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Program Report

The International Trade and Investment Program

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The research of the International Trade and Investment (ITI) Program, which includes 90 current members, covers a wide range of topics, such as explaining patterns of international trade, foreign direct investment, and immigration, and improving our understanding of the impact of trade policies. In addition, specialized ITI conferences cover such topics as "Globalization and Poverty" and "China's Growing Role in World Trade."[1] These two projects illustrate that a good deal of our research is concerned with developing countries, although that will not be discussed in this summary. Here I focus on a few topics related to trade patterns and trade policy.

The Great Trade Collapse

The financial crisis and great recession of 2008–9 brought with it a "great trade collapse": world trade relative to GDP fell by nearly 30 percent between these two years, exceeding the experience of other post-war recessions. Why did trade fall so much, and why did it recover relatively quickly? The leading explanations stress, in varying degrees, the roles of: inventory adjustment for imports; demand for durable versus non-durable goods; the use of intermediate inputs in trade, which might magnify the impact on trade as "supply chains" are temporarily disrupted; and the role of trade credit, which appears to have dried up temporarily during the crisis.

Beginning with the last of these explanations, Kalina Manova and her co-authors provide the strongest evidence supporting the role of credit constraints on exports. These constraints limit the extensive margin of exports in sectors that are most vulnerable to financial stress.[2] Furthermore, she

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argues that such sectors faced greater reductions in their exports to the U.S. market during the financial crisis.[3] That idea is confirmed for Japan by Mary Amiti and David Weinstein.[4] They find that Japanese exporters faced greater reductions in their sales abroad if they were affiliated with main banks that performed poorly. Focusing on China, my co-authors and I find that firms faced tighter credit constraints on their exports than on their domestic sales, and that exports experienced a significant slowdown because of the 2008 crisis.[5] Ann E. Harrison and her co-authors find that, for the United States, import prices often rose during the crisis, which is inconsistent with falling demand but can arise from a supply constraint, such as a lack of export credit.[6]

Other work casts some doubt on the importance of export credit. George Alessandria and co-authors instead stress the role of inventory adjustment, which can lead to a rapid fall in imports as stocks are adjusted downwards.[7] Andrei Levchenko, Logan Lewis, and Linda Tesar also find a limited role for trade credit in their regression analysis of U.S. trade, but they use an accounting definition of "trade credit" that applies equally well to exports or domestic sales.[8] As an alternative explanation, they find that sectors which are more reliant on imported intermediate inputs suffered more during the crisis, because these supply chains were temporarily disrupted. Fabio Ghironi and his co-authors also stress the importance of imported inputs. They model the different components of aggregate demand (consumption, investment, government spending, and exports) as having different import intensities.[9] They then construct a weighted average of those factors with the weights reflecting their import intensities. Using the resulting variable as an income term, and including an import price, they are able to construct a model that predicts the fluctuations in import demand during the current crisis and earlier episodes much more accurately than do conventional methods that rely on GDP and aggregate prices.

Of course, in the end it will be a combination of factors that explain the great trade collapse: even if inventories or imported intermediates are more important quantitatively, that finding need not detract from the significance of trade credit. Amiti and Weinstein, for example, argue that trade credit can account for about 20 percent of the fall in exports for Japan, so it

was not the most important factor, but it was still economically significant. That point is also made for Peruvian exports by Veronica Rappoport and co-authors, who argue that the reduction in loans from banks performing poorly reduced aggregate exports by 15 percent during the crisis.[10] Perhaps the most comprehensive evaluation of the different factors contributing to the great collapse in trade was written by Jonathan Eaton, Sam Kortum, Brent Neiman, and John Romalis.[11] They argue that the relative decline in demand for manufactures was the most important driver of the decline in manufacturing trade, and especially the decline in demand for durable manufactures. These factors account for more than 80 percent of the global decline in trade/GDP. While they find that trade frictions increased and played an important role in reducing trade in some countries, notably China and Japan, these frictions only had a small impact on global trade.

Offshoring, Wages, And Employment

One of the explanations mentioned earlier for the great trade collapse was that supply chains may have been disrupted during the crisis. While the "supply chain" concept is often mentioned in the social sciences, it has had limited modeling within the international trade context. That shortcoming is being addressed in very recent research. Arnaud Costinot, Jonathan Vogel, and Su Wang model a sequential supply chain in which mistakes potentially occur at each stage in a continuum.[12] There are many countries which differ in their probabilities of making mistakes, and in equilibrium there is a matching between stages of production and countries. Richard Baldwin and Anthony Venables call this type of sequential product chain a "snake" and label the assembly of multiple parts at a central facility a "spider." They provide a partial equilibrium model that illustrates the difficulties of solving for the location of stages in this framework and also make clear that the assignments might be non-monotonically related to transportation costs.[13]

Closely related to the supply chain concept is the role of intermediaries who provide services between buyers and sellers. Examples include large trading houses, such as "Li and Fung" in Hong Kong. Recent research by Costinot and Pol Antràs has modeled these intermediation activities.[14] JaeBin Ahn, Amit Khandelwal, and Shang-Jin Wei provide empirical evidence on the role of intermediaries in China.[15]

Also closely related to international supply chains is the fragmentation of production across borders, or offshoring. The most recent theoretical paradigm for offshoring draws on "trade in tasks," which is described in work by Gene Grossman and Esteban Rossi-Hansberg.[16] In this framework, offshoring in low-skilled tasks acts like labor-saving technological progress in that factor. At unchanged prices for goods — as in a small-country framework — increased offshoring raises the wages of low-skilled labor. In contrast, when the prices of goods are endogenous — as in a large-country framework — increased offshoring of less-skilled tasks raises the output of that good and lowers its relative price. This change in relative prices has the expected result of lowering the real and relative wage of less-skilled labor, consistent with earlier work on "trade in inputs" by Gordon Hanson and me.[17] The overall change in wages depends on whether the impact of labor-saving technological change attributable to offshoring dominates the opposite effect of changing international prices, which depends on parameters of production and other features of the economy.

This work on offshoring has been extended by ITI Program members in a number of directions. Richard Baldwin and co-authors integrate the earlier "trade in goods" and "trade in tasks" frameworks, as well as examining the role of heterogeneous firms.[18] Andrés Rodríguez-Clare examines the impact of offshoring in a Ricardian model with a continuum of industries.[19] Costinot and Vogel provide the most general treatment of offshoring attributable to factor endowment differences, in a model with a continuum of goods and factors. This leads to a sophisticated matching of factors with goods, for which they provide a complete solution.[20] Antràs, Luis Garicano, and Rossi-Hansberg consider the effects of offshoring in a model of multinationals where managers monitor and solve problems for workers.[21] Ariel Burstein and Vogel also consider the role of multinationals that bring technology to the host countries.[22] Based on a quantitative exercise, they argue that the growth of multinationals has been at least as important as the growth of trade in explaining the rising skill premium in the United States. Finally, Grossman and Rossi-Hansberg model offshoring between similar countries, where it is not factor-price differences that determine the location of production, but rather local external economies.[23]

Ann E. Harrison, Margaret S. McMillan, and co-authors provide new empirical studies of offshoring, using data on U.S. multinationals and data from the Current Population Survey (CPS).[24] They find that it is occupations rather than particular industries that are the best unit of analysis for identifying the wage effects of offshoring, which can be significant. Runjuan Liu and Daniel Trefler also use the CPS data to link U.S. workers who are switching jobs, or becoming unemployed, to their original industries.[25] They find only a small effect of services offshoring on either switching or unemployment, with an offsetting positive impact of "in-shoring" on employment rates and earnings. Focusing only on employment, Gianmarco Ottaviano, Giovanni Peri, and Greg Wright analyze the impact of offshoring and immigration in a framework that is consistent with the Grossman and Rossi-Hansberg model.[26]

Rather than examining the impact of offshoring on the *level* of wages and employment, one might consider its impact on their volatility. John McLaren and his co-author model employment contracts as long term, and then examine whether international integration weakens these relationships.[27] Paul Bergin, Hanson, and I take an alternative approach, whereby wage fluctuations vary the range of tasks offshored, and the availability of offshoring magnifies the

wage fluctuations themselves.[28] Evidence from Mexico supports the hypothesis that wages exhibit greater fluctuations because of offshoring than occurs in similar industries in the United States. Alejandro Cuñat and Marc Melitz argue that industries displaying greater volatility will tend to locate in countries with more flexible labor market institutions.[29]

Of course, offshoring can be expected to influence unemployment as well as wages. Current research on unemployment using trade models depends on either "fair wages" — that are above the market clearing level — or on search frictions. Work by Donald Davis, Amiti, and James Harrigan are all examples of papers that use the concept of "fair wages".[30]

Recent theoretical work has put these search frictions into models of offshoring. One of the early models was by Devashish Mitra and Priya Ranjan, who find that unemployment is actually reduced because of offshoring, since the cost savings for firms leads them to expand employment.[31] A series of papers by Elhanan Helpman with Oleg Itskhoki and Stephen Redding provide more general treatments of trade and unemployment.[32] Their framework combines search frictions, wage bargaining, and firm heterogeneity. They find that openness to trade may increase unemployment, but that the gains from trade are still positive. Empirical evidence on the effects of trade on labor market outcomes also comes from Kerem Coşar, Nezih Guner, and James Tybout.[33] Their analysis is based on a model with search frictions, wage bargaining, and firm heterogeneity which is then fitted to Colombian micro data on establishments and households.

