other life circumstances permitted calculation of compensating differentials to compare the relative importance of different aspects of life.⁵

My subsequent work expanded the analysis to show that life evaluations depend more on the quality of government than on the institutions of democracy,⁶ especially when the former

is at low levels, that workplace trust, as shown in the figure, is a very strong predictor of life satisfaction, even more so for women than men,⁷ and that the quality and quantity of social connections at work, at home, and in the neighborhood are perhaps the most important supports for life satisfaction.⁸

But what about suicide in those supposedly happy Scandinavian countries? A proper answer to this question required expertise from other



disciplines. How well are modern international differences in suicide rates explained by the same factors exposed by Émile Durkheim’s careful research more than a century ago?⁹ Can the same model consistently explain both life satisfaction and suicide rates? World Values Survey data showed that the same factors that had been found to be associated with international differences in suicide rates, of course with the signs reversed. Sweden fit both models perfectly. Its very high subjective well-being and fairly average suicide rates were reconciled by the differing relative importance of some factor — such as divorce, religion, and government

quality — between the suicide and life satisfaction models.¹⁰ Social trust and community connections were strongly and equally important in both models. Indeed, subsequent research suggested that higher levels of social trust were associated with significantly lower death rates from both suicides and traffic fatalities.¹¹

The apparent usefulness of happiness data spurred deeper digging and a mixture of research methods to untangle two-way linkages between subjective well-being and other variables. It also led to research to establish the meaning and value of different ways of measuring subjective well-being,¹² to assess the extent to which there are interpersonal and international differences in how happiness is measured and determined, to evaluate the extent to which the well-being effects of income and other factors depend on comparisons with others,¹³ and to use subjective well-being data to focus on the quality of economic development.¹⁴

Three recent sets of results invite special attention.

Life Evaluations versus Emotional Reports

It is important to distinguish two importantly different measures of subjective well-being: life evaluations and emotional reports. The former are represented by three main types of survey question: How satisfied are you with life as a whole these days? How happy are you with your life these days? and the Cantril ladder, used in the Gallup World Poll, asking people to evaluate their lives today on a scale with the best possible life as a 10 and the worst

possible life as a zero. These three ways of evaluating lives deliver answers that are structurally identical, in the sense of being explained by the same variables with the same coefficients, despite having distributions with different means.¹⁵ Emotional reports, or measures of affect, can be either positive or negative, and generally refer to either current emotions or those in a recent time period, usually yesterday. Typical measures of negative affect would be worry, anger, depression, and anxiety, with typical measures of positive affect including happiness and enjoyment, sometimes buttressed with more evidently behavioral measures like smiling and laughter. People answer life evaluation questions and reports of emotions yesterday in appropriately different ways, with weekend effects appearing for yesterday’s emotions but not for life evaluations.¹⁶ Life evaluations, much more than current or remembered emotions from yesterday, are linked strongly and durably to levels and changes in a variety of life circumstances, both within and among countries.¹⁷ These include not only individual life circumstances, such as income and unemployment,¹⁸ but also the quality of public institutions, ranging from prison conditions¹⁹ to the honesty and overall efficiency with which public services are delivered.²⁰

The Power of Generosity

Two of my recent co-authored papers, relying on a mixture of experimental lab studies and international survey evidence, find that people are happier performing pro-social acts. The first paper combined experiments in several different cultures with survey data from many countries to argue that the happiness-producing power of generosity could be a psychological universal rather than something bound by the social norms of specific cultures.²¹ The second paper used a range of experiments to show that offering a chance to donate, in the context of an experiment set up for other reasons, led to high donation levels and significantly positive emotional effects for givers compared either to controls or to non-givers.

Those who were offered, but did not take, the chance to donate felt some emotional costs, but in the aggregate these were much less than the emotional returns to those who chose to donate.²²

Marriage and the Set Point for Happiness

If measures of life satisfaction are to be reliable guides to human welfare, they must be shown to respond in predictable and durable ways to changes in important life circumstances. If, on the contrary, there is a happiness set point, determined chiefly by genetic factors, for each individual, with eventual full adaptation to any change in circumstances, then the happiness measure in question will not be able to provide a long-term guide to the quality of life. This view seems to be supported by the finding that post-marriage life evaluations among respondents in the U.K. Household Panel survey returning to pre-marriage levels within a few years demanded our attention. The frequent finding that married people are on average happier than singles in otherwise the same life circumstances has been interpreted by some as showing only that already-happy people were more likely to get and stay married.

In a recent working paper,²³ Shawn Grover and I explain the return to baseline by defining the comparison group closely. Although the individuals studied did indeed return to their pre-marriage levels of life satisfaction, they were still happier than they would have been without getting married, since most of the marriages were occurring at ages when the average life satisfaction was dropping, as part of a U-shaped age pattern of life satisfaction in many countries. In addition, the pre-marriage baseline was set too close to the point of marriage, thus already incorporating the happiness created when the long-term relationship was established with the eventual marriage not yet taken place. To be really convincing, however, our research needed to make full allowance for the reverse effects running from happiness to marriage. We did this by including each indi-



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vidual's measured life satisfaction several years in the past to capture any set point effect.

Finally, in attempting to find an explanation for the size and long duration of the happiness effects accompanying marriage in our U.K. sample, we took advantage of a question in another part of the survey asking each respondent to identify their best friend, with spouse or equivalent being one of the categories offered. The life satisfaction effects of being married, relative to being single, were always large and significant, and were more than 50 percent larger for those who reported their spouse as their best friend. The same relationship was also evident for the growing group who were living as a couple but not married — they were on average happier than the singles, but especially so if they regarded their partner as their best friend.

Thus the research showed large and durable life satisfaction effects from a key change in life circumstances, reconciled the life-course and cross-sectional estimates, and developed evidence for a social and friendship-based basis for the well-being benefits of marriage. The paper thereby supports both the ability of life satisfaction measures to capture the well-being effects of changes in life circumstances and the importance of social factors in explaining levels and changes of life satisfaction.

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Understanding the Effects of Early Investments in Children

Diane Whitmore Schanzenbach

A growing economics literature is seeking to understand the effects of early childhood influences on later life outcomes. While much recent work explores the effects of health measured at birth, my work and that of others demonstrates the importance of events in early life—but after birth—on long-term outcomes.

A recent review by Douglas Almond and Janet Currie concludes that child and family characteristics measured at school entry explain as much of the variation in adult outcomes as factors such as years of education that are more typically studied by economists.¹ James Heckman argues that the rates of return to human capital investment in disadvantaged populations are highest in early life.²

In a series of studies, my coauthors and I have estimated the long-term impacts of interventions in early life. We find that there are promising interventions for children in school settings and through social safety net programs that impact outcomes measured in later adolescence and into adulthood.

Early Life Interventions and Adult Economic and Health Outcomes

The food stamp program is a central part of the U.S. safety net, and provides vouchers to participants that can be used to purchase food at grocery stores. Participation in the food stamp program increases the total resources available to a family, pushing out the budget constraint and raising consumption levels among participants. When the program was introduced in the 1960s, it was rolled out slowly, over a 13-year period, on a county-by-county basis. Hilary Hoynes, Almond, and I investigate the impact of this safety net trans-

fer by exploiting this variation across geography and time of the introduction of the program.

One of our first studies found that babies who were *in utero* when food stamps were introduced in their county weighed more at birth.³ But the availability of food stamps at other points during childhood may also have had an impact. In our recent work, we use the Panel Study of Income Dynamics (PSID) to test whether children born prior to the introduction of food stamps in their county also benefited from the program.⁴ We start with the cohort of children that we initially observe in the 1968 PSID, follow them into adulthood, and observe their completed education, earnings, and detailed health outcomes such as general health status, height and weight, presence of chronic conditions, and work/activity limitations. We find that individuals with access to food stamps before age five had measurably better health in adulthood, exhibiting improved overall health and lower rates of obesity, diabetes, and high blood pressure.

For women, we also find that childhood access to the food stamp program increases economic self-sufficiency in adulthood. Those with access to food stamps as children were more likely to graduate from high school, earn more, and rely less on the social safety net as adults than those who did not. Interestingly, we find positive but diminishing impacts of food stamps by the child's age when the program was introduced in the child's county. These findings suggest that there are important long-term returns to family income from social supports during early life, and that income-support programs have benefits that have not previously been well quantified.

Expanding Access to Preschool

Another promising intervention in early life is access to high-quality educational environments. In his 2013 State of the Union address, President Obama proposed sweeping reform to preschool education in the United States. The \$75 billion proposed “Preschool for All” initiative calls for dramatic increases in the number of four-year-olds in public preschool programs and in the quality of these programs nationwide.

The Preschool for All initiative shares many characteristics with the state universal preschool programs that have been offered in Georgia and Oklahoma since the 1990s. While high rates of return have been documented for preschool programs targeted to children of low socioeconomic status, less is known about the impacts of universal programs.⁵ Elizabeth Cascio and I draw together data from multiple sources to estimate the impacts of these “model” state programs on preschool enrollment and a broad set of short- and longer-run family and child outcomes.⁶

Using data from the Current Population Survey's October supplement on school enrollment, we find that the universal state programs have increased preschool enrollment rates of children from lower and higher socioeconomic status families alike. For children from lower-SES families, preschool enrollment increased by 20 percentage points, primarily driven by children who otherwise would not have attended preschool enrolling in public programs. For children from higher-SES families, however, the enrollment impact has been more muted at 11 to 14 percentage points. Among these higher-SES children, we measure substantial crowd out due to the universal program. In particular, we estimate that of every 10 higher-SES program enrollees, four or five otherwise would have been in private preschools.

We also document the impacts of universal preschool programs on money and time investments families make in their children. Using

data from the Consumer Expenditure Survey, we find that higher-SES families—for whom private preschool enrollment falls significantly—reduce their spending on childcare. By contrast, lower-SES families—for whom there are larger impacts on the extensive margin—display larger declines in overall maternal time spent with children using data from the American Time Use Survey. This finding is counterbalanced by an increase in “quality” time spent reading, playing, talking, etc., between low-SES mothers and their children.

While the model state programs are still too young for us to estimate their long-term impacts, we are able to explore impacts on achievement as late as eighth grade. For lower-income children, we find positive impacts on math and reading scores as measured on the National Assessment of Education Progress (NAEP) in fourth grade. The impacts on this group diminish substantially by eighth grade, but sizable impacts on math scores remain. Conversely, although some children from higher-income families were more likely to have attended preschool and other families effectively received sizable income transfers from the program, their academic achievement does not appear to have improved in either grade.

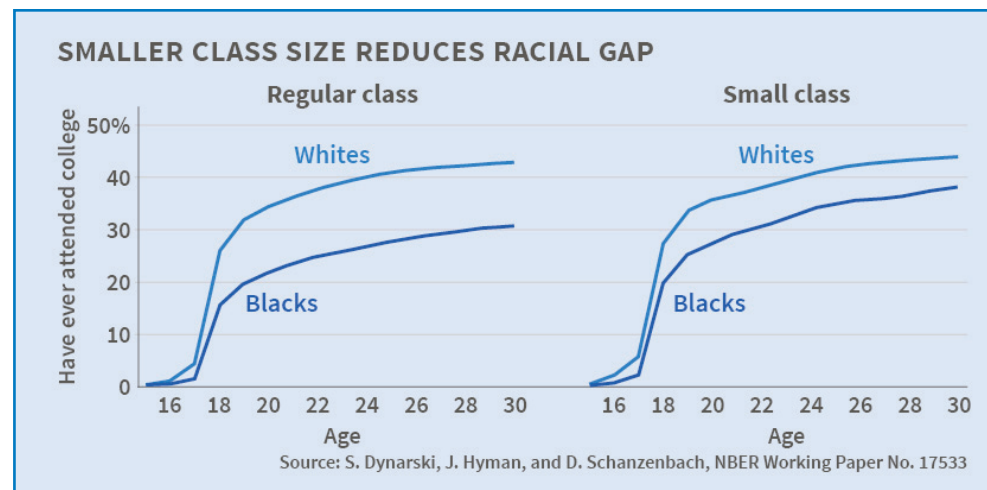
We view these results as highly consistent with the broad patterns in the preschool literature, with highest economic returns coming from programs

that are both high quality and highly targeted, and returns diminishing as the students' counter-factual experiences in the absence of a public preschool program increase.

