NBER
Reporter

Stepping Down as NBER President

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Photo by Matthew Poterba

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My decision to step down as president of the NBER was a very difficult one. The NBER has been the central focus of my professional life. I have taken great satisfaction from watching the Bureau grow and become the nation's leading economic research organization — and from being able to shape that growth — the new programs, working groups, projects, conferences, and activities like the Summer Institute and the "pin factory visits."

But after 31 years I was ready to be relieved of the day-to-day administrative responsibilities and to have more time to read and think and write. And I also knew it would be in the interest of the NBER, and therefore of the economics profession, to have a new leader for the Bureau who would bring new ideas and new initiatives.

I am so pleased that the very careful and elaborate search process for my successor, directed by a committee chaired by Mike Moskow, reached the decision that Jim Poterba was the right person for the job and that Jim agreed to take it on. I cannot think of anyone who would be a better leader of the NBER in the years ahead — with his breadth of interests in economics, his intellectual ability, the respect that he has in the profession, and his willingness to give of himself for the benefit of the organization. I'm confident that he will do an outstanding job.

The growth and the success of the Bureau has been due to the quality and the enthusiasm of all of those who have participated in the process. What has happened these past three decades was only possible because of the efforts of the Program Directors, the Working Group leaders, and the heads of the individual projects and of the annual conferences. In all of those years, no one whom I asked to assume these leadership roles disappointed me or their colleagues — a remarkable measure of their commitment to these activities. And, of course, the success of the NBER also reflects the participation of the entire family of Research Associates and Faculty Research Fellows. Your participation

*Based on my remarks at the NBER dinner on July 24, 2008.

in meetings and projects, your research and writing — all of those yellow-covered Working Papers and chapters in NBER volumes — have made the NBER what it is today.

Many thanks are in order on this occasion. The NBER's Board of Directors has been an important source of advice and support throughout these years. I am grateful to all of them and, in particular, to those who served as chairmen. Eli Shapiro, who is here tonight, was chairman of the NBER in 1982 when President Reagan asked me to come to Washington as CEA chairman. I asked Eli if he would take over as president while I was in Washington — and promised that I would be back in two years. I remain very grateful to him for what he did then. And since Eli would no longer be Chairman, I asked the late Walter Heller, who was then on our board and who had been President Kennedy's CEA chairman, if he would take over as Chairman of the NBER — thus reinforcing the message that the NBER is a nonpartisan organization.

All of us who have participated in NBER activities have benefited from the small but excellent Bureau staff. They have made it possible to have the conferences, the publications, the program meetings, and the Summer Institute without placing an undue administrative burden on the researchers. They have created and developed the many useful features of the NBER website and the NBER datasets. And the excellent people who have worked on grants administration and on accounting have made it easy and attractive for NBER researchers to manage research grants through the NBER.

Crucial to the management success of the Bureau have been the individuals who worked most closely with me in the NBER administration: Charlie McClure — who was there in the beginning and is here tonight — David Hartman, Geoff Carliner, and Sue Colligan.

When I became NBER president back in 1977 I inherited the responsibility for an organization with a long and glorious history. The NBER tradition included the major work on business cycles by Mitchell and Burns, the studies of capital accumulation by Simon Kuznets, the work on monetary economics of Friedman and Schwartz, Gary Becker's work on human capital, Bob Lipsey's work on international trade, and many, many others.

It is not an exaggeration to say that the

NBER initiated the study of empirical economics in the United States, going back to Kuznets' work on the national income accounts and to so many volumes of laboriously accumulated and analyzed data on various aspects of the U.S. economy.

But by 1977 there were new challenges and new opportunities for the NBER. There was a new generation of researchers with sophisticated econometric skills to analyze the large quantities of machine-readable data that were being made available for the first time.

Four Goals

In leading the NBER I have had four goals. Fortunately, these goals also seemed to fit with the needs and the desires of the current generation of economic researchers. Let me tell you what they are and why I think they are important.