Extending The Monopolistic Competition Model

A great deal of research in international trade uses the monopolistic competition model, introduced during the early 1980s by Paul Krugman, Elhanan Helpman, and others. The early models assumed that firms were symmetric in size, which contradicts the fact that a large fraction of exports in most economies are accounted for by a relatively small number of large firms. That observation was incorporated into the monopolistic competition model by Melitz, who added heterogeneous firms with random productivities.[34] Since that time, the research has focused on extending many other aspects of the monopolistic competition model. Costas Arkolakis and Vogel make two rather fundamental contributions. Arkolakis introduces marketing costs into the model, thereby allowing for the presence of small exporters (which cannot arise in the Melitz model).[35] Vogel is the first to introduce heterogeneous firms into a spatial version of the monopolistic competition model.[36]

Evaluating the importance of firm heterogeneity requires firm-level data, which may be restricted because of confidentiality. Fortunately, those problems can be overcome in a number of ways. For the United States, the imports and exports of individual firms are collected by the Foreign Trade Division of the Census Bureau from customs documents. Several members of the ITI group have obtained permission to merge those data with data from the Census of Manufactures, a firm-level database that is available at the Census Bureau's Regional Census Research Data Centers. One of these is at the NBER's office in Cambridge and another, also partly supported by the NBER, is at Baruch College in New York. When analyzing these data in a series of papers,[37] Andy Bernard, Bradford Jensen, and Peter Schott have coined the term "most globally engaged" firm to describe the small number of U.S. firms that are involved in a disproportionate amount of trade. The researchers find that many importing firms are also exporters, and are extremely important to the U.S. economy. For example, the total number of workers at firms that either imported or exported in 2000 was about 50 million, or one third of the total civilian workforce. More than half of the firms in the United States that import also export and these firms account for 90 percent of U.S. trade. So it is these large, trading firms that account for the vast majority of U.S. trade and related employment. In joint work with Redding, these authors also analyze the importance of wholesalers and retailers in trade, and in intra-firm trade.[38]

Firm-level trade data is also available for France, where Jonathan Eaton and Sam Kortum work with Francis Kramarz at the Center for Research on Economics and Statistics.[39] They analyze the trading patterns of firms and confirm that more productive firms sell in many more markets. Arkolakis and Marc-Andreas Meundler use data for Brazil to analyze the extensive margin of exporting firms.[40] In addition to these country studies, some firm-level data from public sources may be available for particular industries. One example is the motion picture industry, analyzed by Hanson and Chong Xiang.[41]

Other important features of the monopolistic competition model being examined in current research are product quality and product variety. Melitz observes that exogenous product quality enters the heterogeneous-firms model in much the same mathematical way as exogenous productivity. But a key difference is that with productivity, the firms that become large are the most productive and therefore have the lowest prices, whereas with quality, the largest firms have the highest quality products and therefore high prices. So, this implies a natural dichotomy between industries where firms compete based on productivity and the largest firms should have low prices and industries where firms compete based on product quality and the largest firms should have high prices. Baldwin, Harrigan, and Tadashi Ito explore this dichotomy.[42]

We would expect that the demand for high-quality goods varies with income, so that non-homothetic preferences and the distribution of income become important. David Hummels and his co-authors examine the role of income distribution, using a utility function from Harry Flam and Elhanan Helpman, which implies that cross-country differences in income distributions are related to variations in import variety and price distributions.[43] They find empirical support for the model by using micro data on income and price distributions that are derived

from trade data. Pablo Fajgelbaum, Gene Grossman, and Helpman use an alternative preference structure, drawing on the discrete choice literature.[44] Their framework allows us to study the welfare consequences of trade, transport costs, and trade policy for different income groups in an economy. Ina Simonovska also uses a non-homothetic utility function to study the role of price discrimination in international trade,[45] while Ana Cecilia Fieler introduces non-homothetic preferences into the Eaton-Kortum model of trade.[46] James Markusen provides a survey of results obtained with non-homothetic preferences.[47] Finally, Maurice Kugler and Eric Verhoogen, who analyze data for Colombia firms, develop a production-side explanation for the quality of traded inputs and outputs.[48]

The studies described above are general equilibrium, combining theory and empirical work. Other empirical research focuses on partial-equilibrium frameworks used to develop measures of product quality. Amit Khandewal uses a discrete choice framework to estimate product quality in a wide range of U.S. manufacturing industries, at the Harmonized System 10-digit level.[49] In his framework, a product that is in high demand but does not have a low price necessarily must be high quality. The same idea, but with different functional form for demand, is used by Juan Carlos Hallak and Schott to estimate product quality for the United States.[50] Manova and Zhiwei Zhang examine the quality heterogeneity across Chinese exporting firms.[51]

Not only product quality but also product variety lends itself to empirical implementation. Bruce Blonigen and Anson Soderbery compare two methods of measuring product variety in automobiles: one using product-level import data and the second using actual market data on automobiles sold in the United States.[52] They find that implied welfare benefits from using the product-level import data are only half what is found with the market-based data. They further show that the welfare gains from all foreign-owned varieties (both imported and from foreign affiliates) are well over 50 percent larger than those stemming from imported varieties alone. Other researchers have studied the positive impact of importing a greater variety of intermediate inputs on the productivity of the downstream industries. Penny Goldberg, Amit Khandelwal, Nina Pavcnik, and Petia Topalova show this with Indian data.[53] Further, in dynamic models the gains from product variety in inputs can contribute to enhanced efficiency and increased growth, as demonstrated by Christian Broda, Joshua Greenfield, and Weinstein.[54]

Closely related to the concept of variety in trade is the "extensive margin" of exports, which refers to the number of firms within an industry who are exporting. For an individual firm, the extensive margin of exports refers to the range of products that it produces and exports. Hand-in-hand with the large differences in the size and productivity of firms are differences in their product range. Bernard, Jensen, Redding, and Schott demonstrate this theoretically and empirically in U.S. data.[55] An alternative theoretical approach to analyzing the scope of firms is presented by Volker Nocke and Stephen Yeaple.[56]

A final area where the monopolistic competition model is being extended is the assumption of CES preferences, which leads to constant markups being charged by firms. Alternative preferences, such as the non-homothetic cases referred to above, will lead to markups that are endogenous and therefore have important implications for welfare. This topic is discussed in the next section.

Trade Policy And Welfare

In the ITI program an ongoing area of research is the impact of, and explanations for, trade policies. Some studies examine the impact of policies in particular sectors. One important example is the textile and apparel sector, which experienced a large reduction in quotas as the Multifibre Agreement was phased out in January 1, 2005. Many people expected that China would take over in this sector, since it had been the most constrained in its textile and apparel exports. But Harrigan and Geoffrey Barrows show that along with these changes in market shares, there was a massive downgrading in the type of product exported from China.[57] These products at the lower end took sales away from countries such as Mexico or Guatemala, and to some extent served to offset the competitive impact on other Asian countries.

Another sector that has received attention for its ongoing trade policies is steel. Bruce Blonigen and co-authors show that the response of this industry to tariffs versus quotas, which they estimate, is highly sensitive to its market structure.[58]

There is also strong interest in the topic of the impact of free trade agreements, particularly on workers. This topic has received renewed interest for the United States in what might be considered "round two" of the debate over the impact of trade on wages and employment. Making use of broad changes in tariffs through trade agreement and detailed datasets on individuals, these studies identify potentially large effects of tariff reductions. A recent example is the work by David Autor, David Dorn, and Hanson, which examines the acceleration in Chinese exports to the United States following its WTO accession in 2001.[59] They match the changes in wages and employment in local labor markets defined by "commuting zones" to the Chinese exporters to manufacturing industries in those zones. They link the rise in Chinese exports, and the implied reduction in employment, to changes in federal support payments to individuals for trade adjustment assistant, disability, retirement, and the like. They find that the deadweight loss from the increase in support payments is very similar in magnitude to the welfare gains from the increased imports: both are on the order of $30–$70 annually per capita. But because the support payments are expected to be temporary while the welfare gains from imports are permanent, there are still gains from trade.

A second example of a study that uses data on individuals (from the decennial census) is the paper by John McLaren and

Shushanik Hakobyan which analyzes the impact of NAFTA on local labor markets in the United States.[60] Drawing on earlier theoretical work by McLaren, they allow for possible wage increases in response to anticipated tariffs cuts (as workers leave industries) and for wage decreases when the tariff cut occurs. They find a significant negative impact of NAFTA on blue-collar workers, with smaller positive or negative effects on college educated workers. Their overall message is that NAFTA has large distributional effects, even if its overall welfare impact is small.

All of these studies find sizable changes in trade flows following the enactment of the tariff changes, despite the fact that U.S. tariffs on Mexico were already low, and that tariffs on China were already at their MFN level before its accession to the WTO. Why can trade change so much in response to small tariff changes? Kyle Handley and Nuno Limão suggest that preferential agreements may reduce the policy uncertainly surrounding tariffs that could change in the future.[61] They study Portugal, which was already a member of the EFTA and had an agreement with Spain when it joined the EEC in 1986. There was no drop in Portugal's tariffs with members of the EEC who were also in EFTA, but nevertheless there was a sizable increase in exports to EC members. Handley and Limão attribute this to a reduction in policy uncertainty, which they measure by the difference in the zero tariffs within the EEC and the MFN tariffs charged to outside members. Variation in that difference allows the researchers to identify the policy impact across industries and to explain the increase in trade.

In addition to these empirical studies, several members of the program, using game-theoretic techniques, have theoretically analyzed the question of why countries pursue preferential agreements. For example, Philippe Aghion, Antràs, and Helpman model this as a question of sequential bargaining, whereby a country makes deals with a series of other countries, but the bargains negotiated must be consistent with the deals that potentially will be made in the future.[62] The researchers show that this model generates both "building bloc" and "stumbling bloc" effects of preferential trade agreements, to use the terminology of Jagdish Bhagwati. In particular, they find conditions under which global free trade is attained when preferential trade agreements are permitted to form (a building bloc effect), and other conditions where global free trade is attained only when preferential trade agreements are forbidden (a stumbling bloc effect).

In a series of papers, Kyle Bagwell and Robert Staiger analyze games in which countries are constrained by the WTO rules and show that these rules can lead to welfare improvements.[63] One example is the most-favored nation rule, which states that all WTO members must be treated equally. This rule means that a reduced trade barrier given to a current negotiating partner must be automatically extended to later partners. Bagwell and Staiger argue that the MFN principle makes it less likely for countries to be willing to offer concessions at early stages of the sequential bargaining process, but that this potential source of conflict can be offset by two other WTO principles: first, by renegotiation at later stages; second, by reciprocity in the concessions made by each country. Incorporating these principles into the bargaining game allows for an efficient outcome even under the MFN rule. This line of research enables Bagwell and Staiger to rationalize various provisions of the WTO.

There are other approaches, too, that can be used to rationalize the provisions to the WTO. Ralph Ossa uses a monopolistic competition model with a "home market" effect, whereby tariffs attract firms to enter the protected market.[64] That framework can generate political economy considerations for trade policies and WTO rules that are similar to what arises from the terms-of-trade model. Using a different approach, Giovanni Maggi and his coauthors argue that WTO-type rules can be understood as arising from the inevitable incompleteness of trade agreements.[65]

The analysis of trade policy naturally leads to the question of the gains from international trade, and we conclude with this classic question. Analysis of the monopolistic competition model has shown that it gives rise to a remarkably simple formula for the gains from opening trade: those gains are equal to one minus the import share of the economy, raised to a negative power that depends on the specific details of the model. In the Krugman monopolistic competition model with homogeneous firms, that power depends on the elasticity of substitution in consumption. In the Melitz model with heterogeneous firms that have a Pareto distribution for productivities, the same formula for the gains from trade holds, but the power depends on the Pareto parameter.[66] I argue that this result obtains in the Melitz model because import competition drives out a number of domestic varieties that just cancel out in welfare terms, so that the only remaining source of gains from trade is productivity improvements.[67] Remarkably, Arkolakis, Costinot, and Andrés Rodríguez-Clare have recently argued that a similar result holds in a broader class of models. The fact that such a simple formula for the gains from trade arises in models that can be quite complex in their market structure leads them to pose the question: "new trade models, same old gains?"[68]

This view has been challenged in other recent work. Weinstein and I estimate a monopolistic competition model with heterogeneous firms, where the aggregate consumer has translog preferences.[69] In that case, the markups charged by firms are endogenous, and we do not expect that the gains from trade depend only on the import share. We estimate the gains from rising imports over 1992–2005 for the U.S. economy, and find that the gains from reduced markups are on the same order of magnitude as the gains attributable to increased import variety.