Long-run Impacts of Early Elementary School Experiences

Another widely-discussed early-life intervention is improvement in the quality of schooling for students in the early elementary grades. Project STAR was a randomized experiment conducted in Tennessee in which over 11,000 students and their teachers were assigned to classrooms that varied in class size and other measures of quality. The experiment included one cohort of children that started kindergarten in the 1985–86 school year. By now, the students in the original cohort have become adults, and researchers have been able to use a variety of administrative databases to follow their progress to determine whether the intervention had meaningful lasting impacts.

Susan Dynarski, Joshua Hyman, and I measure the impact on educational attainment in adulthood of being randomly assigned in grades K-3 to a small class (with on average 15 students) instead of a larger class (with on average 22 students).⁷ Using a data match obtained from the National Student Clearinghouse, we find that assignment to a small class increases the probability of attending college by 2.7 percentage points.



The impacts are considerably higher among populations with traditionally low rates of postsecondary attainment. For example, the estimated impacts on college attendance are 5.8 percentage points among black students, and 4.4 percentage points among students who were eligible for a subsidized school lunch at the time of the original experiment. Among students attending schools with the highest concentration of poverty, small class assignment raised the rate of college attendance by 7.3 percentage points, and among students with the lowest projected probability of attending college, the impact is 11 percentage points. In addition, small classes in the early grades improve the likelihood of earning a college degree, and majoring in a more technical and high-earning field, such as science, technology, engineering, mathematics, business, or economics.

Using administrative tax return data, we are able to broaden the scope of adult outcomes studied in the Project STAR experiment. Raj Chetty, John Friedman, Nathaniel Hilger, Emmanuel Saez, Danny Yagan, and I analyzed the impacts of the experiment on outcomes ranging from earnings to retirement savings, home ownership, and marriage.⁸ While we study long-term impacts of random assignment to a variety of observable characteristics such as class size and teacher experience, we also estimate “classroom effects”—the combined effects of teachers, peers, and other class-level shocks—on later life outcomes. An analysis of variance revealed that kindergarten classroom assignment has significant impacts on earnings and other adult outcomes, leading us to ask whether the class effects on earnings were correlated with class effects on kindergarten test scores. To address this, we proxy for classroom quality with the average test scores of an individual’s classmates, measured at the end of kindergarten. Using this proxy measure, we find that class quality impacts immediate test scores, that the boost dissipates later in elementary school, and that it reappears strongly across

a variety of adult outcomes including earnings. While the test-score impacts faded away in later grades, we were able to detect sustained impacts on non-cognitive skills, suggesting a possible mechanism for the long-term effects. The impacts of class quality are similar for students who entered the experiment later, suggesting that a better classroom environment from ages five through eight can have substantial long-term benefits.

In both Project STAR papers, we find that the actual long-run impacts were larger than what would have been predicted based on the short-run test score gains. This finding is consistent with a growing body of research on early-life interventions, and raises challenging evaluation problems. Policymakers often rely on short-term outcomes such as standardized test scores to gauge the effectiveness of educational interventions. But, as suggested in our research, if these measures systematically understate the long-run impacts of early childhood programs, over-reliance on short-run outcomes may lead to abandonment of some policies that would pass a long-term cost-benefit analysis.

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How Powerful Are Fiscal Multipliers in Recessions?

Alan Auerbach and Yuriy Gorodnichenko

In policy and academic discussions of recent years, few topics have generated more interest than fiscal multipliers, which measure how much a dollar of increased government spending or reduced taxes raises output. Indeed, the magnitude of fiscal multipliers is at the core of debates about whether governments should try to stimulate their economies during a recession. Bitter disagreement in the United States and elsewhere about the course of fiscal policy during the Great Recession reflects in part how little is known about multipliers and how important this matter is for policy.

While previous research studied the effects of fiscal policy on the economy,¹ a key question is how powerful fiscal policy can be in recessions, during which the need to stabilize economic activity is particularly acute. With a quickly shrinking economy in late 2008 and early 2009, existing estimates of the *average* effect of fiscal stimulus were potentially misleading. For example, old-style Keynesian models emphasized that increased government spending might stimulate output and have little effect on prices in times of slack but could have an inflationary effect with low output response if the economy were close to full employment. More recent theoretical work made a similar prediction in the context of a binding zero lower bound for nominal interest rates, based on the view that a fiscal stimulus would not lead to an increase in interest rates in such a circumstance.² While reasonable to expect, cyclical variation in the size of fiscal multipliers has, until recently, been largely unexplored empirically. This glaring gap between what policymakers wanted to know and what earlier work could provide stimulated our interest in exploring state-varying fiscal multipliers.

In our initial work on this question we use a “smooth transition vector autoregression” (STVAR) that allows for transition of the economy between regimes characterized by potentially different responses to fiscal shocks.³ With only a handful of post-World War II recessions, generally short in length, a key advantage of this approach is that it exploits intensive as well as extensive margins of business cycle fluctuations. What matters is not only whether the economy is in a recession but also how deep the recession is. Our approach postulates a function measuring the probability of being in a given regime (recession or expansion) that depends on the state of the economy. The higher the probability of a regime, the more the behavior of the economy will reflect conditions in that regime rather than in the alternative regime. We calibrate this function in such a way that the implied frequency of the economy being in recession matches the frequency of U.S. recessions as determined by the NBER. To measure the state of the economy, we use a coincident business cycle indicator, the deviation of the centered seven-quarter moving average of the real GDP growth rate from the average growth rate.

The same paper makes another methodological contribution by using professional forecasts to purge predictable variation from the time series of government spending in constructing measures of unexpected changes in fiscal policy. This adjustment is potentially important because many changes in fiscal variables are predictable and hence potentially anticipated by economic agents. Treating such anticipated changes in fiscal variables as fiscal shocks can attenuate estimates of fiscal multipliers.⁴ To construct a long time series of fiscal forecasts at a quarterly frequency, we splice fore-

casts for fiscal variables using the Survey of Professional Forecasters and “Greenbook” projections made by the staff of the Federal Reserve Board.

Our STVAR estimates suggest that multipliers are considerably larger in recessions than in expansions. Although exact magnitudes depend on the horizon and specifics of how multipliers are defined, we conclude that a dollar increase in government spending raises output by about \$1.50 to \$2 in recessions and by only about \$0.50 in expansions. The figure on the next page shows a time series of multipliers over our post-war sample period based on these estimates, with the variation over time reflecting changes in the state of the economy. Controlling for real-time expectations about fiscal variables generally increases the difference in the size of the government spending multiplier across the regimes. Note that this variation in the multiplier applies broadly to recessions vs. expansions in the sense that our results are not driven by the recent U.S. experience of very low short-term interest rates and a binding zero lower bound. Our estimates suggest that fiscal policy could be a powerful tool to stabilize output and thus reduce adverse effects of business cycles.

In subsequent work, we investigate whether the government spending multiplier varies over the business cycle in other countries as well.⁵ Introducing a multi-country dimension increases the overall number of episodes of economies which exhibit slack or which are in recession, possibly allowing us to obtain sharper estimates of fiscal multipliers. However, the international dimension poses several statistical and computational challenges for STVARs, such as correlation of error terms across countries. To address these challenges, we introduce the method of direct pro-



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Auerbach previously has served as editor of the *Journal of Economic Perspectives* and *American Economic Journal: Economic Policy* and as vice president of the American Economic Association. He is currently president of the National Tax Association. He is also a Fellow of the Econometric Society and the American Academy of Arts and Sciences. A New York native, Auerbach received his B.A. from Yale University. He lives in Berkeley with his wife, Gay, with whom he enjoys hiking and (when there is snow) skiing around California.

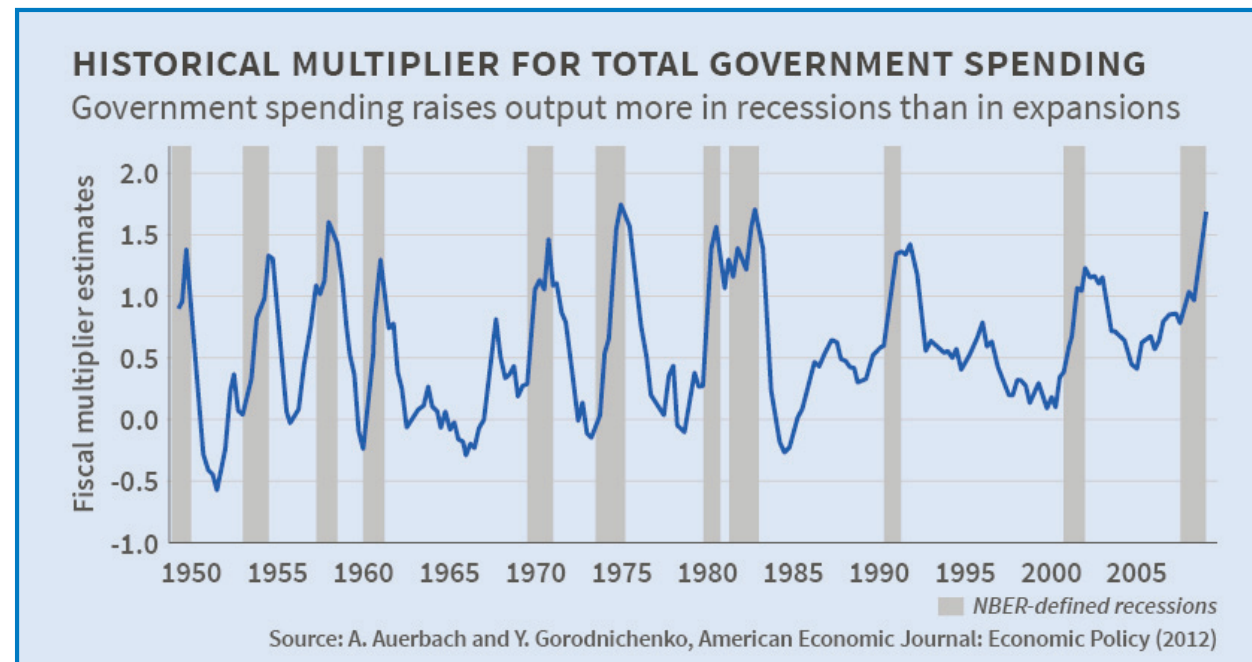
jections to estimate average or state-dependent multipliers.⁶ Specifically, this approach involves estimating a series of linear regressions for different horizons, thus making statistical analysis straightforward and robust. Using direct projections also allows us to radically increase the number of variables we can study because this framework is a single-equation approach and thus avoids the “curse of dimensionality” plaguing simultaneous estimation in VARs. Furthermore, this approach can easily accommodate fiscal shocks that are orthogonal to the fiscal predictions of professional forecasters.

Using data for OECD countries and our approach of direct projections, we find that shocks to government spending—identified as innovations in government spending purged of fiscal forecasts made by the OECD staff—lead to stronger output responses in recessions than in expansions. We see the same pattern when regimes are defined based on current output levels rather than growth rates (i.e., boom vs. slack rather than expansion vs. recession). We also use the direct projections framework to examine responses of other macroeconomic variables—such as investment, consumption, employment, wages, and prices—to government spending shocks as a function of the state of the business cycle. By and large, the estimated responses are consistent with the old-style Keynesian view: Excess capacity is associated with larger government spending multipliers and smaller effects on prices.

The focus of this exercise was to examine domestic multipliers: If Germany has a government spending shock, how much does the German economy respond to the shock? However, the world economy is increasingly integrated and a shock in one country can spill over to other countries. To the extent that fiscal spillovers are strong, there may be added benefits and costs to one country's adoption of fiscal stimulus. Countries with strong fiscal capacity, like Germany, can help stimulate the economies of countries with weak fiscal capacity, like Greece, but spillovers from abroad also may upset economic stability.