My first goal was to bring researchers together. As we all know, in any department there are at most one or two faculty members in each specialized field. There were in general no opportunities back in the 1970s for researchers in fields like taxation, international trade, or labor markets to come together in relatively small groups to discuss research and to provide criticisms and suggestions. So I thought that the NBER could fill that gap through program meetings and more recently working groups. We started with 7 programs — organized by David Bradford, Bill Branson, Bob Fogel, Richard Freeman, Ben Friedman, Zvi Griliches, and Bob Hall. Because of them, the programs flourished. We now have nearly 20 Programs and more than a dozen less formal Working Groups.

My second goal was to encourage empirical research. I was part of the first generation of economists to have the advantage of high-speed computers, machine-readable datasets, sophisticated econometric theory, and other things that we now all take for granted. These features increased enormously the ability to do good empirical research. But doing useful empirical work is diffi-

cult. It is easy to misinterpret how the data are constructed and to misunderstand the institutions with which the economy operates.

But with the help of colleagues who do understand the data and the institutions, it is very much easier to do good and useful empirical research. I saw the NBER as a way of encouraging and facilitating such empirical research. The program meetings would be a place where NBER researchers would get useful advice about the data that they are using and about the institutional framework. The applied theorists could benefit from exposure to discussions about actual economic problems. And those doing empirical work could benefit from the insights of the theorists.

My third goal was to have NBER research inform public and private decisionmaking. Without an institutional mechanism to deliver research to that broader public, there is the danger that the results of good research would be known only to a small number of academic specialists. Now the NBER Working Papers and books make research by the nation's best researchers available to a large audience in the United States and the rest of the world.

A key feature of NBER papers — as you all know — is that they do not advocate policy or editorialize about existing policy proposals. Instead the aim is to analyze what is happening in the economy and how alternative policies might affect the economy's performance. This approach has allowed the NBER to have researchers with a broad spectrum of different policy views working together within the Bureau in a way that has not been true of other think tanks. And it has given NBER Working Papers greater credibility. Last year, readers around the world downloaded some 2.3 million copies of NBER Working Papers.

My final goal during these past 30 years was to organize NBER projects on important topics that were otherwise not getting adequate attention from first-rate research economists. These "top-down" projects brought small groups of NBER researchers together

to investigate a wide range of topics over the years. Having that research in NBER volumes or in special journal issues focused attention on those results. There have been far too many such projects for me to comment on them all. But I look back with pride at the first three projects that I initiated: one on youth labor markets organized by Dick Freeman and David Wise, one on capital formation headed by Ben Friedman, and one on the implications of rational expectations theory for macroeconomic policy organized by Stan Fischer. And I am equally pleased with the newest of those top-down projects that will study "African Successes" under the leadership of Sebastian Edwards and David Weil.

So those were my initial four goals — bringing researchers together, encouraging empirical research, communicating to decisionmakers, and organizing research projects on important policy-relevant topics — and they remained my goals for the NBER throughout the 30 years.

In addition the NBER has used its unique position in the United States to develop relations with economists in other parts of the world. We started in Europe with the International Seminar on Macroeconomics. Its success led to the Inter-American Seminar, the East Asian Seminar, several U.S.-Japan annual meetings, and annual conferences in China and India. I think the dozens of NBER economists who have participated in these meetings understand the world better because of that experience and are therefore better economists.

Looking Ahead

Being president of the NBER has been a wonderful experience for me. It has been a source of intellectual excitement and of personal satisfaction. It has continued to educate me about a wide range of economic issues and research findings. I will miss my role as president but I will continue as a Research Associate and as the head of the Working Group on the Economics of National Security, perhaps the most

neglected important subject in economics. I will of course continue to teach at Harvard, as I have throughout my years as NBER president.

The NBER is a unique and a great organization. It provides a way to develop first class research that can contribute to the public policy process, research that can make this country and the world a better place. It's important that we never lose sight of this purpose, this challenge, and this responsibility. I'm pleased that I will continue to be a part of this outstanding organization.