Ina Simonovska also obtains variable markups, as discussed above, as do Beatriz de Blas and Katheryn Russ in the context of the model by Bernard, Eaton, Jensen, and Kortum.[70] In that model, Bertrand competition leads to markups that equal the difference between the productivity of the most efficient and second-most efficient firms. But with entry by a finite number of potential rivals, de Blas and

Russ show that these markups are not fixed by the productivity distribution of firms, but depend on the number of rivals. If opening to trade alters the number of potential rivals, then markups will also change. In that case, we can conjecture that the gains from trade will not depend on only the import share and a parameter. Understanding the class of models in which this conjecture holds true is an important direction for further research.

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Oil Price Shocks

James D. Hamilton *

The first decade of the new millennium brought a dramatic increase in the real price of crude petroleum. The price (in 2009 dollars) rose from about $30 a barrel in 2003 to an average of nearly $100 a barrel in 2008 (see the far right panel of Figure 1). Such a rapid price increase was not unprecedented, though. The price of oil rose similarly during the 1970s (middle panel) and during the U.S. Civil War (left panel).

The oil price increase during the 1970s was spurred by three dramatic geopolitical events: the embargo and production cutbacks by the Arab members of OPEC in 1973–4; the Iranian revolution in 1978–9; and the Iran-Iraq war which began in 1980. A century earlier, strong demand associated with the U.S. Civil War and a big tax on crude's competitor, alcohol, were factors in a comparable boom. By contrast, the oil price run-up of 2005–8 did not seem to be associated with significant geopolitical disruptions.

The three episodes shown in Figure 1 have one theme in common: declining production from the maturing oilfields on which the world had been depending at the time. Flows from the initial Pennsylvanian fields fell quickly as the reservoirs were exploited, and total world oil production fell during 1862–4 before more productive new fields were found to replace them. Thanks to discoveries in Texas and California, for example, the United States was to remain the world's biggest oil producer until the early 1970s, when production from maturing U.S. fields began what proved to be a permanent decline (see Figure 2, on the following page). That loss of U.S. production was one reason the world suddenly came to depend so much more on the volatile Middle East. Over the most recent decade, production has begun to fall significantly from mature fields in the North Sea and Mexico, and output from Saudi Arabia failed to increase. In recent assessments,[1] I conclude that stagnating global production coinciding with remarkable growth in demand from the newly industrialized economies were the most important factors in the oil price increases over 2005–8.

I review the history of the oil market in a new working paper.[2] Table 1, also on the following page, presents from that research the summary of the five most recent petroleum supply disruptions. In most of these episodes, the lost oil production from the affected countries was offset in part by production increases elsewhere. Boosts in production from Saudi Arabia were the most significant offsetting factor. The first four events listed were followed by economic recessions. In the paper, I note that in fact all but one of the 11 U.S. recessions since World War II were preceded by a sharp increase in the price of crude petroleum, a pattern I first noted in 1983[3] when there were only eight postwar recessions for which the observation could be made.

One mechanism by which oil shocks likely contribute to economic recessions is through the automotive sector, because consumers postpone purchases or shift spending away from larger domestically manufactured vehicles.[4] Paul Edelstein and Lutz Kilian[5] document the empirical sig-

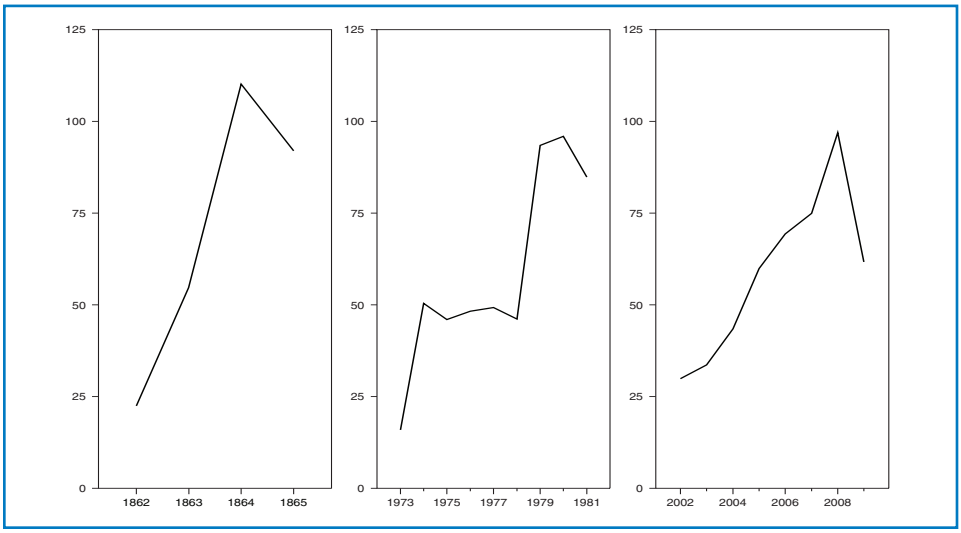

Figure 1 — Price of oil measured in 2009 dollars per barrel. Left panel: 1862 to 1865. Middle panel: 1973 to 1981. Right panel: 2002 to 2009.

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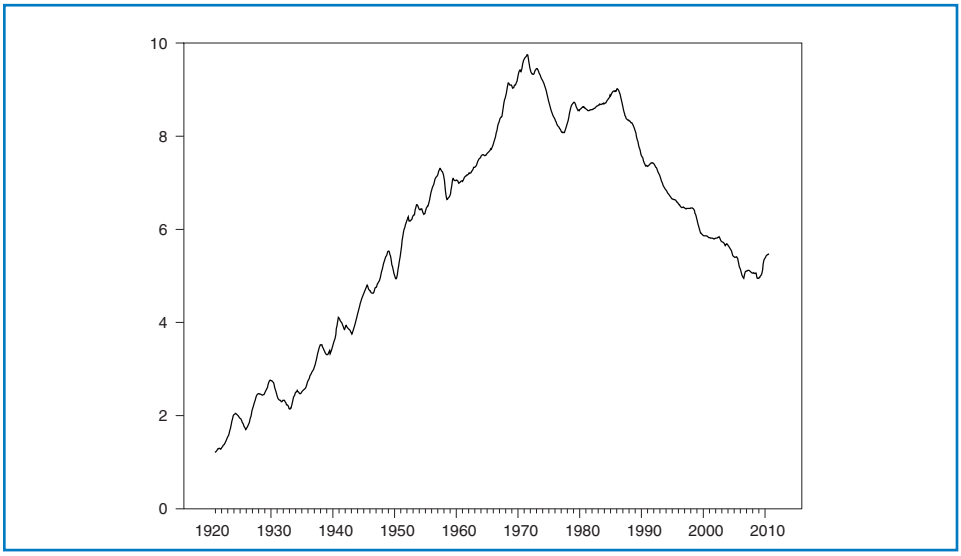

Figure 2 — Production of crude oil from U.S. fields, average over preceding 12 months, in millions of barrels per day, December 1920 to September 2010.

nificance of this effect, and Valerie Ramey and Dan Vine[6] demonstrate that it continues to be quite important despite changes in the American economy over time. Gasoline price increases also have been observed to have a significant depressing effect on measures of consumer sentiment.

In a recent paper[7] I document that automobile purchases, consumer sentiment, and overall consumer spending in 2007–8 responded to the oil price increase in much the same way as had been observed in earlier episodes. Had it not been for the decline in the auto sector alone, U.S. real GDP would have increased by 1.2 percent between 2007:Q4 and 2008:Q3, a period that was subsequently characterized by the NBER Business Cycle Dating Committee as the first year of our most recent recession. Given the likely additional contribution of the oil price shock to other components of consumer spending, it seems quite reasonable to conclude that oil prices were an important factor in the initial stages of the most recent economic downturn.

This mechanism would not necessarily operate in reverse to stimulate the economy when oil prices go down. To the extent that postponement of vehicle purchases is part of the propagating mechanism when the price of oil goes up, consumers would not be expected to accelerate purchases when the gasoline price declines. Some of the macroeconomic effects of oil shocks come from difficulties in reallocating specialized labor and capital out of the disfavored sectors, which is exacerbated by the Keynesian multiplier process that results from unemployed auto workers. Indeed, Michael Owyang and I[8] find that the oil price collapse in the mid-1980s seemed to induce a regional recession in the major U.S. oil-producing states. In other research[9] I explore the evidence of nonlinearities in the effects of oil price changes on the level of economic activity, and I recently reviewed[10] the economic literature that has addressed this question. That research suggests that at the moment, when memories of $4 gasoline are still fresh in consumers' minds and spending patterns have not reverted to pre-2007 values, we might expect these nonlinear multiplier effects to be less significant.

That finding is of course extremely relevant in the Spring of 2011, as dramatic developments in North Africa and the Middle East are leading many people to wonder whether we are about to see a replay of the historical pattern. The significant production disruptions at the time of this writing have been confined to Libya, which had been contributing about 2 percent of global oil production. If this is the end of the story, then it would be perhaps comparable to the 2002–3 Venezuela-Iraq disruptions, and significantly smaller than the supply disruptions that were associated with economic recessions. However, given the turbulent history of the Middle East, even if current events are contained, it seems quite likely that sometime within the next decade there will be broader conflicts with significant implications for world oil supplies.

Apart from the possibility of dramatic geopolitical developments, there is another lesson we can learn from studying the past. Falling production from mature fields in Oil Creek, Pennsylvania in the 1860s and in the United States as a whole after 1971 ended up being more than replaced by much more productive fields discovered elsewhere. So far, that has yet to happen in the new millennium, and the potential demand is enormous as countries like China enter the automotive age. Saudi Arabia has provided a critical buffer for many historical production shortfalls, but it is far from clear that the kingdom is going to continue to play that role. Even if we some-

Date	Event	Supply cut (affected countries)	Supply cut (net global)	Price change	Business cycle peak
Nov 1973	OPEC embargo	7 percent	7 percent	51 percent	Nov 1973
Nov 1978	Iran revolution	7 percent	4 percent	57 percent	Jan 1980
Oct 1980	Iran Iraq war	6 percent	4 percent	45 percent	July 1981
Aug 1990	Gulf War I	9 percent	6 percent	93 percent	July 1990
Dec 2002	Venezuela and Gulf War II	4 percent	2 percent	28 percent	none

Table 1 — Recent petroleum supply disruptions. Price increases for first three episodes based on producer price index for crude petroleum.

how maintain stability in the Middle East, meeting the world's growing thirst for oil poses a daunting challenge for the next decade.

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Fiscal Stress and Inflation

Eric M. Leeper *

There is growing concern that inflation worldwide is rising. Among the factors that are cited as potential contributors are expansionary monetary policies in the United States, the United Kingdom, and the Euro Area; rapid economic growth in emerging economies; and increases in value-added taxes and commodity prices. In a sequence of recent papers, I suggest another potential culprit: looming fiscal stress and uncertainty about how policies will adjust to resolve that stress.