Despite the potential importance of fis-

cal spillovers, there has been little work on the subject.⁷ In a paper based on the same data set as the previous one, we make progress in several dimensions.⁸ First, our sample of OECD countries is larger and more diverse than those used in previous research. Second, we again remove predictable innovations in government spending using professional forecasts. Once each country's fiscal shocks are calculated, we compute external shocks for each country as a weighted average of other countries' domestic shocks, using weights based on bilateral trade volumes. Third, we use the method of direct projections to allow the size of fiscal spillovers to depend on the state of the economy, in particular recession vs. expansion. Our



estimates suggest that fiscal spillovers are comparable in magnitude to domestic multipliers and tend to be lower in expansions than in recessions. These results suggest that coordination of fiscal policies may be more valuable than previously thought.

While this recent work finds fiscal policy to be a potentially powerful tool to stabilize an economy, estimation of state-dependent, or even average, fiscal multipliers sometimes presents researchers with challenges that are difficult to address using conventional data. Specifically, given the “Great Moderation” that preceded the Great Recession, the recent

macroeconomic past is characterized by relatively small business-cycle fluctuations. This data challenge is not insurmountable, however. First, as already noted, one can use variations in economic strength throughout the postwar period, not simply focusing on episodes of recession, to estimate state-varying fiscal multipliers. Second, one can focus on countries with more postwar volatility, or use longer time series with more frequent or volatile recessions, to obtain more variation in the data. We take the first of these approaches in looking at the experience in Japan, which has had a long period of economic weakness and thus potentially allows us to estimate more precisely multipliers in an economic downturn.⁹ One can also con-

struct historical U.S. time series of output, taxes and government spending as far back as 1890.¹⁰ While using longer time series can be helpful, it also raises issues that may be hard to address with available data. These include structural transformations that coincide with the changing role of the government in the economy, the evolution of the tax system, and identification coming from wars that are special periods for the economy. Another approach is to use local variation in government spending and economic conditions.¹¹ The key disadvantage of this approach is that one estimates a local rather than an aggre-

gate multiplier; the mapping from estimated responses at the local level to macroeconomic responses is not straightforward, as some elements of local responses may overstate national responses—because of factors such as national supply constraints—while others may understate them because of effects such as positive regional spillovers.

A promising alternative to longer time series or exploiting local variation is the use of high-frequency data, which can provide many observations even in precisely defined regimes, can sharpen identification of fiscal shocks, and can keep the level of the analysis at an aggregate level.¹² To illustrate the power of this approach, our most recent work involves the construction of daily series of spending and spending commitments by the U.S. Department of Defense (DoD).¹³ It is highly unlikely that changes in DoD spending or DoD commitments on a given day are driven by developments in the economy. As a result, the commonly used minimum delay restriction—that is, government spending cannot react to changes in the economy within a narrow time window—is likely to be satisfied. Hence, the chain of causality from changes in government spending to changes in macroeconomic outcomes is even more credible than in analysis based on quarterly data. Using high-frequency data on fiscal variables can also radically improve our ability to estimate when economic agents learn about changes in fiscal variables and when economic variables react to changes in fiscal variables.

Of course, analysis at a daily frequency rules out analysis of responses of slow-moving variables like GDP or the unemployment rate, leading us to focus on financial indicators such as exchange rates and interest rates that can respond immediately.¹⁴

Using our daily series of defense spending announcements, we are able to resolve an exchange-rate puzzle in the previous literature.¹⁵ With fiscal shocks identified from actual spending data at a quarterly frequency, the U.S. dollar depreciates after a positive government-spending shock, even though the overwhelming majority of macroeco-



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Gorodnichenko is an applied macroeconomist. A significant part of his research has been about monetary policy (effects, optimal design, inflation targeting), fiscal policy (countercyclical policy, government spending multipliers), taxation (tax evasion, inequality), economic growth (long-run determinants, globalization, innovation, financial frictions), pricing, and business cycles. He serves on many editorial boards, including *The Review of Economics and Statistics* and *VoxUkraine* (<http://voxukraine.org/>). He has written over 40 papers since he joined UC Berkeley in 2007; his work has been published in leading economics journals and cited in policy discussions and media. He has received numerous awards for his research and advising.

A native of Ukraine, Gorodnichenko received his B.A. and M.A. at EERC/Kyiv-Mohyla Academy (Kyiv, Ukraine) and his Ph.D. at the University of Michigan. He lives in Oakland, California, with his wife—also a professor at UC Berkeley—and son.



monic models predict an appreciation. We demonstrate that this puzzle evaporates when one considers responses at a higher frequency: On average, on days when the DoD announces more spending, the U.S. dollar appreciates significantly. Thus, the standard macroeconomic framework is suitable for analyses of the international effects of fiscal shocks.

During the Great Recession, countries around the world adopted expansionary fiscal policies aimed at counteracting the large negative shocks to their economies. These actions occurred in spite of skepticism among many economists about the potential of fiscal policy to stimulate economic activity. The results of our and related work suggest that fiscal policy activism may indeed be effective at stimulating output during a deep recession, and that the potential negative side effects of fiscal stimulus, such as increased inflation, are also less likely in these circumstances. These empirical results call into question the results from the new Keynesian literature, which suggests that shocks to government spending, even when increasing output, will crowd out private economic activity. While there has been some recent progress providing a rationale for large multipliers when economies confront a binding zero lower bound on interest rates, our findings apply to more general recessionary conditions, and thus present a challenge for the development of new models that, like the simple traditional Keynesian model, can encompass positive fiscal multipliers for private activity.

¹ O. Blanchard and R. Perotti, “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output,” *Quarterly Journal of Economics*, 117(4), 2002, pp. 1329–68.

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² L. Christiano, M. Eichenbaum, and

S. Rebelo, “When Is the Government Spending Multiplier Large?” *Journal of Political Economy*, 119(1), 2011, pp. 78–121; and M. Woodford, “Simple Analytics of the Government Expenditure Multiplier,” *American Economic Journal: Macroeconomics*, 3(1), 2011, pp. 1–35.

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³ A. Auerbach and Y. Gorodnichenko, “Measuring the Output Responses to Fiscal Policy,” *American Economic Journal: Economic Policy*, 4(2), 2012, pp. 1–27.

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⁴ See the discussion in V. Ramey, “Identifying Government Spending Shocks: It’s all in the Timing,” *The Quarterly Journal of Economics*, 126(1), 2011, pp. 1–50.

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⁵ A. Auerbach and Y. Gorodnichenko, “Fiscal Multipliers in Recession and Expansion,” in A. Alesina and F. Giavazzi, eds., *Fiscal Policy after the Financial Crisis*, Chicago, Illinois: University of Chicago Press, 2013, pp. 63–98.

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⁶ Ö. Jordà, “Estimation and Inference of Impulse Responses by Local Projections,” *American Economic Review*, 95(1), 2005, pp. 161–82.

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⁷ For example, see S. Hebous and T. Zimmermann, “Estimating the Effects of Coordinated Fiscal Actions in the Euro Area,” *CESIFO Working Paper No. 3912*, August 2012.

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⁸ A. Auerbach and Y. Gorodnichenko, “Output Spillovers from Fiscal Policy,” *American Economic Review*, 103(3), 2013, pp. 141–6.

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⁹ A. Auerbach and Y. Gorodnichenko, “Fiscal Multipliers in Japan,” *NBER Working Paper No. 19911*, February 2014.

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¹⁰ V. Ramey and S. Zubairy,

“Government Spending Multipliers in Good Times and in Bad: Evidence from U.S. Historical Data,” *NBER Working Paper No. 20719*, November 2014.

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¹¹ For example, see E. Nakamura and J. Steinsson, “Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions,” *American Economic Review*, 104(3), 2014, pp. 753–92, and G. Chodorow-Reich, L. Feiveson, Z. Liscow, and W. Woolston, “Does State Fiscal Relief During Recessions Increase Employment? Evidence from the American Recovery and Reinvestment Act.” *American Economic Journal: Economic Policy*, 4(3), 2012, pp. 118–45.

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¹² For example, we can differentiate between i) a period of binding ZLB in a recession and ii) a period of binding ZLB in an expansion. For the United States, we have enough daily observations to precisely estimate responses of macroeconomic variables to government spending shocks during these regimes.

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¹³ A. Auerbach and Y. Gorodnichenko, “Effects of Fiscal Shocks in a Globalized World,” *NBER Working Paper No. 21100*, April 2015.

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¹⁴ Another source of high-frequency identification of government spending shocks could be the stock market. For example, Jonas Fisher and Ryan Peters use quarterly stock price movements of defense corporations to identify fiscal shocks. In principle, that can be done at a daily frequency. See J. Fisher and R. Peters, “Using Stock Returns to Identify Government Spending Shocks,” *Economic Journal*, 120(544), 2010, pp. 414–26.

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¹⁵ T. Monacelli and R. Perotti, “Fiscal Policy, the Real Exchange Rate, and Traded Goods,” *Economic Journal*, 120(544), 2010, pp. 437–61.

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NBER News

Fryer Receives John Bates Clark Medal

NBER Research Associate Roland G. Fryer, Jr. received the American Economic Association’s John Bates Clark Medal for 2015. This annual award recognizes the American economist under the age of 40 who has made the most substantial contribution to economic thought and knowledge. This year’s prize citation highlights Fryer’s “innovative and creative research contributions [that] have deepened our understanding of the sources, magnitude, and persistence of U.S. racial inequality,” and his evaluations of various policies that are designed

to improve economic opportunities for disadvantaged children. It calls Fryer “the leading economist working on the economics of race and education.”

Fryer is the Henry Lee Professor of Economics at Harvard University and a research associate in the NBER Labor Studies and Education programs. He received his B.A. from the University of Texas at Arlington in 1998 and his Ph.D. from the Pennsylvania State University in 2002.

Other current NBER research associates who have received the Clark

Medal include Daniel McFadden, Martin Feldstein, Joseph Stiglitz, James Heckman, Jerry Hausman, Sanford Grossman, Paul Krugman, Lawrence Summers, David Card, Kevin Murphy, Andrei Shleifer, Steven Levitt, Daron Acemoglu, Susan Athey, Emmanuel Saez, Esther Duflo, Jonathan Levin, Amy Finkelstein, Raj Chetty, and Matthew Gentzkow. Other NBER associates who won the Clark Medal are Franklin Fisher, now an emeritus member of the Board of Directors, and the late research associates Gary Becker, Milton Friedman, and Zvi Griliches.