Thank you.

Research Summaries

Who Pays for Obesity?

Jay Bhattacharya*

The rapid increase in the prevalence of obesity over the past few decades has attracted much interest by economists about its cause, but far less interest in its economic consequences. Of particular importance is the question: who pays for obesity? In this report, I review the contribution that my colleagues and I have made toward answering that question.

Many people have argued that the rising prevalence of obesity over the past decades is socially expensive because the obese consume more medical resources than thinner people. While it is certainly true that obesity is the cause of, and is associated with, many conditions that are expensive to treat, it does not logically follow that obesity is socially expensive. The true social costs of obesity depend upon the extent to which obese individuals impose costs on others, costs that they do not take into account when they do things that affect their body weight. Yet despite the vast literature on the medical costs of obesity, there is nothing available to answer the question of who pays these costs — the obese themselves, or someone else?

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One important mechanism by which the obese might impose costs on others is through pooled health insurance. In pooled insurance, high medical expenditures for one member of the pool are paid in part by every member of the pool. Thus, the high costs of treating an obese individual are shared by members of the pool — that is, the costs of obesity are paid for, in part, by other people. In a recent paper, Neeraj Sood and I consider this possiblity.[1]

Two key necessary conditions must be met for obesity to cause social loss in a pooled health insurance setting: 1) being obese must increase health expenditures over being thinner; and 2) being in a health insurance pool must cause individuals to change their eating and exercising. The latter condition is not obvious, but is nevertheless crucial for obesity to cause loss through the health insurance mechanism; without it, the implicit transfer of funds from the thin to the obese that pooled health insurance induces is socially costless. Obese individuals in the pool are made better off by exactly the amount that thin individuals are made worse off. While pooled insurance induces redistribution from thin individuals to overweight ones, there is no net cost to society.

In addition to developing a formal model, Sood and I use nationally repre-

sentative data to estimate the social costs of obesity through the health insurance mechanism. Because we account for the second necessary condition in our empirical work, our estimate of social cost is an order of magnitude lower than estimates of the cost of obesity reported in the literature that ignore this condition. This makes sense because it is unlikely that people gain much weight in response to the incentives induced by being part of a pooled health insurance plan.

My paper with Sood is premised on the idea that under some circumstances, obesity might induce a social loss if there is pooled health insurance. However, whether health insurance actually pools medical expenditure risk associated with obesity is an empirical issue. In the case of obesity, there is good reason to think that there may be considerably less pooling than is traditionally thought for some types of health insurance. If, in a given insurance plan, there is no effective pooling between the obese and thin, then the obese pay for their higher expected medical expenditures.

In another paper, Kate Bundorf and I consider whether wage penalties associated with being obese undo pooling in employer provided health insurance.[2] Legal and other constraints make charging obese workers higher premiums for health

insurance problematic. However, these constraints do not imply that employer provided insurance will pool this risk.

Labor economists have documented that obese workers earn less per hour than thinner workers. This is true even after adjusting for differences in age, education, industry, and occupational choice, although wage differences between obese and thin are most pronounced for female workers. However, these wage differences are not uniform over every work environment. Using nationally representative data on workers between 28 and 41 years old, Bundorf and I find that wage differences associated with obesity occur only in jobs where employers provide health insurance; in jobs without health insurance, obese workers and thinner workers earn the same wage, on average. Furthermore, the obesity wage difference is substantially higher for female workers in jobs that provide health insurance than it is for their male counterparts.

The simplest interpretation of these facts is that the incremental health care costs associated with obesity are passed on to obese workers with employer-sponsored health insurance in the form of lower cash wages; at jobs without health insurance, there is need to undo pooling and hence no wage penalty. But other explanations may be possible. It is certainly true, for instance, that jobs with health insurance differ from jobs without health insurance in many ways that have nothing directly to do with health insurance provision. It is possible that these differences, many of which we do not observe, lead to wage penalties for the obese workers only at jobs that provide health insurance.