Populations in advanced economies are aging and governments have promised substantially more old-age benefits than they have made provisions to finance. The table below summarizes the "unfunded liabilities" problem that countries face. Overall, the G-20 countries have made spending promises that exceed financing plans and reach as much as 400 percent of their GDP. When the Congressional Budget Office rolls spending commitments and current revenues into debt accumulation, its debt projections are similar to those shown in the figure below.[1]

What happens next is uncertain. Some policies must adjust, and the fact that bondholders continue to value U.S. federal debt implies that investors expect that policies eventually *will* adjust. The eventual adjustments will be large. My coauthors and I are therefore pursuing a line of research with three key features: 1) policy regime changes can and do occur; 2) the timing and nature of future regimes are uncertain; and 3) a complete picture requires studying fiscal and monetary policies jointly.[2] Each factor operates strongly through expectations.

To motivate this research, some background on monetary-fiscal interactions is helpful. At a general level, monetary and fiscal policies have two tasks to perform: control inflation and stabilize the value of government debt. There is a beautiful symmetry between the two policies. The conventional assignment — call it *Regime M* — tasks monetary policy with controlling inflation and fiscal policy with stabilizing debt. But an alternative assignment — *Regime F* — has monetary policy maintain the value of debt and fiscal policy control inflation. Regime F characterizes the U.S. policy mix leading up to the 1951 Treasury Accord and, arguably, describes recent policies.[3] Many economists regard Regime M as the normal state of affairs and have studied it extensively.

Macroeconomists often equate Regime F to Sargent and Wallace's (1981) "unpleasant monetarist arithmetic" regime. They infer that it necessarily leads to high inflation rates, and they dismiss it as irrelevant to advanced economies with independent central banks.[4] But the fiscal theory of the price level is an alternative policy mix that delivers Regime F without necessarily producing the extremely high inflation rates associated with unpleasant arithmetic. This theory plays off the fact that the vast majority of

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Country	Aging-Related Spending
Australia	482
Canada	726
France	276
Germany	280
Italy	169
Japan	158
Korea	683
Spain	652
United Kingdom	335
United States	495
Advanced G-20 Countries	409

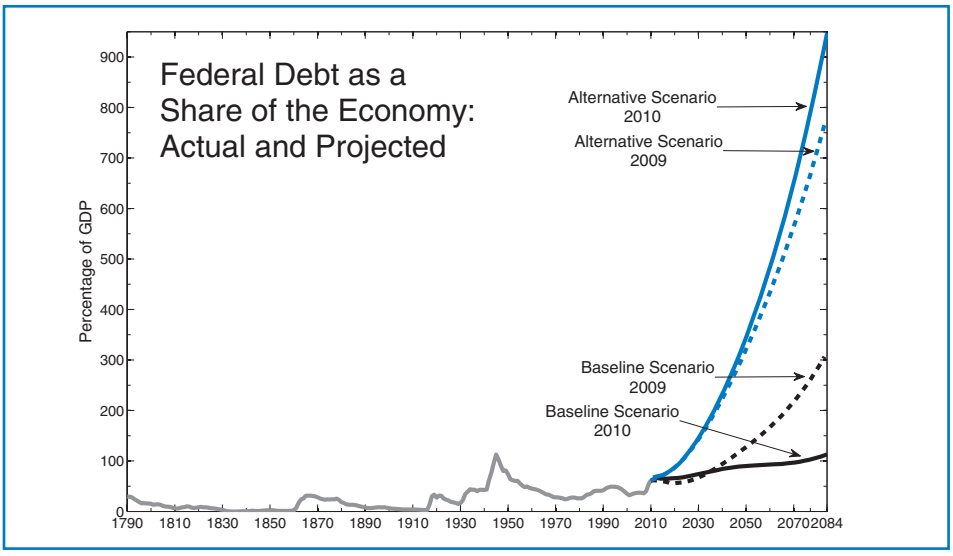
Net present value of the impact on fiscal deficits of aging-related spending as a percent of GDP
Source: International Monetary Fund, "Fiscal Implications of the Global Economic and Financial Crisis," IMF Staff Position Note SPN/09/13 (2009).

government debt issued by advanced economies is nominal—denominated in domestic currency—so that changes in the price level can change the value of outstanding debt.[5] If fiscal policy does not consistently raise the present value of primary surpluses whenever debt rises and monetary policy does not consistently combat rising inflation with sharply higher nominal interest rates—that is, does not always obey the Taylor principle—then a fiscal theory equilibrium emerges. Fluctuations in current and expected surpluses feed directly into current or future inflation and monetary policy stabilizes debt by preventing higher inflation from transmitting into still higher nominal interest rates and, therefore, real debt service.

One example demonstrates the economic mechanisms in Regime F: consider a one-time increase in transfers (or a cut in taxes), financed by new nominal debt issuance. With no offsetting increase in current or expected tax obligations, households feel wealthier at the initial price level and try to increase their consumption. Higher demand for goods drives up the price level—reducing the value of debt—and continues to do so until the wealth effect dissipates and households are content with their original consumption plan. News of higher future transfers (or lower future taxes) sets off the identical chain of events, so the current price rises to equate the value of outstanding debt to the lower expected discounted surpluses.[6]

Our research on fiscal stress feeds the Congressional Budget Office's projections of federal government transfers—Social Security, Medicare, and Medicaid—into a variety of formal models, but treats those transfers as "promised." These promises are initially honored and paid for with debt sales and distorting taxation. As marginal tax rates rise, though, the private sector grows increasingly disgruntled, increasing the probability that the economy will hit its *fiscal limit*—the point at which political resistance prevents taxes from continuing to rise. Promised transfers continue to grow relentlessly, so further policy adjustments must occur. We posit that people ascribe some probability to Regime M—where monetary policy targets inflation and entitlements reform stabilizes debt—and some probability to Regime F—where promised transfers are delivered and monetary policy stabilizes debt. Uncertainty plays a crucial role in agents' decisions, as probability distributions describe both the fiscal limit and future regimes. We compute rational expectations equilibriums, which require that policies be sustainable in the long run.[7]

Several robust implications for inflation emerge from this research. First, if people believe that Regime F could occur in the future, then the central bank loses control of actual and expected inflation. A higher likelihood of Regime F, even if the regime is temporary, produces a larger increase in inflation. Second, effects on inflation from fiscal stress can be small and gradual or large and sudden, depending on agents' beliefs about possible future policy regimes. Small and gradual effects can be difficult to glean from early warning signals of inflation, such as long-term interest rates, particularly because the effects arise through expectations of distant policy adjustments. Third, because larger accumulations of debt produce larger run-ups in inflation, postponing eventual



Actual and projected U.S. federal government debt as a share of GDP
Source: Congressional Budget Office, The Long-Term Budget Outlook, Washington, D.C. (2009 and 2010).

fiscal adjustments raises inflation risks. Finally, even when long-run expectations are anchored on Regime M — where monetary policy can control inflation perfectly — the central bank's loss of inflation control can be dramatic along the transition path.

This research demonstrates that inflation can arise for *fiscal* reasons that are beyond the control of independent central banks. It also suggests that efforts by central banks to offset fiscally-induced inflation through more aggressive monetary policy cannot succeed if fiscal policies and their expectations are inconsistent with the central bank's inflation goals.

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Evaluating the Impact of Social Security

Kevin Milligan*

Although pressing issues, from immigration to national security, can capture the attention of policymakers from year to year, the problems associated with the fiscal consequences of an aging population are always looming in the background. The eventual impact of Social Security and Medicare on the long-run budget in the United States is likely to be substantial. But, the problems facing other OECD countries are perhaps even more severe. Birth rates elsewhere are lower, meaning that fewer workers will be paying for the benefits of retirees. Moreover, the share of retirement benefits provided through the state is higher in many other OECD countries than in the United States.[1]

In light of these pressures, many coun-

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tries already have implemented substantial reforms. Italy and Sweden are phasing in notional defined contribution plans to replace their traditional social security programs. Canada has a 140 billion dollar trust fund invested in a diversified portfolio of financial assets. Germany has lowered the public pension entitlement and encouraged the establishment of occupational pensions and individual savings plans. In the fall of 2010, France advanced the retirement age from 60 to 62 in the face of mass protests, joining the United States and other countries in a movement toward later benefit entitlement ages. Further reforms, both large and small, are under discussion in many other nations.

Over the past few years, I have participated in a number of research projects evaluating social security programs around the world. The broad goal of this work is a better understanding of the economic responses to the incentives embedded in public pension programs. Research on these issues can provide policymakers with some guidance as they face the demographic challenges of the future. Some of this work is undertaken through the NBER's International Social Security group, organized by Economics of Aging Program Director David A. Wise. It features the work of teams from twelve OECD countries, collaborating to produce comparable analyses that address important questions for the design and future of Social Security programs. To date, this project has produced four published volumes, with more on the way.

Here I describe work from two phases of the International Social Security project, as well as two other research projects related to retirement behavior.

Disability Insurance

The International Social Security project has focused recently on disability programs. Wise and I have written a summary paper describing and exploring the detailed work being done by the country teams.[2] In most countries, public disability insurance programs provide important insurance against income loss from disability for those too young to retire. However, in many countries disability programs may become a pathway for early retirement. Across countries, the uptake of disability insurance among younger working people is quite similar; however, among those who are older, uptake displays enormous variation. For men at age 64, for example, uptake ranges from 8 percent in Italy to 37 percent in Sweden. The cross-country comparisons suggest a strong level of substitutability between the availability of early public retirement pensions and disability insurance uptake.

We are also interested in how much of the growth of disability insurance programs can be attributed to changes in health and improvements in life expectancy. Japanese men aged 65 in 2005 could expect to live ten years longer than Japanese men who were 65 in 1960. There also have been large increases in self-assessed health over time. Still, the use of disability insurance has grown over these years. Making use of the cross-country data, we can compare changes in disability benefit use in countries with large and small improvements in health status. We find no evidence of a relationship between health changes and disability rates. Instead, the main driver of disability insurance uptake seems to be policy choices about how disability is defined, as well as variation in the generosity of benefits.

Elderly and Youth Employment

An earlier phase of the International Social Security Project delved into the relationship between elderly workers and youth employment. Over the last thirty years, governments around the world have occasionally extended early retirement benefits to older workers in periods of high youth unemployment in an effort to improve the employment outcomes of the young. Most economists are quick to invoke the "lump of labor fallacy" in rejecting these efforts, but the idea remains attractive to many policymakers. The introductory chapter for this phase of the research, written with Jonathan Gruber and Wise, pools the data to generate cross-country analyses and picks out the most compelling examples from the experience of individual countries.[3]

This cross-country analysis reveals no consistent relationship between long-run changes in elderly employment and the employment of those at prime labor market ages. Furthermore, each country team produced a detailed simulation of the retirement incentives embedded in its nation's public retirement insurance programs. While the cross-country results show a clear pattern between these incentives and the employment rates of older workers, no such relationship is found for younger workers.

Looking at the experiences of individual countries, the most striking comes from Denmark. In 1979, the "Post-Employment Wage" program was introduced, leading to an almost immediate drop of 28 percentage points in the employment rate of men aged 61–65. Over this same short time period, the employment rate of males aged 20–24 lost 5 percentage points, meaning that the young did not capture the lost employment of the older workers.