Conferences

Retirement & Health Benefits in the Public Sector

An NBER conference, “Retirement & Health Benefits in the Public Sector,” took place in Cambridge on April 10–11. Research Associates Robert L. Clark of North Carolina State University and Joseph P. Newhouse of Harvard University organized the meeting. These papers were discussed:

- **Jeffrey R. Brown**, University of Illinois at Urbana-Champaign and NBER, and **George Pennacchi**, University of Illinois at Urbana-Champaign, “Discounting Pension Liabilities: Funding Versus Value” (NBER Working Paper No. [21276](#))
- **Jeffrey Clemens**, University of California, San Diego, and NBER, and **David M. Cutler**, Harvard University and NBER, “Impact of ACA on State and Local Health Plans”
- **Jeremy D. Goldhaber-Fiebert**, **David M. Studdert**, and **Monica S. Farid**, Stanford University, and **Jay Bhattacharya**, Stanford University and NBER, “Will Divestment from Employment-Based Health Insurance Save Employers Money? The Case of State and Local Governments” (NBER Working Paper No. [20222](#))
- **Alan R. Weil**, Project Hope, “State Health Plans and Their Impact on State Budgets”
- **Robert L. Clark** and **Emma Hanson**, North Carolina State University; and **Olivia S. Mitchell**, University of Pennsylvania and NBER, “Lessons for Public Pensions from Utah’s Move to Pension Choice”
- **Alicia Munnell**, **Jean-Pierre Aubry**, and **Mark Cafarelli**, Boston College, “COLA Cuts in State-Local Pensions”



- **Robert L. Clark** and **Emma Hanson**, **Melinda S. Morrill**, and **Aditi Pathak**, North Carolina State University, “Supplemental Plan Offerings and Retirement Saving Choices: An Analysis of North Carolina School Districts”
- **Jeffrey R. Brown**, and **Richard Dye**, University of Illinois at Chicago, “Illinois Pensions in a Fiscal Context: A (Basket) Case Study” (NBER Working Paper No. [21293](#))

Summaries of these papers are at <http://www.nber.org/confer/2015/RHBs15/summary.html>

Economics of Culture and Institutions

An NBER conference, “Economics of Culture and Institutions,” took place in Cambridge on April 11. Research Associate Alberto Bisin of New York University and Faculty Research Fellow Paola Giuliano of the University of California, Los Angeles, organized the meeting. These papers were discussed:

- **Oded Galor**, Brown University and NBER, and **Ömer Özak**, Southern Methodist University, “The Agricultural Origins of Time Preference” (NBER Working Paper No. [20438](#))
- **Daron Acemoglu**, MIT and NBER, and **Matthew Jackson**, Stanford University, “Social Norms and the Enforcement of Laws” (NBER Working Paper No. [20369](#))
- **Daniel Chen**, ETH Zürich, and **Susan Yeh**, George Mason University, “How Do Rights Revolutions Occur? Free Speech and the First Amendment”
- **Yihui Pan**, University of Utah; **Stephan Siegel**, University of Washington; and **Tracy Yue Wang**, University of Minnesota, “The Cultural Origin of Preferences: CEO Cultural Heritage and Corporate Investment”
- **Eugenio Proto** and **Andis Sofianos**, University of Warwick, and **Aldo Rustichini**, University of Minnesota, “Higher Intelligence Groups Have Higher Cooperation Rates in the Repeated Prisoner’s Dilemma”
- **Giovanni Mastrobuoni**, University of Essex, and **Daniele Terlizze**, Bank of Italy, “Rehabilitating Rehabilitation: Prison Conditions and Recidivism”
- **Jeffrey Butler**, Einaudi Institute for Economics and Finance (Rome); **Pierluigi Conzo**, University of Turin; and **Martin A. Leroch**, University of Mainz, “Social Identity and Punishment”

Summaries of these papers are at <http://www.nber.org/confer/2015/CIs15/summary.html>

Economics of Field Experiments

An NBER conference, “Economics of Field Experiments,” took place in Cambridge on April 10–11. Research Associates Abhijit Banerjee and Esther Duflo of MIT organized the meeting. These papers were discussed:

- **Judith Gueron**, MDRC, “The Politics and Practice of Social Experiments: Seeds of a Revolution”
- **Rachel Glennerster**, MIT, “The Practicalities of Running Randomized Evaluations: Partnerships, Measurement, Ethics, and Transparency”
- **Abhijit Banerjee**; **Sylvain Chassang**, Princeton University; and **Erik Snowberg**, California Institute of Technology and NBER, “Decision Theoretic Approaches to Experiment Design and External Validity”
- **Duncan Simester**, MIT, “Field Experiments in Marketing”
- **Frederico Finan**, University of California, Berkeley, and NBER; **Benjamin A. Olken**, MIT and NBER; **Rohini Pande**, Harvard University and NBER, “Government Workers in Developing Countries”
- **Alan S. Gerber**, Yale University and NBER, and **Donald Green**, Columbia University, “Field Experiments on Voter Mobilization: An Overview of a Burgeoning Literature”



- **Pascaline Dupas**, Stanford University and NBER, and **Edward Miguel**, University of California, Berkeley, and NBER, “Health, Health Care, and Health Behavior in Developing Countries”
- **Karthik Muralidharan**, University of California, San Diego, and NBER, “Field Experiments in Education in Developing Countries”
- **Roland G. Fryer, Jr.**, Harvard University and NBER, “Education in Developed Countries”
- **Alain de Janvry** and **Elisabeth Sadoulet**, University of California, Berkeley, and **Tavneet Suri**, MIT and NBER, “Agriculture in Developing Economies”
- **Jesse Rothstein**, University of California, Berkeley, and NBER, and **Till M. von Wachter**, University of California, Los Angeles, and NBER, “Social Experiments in the Labor Market”
- **Uri Gneezy**, University of California, San Diego, and **Alex Imas**, Carnegie Mellon University, “Lab in the Field: Measuring Preferences in the Wild”
- **Elizabeth Levy Paluck** and **Eldar Shafir**, Princeton University, “The Psychology of Construal in the Design of Field Experiments”
- **Marianne Bertrand**, University of Chicago and NBER, and **Esther Duflo**, “Field Experiments on Discrimination”
- **Rema Hanna**, Harvard University and NBER, and **Dean Karlan**, Yale University and NBER, “Designing Anti-Poverty Programs: Experimental Lessons”
- **William Congdon**, ideas42; **Jeffrey R. Kling**, Congressional Budget Office and NBER; **Jens Ludwig**, University of Chicago and NBER; and **Sendhil Mullainathan**, Harvard University and NBER, “Social Policy: Mechanism Experiments and Policy Evaluations”

Summaries of these papers are at <http://www.nber.org/confer/2015/FEs15/summary.html>

Innovation Policy and the Economy

The NBER’s 16th annual Innovation Policy and the Economy conference took place in Washington on April 14. The conference was organized by Research Associates Scott Stern of MIT and Josh Lerner of Harvard University. These papers were discussed:

- **Karim Lakhani**, Harvard University, and **Kevin J. Boudreau**, London Business School, “Innovation Field Experiments: Empirical Insights and Policy Implications from Organizing Innovation Contests”
- **Yael Hochberg**, Rice University and NBER, “Accelerating Entrepreneurs and Ecosystems: The Seed Accelerator Model”
- **Ramana Nanda** and **Matthew Rhodes-Kropf**, Harvard University and NBER, “Financing Entrepreneurial Experimentation” (NBER Working Paper No. [21278](#))
- **Heidi L. Williams**, MIT and NBER, “Intellectual Property Rights and Innovation: Evidence from Health Care Markets” (NBER Working Paper No. [21246](#))
- **Fiona Scott Morton**, Yale University and NBER, and **Carl Shapiro**, University of California, Berkeley, and NBER, “Patent Assertions: Are We Any Closer to the Aligning Reward to Contribution?”

Summaries of these papers are at <http://www.nber.org/confer/2015/IPEs15/summary.html>

30th Macroeconomics Annual Conference

The NBER’s 30th Annual Conference on Macroeconomics, organized by Research Associates Martin Eichenbaum of Northwestern University and Jonathan Parker of MIT, took place in Cambridge on April 17–18. Theses papers were discussed:

- **Nicola Gennaioli**, Bocconi University; **Yueran Ma**, Harvard University; and **Andrei Shleifer**, Harvard University and NBER, “Expectations and Investment” (NBER Working Paper No. [21260](#))
- **Chun Chang**, Shanghai Jiao Tong University; **Kaiji Chen**, Emory University; **Daniel F. Waggoner**, Federal Reserve Bank of Atlanta; and **Tao Zha**, Emory University and NBER, “Trends and Cycles in China’s Macroeconomy” (NBER Working Paper No. [21244](#))
- **Hanming Fang**, University of Pennsylvania and NBER; **Quanlin Gu** and **Li-An Zhou**, Peking University; and **Wei Xiong**, Princeton University and NBER, “Demystifying the Chinese Housing Boom” (NBER Working Paper No. [21112](#))
- **Daron Acemoglu**, MIT and NBER; **Ufuk Akcigit**, University of Pennsylvania and NBER; and **William Kerr**, Harvard University and NBER, “Networks and the Macroeconomy: An Empirical Exploration”
- **Regis Barnichon**, CREI (Barcelona), and **Andrew Figura**, Federal Reserve Board, “Declining Desire to Work and Downward Trends in Unemployment and Participation” (NBER Working Paper No. [21252](#))
- **Cristina Arellano**, Federal Reserve Bank of Minneapolis and NBER; **Andrew Atkeson**, University of California, Los Angeles, and NBER; and **Mark L. J. Wright**, Federal Reserve Bank of Chicago and NBER, “External and Public Debt Crises”

Summaries of these papers are at <http://www.nber.org/confer/2015/Macro15/summary.html> and full texts of the papers and video presentations are at http://www.nber.org/macroannualconference/macroannual_2015.html

Conference on the Economics of Aging

The NBER’s “Conference on the Economics of Aging” took place in Carefree, Arizona on April 30 and May 1. Program Director David A. Wise of Harvard University organized the meeting. These papers were discussed:

- **James M. Poterba**, MIT and NBER; **Steven F. Venti**, Dartmouth College and NBER; and **David A. Wise**, “Assets at End of Life and When First Observed: Looking Backwards”
- **Michael Chernew** and **David M. Cutler**, Harvard University and NBER; **Kaushik Ghosh**, NBER; and **Mary Beth Landrum**, Harvard University, “Understanding the Improvement in Disability Free Life Expectancy in the U.S. Elderly Population”
- **John Beshears**, Harvard University and NBER; **James J. Choi**, Yale University and NBER; **Joshua Hurwitz**, NBER; and **David Laibson** and **Brigitte C. Madrian**, Harvard University and NBER, “Liquidity in Retirement Savings Systems: An International Comparison” (NBER Working Paper No. [21168](#))
- **Philip Armour** and **Susann Rohwedder**, RAND Corporation, and **Michael D. Hurd**, RAND Corporation and NBER, “Trends in Pension Cash-Out at Job Change and the Effects on Long-Term Outcomes”
- **Florian Heiss**, University of Düsseldorf; **Daniel L. McFadden**, University of California, Berkeley, and NBER; **Joachim Winter** and **Amelie C. Wuppermann**, University of Munich; and **Yaoyao Zhu**, University of Southern California, “Three Measures of Disease Prevalence: The Good, the Bad, and the Ugly”
- **Anne Case** and **Angus Deaton**, Princeton University and NBER, “Suicide, Age, and Wellbeing: an Empirical Investigation” (NBER Working Paper No. [21279](#))
- **Raquel Fonseca**, Université du Québec à Montréal; **Arie Kapteyn**, University of Southern California and NBER; and **Jinkook Lee** and **Gema Zamarro**, University of Southern California, “Does Retirement Make You Happy? A Simultaneous Equations Approach”

- **Amitabh Chandra**, Harvard University and NBER, and **Jon Skinner**, Dartmouth College and NBER, “Racial Disparities in Hospital Quality”
- **Jay Bhattacharya** and **Thomas E. MaCurdy**, Stanford University and NBER, “Challenges in Controlling Medicare Spending: Treating Highly Complex Patients”
- **James Banks**, University of Manchester; **Richard Blundell**, University College London; **Zoë Oldfield**, Institute for Fiscal Studies (London); and **James P. Smith**, RAND Corporation, “House Price Volatility and the Housing Ladder” (NBER Working Paper No. [21255](#))

Summaries of these papers are at <http://www.nber.org/confer/2015/AGs15/summary.html>

Multiple Equilibria and Financial Crises

An NBER conference, supported by New York University, the Federal Reserve Bank of San Francisco, the Barry Family Trust, and the University of California, Los Angeles, titled “Multiple Equilibria and Financial Crises” took place in San Francisco on May 14–15. Research Associates Roger Farmer of University of California, Los Angeles, and Jess Benhabib of New York University organized the meeting. These papers were discussed:

- **Romain Rancière**, Paris School of Economics, and **Aaron Tornell**, University of California, Los Angeles, “Financial Liberalization, Debt Mismatch, Allocative Efficiency, and Growth”
- **Edouard Schaal**, New York University, and **Mathieu Taschereau-Dumouchel**, University of Pennsylvania, “Coordinating Business Cycles”
- **Ricardo Lagos**, New York University and NBER, and **Shengxing Zhang**, London School of Economics, “Monetary Exchange in Over-the-Counter Markets: A Theory of Speculative Bubbles, the Fed Model, and Self-Fulfilling Liquidity Crises”
- **Mikhail Golosov**, Princeton University and NBER, and **Guido Menzio**, University of Pennsylvania and NBER, “Agency Business Cycle”
- **Dmitry Plotnikov**, International Monetary Fund, “Hysteresis in Unemployment and Jobless Recoveries”
- **Roger Farmer**, “Global Sunspots and Asset Prices in a Monetary Economy” (NBER Working Paper No. [20831](#))
- **Assaf Patir**, Hebrew University of Jerusalem, “Synchronization and Bias in a Simple Macroeconomic Model”
- **Gianluca Benigno**, London School of Economics, and **Luca Fornaro**, CREI (Barcelona), “Stagnation Traps”
- **Guillaume Rocheteau**, University of California, Irvine; **Randall Wright**, University of Wisconsin–Madison and NBER; and **Sylvia Xiaolin Xiao**, University of Wisconsin–Madison, “Open Market Operations”
- **Feng Dong**, Shanghai Jiao Tong University; **Pengfei Wang**, Hong Kong University of Science and Technology; and **Yi Wen**, Federal Reserve Bank of St. Louis, “Credit Search and Credit Cycles”
- **Russell Cooper**, Pennsylvania State University and NBER, and **Kalin Nikolov**, European Central Bank, “Government Debt and Banking Fragility: The Spreading of Strategic Uncertainty” (NBER Working Paper No. [19278](#))
- **Guido Lorenzoni**, Northwestern University and NBER, and **Iván Werning**, MIT and NBER, “Slow Moving Debt Crises” (NBER Working Paper No. [19228](#))

Summaries of these papers are at <http://www.nber.org/confer/2015/MEFCs15/summary.html>

The Economics of Commodity Markets

The NBER held its annual Universities Research Conference in Cambridge on May 15–16. Research Associates Kenneth Singleton of Stanford University and Wei Xiong of Princeton University organized the meeting on the topic “The Economics of Commodity Markets.” These papers were discussed:

- **Harrison Hong**, Princeton University and NBER; **Áureo de Paula**, University College London; and **Vishal Singh**, New York University, “Hoard Behavior and Commodity Bubbles” (NBER Working Paper No. [20974](#))
- **Sylvain Leduc**, Federal Reserve Bank of San Francisco; **Kevin Moran**, Université Laval (Quebec City); and **Robert Vigfusson**, Federal Reserve Board, “A Decade of Learning: The Role of Beliefs in Oil Futures Markets During the 2000s”
- **Itay Goldstein**, University of Pennsylvania, and **Liyan Yang**, University of Toronto, “Commodity Financialization: Risk Sharing and Price Discovery in Commodity Futures Markets”
- **Erik P. Gilje**, University of Pennsylvania; **Robert C. Ready**, University of Rochester; and **Nikolai Roussanov**, University of Pennsylvania and NBER, “Fracking, Drilling, and Asset Pricing: Estimating the Economic Benefits of the Shale Revolution”
- **Rabah Arezki**, International Monetary Fund; **Valerie A. Ramey**, University of California, San Diego, and NBER; and **Liugang Sheng**, Chinese University of Hong Kong, “News Shocks in Open Economies: Evidence from Giant Oil Discoveries” (NBER Working Paper No. [20857](#))
- **Darien Huang**, University of Pennsylvania, “Gold, Platinum, and Expected Stock Returns”
- **Akshaya Jha**, Stanford University, and **Frank A. Wolak**, Stanford University and NBER, “Testing for Market Efficiency with Transactions Costs: An Application to Convergence Bidding in Wholesale Electricity Markets”
- **Thomas Covert**, University of Chicago, “Experiential and Social Learning in Firms: The Case of Hydraulic Fracturing in the Bakken Shale”
- **Davidson Heath**, University of Southern California, “Unspanned Macroeconomic Risks in Oil Futures”
- **Ke Tang**, Tsinghua University, and **Haoxiang Zhu**, MIT and NBER, “Commodities as Collateral”

Summaries of these papers are at <http://www.nber.org/confer/2015/URCs15/summary.html>

The 17th Annual CCER-NBER-Tsinghua University Conference on China and the World Economy

The seventeenth annual CCER-NBER-Tsinghua University Conference on China and the World Economy took place at the China Center for Economic Research (CCER) of Beijing University on June 16–19. The conference was jointly organized by Shang-Jin Wei of Columbia University and the Asian Development Bank (on leave from NBER), Yang Yao of CCER, and Chong-en Bai of Tsinghua University. These papers were discussed:

Development and Growth

- **Jinfeng Luo** and **Yi Wen**, Tsinghua University, “Institutions Do Not Rule: Reassessing the Driving Forces of Economic Development”
- **Shang-Jin Wei**, “Inferring the Unofficial Income of the Officials: With an Application to China”



Education

- **Eric A. Hanushek**, Stanford University and NBER, “Minimal Skills, Knowledge Capital, and Economic Growth”
- **Binzhen Wu** and **Xiaohan Zhong**, Tsinghua University, “Mismatch in China’s College Admission”

Energy and the Environment

- **James B. Bushnell**, University of California, Davis, and NBER, “Emission Uncertainty and Cap and Trade Market Design”
- **Mar Reguant**, Stanford University and NBER, “Wind Uncertainty in Electricity Markets: Practical Challenges”
- **Hua Wang**, The World Bank, “Economic Cost of Environmental Pollution in China”
- **Min Wang**, CCER, and **Jinhua Zhao**, Michigan State University, “Are Renewable Energy Policies Climate Friendly? The Role of Capacity Constraints and Market Power”

Industrial Organization and Regional Economics

- **Joseph Gyourko**, University of Pennsylvania and NBER, “Real Estate Market in China”
- **Hanming Fang**, University of Pennsylvania and NBER; **Quanlin Gu** and **Li-An Zhou**, Peking University; and **Wei Xiong**, Princeton University and NBER, “Demystifying the Chinese Housing Boom” (NBER Working Paper No. [21112](#))
- **Xiaobo Zhang**, CCER, “E-commerce Development in China”

International Finance

- **Michael B. Devereux**, University of British Columbia and NBER, and **Wei Dong** and **Ben Tomlin**, Bank of Canada, “Exchange Rate Pass Through, Currency of Invoicing, and Market Share”
- **Jianguo Xu**, CCER, “Capital Account Liberalization and Economic Growth Revisited: Different Effects of Inflow and Outflow Liberalization”

Labor Economics

- **Wouter Dessein** and **Tano Santos**, Columbia University, “Managerial Style and Attention”
- **Wei Huang**, Harvard University; **Xiaoyan Lei**, CCER; and **Ang Sun**, Renmin University of China, “The Great Expectations: Impact of One-Child Policy on Education of Girls”
- **Gordon Liu**, CCER, “Fertility Transition in China: Does the One-Child Policy Matter?”
- **Kevin Milligan**, University of British Columbia and NBER, “Work Capacity of Older Workers: Canada and the United States”
- **Kathryn L. Shaw**, Stanford University and NBER, “The Effectiveness of Human Resources Management Practices: Evidence from Insider Econometrics”
- **Till M. von Wachter**, University of California, Los Angeles, and NBER, “U.S. and Chinese Trends in Employment and Labor Force Participation”
- **Dandan Zhang**, CCER, “Stealing Your Way to My Heart: China’s One Child Policy, Marriage Markets, and Crime”

Public Finance

- **James M. Poterba**, MIT and NBER, “Drawdown Patterns in Tax-Favored Retirement Saving Accounts”
- **Fan Zhang**, CCER, “The Credit Risk of China’s Local Government Debt”

Trade

- **Meixin Guo** and **Lin Lu**, Tsinghua University, “Trade Costs and Income Inequality in China”
- **Kalina Manova**, Stanford University and NBER, “China’s International Trade: Finance, Quality and Global Value Chains”
- **Miaojie Yu**, CCER, “Distribution Outward FDI and Firm Heterogeneity: Evidence from Chinese Firms”

East Asian Seminar on Economics

The NBER, the Australian National University, the Peking University China Center for Economic Research, the Chung-Hua Institution for Economic Research (Taipei), the Hong Kong University of Science and Technology, the Korea Development Institute, the National University of Singapore, the Tokyo Center for Economic Research, and Tsinghua University jointly sponsored the NBER’s 26th Annual East Asian Seminar on Economics. It took place in San Francisco on June 18–19. Research Associates Takatoshi Ito of Columbia University and Andrew K. Rose of the University of California, Berkeley, organized the conference, which focused on “Financial Stability.” These papers were discussed:

- **Òscar Jordà**, Federal Reserve Bank of San Francisco; **Moritz Schularick**, University of Bonn; and **Alan M. Taylor**, University of California, Davis, and NBER, “Leveraged Bubbles”
- **Sumit Agarwal**, **Jessica Pan**, and **Wenlan Qian**, National University of Singapore, “Age of Decision: Pension Savings Withdrawal and Consumption and Debt Response”
- **Douglas W. Diamond** and **Anil K. Kashyap**, University of Chicago and NBER, “Liquidity Requirements, Liquidity Choice, and Financial Stability”
- **Frederic Lambert** and **Kenichi Ueda**, International Monetary Fund, “The Effects of Unconventional Monetary Policies on Bank Soundness”
- **Woon Gyu Choi**, Bank of Korea, and **David Cook**, Hong Kong University of Science and Technology, “Policy Conflicts and Inflation Targeting: The Role of Credit Markets”
- **Hao Wang** and **Hao Zhou**, Tsinghua University; **Honglin Wang**, Hong Kong Institute for Monetary Research; and **Lisheng Wang**, Chinese University of Hong Kong, “Shadow Banking: China’s Dual-Track Interest Rate Liberalization”
- **John D. Burger**, Loyola University Maryland; **Rajeswari Sengupta**, Indira Gandhi Institute of Development Research (Mumbai); **Francis E. Warnock**, University of Virginia and NBER; and **Veronica Cacdac Warnock**, University of Virginia, “U.S. Investment in Global Bonds: As the Fed Pushes, Some EMEs Pull” (NBER Working Paper No. [20571](#))
- **Jens Christensen**, **Jose Lopez**, and **Glenn Rudebusch**, Federal Reserve Bank of San Francisco, “A Probability-Based Stress Test of Federal Reserve Assets and Income”
- **Tim Robinson**, University of Melbourne, and **Fang Yao**, Reserve Bank of New Zealand, “Loan-to-Value Ratio Policy and Business Cycles”
- **Andrés Fernández**, Inter-American Development Bank; **Alessandro Rebucci**, Johns Hopkins University; and **Martín Uribe**, Columbia University and NBER, “Are Capital Controls Countercyclical?”
- **Jiseob Kim**, Korea Development Institute, “How Loan Modifications Influence the Prevalence of Mortgage Defaults”
- **Chung-Hua Shen**, National Taiwan University; **Hao Fang**, Hwa Hsia University of Technology (New Taipei City); and **Yen-Hsien Lee**, Chung Yuan Christian University (Taoyuan City), “How Early of the Early Warning Signal in Banking Crisis? The Three Booms, Credit, Housing, and Capital, Cases”

Summaries of these papers are at <http://www.nber.org/confer/2015/EASE15/summary.htm>

Program and Working Group Meetings

Productivity, Innovation, and Entrepreneurship

The NBER’s Productivity, Innovation, and Entrepreneurship Program, co-directed by Nicholas Bloom of Stanford University and Josh Lerner of Harvard University, met in Cambridge on March 20. These papers were discussed:

- **David C. Chan, Jr.**, Stanford University and NBER, “The Efficiency of Slacking Off: Evidence from the Emergency Department” (NBER Working Paper No. [21002](#))
- **Ariel Dora Stern**, Harvard University, “Innovation under Regulatory Uncertainty: Evidence from Medical Technology”
- **Lee G. Branstetter**, Carnegie Mellon University and NBER; **Chirantan Chatterjee**, Indian Institute of Management Bangalore; and **Matthew Higgins**, Georgia Institute of Technology and NBER, “Starving or Fattening the Golden Goose? Generic Entry and the Incentives for Early-Stage Pharmaceutical Innovation” (NBER Working Paper No. [20532](#))
- **Prithwiraj Choudhury** and **Tarun Khanna**, Harvard University, “Ex-Ante Information Provision and Innovation: Natural Experiment of Herbal Patent Prior Art Adoption at the USPTO and EPO”
- **Paul Gompers**, Harvard University and NBER; **Steven N. Kaplan**, University of Chicago and NBER; and **Vladimir Mukharlyamov**, Harvard University, “What Do Private Equity Firms Say They Do?” (NBER Working Paper No. [21133](#))
- **Benjamin Pugsley** and **Ayşegül Şahin**, Federal Reserve Bank of New York, “Grown-Up Business Cycles”
- **Antoine Dechezleprêtre** and **Ralf Martin**, London School of Economics, and **Myra Mohnen**, University College London, “Knowledge Spillovers from Clean and Dirty Technologies”