To rule out this explanation, we divide the data on the basis of other benefits provided by employers, the value of which (unlike health insurance) does not vary with body weight. If this alternative explanation is right, then by analogy we should expect to see an obesity wage penalty in jobs that provide pension benefits but not in jobs that do not. In fact, we observe an obesity wage penalty in jobs both with and without pensions. The same is true for every benefit we observe in our data,

except health insurance. A more complicated story still might be consistent with the facts we develop, but Occam's razor would favor our simple interpretation: obese workers pay for their higher expected health care costs through lower wages.

So why is the obesity wage penalty so large for female workers? In part, the answer is almost certainly that obese women face more discrimination in the workplace than obese men. It is also attributable, though, to differences in health care expenditures. Using nationally representative data on medical expenditures, Bundorf and I find that obese men and thinner men in this 28–41 age range have the same medical expenditures, on average, while obese women have higher medical expenditures than thinner women in this age range. There is no obesity wage penalty for men in this age range because there are no extra health care costs to pay.

This reasoning works for employer health insurance but not for government provided health insurance, which is also common in the United States. In 2004, for instance, there were 174.2 million Americans covered by employer health insurance, 39.7 million covered by Medicare (provided by the federal government to elderly and disabled people), and 37.5 million covered by Medicaid (provided by states to poor people). Like employer health insurance, Medicare and Medicaid may induce a link between body weight decisions by enrollees and taxpayers. In both of these government programs, enrollees are charged premiums that do not depend on body weight and are always much less than expected medical bills. In many cases, enrollees are not charged premiums at all. Unlike employer-provided health insurance, there is no wage pass-through mechanism that can undo pooling between obese enrollees, who spend on medical care, and taxpayers, who pay for it. While the literature on the size of the subsidy to obese enrollees induced by government health insurance is far from definitive, it seems likely that the subsidy is substantial.

For government provided health insurance, to understand whether there is

a social loss from obesity and its attendent increase in health expenditures, we must consider the question posed by the second necessary condition: does the subsidy to the obese induced by insurance change the body weight decisions of enrollees? NBER researchers Inas Rashad and Sara Markowitz conclude that being covered by insurance does not induce a measurable change in body weight.[3] Three of my colleagues (Bundorf, Sood, and Noemi Pace) are currently working on a project to test that result in randomized data from the RAND health insurance experiment; our preliminary results confirm the Rashad and Markowitz result. The upshot of this result is that public health insurance, including Medicare and Medicaid, induces a socially costless transfer from the thin to the obese. The thin are made worse off by exactly the same amount as the obese are made better off, but the transfer does not otherwise change behavior.

Surprisingly, while the evidence suggests that obesity induces no social loss through costs imposed by others via pooled health insurance, there is other evidence to suggest that obesity may *benefit* others through another mechanism. Mikko Packalen and I measure the extent to which the rise in obesity prevalence has induced research by biomedical researchers on diseases that are associated with that rise.[4] By studying obesity and other conditions, we find that biomedical researchers are indeed quite responsive to changes in disease prevalence in the population. Private markets reward this responsiveness with profits for pharmaceutical firms, for instance, and the National Institute of Health rewards this responsiveness with grant funding to universities and medical schools.

In a companion piece, Packalen and I work through the implications of this induced innovation effect for the debate over the costs of the obesity.[5] We argue that to the extent that people do not account for this induced innovation effect when they make decisions such as eating and exercising that determine their body weight, their private decisions will benefit third parties who are not obese; after

all, even thin people get heart attacks, just at lower rates than obese people. In economic jargon, there is a positive externality from becoming obese, because the benefit from the induced research on heart attacks and diabetes will not accrue solely to obese individuals. We estimate that this positive externality, which benefits thin people, is at least as large as the transfer induced by Medicare from thin to obese people.