Health and Wealth Allocation

To relieve pressure on public retirement income plans, many countries have considered private savings schemes designed to supplement or even replace incumbent public plans. Therefore, one important focus of the vast literature on social security privatization is the effectiveness of individual portfolio decisions among elderly populations. Courtney Coile and I have studied the impact of health shocks and aging on household portfolio decisions,[4] following the asset allocation of elderly American households in the Health and Retirement Study as they grew older and experienced health setbacks. We find that when an elderly couple experiences a death or a large shock to health, there is substantial disposition of assets, including the principal residence, vehicles, and small businesses. We also find a significant increase in the share of wealth that is held in dominated assets, such as bank accounts. This latter finding corroborates my earlier finding, using Canadian data, of a rising share of liquid assets held as households age.[5]

We then compare all of these asset changes for those with and without preexisting mental or physical impairment. We find the largest responses to health shocks among those with reduced mental capacity. Our findings suggest that the focus on the risk-return properties of portfolios may

be misplaced in the literature on aging and wealth allocation, because for many households the primary concerns are liquidity and the complexity of asset holdings.

Public Pensions and Wellbeing

While it is important to understand the impact of public retirement income plans on savings and on the labor supply of the elderly, it is also important to remember the economic justification for retirement income insurance in the first place. The risks of longevity, poor investment returns, and unexpectedly low career earnings can be diminished through insurance. Using data from Canada, Michael Baker, Gruber, and I investigate the impact of public retirement income plans on wellbeing in retirement.[6]

We exploit variation over 25 years in the rules governing Canada's public pensions to compare cohorts with higher and lower entitlements to income from public pensions. We find that expansions of public pensions increase income, especially among those at the lower end of the income distribution. Consumption also increases with higher public pension entitlements. On the other hand, we don't uncover any evidence of changes in happiness related to expansions of public pension income. Most intriguing, our measure of consumption poverty shows no change with increases in public pension entitlements. This result could be explained by lower-income families finding other ways to maintain their consumption, for example through charity, family donations, or other mechanisms, in the absence of enriched public pension benefits.

Summary

Through comparative analysis of the systems of different countries, and with in-depth studies of aspects of Canadian and American elderly families, my research has contributed to understanding the impact of retirement policy. This research helps us to build a menu of the available policy options as each country within the OECD seeks a path toward a fiscally sustainable system of retirement incomes.

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[1] *Public pensions represented 6 percent of GDP in the United States in 2005, but 14 percent in Italy and 12.4 percent in France, according to "Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries" published by the OECD. http://dx.doi.org/10.1787/651748842654*

[2] *See "Social Security and Retirement around the World: Historical Trends in Mortality and Health, Employment, and Disability Insurance Participation and Reforms — Introduction and Summary", with D.A. Wise, NBER Working paper No. 16719, January 2011.*

[3] *See "Social Security Programs and Retirement around the World: The Relationship to Youth Employment, Introduction and Summary," NBER Working Paper No. 14647, January 2009. The conference volume has been published as* Social Security Programs and Retirement around the World: The Relationship to Youth Employment, *J. Gruber and D.A. Wise eds., Chicago: University of Chicago Press, 2010.*

[4] *See "How Household Portfolios Evolve after Retirement: The Effect of Aging and Health Shocks" with C. Coile, NBER Working Paper No. 12391, July 2006, and* Review of Income and Wealth, *2009, Vol. 55, No. 2, pp. 226–48.*

[5] *See "Life-Cycle Asset Accumulation and Allocation in Canada," NBER Working Paper No. 10860, October 2004, and* Canadian Journal of Economics, *2005, Vol. 38, No. 3, pp. 1057–1106.*

[6] *See "Retirement Income Security and Wellbeing in Canada," with M. Baker and J. Gruber, NBER Working Paper No. 14667, January 2009.*

Trust and Finance

Paola Sapienza and Luigi Zingales*

In recent years, economists have become increasingly interested in studying how specific institutions and norms affect economic behavior and economic performance. One part of our research, developed with Luigi Guiso, examines the interactions between a small but important subset of norms and institutions: trust and civic capital. This research also explores the effects of these factors on economic outcomes, such as economic growth.

Trust, Social Capital, and Financial Development

Our first contribution in this area introduces the concept of trust into financial economics. One paper investigates how social norms affect financial develop-

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ment.[1] The term "social capital" has been widely used in the social sciences outside of economics and is defined as "features of social life — networks, norms, trust, that enable participants of a given community to act together to pursue shared objectives."[2] As such, a community's level of social capital may affect economic efficiency by enhancing the level of trust among economic agents belonging to the group — here trust is defined as "a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action."[3] This concept is foreign in traditional finance, because the prevailing paradigm is based on common knowledge, homogenous beliefs, and, very often, representative agents.

Because financial contracts require trust, differential levels of social capital may have important consequences for the way that financial markets develop. Financing is nothing but an exchange of a sum of money today for a promise to return more money in the future. Whether such an exchange can take place depends not only on the legal enforceability of contracts but also on the extent to which the financier trusts the financee. In relational contracts, what matters is personalized trust — that is, the mutual trust that people develop through repeated interactions. For the development of anonymous markets, though, what matters is generalized trust: the trust that people have in a random member of an identifiable group. Sociological research shows that areas where social capital is greater have higher generalized trust and, thus, are more likely to develop financial relations.

In "The Role of Social Capital in Financial Development" we study this empirical prediction for a variety of households' financial choices: portfolio allocation, use of checks, availability of loans, and reliance on informal lending. Consistent with social capital being important, the results show that in areas characterized by high levels of social capital, households invest a smaller proportion of their financial wealth in cash and a bigger proportion in stock. In areas with a great deal of social capital, households also are more likely to use personal checks and to obtain credit when they seek it. The effect of social capital is stronger when legal enforcement is weaker and is more pronounced among less-educated people, who need to rely more on trust because of their limited understanding of contracting mechanisms. These results have real implications for developing countries where education levels tend to be low and law enforcement is weak. Whether trust is simply an equilibrium outcome of a society in which non-legal mechanisms force people to behave cooperatively, or whether there is an inherited component imprinted during education, is the subject of a long standing debate. In the above-mentioned paper, we address this question by examining the behavior of people who migrated over the course of their lifetime. For these households, we can separately identify the effect of the environment they grew up in versus the environment where they now live. Although most of the effect is attributable to the level of social capital prevailing in the area where an individual lives, roughly one third is attributable to the level of social capital prevailing in the area where he or she was born. This is important, because it emphasizes that subjective priors about other people's behavior may be different from the objective probability, and they may be driven by the individual's educational background and the cultural environment in which the individual was reared.

While deeply affected by societal norms, trust is also influenced by individual characteristics related to biological traits and personal history. We consider each of those factors in subsequent work.

In another study, we look at whether individual trust, rather than the average level of trust of the community, helps to explain the limited stock market participation observed in the data, especially among the wealthy.[4] Analyzing what drives participation in the stock market is important not only for asset pricing and for the development of financial markets but also for analyzing the potential impact of investing social security account balances in the stock market.

We develop a simple testable model in which the decision to buy stocks depends not only on the objective expected return but also on the subjective priors of the investor about the probability of being cheated. Less trusting individuals are less likely to buy stock and, conditional on buying stock, they buy less. The calibration of the model indicates that mistrust is sufficiently severe to account for the lack of participation of some of the wealthiest investors in the United States, as well as for differences in the rate of participation across countries. To test the model's predictions, we use a sample from the Dutch National Bank (DNB) Household survey. Trusting individuals are significantly more likely to buy stocks and risky assets and, conditional on investing in stock, they invest a larger share of their wealth in stocks.

In a related paper, we examine whether cultural biases help to explain the extent to which individuals trust each other.[5] We also study how these cultural biases affect international trade and investments. In this work, the empirical challenge is how to separate customary beliefs from rational expectation beliefs. We do so using a rich dataset that contains the trust of European citizens for citizens of other countries. First, we document that relative trust is affected not only by objective characteristics of the country being trusted (that is, country fixed effects), but also by cultural aspects including religion, a history of conflicts, and similarities between pairs of countries. The impact of both wars and religion on relative trust is reduced by half for people with a college degree, consistent with the hypothesis that cultural stereotypes become less important in shaping people's priors when individuals are more educated.

Having established an effect of culture on priors, we then find that lower relative levels of trust toward citizens of a country lead to less trade with that country, less portfolio investment, and less direct investment in that country, even after controlling for the country's objective characteristics. This effect is stronger for goods that are more trust intensive, and it doubles or triples when trust is instrumented with its

cultural determinants. These results suggest that perceptions rooted in culture are important (and generally omitted) determinants of economic exchange.

Cultural Determinants of Preferences and Priors

If trust is important in explaining participation in the market and in the use and availability of financial contracts, then the next logical step — which we take in our research — is to investigate why trust and, more generally, individuals' priors and preferences differ so greatly across countries and across individuals within a country. A logical place to start is by investigating the set of social institutions that affect individuals' lives.

One such important social institution is religion. We analyze the relation between religion and six groups of attitudes that have been shown to be relevant for economic growth: attitudes toward cooperation (trust and tolerance), women, government, legal rules, the market economy and its fairness, and attitudes toward savings.[6] We examine the effect of different religiosity levels and different religious denominations, controlling for individual characteristics and country fixed effects.

On average, we find that religion is positively associated with attitudes that are conducive to free markets and better institutions. Religious people trust others more, trust the government and the legal system more, are less willing to break the law, and are more likely to believe that market outcomes are fair. However, the relation between religiosity and market mechanisms (incentives, competition, and private property) is more mixed. On the negative side, religious people are more intolerant and less sympathetic to women's rights. These effects differ across religious denominations.

This evidence suggests the importance of upbringing and social environment in shaping individuals' preferences and beliefs and in influencing the allocation of resources. The role of culture in this context is very important. In a review paper[7], we discuss and extend the literature on the effect of culture on individual preferences and priors; we also investigate some of the macro effects of culture on economic outcomes.

It is also important to understand how social capital and trust are accumulated and dissipated. Putnam (1993), one of the fathers of the concept of social capital, conjectures that social capital can be the result of historical experiences. For example, he attributes the large difference in social capital between the North and the South of Italy to the period of independence that Northern cities had as free city-states more than 500 years ago.

This conjecture, which Putnam does not formally test, is intriguing for two reasons. First, it identifies how social capital is formed, through the experience of positive cooperation at the local level. Second, it assumes an enormous degree of persistence of this experience. If Putnam is correct, then a lot of the observed persistence in economic development might be caused by the persistence of the social capital. We test Putnam's conjecture by studying both differences within sub-regions of northern Italy and differences between the north and south of Italy.[8]

Both methods suggest that Putnam's conjecture was right and that at least 47 percent of the North-South divide in Italy is attributable to the free city-state experience. More importantly, our results suggest that positive experiences of cooperation at the local level can have extremely long-lasting effects, even when the institutions associated with those experiences have all but vanished. This result has implications that reach beyond the explanation of the Italian experience. What colonizers might have transferred to their colonies is not necessarily a set of institutions, but rather a different experience of cooperation or mistrust. An unresolved question, however, is how these experiences last for so long.