Summaries of these papers are at <http://www.nber.org/confer/2015/PRs15/summary.html>

International Trade and Investment

The NBER’s Program on International Trade and Investment, directed by Robert Feenstra of the University of California, Davis, met in Cambridge on March 20-21. These papers were discussed:

- **Michael Dickstein**, Stanford University and NBER, and **Eduardo Morales**, Princeton University and NBER, “What do Exporters Know?”
- **William Lincoln**, Johns Hopkins University, and **Andrew McCallum**, Federal Reserve Board, “The Rise of Exporting By U.S. Firms”
- **Thibault Fally**, University of California, Berkeley, and **Russell Hillberry**, The World Bank, “A Coasian Model of International Production Chains”
- **Emily Blanchard**, Dartmouth College, and **William Olney**, Williams College, “Globalization and Human Capital Investment: How Export Composition Drives Educational Attainment”
- **Ryan Monarch**, Federal Reserve Board, “It’s Not You, It’s Me: Breakups in U.S.-China Trade Relationships”
- **Illenin Kondo**, Federal Reserve Board, “Trade Reforms, Foreign Competition, and Labor Market Adjustments in the U.S.”
- **Emily Blanchard**; **Chad Bown**, The World Bank; and **Robert Johnson**, Dartmouth College and NBER, “Global Supply Chains and Trade Policy”
- **Delina Agnosteva** and **Yoto Yotov**, Drexel University, and **James Anderson**, Boston College and NBER, “Intra-National Trade Costs: Assaying Regional Frictions”

Summaries of these papers are at <http://www.nber.org/confer/2015/ITIs15/summary.html>



Environmental and Energy Economics

The NBER’s Program on Environmental and Energy Economics met in Cambridge on March 26–27. Program Director Don Fullerton of the University of Illinois at Urbana-Champaign and Research Associate Matthew E. Kahn of the University of California, Los Angeles, organized the meeting. These papers were discussed:

- **Ann Ferris, Ronald Shadbegian,** and **Ann Wolverton**, Environmental Protection Agency, and **Wayne B. Gray**, Clark University and NBER, “Do Renewable Portfolio Standards Affect Manufacturing Activity Through Higher Electricity Prices?”
- **Lucas W. Davis**, University of California, Berkeley, and NBER, and **Gilbert E. Metcalf**, Tufts University and NBER, “Does Better Information Lead to Better Choices? Evidence from Energy-Efficiency Labels” (NBER Working Paper No. [20720](#))
- **Garth Heutel**, Georgia State University and NBER; **Juan Moreno-Cruz**, Georgia Institute of Technology; and **Soheil Shayegh**, Carnegie Institution of Washington, “Solar Geoengineering, Uncertainty, and the Social Cost of Carbon”
- **Stephen P. Holland**, University of North Carolina at Greensboro and NBER; **Erin T. Mansur**, Dartmouth College and NBER; **Nicholas Muller**, Middlebury College and NBER; and **Andrew Yates**, University of North Carolina at Chapel Hill, “Measuring the Spatial Heterogeneity in Environmental Externalities from Driving: A Comparison of Gasoline and Electric Vehicles”
- **Klaus Desmet**, Southern Methodist University; **Dávid Krisztián Nagy**, Princeton University; and **Esteban Rossi-Hansberg**, Princeton University and NBER, “The Geography of Development: Evaluating Migration Restrictions and Coastal Flooding” (NBER Working Paper No. [21087](#))
- **Marco Gonzalez-Navarro**, University of Toronto, and **Matthew Turner**, Brown University, “Subways and Urban Growth: Evidence from Earth”
- **Christopher Timmins**, Duke University and NBER, and **Ashley Vissing**, Duke University, “Valuing Leases for Shale Gas Development”
- **Christiane Baumeister**, Bank of Canada, and **Lutz Kilian**, University of Michigan, “A General Approach to Recovering Market Expectations from Futures Prices with an Application to Crude Oil”
- **Mark R. Jacobsen**, University of California, San Diego, and NBER; **Christopher R. Knittel**, MIT and NBER; **James M. Sallee**, University of Chicago and NBER; and **Arthur van Benthem**, University of Pennsylvania and NBER, “The Implications of Heterogeneity for the Regulation of Energy-Consuming Durable Goods”

Summaries of these papers may be found at: <http://www.nber.org/confer/2015/EEEs15/summary.html>

International Finance and Macroeconomics

The NBER’s Program on International Finance and Macroeconomics met in Cambridge on March 27. Research Associates Gita Gopinath and Laura Alfaro of Harvard University organized the meeting. These papers were discussed:

- **Emmanuel Farhi**, Harvard University and NBER, and **Jean Tirole**, Toulouse School of Economics, “Deadly Embrace: Sovereign and Financial Balance Sheets Doom Loops”
- **Raquel Fernández**, New York University and NBER, and **Alberto Martin**, CREI (Barcelona), “The Long and the Short of It: Sovereign Debt Crises and Debt Maturity” (NBER Working Paper No. [20786](#))
- **Liliana Varela**, University of Houston, “Reallocation, Competition and Productivity: Evidence from a Financial Liberalization Episode”
- **David Atkin**, University of California, Los Angeles, and NBER; **Benjamin Faber**, University of California, Berkeley, and NBER; and **Marco Gonzalez-Navarro**, University of Toronto, “Retail Globalization and Household Welfare: Evidence from Mexico” (NBER Working Paper No. [21176](#))



- **Benjamin Hébert** and **Jesse Schreger**, Harvard University, “The Costs of Sovereign Default: Evidence from Argentina”
- **Rosen Valchev**, Duke University, “Exchange Rates and UIP Violations at Short and Long Horizons”
- **Shaghil Ahmed, Stephanie E. Curcuru,** and **Andrei Zlate**, Federal Reserve Board, and **Francis E. Warnock**, University of Virginia and NBER, “The Two Components of International Capital Flows”

Summaries of these papers may be found at: <http://www.nber.org/confer/2015/IFMs15/summary.html>

Public Economics

The NBER’s Program on Public Economics met in Cambridge on April 9–10. Program Co-director Raj Chetty of Harvard University and Research Associate John N. Friedman of Brown University organized the meeting. These papers were discussed:

Behavioral Responses to Taxation: Research Using Administrative Tax Data

- **George Bulman**, University of California, Santa Cruz, and **Caroline M. Hoxby**, Stanford University and NBER, “The Returns to the Federal Tax Credits for Higher Education” (NBER Working Paper No. [20833](#))
- **Patricia Tong**, Department of the Treasury, and **Li Zhou**, University of Alberta, “The Impact of Place-Based Employment Tax Credits on Local Labor: Evidence from Tax Data”
- **Michael P. Devereux** and **Li Liu**, University of Oxford, “Incorporation for Investment”
- **David Joulfaian**, Department of the Treasury; **James M. Poterba**, MIT and NBER; and **Robert Gordon**, Twenty-First Securities Corporation, “Choosing Between the Estate Tax and Basis Carryover Regime of 2010”
- **Jason M. DeBacker**, Middle Tennessee State University; **Bradley Heim** and **Anh Tran**, Indiana University; and **Alexander Yuskavage**, Department of the Treasury, “Once Bitten, Twice Shy? The Lasting Impact of IRS Audits on Individual Tax Reporting”
- **Julie Berry Cullen**, University of California, San Diego, and NBER; **Nicholas Turner**, Department of the Treasury; and **Ebonya L. Washington**, Yale University and NBER, “Political Alignment and Tax Evasion”
- **Tatyana Deryugina**, University of Illinois at Urbana-Champaign; **Laura Kawano**, Department of the Treasury; and **Steven D. Levitt**, University of Chicago and NBER, “The Economic Impact of Hurricane Katrina on its Victims: Evidence from Individual Tax Returns” (NBER Working Paper No. [20713](#))
- **Kirk B. Doran**, University of Notre Dame; **Alexander M. Gelber**, University of California, Berkeley, and NBER; and **Adam Isen**, Department of the Treasury, “The Effects of High-Skilled Immigration on Firms: Evidence from H-1B Visa Lotteries” (NBER Working Paper No. [20668](#))

Public Economics Spring Program Meeting

- **Michael Geruso**, University of Texas at Austin and NBER, and **Timothy J. Layton**, Harvard University, “Upcoding or Selection? Evidence from Medicare on Squishy Risk Adjustment” (NBER Working Paper No. [21222](#))
- **Jonas Kolsrud**, Uppsala University; **Camille Landais** and **Johannes Spinnewijn**, London School of Economics; and **Peter Nilsson**, Stockholm University, “The Optimal Timing of Unemployment Benefits: Theory and Evidence from Sweden”
- **John Beshears, David Laibson,** and **Brigitte C. Madrian**, Harvard University and NBER, and **James J. Choi**, Yale University and NBER, “Does Front-Loading Taxation Increase Savings? Evidence from Roth 401(k) Introductions” (NBER Working Paper No. [20738](#))
- **François Gerard**, Columbia University, and **Francisco J. M. Costa**, Getúlio Vargas Foundation (Rio de Janeiro), “Hysteresis and the Social Cost of Corrective Policies: Evidence from a Temporary Energy Saving Program”
- **Patrick M. Kline** and **Christopher R. Walters**, University of California, Berkeley, and NBER, “Evaluating Public Programs with Close Substitutes: The Case of Head Start”

- **Justine S. Hastings**, Brown University and NBER; **Christopher A. Neilson**, New York University; and **Seth D. Zimmerman**, University of Chicago, “The Effects of Earnings Disclosure on College Enrollment Decisions”

Summaries of these papers are at <http://www.nber.org/confer/2015/PEs15/summary.html>

Corporate Finance

The NBER’s Program on Corporate Finance met at the University of Chicago on April 10. Research Associates Thomas Philippon and Jeffrey Wurgler of New York University organized the meeting. These papers were discussed:

- **Erik P. Gilje**, University of Pennsylvania, “Do Firms Engage in Risk-Shifting? Empirical Evidence”
- **Xavier Giroud**, MIT and NBER, and **Holger Mueller**, New York University and NBER, “Firm Leverage and Unemployment during the Great Recession” (NBER Working Paper No. [21076](#))
- **Manuel Adelino**, Duke University; **Antoinette Schoar**, MIT and NBER; and **Felipe Severino**, Dartmouth College, “Changes in Buyer Composition and the Expansion of Credit during the Boom” (NBER Working Paper No. [20848](#))
- **Atif Mian**, Princeton University and NBER, and **Amir Sufi**, University of Chicago and NBER, “Fraudulent Income Overstatement on Mortgage Applications during the Credit Expansion of 2002 to 2005” (NBER Working Paper No. [20947](#))
- **Claire Célérier**, University of Zurich, and **Boris Vallée**, Harvard University, “Returns to Talent and the Finance Wage Premium”
- **Harrison Hong**, Princeton University and NBER, and **Inessa Liskovich**, Princeton University, “Crime, Punishment and the Halo Effect of Corporate Social Responsibility”
- **José Azar** and **Isabel K. Tecu**, Charles River Associates, and **Martin C. Schmalz**, University of Michigan, “Anti-Competitive Effects of Common Ownership”
- **Craig Doidge** and **Alexander Dyck**, University of Toronto; **Hamed Mahmudi**, University of Oklahoma; and **Aazam Virani**, University of Arizona, “Can Institutional Investors Improve Corporate Governance Through Collective Action?”