We try to answer this question in subsequent research where the main hypothesis is that the transmission process is cultural and is passed from generation to generation. We define social capital as "good" culture — in other words, a set of beliefs and values that facilitate cooperation among the members of a community — and we build a model of the cultural transmission of beliefs.[9] In this context, even a positive experience of cooperation lasting two to three generations can have permanent effects. This result could rationalize the long-lasting effect of a history of good institutions even after these institutions have vanished. One way to model better legal enforcement, for example, is as a reduction in the cost of being cheated. Even a temporary reduction in this cost can permanently increase the level of cooperation as the good experience is transmitted across generations. This effect also can explain the long-lasting effect of legal origin[10] and of bad colonial institutions.[11]

Conclusions

Research on "social capital" has been plagued by ambiguity on what that term actually means. This ambiguity has made it difficult for this concept to be fully accepted into the mainstream economic debate. In a survey paper[12], we propose a definition of social capital that satisfies the criteria of an economic definition of capital (Solow, 1995) and clearly differentiates social capital from physical and human capital. This so-called "civic capital" is an important omitted factor of production and can explain why differences in economic performance persist over centuries. We discuss how the effect of civic capital can be distinguished empirically from other variables that affect economic performance and its persistence, including institutions and geography.

While this research has brought some useful insights, much remains to be done. First, there is a need for better empirical measures of civic capital. Second, it is important to study the mechanism through which civic capital accumulates and depreciates. The evidence suggests that a positive shock to the benefits of cooperation can have effects that last several centuries. What

ensures such a high degree of persistence, however, still remains unclear. A better understanding of these mechanisms is crucial if we want to think about designing policies that might foster the formation and preservation of civic capital.

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NBER Profile: *James D. Hamilton*

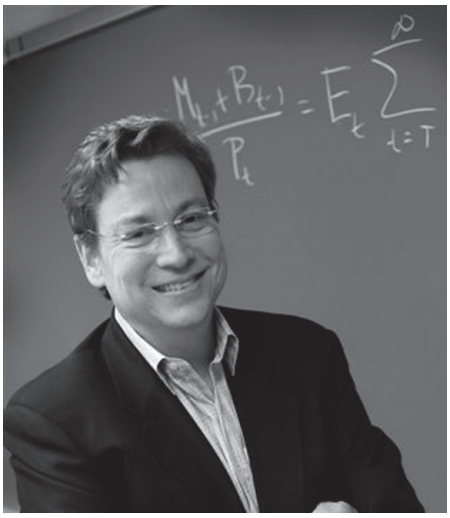
James D. Hamilton is a Research Associate in the NBER's Programs on Economic Fluctuations and Growth and Environmental and Energy Economics. He has also been a professor in the Economics Department at the University of California at San Diego (UCSD) since 1992, and served as department chair from 1999–2002.

Hamilton received a Ph.D. in economics from the University of California at Berkeley in 1983. Before joining the UCSD faculty, he taught at the University of Virginia. He also has been a visiting scholar at the Federal Reserve Board in Washington, DC, and at the Federal Reserve Banks of Atlanta, Boston, New York, and San Francisco.

Hamilton's research and publications focus on econometrics, business cycles, monetary policy, and energy markets. His graduate textbook on time-series analysis has almost 10,000 scholarly citations and has been translated into Chinese, Japanese, and Italian. Academic honors include election as a Fellow of the Econometric Society.

Hamilton is co-author (along with University of Wisconsin professor and NBER Research Associate Menzie Chinn) of *Econbrowser*, a popular weblog covering current economic conditions and policy. Hamilton is married to Marjorie A. Flavin, who is also an NBER Research Associate and a professor of economics at UCSD.

NBER Profile: *Eric M. Leeper*



Eric Leeper has been an NBER Research Associate in the Program on Economic Fluctuations and Growth since 2005. He is also a professor of economics and the director of the Center for Applied Economics and Policy Research at Indiana University, a distinguished visiting professor of business and economics at Monash University, and an external advisor to the Swedish central bank (Sveriges Riksbank).

Leeper received a B.S. in economics from George Mason University in 1980 and a Ph.D. in economics from the University of Minnesota in 1989. Prior to joining the Indiana University faculty in 1995, he was a research officer in the macro policy group at the Federal Reserve Bank of Atlanta and spent four years as a staff economist in the International Finance Division of the Federal Reserve Board of Governors. His research focuses on theoretical and empirical models of macro policy, with special emphasis on monetary-fiscal policy interactions.

Leeper was born in Isfahan, Iran, and spent his school-age years in Taiwan, Malaysia, Seattle, Hong Kong, and Northern Virginia. He now lives in Bloomington, Indiana with his wife, Susan Monaco, and their two children, Sam and Sydney. When he is not fretting about the government's budget constraint, he is fingering the frets on his guitar.

NBER Profile: *Kevin S. Milligan*

Kevin S. Milligan is a Research Associate in the NBER's Programs on Aging and Public Economics and an Associate Professor of Economics at the University of British Columbia (UBC). He received his Ph.D. in Economics from the University of Toronto in 2001 and joined the UBC economics faculty that year. He was also a Visiting Associate Professor in the Department of Economics at Simon Fraser University from July 2008 to June 2009.

Milligan's research has focused on policies related to the wellbeing of children and seniors, studying issues such as child tax benefits, parental leave, tax-preferred savings, and retirement decisions. He has taught public finance and program evaluation at the graduate level, and leads a senior undergraduate seminar on the economics of taxation.

In addition to his teaching and research, Milligan serves as Co-Director with Tammy Schirle of the CLSRN project "Challenges for Canada's Retirement Income System." He is also Associate Editor of the journal, *Canadian Public Policy*, and is on the Editorial Board of the *Canadian Tax Journal* and the *Journal of Pension Economics and Finance*.

When time permits, Milligan enjoys spending time in the outdoors and listening to music with his family.

NBER Profile: *Paola Sapienza*

Paola Sapienza is a Research Associate in the NBER's Program on Corporate Finance and Political Economy and a professor of finance at Northwestern University's Kellogg School of Management. She joined the Kellogg School faculty in 1998 after receiving a Ph.D. in economics from Harvard University.

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Sapienza is a director of the American Finance Association and currently serves as an associate editor of *Management Science*. She lives in Evanston with her husband, Salvatore, and their two sons, Matteo and Carlo.

NBER Profile: *Luigi G. Zingales*

Luigi G. Zingales is a Research Associate in the NBER's Programs on Corporate Finance and Political Economy and the Robert C. McCormack Professor of Entrepreneurship and Finance at the University of Chicago's Booth School of Management. He received a bachelor's degree in economics from Università Bocconi in Italy in 1987 and a Ph.D. in economics from MIT in 1992. He joined the Chicago Booth faculty in 1992.

Zingales studies the theory of the firm, the relationship between organization and financing, and the decision to go public. He is also the co-developer of the Financial Trust Index, which is designed to monitor the level of trust that Americans have toward their financial system. His work has been published in the *Journal of Financial Economics*, the *Journal of Finance*, and the *American Economic Review*, and he is co-author, with NBER Research Associate Raghuram G. Rajan, of *Saving Capitalism from Capitalists*.

Zingales was born in Italy, a country with high inflation and unemployment which inspired his professional interests as an economist. In addition to teaching and researching, Zingales enjoys cooking and spending time with his children.

Conferences

Twenty-sixth Annual Conference on Macroeconomics

The NBER's Twenty-sixth Annual Conference on Macroeconomics, organizer by Research Associates Daron Acemoglu of MIT and Michael Woodford of Columbia University, took place in Cambridge on April 8 and 9. These papers were discussed:

- **Andreas Fuster** and **Ben Hebert**, Harvard University, and **David Laibson**, Harvard University and NBER, "Natural Expectations, Macroeconomic Dynamics, and Asset Pricing"
- **Klaus Adam**, University of Mannheim; **Pei Kuang**, Frankfurt University; and **Albert Marcet**, London School of Economics, "House Prices and the Current Account"
- **Markus K. Brunnermeier**, Princeton University and NBER; **Gary B. Gorton**, Yale University and NBER; and **Arvind Krishnamurthy**, Northwestern University and NBER, "Risk Topography"
- **Deniz Igan**, **Prachi Mishra**, and **Thierry Tressel**, International Monetary Fund, "A Fistful of Dollars: Lobbying and the Financial Crisis"
- **Gianluca Benigno**, London School of Economics; **Pierpaolo Benigno**, Luiss Guido Carli and NBER; and **Salvatore Nisticò**, Università di Roma, La Sapienza, "Risk, Monetary Policy, and The Exchange Rate"
- **Jordi Gali**, CREI and NBER; **Frank Smets**, European Central Bank; and **Raf Wouters**, National Bank of Belgium, "Unemployment in an Estimated New Keynesian Model"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/Macro11/summary.html

Innovation Policy and the Economy

The NBER's twelfth annual Conference on Innovation Policy and the Economy took place in Washington on April 12. The conference was organized by NBER Research Associates Joshua Lerner of Harvard University and Scott Stern of Northwestern University. The following papers were discussed:

- **Simon Johnson**, MIT and NBER, "Is Innovation Always Good for the Economy?"
- **John Haltiwanger**, University of Maryland and NBER, "Job Creation and Firm Dynamics in the U.S."
- **Lee Fleming**, Harvard University, and **Matt Marx**, MIT, "Non-compete Agreements: Barriers to Entry ... and Exit?"
- **Avi Goldfarb**, University of Toronto, and **Catherine Tucker**, MIT, "Privacy and Innovation"
- **Joel Waldfogel**, University of Minnesota and NBER, "Music Piracy and its Effects on Demand, Supply, and Welfare"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/IPEs11/summary.html

NBER News

Levin Receives John Bates Clark Medal

NBER Research Associate Jonathan D. Levin received the American Economics Association's John Bates Clark Medal for 2011. 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 highlights Levin's research contributions on contracting, the organization and design of markets, sub-prime lending, and the design of empirical methods for studying imperfect competition.

Levin is a faculty member at Stanford University and a member of the NBER's Industrial Organization Program. He received a B.A in English and a B.S. in Mathematics from Stanford University in 1994, an M. Phil. in Economics from Oxford University in 1996, and a Ph.D. in Economics from MIT in 1999. Levin was appointed a Faculty Research Fellow at the NBER in 2005 and he was promoted to Research Associate in 2008.

Other current NBER Research Associates who have received the Clark Medal include Daniel McFadden, Martin S. Feldstein, Joseph E. Stiglitz, James J. Heckman, Jerry A. Hausman, Sanford J. Grossman, Paul R. Krugman, Lawrence H. Summers, David Card, Kevin M. Murphy, Andrei Shleifer, Steven Levitt, Daron Acemoglu, Susan C. Athey, Emmanuel Saez, and Esther Duflo. Gary Becker, who was an NBER affiliate from 1957 until 1979, also won the Clark Medal, as did the late Milton Friedman and Zvi Griliches, both of whom were NBER affiliates for substantial parts of their careers.

Program and Working Group Meetings

Law and Economics

The NBER's Program on Law and Economics, directed by Christine Jolls of Yale Law School, met in Cambridge on March 25, 2011. These papers were discussed:

- **Jonathan B. Cohn** and **Jay C. Hartzell**, University of Texas at Austin, and **Stuart L. Gillan**, Texas Tech University, "On the Optimality of Shareholder Control: Evidence from the Dodd-Frank Financial Reform Act"
- **Kenneth Ayotte**, Northwestern University, and **Henry Hansmann**, Yale University, "A Nexus of Contracts Theory of Legal Entities"
- **Kathryn E. Spier**, Harvard University and NBER, and **Albert Choi**, University of Virginia, "Should Consumers be Permitted to Waive Products Liability? Product Safety, Private Contracts, and Adverse Selection"
- **Joel Waldfogel**, University of Minnesota and NBER, "Bye, Bye, Miss American Pie? The Supply of New Recorded Music Since Napster" (NBER Working Paper No. 16882)
- **Howard F. Chang**, University of Pennsylvania, and **Hilary Sigman**, Rutgers University and NBER, "An Empirical Analysis of Cost Recovery in Superfund Cases: Implications for Brownfields and Joint and Several Liability" (NBER Working Paper No. 16209)

Special Session on Corporate Governance

- **Robin Greenwood** and **C. Fritz Foley**, Harvard Business School and NBER, and **Sergey Chernenko**, Harvard Business School, "Agency Costs, Mispricing, and Ownership Structure" (NBER Working Paper No. 15910)

- **Alex Edmans**, University of Pennsylvania; **Xavier Gabaix**, New York University and NBER; **Tomasz Sadzik**, New York University; and **Yuliy Sannikov**, Princeton University, "Dynamic CEO Compensation"

- **Viral V. Acharya**, New York University and NBER, and **Marc Gabarro** and **Paolo Volpin**, London Business School, "Competition for Managers, Corporate Governance and Incentive Compensation"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/LEs11/summary.html

Public Economics Program Meeting

The NBER's Program on Public Economics (PE) met at Stanford University on April 7 and 8, 2011. The PE Program's Co-Director Amy Finkelstein of MIT, and NBER Research Associate Julie Berry Cullen of University of California, San Diego, organized this meeting. The following papers were discussed:

- **Johannes Schmieder**, Boston University; **Till M. von Wachter**, Columbia University and NBER; and **Stefan Bender**, Institut fur Arbeitsmarkt und Berufsforschung, "The Effects of Extended Unemployment Insurance over the Business Cycle: Evidence from Regression Discontinuity Estimates over Twenty Years"

- **Kory Kroft**, Yale University, and **Matthew J. Notowidigdo**, MIT, "Should Unemployment Insurance Vary With the Unemployment Rate? Theory and Evidence"

- **Camille Landais**, Stanford University; **Pascal Michaillat**, London School of Economics; and **Emmanuel Saez**, University of California at Berkeley and NBER, "Optimal Unemployment Insurance over the Business Cycle" (NBER Working Paper No. 16526)

- **Christina D. Romer** and **David H. Romer**, University of California at Berkeley and NBER, "The Effects of Marginal Tax Rates: Evidence from the Interwar Era"

- **Matias Busso**, Inter-American Development Bank; **Jesse Gregory**, University of Michigan; and **Patrick M. Kline**, University of California at Berkeley and NBER, "Assessing the Incidence and Efficiency of a Prominent Place Based Policy" (NBER Working Paper No. 16096)

- **Nicole Maestas** and **Kathleen Mullen**, RAND Corporation, and **Alexander Strand**, Social Security Administration, "Does Disability Insurance Receipt Discourage Work? Using Examiner Assignment to Estimate Causal Effects of SSDI Receipt"

- **Lex Borghans**, Maastricht University; **Anne Gielen**, IZA; and **Erzo F.P. Luttmer**, Dartmouth College and NBER, "Social Support Shopping: Evidence from a Regression Discontinuity in Disability Insurance Reform"

- **Liran Einav** and **Mark R. Cullen**, Stanford University and NBER; **Amy Finkelstein** and **Stephen P. Ryan**, MIT and NBER; and **Paul Schrimpf**, MIT, "Selection on Moral Hazard in Health Insurance"

- **Paul Niehaus**, University of California, San Diego, and **Sandip Sukhtankar**, Dartmouth College, "The Marginal Rate of Corruption in Public Program"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/PEs11/summary.html

Cohort Studies Meeting

The NBER's Working Group on Cohort Studies, directed by Dora Costa of the University of California, Los Angeles, met there on April 8, 2011. These topics were discussed:

- **Gabriella Conti**, University of Chicago; **James Heckman**, NBER and University of Chicago; and **Junjian Yi** and **Junsen Zhang**, Chinese University of Hong Kong, "Early Health Shocks, Parental Responses, and Child Outcomes"
- **Reynaldo Martorell**, Emory University, "Early Growth and Adult Health and Human Capital: A Pooled Analysis from Five Cohorts from Developing Countries"
- **Laura Carstensen**, Stanford University, "Shifting Temporal Horizons Influence Motivation across Adulthood"
- **Moshe Buchinsky**, University of California, Los Angeles and NBER, and **Nicole Maestas**, RAND Corporation, "The Evolution of Self-Reported Health"
- **Anne R. Pebley**, University of California, Los Angeles, "Capturing Residential Mobility and Choice in a Longitudinal Survey"
- **Janice Compton**, University of Manitoba, and **Robert Pollak**, Washington University and NBER, "Family Proximity, Childcare, and Women's Labor Force Attachment"
- **Paola Giuliano**, University of California at Los Angeles and NBER, and **Alberto F. Alesina** and **Nathan Nunn**, Harvard University and NBER, "On the Origin of Gender Roles: Women and the Plough" (NBER Working Paper No. 16718)

Summaries of these papers may be found at: http://www.nber.org/confer/2011/CS11/summary.html

Environmental and Energy Economics

The NBER's Program on Environmental and Energy Economics met at Stanford University on April 8 and 9, 2011. NBER Faculty Research Fellow Lucas W. Davis of the University of Calfornia, Berkeley and NBER Research Associate Lawrence H. Goulder of Stanford University organized the meeting. These papers were discussed:

- **Yuyu Chen**, Peking University; **Avraham Ebenstein**, Hebrew University of Jerusalem; **Michael Greenstone**, MIT and NBER; and **Hongbin Li**, Tsinghua University, "The Long-Run Impact of Air Pollution on Life Expectancy: Evidence from China's Huai River Policy"
- **H. Spencer Banzhaf**, Georgia State University and NBER, and **B. Andrew Chupp**, Illinois State University, "Heterogeneous Harm vs. Spatial Spillovers: Environmental Federalism and U.S. Air Pollution" (NBER Working Paper No. 15666)
- **Michael Anderson**, University of California, Berkeley, and **Maximilian Auffhammer**, University of California, Berkeley and NBER, "Vehicle Weight, Highway Safety, and Energy Policy"
- **Stephen P. Holland**, University of North Carolina, Greensboro and NBER; **Jonathan E. Hughes**, University of Colorado, Boulder; **Christopher R. Knittel**, University of California, Davis and NBER; and **Nathan C. Parker**, University of California, Davis, "Some Inconvenient Truths about Climate Change Policy"

- **Reed Walker**, Columbia University, "The Transitional Costs of Policy: Evidence from the Clean Air Act and the Workforce"

- **Robert Deacon**, University of California, Santa Barbara; **Dominic Parker**, Montana State; and **Christopher Costello**, University of California, Santa Barbara and NBER, "The Efficiency Gains from Coordinating Use of a Shared Resource: Evidence from a Self-Selected Fishery Coop"

- **Hunt Allcott**, MIT, and **Sendhil Mullainathan**, Harvard University and NBER "External Validity and Partner Selection Bias"

Summaries of these papers are available at: http://www.nber.org/confer/2011/EEEs11/summary.html

Political Economy

The NBER's Program on Political Economy, directed by Alberto Alesina of Harvard University, met in Cambridge on April 15, 2011. These papers were discussed:

- **Stelios Michalopoulos**, Tufts University, and **Elias Papaioannou**, Dartmouth College, "The Long-Run Effects of the Scramble for Africa"

- **Roland Benabou**, Princeton University and NBER, and **Jean Tirole**, Institut d'Economie Industrielle, "Laws and Norms"

- **Nicola Gennaioli**, CREI; **Rafael La Porta**, Dartmouth College and NBER; **Florencio Lopez-de-Silanes**, EDHEC Business School and NBER; and **Andrei Shleifer**, Harvard University and NBER, "Human Capital and Regional Development"

- **Alberto Alesina** and **Nathan Nunn**, and **Paola Giuliano**, University of California, Los Angeles and NBER, "On the Origins of Gender Roles: Women and the Plough"(NBER Working Paper No. 16718)

- **Irena Grosfeld** and **Ekaterina Zhuravskaya**, Paris School of Economics, and **Alexander Rodnyansky**, CEFIR, "Persistent Anti-Market Culture: A Legacy of the Pale of Settlement and of the Holocaust"

- **Daron Acemoglu**, MIT and NBER; **Aleh Tsyvinski**, Yale University and NBER; and **Pierre Yared**, Columbia University, "A Dynamic Theory of Resource Wars"(NBER Working Paper No. 16682)

Summaries of these papers may be found at: http://www.nber.org/confer/2011/POLs11/summary.html

Asset Pricing Program Meeting

The NBER's Program on Asset Pricing met at the University of Chicago's Booth School on April 29, 2011. NBER Research Associates Arvind Krishnamurthy and Annette Vissing-Jorgensen, both of Northwestern University, organized the meeting and chose these papers to discuss:

- **Anna Cieslak**, Northwestern University, and **Pavol Povala**, University of Lugano, "Understanding Bond Risk Premia"

- **Matthias Fleckenstein, Francis A. Longstaff,** and **Hanno Lustig**, University of California at Los Angeles and NBER, "Why Does the Treasury Issue TIPS? The TIPS-Treasury Bond Puzzle" (NBER Working Paper No. 16358)
- **Michael Johannes, Lars Lochstoer,** and **Yiqun Mou**, Columbia University, "Learning About Consumption Dynamics"
- **Xing Hu**, Princeton University, and **Jun Pan** and **Jiang Wang**, MIT and NBER, "Noise" (NBER Working Paper No. 16468)
- **Jack Favilukis**, London School of Economics, and **Sydney C. Ludvigson** and **Stijn Van Nieuwerburgh**, New York University and NBER, "The Macroeconomic Effects of Housing Wealth, Housing Finance, and Limited Risk-Sharing in General Equilibrium" (NBER Working Paper No. 15988)
- **Harrison Hong**, Princeton University and NBER, and **David Sraer**, Princeton University, "Quiet Bubbles"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/APs11/summary.html