Summaries of these papers are at <http://www.nber.org/confer/2015/CFs15/summary.html>

Political Economy

The NBER’s Program on Political Economy met in Cambridge on April 10. Program Director Alberto Alesina of Harvard University organized the meeting. These papers were discussed:

- **Sergei Guriev**, Sciences Po (Paris), and **Daniel Treisman**, University of California, Los Angeles, and NBER, “How Modern Dictators Survive: Co-optation, Censorship, Propaganda, and Repression” (NBER Working Paper No. [21136](#))
- **Andrea Prat**, Columbia University, “Media Power”
- **Brian G. Knight**, Brown University and NBER, “An Econometric Evaluation of Competing Explanations for the Midterm Gap” (NBER Working Paper No. [20311](#))
- **Thomas Dohmen**, **Benjamin Enke**, and **Armin Falk**, University of Bonn; **David Huffman**, University of Oxford; and **Uwe Sunde**, University of Munich, “Patience and the Wealth of Nations”
- **Leonardo Bursztyn**, University of California, Los Angeles, and NBER; **Michael J. Callen**, Harvard University; **Bruno Ferman**, Getúlio Vargas Foundation (Rio de Janeiro); **Ali Hasanain**, Lahore University of Management Sciences; and **Noam Yuchtman**, University of California, Berkeley, and NBER, “Identifying Ideology: Experimental Evidence on Anti-Americanism in Pakistan”

- **Daron Acemoglu**, MIT and NBER; **Georgy Egorov**, Northwestern University and NBER; and **Konstantin Sonin**, National Research University Higher School of Economics (Moscow), “Social Mobility and Stability of Democracy: Re-Evaluating de Tocqueville”

Summaries of these papers are at <http://www.nber.org/confer/2015/POLs15/summary.html>

Chinese Economy

The NBER’s Working Group on the Chinese Economy met in Cambridge on April 10–11. Working Group Director Shang-Jin Wei of Columbia University and Research Associate Hanming Fang of the University of Pennsylvania organized the conference. These papers were discussed:

- **Xiaoxue Zhao**, Duke University, “To Reallocate or Not? Optimal Land Institutions under Communal Tenure: Evidence from China”
- **Teng Li**, **Haoming Liu**, and **Alberto Salvo**, National University of Singapore, “Severe Air Pollution and Labor Productivity”
- **Nancy Qian**, Yale University and NBER, and **Jaya Wen**, Yale University, “The Impact of Xi Jinping’s Anti-Corruption Campaign on Luxury Imports in China”
- **Brent Ambrose**, Pennsylvania State University; **Yongheng Deng**, National University of Singapore; and **Jing Wu**, Tsinghua University, “Understanding the Risk of China’s Local Government Debts and Its Linkage with Property Markets”
- **Carlos Garriga**, Federal Reserve Bank of St. Louis; **Yang Tang**, Nanyang Technological University (Singapore); and **Ping Wang**, Washington University in St. Louis and NBER, “Rural-Urban Migration, Structural Transformation, and Housing Markets in China”
- **Nathaniel Baum-Snow**, Brown University and NBER; **Loren Brandt**, University of Toronto; **J. Vernon Henderson**, London School of Economics; **Matthew Turner**, Brown University; and **Qinghua Zhang**, Peking University, “Transport Infrastructure, Urban Growth, and Market Access in China”
- **Donghua Chen**, Nanjing University; **Dequan Jiang**, Wuhan University; **Alexander Ljungqvist**, New York University and NBER; **Haitian Lu**, Hong Kong Polytechnic University; and **Mingming Zhou**, University of Colorado Colorado Springs, “State Capitalism vs. Private Enterprise” (NBER Working Paper No. [20930](#))
- **Ke Tang**, Tsinghua University, and **Haoxiang Zhu**, MIT and NBER, “Commodities as Collateral”
- **Hanwei Huang**, London School of Economics; **Jiandong Ju**, Shanghai University of Finance and Economics; and **Vivian Z. Yue**, Emory University, “A Unified Model of Structural Adjustments and International Trade: Theory and Evidence from China”
- **Ying Bai**, Hong Kong University of Science and Technology, and **Ruixue Jia**, University of California, San Diego, “Elite Recruitment and Political Stability: The Impact of the Abolition of China’s Civil Service Exam”

Summaries of these papers may be found at: <http://www.nber.org/confer/2015/CEs15/summary.html>

Asset Pricing

The NBER’s Program on Asset Pricing met at the University of Chicago on April 10. Research Associates Nikolai Roussanov and Jules H. van Binsbergen of the University of Pennsylvania organized the meeting. These papers were discussed:

- **William Fuchs** and **Brett Green**, University of California, Berkeley, and **Dimitris Papanikolaou**, Northwestern University and NBER, “Adverse Selection, Slow Moving Capital, and Misallocation”



- **Nicolae B. Gârleanu**, University of California, Berkeley, and NBER; **Stavros Panageas**, University of Chicago and NBER; and **Jianfeng Yu**, University of Minnesota, “Impediments to Financial Trade: Theory and Measurement”
- **Andrea Buffa**, Boston University; **Dimitri Vayanos**, London School of Economics and NBER; and **Paul Woolley**, London School of Economics, “Asset Management Contracts and Equilibrium Prices” (NBER Working Paper No. [20480](#))
- **Martin Lettau**, University of California, Berkeley, and NBER; **Sydney C. Ludvigson**, New York University and NBER; and **Sai Ma**, New York University, “Capital Share Risk and Shareholder Heterogeneity in U.S. Stock Pricing” (NBER Working Paper No. [20744](#))
- **Peter Feldhütter** and **Stephen Schaefer**, London Business School, “The Credit Spread Puzzle in the Merton Model — Myth or Reality?”
- **Anna Cieslak**, Northwestern University, and **Adair Morse** and **Annette Vissing-Jorgensen**, University of California, Berkeley, and NBER, “Stock Returns over the FOMC Cycle”

Summaries of these papers are at <http://www.nber.org/confer/2015/APs15/summary.html>

Behavioral Finance

The Behavioral Economics Working Group held a meeting on Behavioral Finance at the University of Chicago on April 11. Research Associate James J. Choi of Yale University and Faculty Research Fellow Kelly Shue of the University of Chicago organized the meeting. These papers were discussed:

- **Cary Frydman**, University of Southern California, “What Drives Peer Effects in Financial Decision-Making? Neural and Behavioral Evidence”
- **Hong Ru**, MIT, and **Antoinette Schoar**, MIT and NBER, “Do Credit Card Companies Screen for Behavioral Biases?”
- **Joshua Madsen**, University of Minnesota, and **Marina Niessner**, Yale University, “Is Investor Attention for Sale? The Role of Advertising in Financial Markets”
- **Erik Eyster**, London School of Economics; **Matthew Rabin**, University of California, Berkeley; and **Dimitri Vayanos**, London School of Economics and NBER, “Financial Markets where Traders Neglect the Informational Content of Prices” (NBER Working Paper No. [21224](#))
- **Dong Lou** and **Christopher Polk**, London School of Economics, and **Spyros Skouras**, Athens University of Economics and Business, “A Tug of War: Overnight Versus Intraday Expected Returns”
- **Olivier Dessaint**, University of Toronto, and **Adrien Matray**, HEC Paris, “Do Managers Overreact to Salient Risks? Evidence from Hurricane Strikes”

Summaries of these papers are at <http://www.nber.org/confer/2015/BEs15/summary.html>

Health Economics

The NBER’s Program on Health Economics met in Cambridge on April 17. Program Director Michael Grossman of the Graduate Center of the City University of New York and Research Associate Theodore Joyce of Baruch College organized the meeting. These papers were discussed:

- **Philip DeCicca**, McMaster University and NBER, and **Harry Krashinsky**, University of Toronto, “Does Education Reduce Teen Fertility? Evidence from Compulsory Schooling Laws”
- **Thomas Goldring**, Carnegie Mellon University; **Fabian Lange**, McGill University; and **Seth Richards-Shubik**, Carnegie Mellon University and NBER, “Testing for Changes in the SES-Mortality Gradient when the Distribution of Education Changes Too” (NBER Working Paper No. [20993](#))



- **Elaine M. Liu**, University of Houston and NBER; **Jin-Tan Liu**, National Taiwan University and NBER; and **Hazel Tseng**, University of Houston, “The Impact of a Natural Disaster on the Incidence of Fetal Losses and Pregnancy Outcomes”
- **Mark L. Egan**, University of Chicago, and **Tomas Philipson**, University of Chicago and NBER, “Non-Adherence and Personalized Medicine: A Positive and Normative Analysis”
- **D. Mark Anderson**, Montana State University; **Benjamin Crost**, University of Illinois at Urbana-Champaign; and **Daniel I. Rees**, University of Colorado Denver, “Wet Laws, Drinking Establishments, and Crime”
- **Chad D. Cotti**, University of Wisconsin–Oshkosh; **Erik Nesson**, Ball State University; and **Nathan Tefft**, Bates College, “The Effects of Tobacco Control Policies on Tobacco Products, Tar, and Nicotine Consumption: Evidence from Household Panel Data”

Summaries of these papers are at <http://www.nber.org/confer/2015/HEs15/summary.html>

Cohort Studies

The NBER’s Working Group on Cohort Studies met in Cambridge on April 17–18. Working Group Director Dora Costa of the University of California, Los Angeles, and Research Associate Robert Pollak of Washington University in St. Louis organized the meeting. These papers were discussed:

- **Alissa Goodman**, **Heather Joshi**, **Bilal Nasim**, and **Claire Tyler**, University College London, “Social and Emotional Skills in Childhood and Their Long-Term Effects on Adult Life”
- **Gabriella Conti**, University College London, “Explaining the Relationship between Early Life Factors and Later Outcomes: Behavioral and Biological Pathways”
- **Eric Schneider**, University of Sussex, “Fetal Health Stagnation: Have Health Conditions in Utero Improved in the U.S. and Western and Northern Europe over the Past 150 Years?”
- **Aryeh Stein**, Emory University, “Child Growth and Human Capital: Data from COHORTS”
- **Daniel W. Belsky**, **Avshalom Caspi**, **Renate Houts**, **Harvey J. Cohen**, **David Corcoran**, **HonaLee Harrington**, **Jon Schaefer**, **Karen Sugden**, **Benjamin Williams**, **Anatoli I. Yashin**, and **Terrie Moffitt**, Duke University; **Andrea Danese**, King’s College London; **Salomon Israel**, Hebrew University of Jerusalem; **M. E. Levine**, University of California, Los Angeles; and **Richie Poulton**, University of Otago, “Quantification of Biological Aging in Young Adults”
- **Dave Donaldson**, Stanford University and NBER, and **Daniel Keniston**, Yale University and NBER, “How Positive Was the Positive Check? Investment and Fertility in the Aftermath of the 1918 Influenza in India”
- **Chulhee Lee** and **Esther Lee**, Seoul National University, “Son Preference, Sex-Selective Abortion, and Parental Investment in Girls in Korea: Evidence from the Year of the White Horse”
- **Joanna Lahey**, Texas A&M University and NBER, and **Douglas Oxley**, University of Wyoming, “Discrimination at the Intersection of Age, Race, and Gender: Evidence from a Lab-in-the-Field Experiment”
- **Avron Spiro**, Boston University, “Long-Term Psychological Outcomes of Military Experience”
- **Hans Henrik Sievertsen** and **Miriam Wüst**, Danish National Centre for Social Research, “Discharge on the Day of Birth, Parental Response, and Health and Schooling Outcomes”
- **Adam Isen**, Department of the Treasury; **Maya Rossin-Slater**, University of California, Santa Barbara; and **Reed Walker**, University of California, Berkeley, and NBER, “Heat and Long-Run Human Capital Formation”
- **Achyuta Adhvaryu**, University of Michigan; **Steven A. Bednar**, Elon University; **Teresa Molina** and **Anant Nyshadham**, University of Southern California; and **Quynh T. Nguyen**, The World Bank, “Salt Iodization and the Enfranchisement of the American Worker”