Behavioral Finance Meeting

The Behavioral Economics Working Group held a meeting on Behavioral Finance in Chicago on April 30, 2011. NBER Research Associates Stefano DellaVigna and Ulrike Malmendier, both of the University of California, Berkeley, organized the meeting and chose these papers to discuss:

- **Robert F. Stambaugh**, University of Pennsylvania and NBER; **Jianfeng Yu**, University of Minnesota; and **Yu Yuan**, University of Pennsylvania, "The Short of It: Investor Sentiment and Anomalies"
- **Matti Keloharju**, Aalto University**; Samuli Knüpfer**, London Business School; and **Juhani Linnainmaa**, University of Chicago, "From Customers to Shareholders: The Effect of Product Market Choices on Investment Decisions"
- **Aydogan Alti**, University of Texas, and **Paul C. Tetlock**, Columbia University, "How Important Is Mispricing?"
- **Sendhil Mullainathan**, Harvard University and NBER; **Markus Noeth**, Hamburg University; and **Antoinette Schoar**, MIT and NBER, "The Market for Financial Advice: An Audit Study"
- **Annette Vissing-Jorgensen**, Northwestern University and NBER, "Consumer Credit: Learning Your Customer's Default Risk from What (S)he Buys"
- **Philipp Krueger**, University of Geneva; **Augustin Landier**, Toulouse School of Economics; and **David Thesmar**, HEC Paris, "The WACC Fallacy: The Real Effects of Using a Unique Discount Rate"

Summaries of these papers may be found at: http://www.nber.org/2011/BEf11/summary.html

Corporate Finance

The NBER's Program on Corporate Finance met in Chicago on April 30, 2011. Program Director Malcolm Baker of Harvard Business School organized the meeting. These papers were discussed:

- **Pol Antràs** and **C. Fritz Foley**, Harvard University and NBER, "Poultry in Motion: A Study of International Trade Finance Practices"

- **Daniel Paravisini** and **Daniel Wolfenzon**, Columbia University and NBER; **Veronica Rappoport**, Columbia University; and **Philipp Schnabl**, New York University, "Dissecting the Effect of Credit Supply on Trade: Evidence from Matched Credit-Export Data" (NBER Working Paper No. 16975)

- **Anat Admati**, **Peter M. DeMarzo**, and **Paul Pfleiderer**, Stanford University, and **Martin F. Hellwig**, Max Planck Institute for Research on Collective Goods, Bonn, "Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Expensive"

- **Robert L. McDonald**, Northwestern University, "Contingent Capital with a Dual Price Trigger"

- **Oliver Hart,** Harvard University and NBER, and **Luigi Zingales**, University of Chicago and NBER, "A New Capital Regulation for Large Financial Institutions"

- **Adam Copeland**, **Antoine Martin**, and **Michael Walker**, Federal Reserve Bank of New York, "The Tri-Party Repo Market before the 2010 Reforms"

- **Jakub W. Jurek**, Princeton University and NBER; and **Erik Stafford**, Harvard University, "Crashes and Collateralized Lending"

- **Casey Dougal**, **Joseph Engelberg**, **Christopher A. Parsons**, and **Edward D. Van Wesep**, University of North Carolina, "Anchoring and the Cost of Capital"

- **Patrick Bolton** and **Neng Wang**, Columbia University and NBER, and **Hui Chen**, MIT and NBER, "Market Timing, Investment, and Risk Management"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/CFf11/summary.html

Education Program Meets

The NBER's Program on Education, directed by Caroline M. Hoxby of Stanford University, met in Cambridge on May 5, 2011. The following papers were discussed:

- **Elizabeth U. Cascio** and **Douglas O. Staiger**, Dartmouth College and NBER, "Skill, Standardized Tests, and Fadeout in Educational Interventions"

- **Aaron Sojourner**, **Kristine L. West**, and **Elton Mykerezi**, University of Minnesota, "When Does Teacher Incentive Pay Raise Student Achievement? Evidence from Minnesota's Q-Comp Program"

- **Ran Abramitzky**, Stanford University and NBER, and **Victor Lavy**, Hebrew University and NBER, "How Responsive is Investment in Schooling to Changes in Returns? Evidence from an Unusual Pay Reform in Israel's Kibbutzim"

- **Brian Cadena**, University of Colorado at Boulder, and **Benjamin Keys**, Federal Reserve Board, "Human Capital and the Lifetime Costs of Impatience"

- **Guido Schwerdt**, Ifo Institute for Economic Research, and **Martin West**, Harvard University, "The Road Less Traveled: Impacts of Alternative Grade Configurations through Middle and High School"

- **Elizabeth Cascio**, Dartmouth College and NBER; **Nora Gordon**, Georgetown University and NBER; and **Sarah Reber**, University of California, Los Angeles and NBER, "The War on Poverty and Educational Opportunity in the South"

Summaries of these papers may be found at: http://www.nber.org/confer/2011/CHEDs11/summary_ed.html

Children's Program Meeting

The NBER's Program on Children, directed by Janet Currie of University of California, Los Angeles, met in Cambridge on May 6, 2011. The following papers were discussed:

- **Alan Barreca**, Tulane University; **Melanie E. Guldi**, Mount Holyoke College; **Jason M. Lindo**, University of Oregon and NBER; and **Glen Waddell**, University of Oregon, "Running and Jumping Variables in Regression Discontinuity Designs"

- **Prashant Bharadwaj**, University of California, San Diego, and **Christopher Andre Neilson**, Yale University, "Early Life Health Interventions and Academic Achievement"

- **Sonia R. Bhalotra**, University of Bristol, and **Atheendar S. Venkataramani**, Yale University, "The Long-Run Effects of Early Life Pneumonia: Evidence from the Arrival of Sulfa Drugs in America"

- **Douglas Almond**, Columbia University and NBER; **Hilary W. Hoynes**, University of California at Davis and NBER; and **Diane Whitmore Schanzenbach**, Northwestern University and NBER, "Childhood Exposure to the Food Stamp Program: Long-run Health and Economic Outcomes"

- **David Frisvold**, Emory University, "Nutrition and Cognitive Achievement: An Evaluation of the School Breakfast Program"

- **Nicholas J. Sanders**, Stanford University, and **Charles F. Stoecker**, University of California, Davis, "Where Have all the Young Men Gone? Using Gender Ratios to Measure the Effect of Pollution on Fetal Death Rates

Summaries of these papers may be found at:http://www.nber.org/confer/2011/CHEDs11/summary_ch.html

Health Economics Program Meeting

The NBER's Program on Health Economics met in Cambridge on May 6, 2011. Program Director Michael Grossman of City University of New York's Graduate Center and Research Associate Theodore J. Joyce of Baruch College organized the meeting. These papers were discussed:

- **Dean Lillard** and **Eamon Molloy**, Cornell University, and **Andrew Sfekas**, Temple University, "Smoking Initiation and the Iron Law of Demand"

- **George Wehby**, University of Iowa, and **Jason Hockenberry**, University of Iowa and NBER, "Impact of Child Health and Disability on Subsequent Maternal Fertility"

- **Pinar Karaca-Mandic**, University of Minnesota and NBER, and **Dana P. Goldman** and **Geoffrey F. Joyce**, University of Southern California and NBER, "Private Insurance and Outcomes for Children with Asthma"

- **Marah A. Curtis**, Boston University; **Hope Corman** and **Kelly Noonan**, Rider University and NBER; and **Nancy Reichman**, University of Medicine and Dentistry of New Jersey, "Life Shocks and Homelessness"

- **Robert Kaestner**, University of Illinois at Chicago and NBER, and **Sara Borelli**, University Of Illinois At Chicago, "Effects Of Parental Involvement Laws On Fertility And Socioeconomic Outcomes Of Women Ages 21 To 32"

- **Andrew M. Francis**, **Hugo Mialon**, and **Handie Peng**, Emory University, "The Effects of Same-Sex Marriage Laws on Public Health and Welfare"

Summaries of these papers may be available at: http://www.nber.org/confer/2011/HEs11/summary.html

Organizational Economics

The NBER's Working Group on Organizational Economics met in Cambridge on May 13 and 14, 2011. The following papers were discussed:

- **Luis Garicano**, London School of Economics; **Claire LeLarge**, SESSI; and **John Van Reenen**, London School of Economics and NBER, "Firm Size Distortions and the Productivity Distribution: Evidence from France"
- **Chang-Tai Hsieh**, University of Chicago and NBER, and **Peter Klenow**, Stanford University and NBER, "The Life-Cycle of Plants in Mexico and India"
- **Lorenzo Caliendo**, Yale University, and **Esteban Rossi-Hansberg**, Princeton University and NBER, "The Effect of Trade on Organization and Productivity"
- **Yeon-Koo Che**, **Wouter Dessein**, and **Navin Kartik**, Columbia University, "Pandering to Persuade"
- **Heikki Rantakari**, University of Southern California, "Employee Initiative and Managerial Control"
- **Florian Ederer**, University of California, Los Angeles, and **Johannes Spinnewijn**, London School of Economics, "Information Search and Revelation in Groups"
- **Maria Guadalupe**, Columbia University and NBER, and **Catherine Thomas** and **Olga Kuzmina**, Columbia University, "Innovation and Foreign Ownership"
- **Ian Larkin**, Harvard University, "Paying $30,000 for a Gold Star: An Empirical Investigation into the Value of Peer Recognition to Software Salespeople"
- **Jin Li** and **Niko Matouschek**, Northwestern University, "The Burden of Past Promises"
- **Mrinal Ghosh**, University of Arizona; **Francine Lafontaine**, University of Michigan; and **Desmond Lo**, Santa Clara University, "Delegation and Pay-for-Performance: Evidence from Industrial Sales Force"
- **Nicholas Bloom**, Stanford University and NBER; **Benn Eifert**, Overland Advisors LLC; **Aprajit Mahajan** and **John Roberts**, Stanford University; and **David McKenzie**, The World Bank, "Does Management Matter? Evidence from India"
- T**imothy F. Bresnahan**, Stanford University and NBER; **Rebecca Henderson**, Harvard University and NBER; and **Shane Greenstein**, Northwestern University and NBER, "Schumpeterian competition and diseconomies of scope: illustrations from the histories of Microsoft and IBM"

Summaries of these papers are available at: http://www.nber.org/confer/2011/OEs11/summary.html

Bureau Books

The Changing Body

The Changing Body — Health, Nutrition, and Human Development in the Western World since 1700, by Roderick Floud, Robert W. Fogel, Bernard Harris, and Sok Chul Hong, is available from Cambridge University Press. The paperback price is $32.99 and the hardcover price is $90.00.

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Floud is on leave from his position as an NBER Research Associate in the Program on the Development of the American Economy. He is on the faculty of Gresham College in England. Fogel is a Research Associate in the NBER's Programs on Aging and the Development of the American Economy. He is also Director of the Center for Population Economics at the University of Chicago. Bernard Harris is Professor of the History of Social Policy at the University of Southampton, and Sok Chul Hong is assistant professor of economics at Sogang University, South Korea.

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