- **Govert Bijwaard**, Netherlands Interdisciplinary Demographic Institute, and **L.H. Lumey**, Columbia University, “Effects of Prenatal Famine on Conscript Heights at Age 18”
- **Jesse Anttila-Hughes**, University of San Francisco, and **Thomas Dreesen**, Abdul Latif Jameel Poverty Action Lab, “Heterogeneous Long-Term Human Capital Impacts of Climate Variability in Rural and Urban Bangladesh”
- **Sarah Miller**, University of Michigan, and **Laura R. Wherry**, University of California, Los Angeles, “The Long-Term Health Effects of Early Life Medicaid Coverage”
- **Amanda E. Kowalski**, Yale University and NBER, “What Do Longitudinal Data on Millions of Hospital Visits Tell us about the Value of Public Health Insurance as a Safety Net for the Young and Privately Insured?” (NBER Working Paper No. [20887](#))

Summaries of these papers are at <http://www.nber.org/confer/2015/CSs15/summary.html>

Organizational Economics

The NBER’s Working Group on Organizational Economics met in Cambridge on April 24–25. Working Group Director Robert Gibbons of MIT organized the meeting. These papers were discussed:

- **David C. Chan, Jr.**, Stanford University and NBER, “Tacit Learning and Influence behind Practice Variation: Evidence from Physicians in Training”
- **Maija Halonen-Akatwijuka**, University of Bristol, and **Oliver D. Hart**, Harvard University and NBER, “Short-Term, Long-Term, and Continuing Contracts” (NBER Working Paper No. [21005](#))
- **Casey Ichniowski**, Columbia University (deceased), **Anne Preston**, Haverford College, “Do Star Performers Produce More Stars? Peer Effects and Learning in Elite Teams” (NBER Working Paper No. [20478](#))
- **Robert Akerlof**, University of Warwick, and **Richard Holden**, University of New South Wales, “Movers and Shakers”
- **Rebecca Henderson**, Harvard University and NBER, and **Hazhir Rahmandad** and **Nelson P. Repenning**, MIT, “Making the Numbers? ‘Short Termism’ & the Puzzle of Only Occasional Disaster” (NBER Working Paper No. [16367](#))
- **Alexander Peysakhovich**, Harvard University, and **David Rand**, Yale University, “Habits of Virtue: Creating Norms of Cooperation and Defection in the Laboratory”
- **Steven Grenadier**, Stanford University; **Andrey Malenko**, MIT; and **Nadya Malenko**, Boston College, “Timing Decisions in Organizations: Communication and Authority in a Dynamic Environment”
- **Birger Wernerfelt**, MIT, “The Size of Markets and the Scope of Firms”
- **Mitchell Hoffman**, University of Toronto; **Lisa Kahn**, Yale University and NBER; and **Danielle Li**, Harvard University, “Discretion in Hiring”
- **Luis Garicano**, London School of Economics, and **Luis Rayo**, University of Utah, “Why Organizations Fail: Models and Cases”

Summaries of these papers are at <http://www.nber.org/confer/2015/OEs15/summary.html>

Education Program

The NBER’s Program on Education met in Cambridge on April 30. Program Director Caroline M. Hoxby of Stanford University organized the meeting. These papers were discussed:

- **Judith Scott-Clayton**, Columbia University and NBER, and **Lauren Schudde**, Columbia University, “Performance Standards in Need-Based Student Aid”



- **Sarah R. Cohodes**, Harvard University, “The Long-Run Impacts of Tracking High-Achieving Students: Evidence from Boston’s Advanced Work Class”
- **Hugh Macartney**, Duke University and NBER; **Robert McMillan**, University of Toronto and NBER; and **Uros Petronijevic**, University of Toronto, “Incentive Design in Education: An Empirical Analysis”
- **Nicola Bianchi**, Stanford University, “The General Equilibrium Effects of Educational Expansion”
- **Cassandra Hart**, **Elizabeth Friedmann**, and **Michael Hill**, University of California, Davis, “Online Course-Taking and Student Outcomes in California Community Colleges”
- **Markus Nagler**, University of Munich; **Marc Piopiunik**, Ifo Institute for Economic Research (Munich); and **Martin R. West**, Harvard University and NBER, “Weak Markets, Strong Teachers: Recession at Career Start and Teacher Effectiveness”

Summaries of these papers are at <http://www.nber.org/confer/2015/CHEDs15/summary.html>

Children

The NBER’s Program on Children met in Cambridge on May 1. Program Director Janet Currie of Princeton University organized the meeting. These papers were discussed:

- **Raj Chetty**, **Nathaniel Hendren**, and **Lawrence Katz**, Harvard University and NBER, “The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment” (NBER Working Paper No. [21156](#))
- **Seema Jayachandran**, Northwestern University and NBER, and **Rohini Pande**, Harvard University and NBER, “Why Are Indian Children So Short?” (NBER Working Paper No. [21036](#))
- **Randall Akee**, University of California, Los Angeles, and **Emilia Simeonova**, Johns Hopkins University and NBER, “How Does Household Income Affect Child Personality Traits and Behaviors?”
- **Krzysztof Karbownik** and **Anthony Wray**, Northwestern University, “Childhood Health and Long-Run Economic Opportunity in Victorian England”
- **Tom Vogl**, Princeton University and NBER, “Intergenerational Dynamics and the Fertility Transition”
- **Kasey Buckles** and **Daniel M. Hungerman**, University of Notre Dame and NBER, “The Incidental Fertility Effects of School Condom Distribution Programs”

Summaries of these papers are at <http://www.nber.org/confer/2015/CHEDs15/summary1.html>

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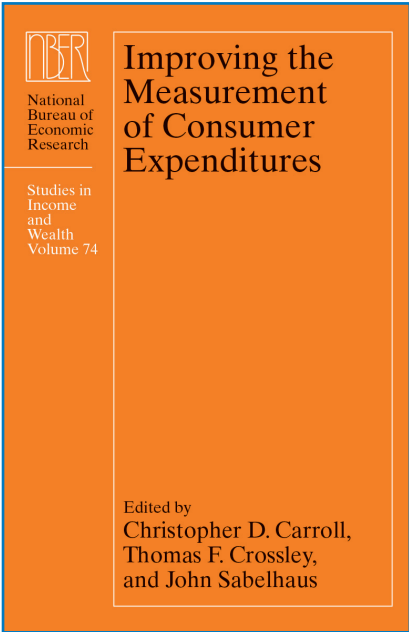
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Improving the Measurement of Consumer Expenditures

Edited by Christopher D. Carroll, Thomas F. Crossley, and John Sabelhaus
Studies in Income and Wealth, volume 74
\$130.00

Robust and reliable measures of consumer expenditures are essential for analyzing aggregate economic activity and for measuring differences in household circumstances. Many countries, including the United States, are embarking on ambitious projects to redesign surveys of consumer spending, with the goal of better capturing economic heterogeneity. This is an appropriate time to examine the way consumer expenditures are currently measured, and the challenges and opportunities that alter-

native approaches might present. *Improving the Measurement of Consumer Expenditures* begins with a comprehensive review of current methodologies for collecting consumer expenditure data. Subsequent chapters highlight the range of objectives that expenditure surveys may satisfy, compare the data available from consumer expenditure surveys with that available from other sources, and describe how current survey practices in the United States compare with those in other nations.



Innovation Policy and the Economy, Volume 15

Edited by William R. Kerr, Josh Lerner, and Scott Stern
\$60.00
ISBN: 978-0-226-26842-2

The 15th volume of *Innovation Policy and the Economy* is the first to focus on a single theme: high-skilled immigration to the United States. The first paper is the product of a long-term research effort on the impact of immigration to the United States of Russian mathematicians beginning around 1990 as the Soviet Union collapsed. The second describes how obtaining an undergraduate degree from a U.S. university can open an important pathway for immigrants to participate in the U.S. labor market in IT occupations. The third paper consid-

ers the changing nature of postdoctoral positions in science departments, which are disproportionately held by immigrant researchers. The fourth considers the role of U.S. firms in high-skilled immigration. The final paper describes how strong growth in global scientific and technological knowledge production has reduced the share of world scientific activity in the United States, increased the immigrant proportion of scientists and engineers at U.S. universities and firms, and fostered cross-border collaborations for U.S. scientists.

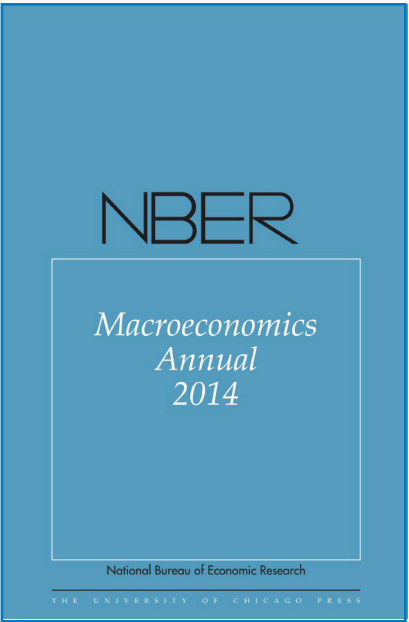


NBER Macroeconomics Annual 2014

Edited by Jonathan Parker and Michael Woodford
\$90.00
ISBN: 978-0-226-26873-6

The twenty-ninth edition of the *NBER Macroeconomics Annual* continues its tradition of featuring theoretical and empirical research on central issues in contemporary macroeconomics. Two papers in this year's issue deal with recent economic performance: one analyzes the evolution of aggregate productivity before, during, and after the Great Recession, and the other characterizes the factors that have contributed to slow economic growth following the Great

Recession. Another pair of papers tackles the role of information in business cycles. Other contributions address how assumptions about sluggish nominal price adjustment affect the consequences of various monetary policy rules and the role of business cycles in the long-run decline in the workforce share of middle-wage jobs. The final chapter discusses the advantages and disadvantages of the elimination of physical currency.



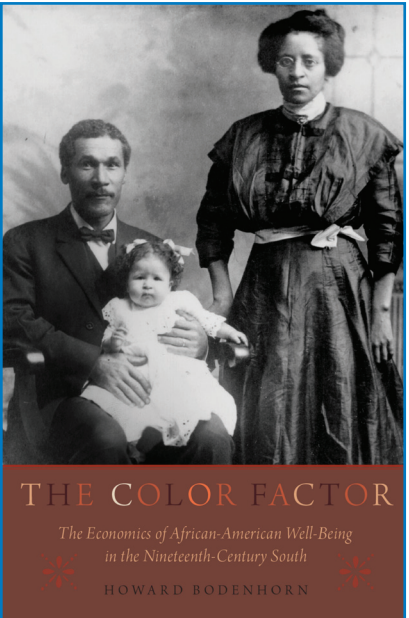
The Color Factor: The Economics of African-American Well-Being in the Nineteenth-Century South

Long-term Factors in Economic Development series
Howard Bodenhorn
\$39.95

This book is available from Oxford University Press:
1-800-445-9714 (phone)
1-919-677-1303 (fax)
custserv.us@oup.com

Despite the many advances that the United States has made in racial equality over the past half century, numerous events within the past several years have proven prejudice to be alive and well in modern-day America. In one such example, Governor Nikki Haley of South Carolina dismissed one of her principal advisors in 2013 when his membership in the ultra-conservative Council of Conservative Citizens (CCC) came to light. According to the Southern Poverty Law Center, in 2001 the CCC website included a message that read "God is the one who divided mankind into different races ... Mixing the races is rebelliousness against God." This episode reveals America's continuing strug-

gle with race, racial integration, and race mixing—a problem that has plagued the United States from its earliest days. In *The Color Factor: The Economics of African-American Well-Being in the Nineteenth-Century South* economist Howard Bodenhorn presents the first full-length study of the ways in which skin color intersected with policy, society, and economy in the 19th century South. With empirical and statistical rigor, the investigation confirms that individuals of mixed race experienced advantages over African Americans in multiple dimensions—in occupations, family formation and family size, wealth, health, and access to freedom, among other criteria.



The Color Factor concludes that we will not really understand race until we understand how American attitudes toward race were shaped by race mixing. The text is a valuable resource for students, social scientists, historians, and anyone hoping to gain a deeper understanding of the historical roots of modern race dynamics in America.

NBER*Reporter*

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