The conclusions of this research agenda cast doubt on the conventional wisdom about the costs of obesity, which fails to distinguish between private and public costs. There is no doubt that becoming obese imposes substantial medical costs on the obese individual, who is more likely to develop Type II diabetes, heart disease, strokes, and a number of other unpleasant chronic diseases. Furthermore, becoming obese often imposes financial costs, such as a reduction in wages in some cases. My research suggests that the vast preponderance of these costs is private and paid for by obese individuals themselves. Moreover, some of the costs that are traditionally identified as public costs may actually be benefits. Rising obesity rates, for example, may bring forth greater innovative activity and ultimately treatments that benefit thin people as well. In this setting, policies such as taxes on junk food may lower social welfare rather than raising it while placing substantial burdens on obese individuals who already pay a substantial cost for their girth.

[1]   J. Bhattacharya and N. Sood, "Health Insurance and the Obesity Externality," *NBER Working Paper No. 11529, August 2005, and* Advances In Health Economics And Health Services Research, *17 (2007), pp.279–318.*
[2]   *J. Bhattacharya and M.K. Bundorf, "The Incidence of the Healthcare Costs of Obesity," NBER Working Paper No. 11303, May 2005.*
[3]   *I. Rashad and S. Markowitz, "Incentives in Obesity and Health Insurance," NBER Working Paper No. 13113, May 2007.*
[4]   *J. Bhattacharya and M. Packalen, "Is Medicine an Ivory Tower?" NBER Working Paper No. 13862, March 2008.*
[5]   *J. Bhattacharya J and M. Packalen, "The Other Ex-Ante Moral Hazard in Health" NBER Working Paper No. 13863, March 2008.*

Capital Flows, Taxation, and Institutional Variation

Mihir A. Desai*

Tariff reductions, falling transport costs, and reduced barriers to international capital flows have created extensive opportunities for multinational firms and investors in increasingly integrated global markets. For example, the outbound foreign direct investment (FDI) position of American firms grew at an average annual rate of 11 percent to $2.4 trillion from 1982 to 2006 while inbound FDI to the United States grew to $1.8 trillion. Foreign portfolio investment (FPI) has grown similarly. By 2005, 16 percent of all U.S. long-term securities (equity and debt) were held by foreigners. Foreign holdings of American stocks increased from $400 billion to $2.3 trillion over the last decade, while American holdings of foreign stocks increased from $600 billion to $3 trillion.

In the midst of this rapid integration, investors and firms still face tax systems and investor protections that differ across countries, and these differences have the potential to affect major investment and financing decisions. Governments anxious to attract FDI often consider the use of tax incentives to lure multinational firms, and governments of FDI source countries — including the United States — often wonder whether their tax treatment of foreign income is appropriate. Similarly, investor protections and the broader institutional environment remain distinctive around the world and may influence investors' portfolio decisions and firms' operational and financing decisions.

Recent research has advanced our understanding of the role of taxation and investor protections on capital flows and patterns of FPI. We also have considered the causes and consequences of tax avoidance activity; we have established how foreign and domestic activity interact in order to inform new welfare measures; and we have elaborated on how investment and financing decisions by multinational firms reflect the effects of taxes and varying institutional regimes.

Portfolio Flows

Empirical efforts to isolate how taxation influences portfolio choice have produced mixed results. Investigating the

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relationship between cross-sectional differences in marginal tax rates and asset holdings is complicated by the incomplete nature of most household portfolios and the fact that income levels can influence both risk preferences and marginal tax rates. Efforts to examine how portfolios change in response to tax reforms must overcome the possibility that the observed changes reflect endogenous supply responses or other general equilibrium effects that may confound the influence of taxation on portfolio choices.

Dhammika Dharmapala and I attempt to overcome these empirical difficulties by analyzing a tax reform that differentially changed the tax treatment of otherwise similar instruments in a manner that is unlikely to have produced any endogenous supply response.[1] Specifically, we investigate how taxes influence portfolio choices by exploring the response to the distinctive treatment of foreign dividends in the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA). JGTRRA lowered the dividend tax rate to 15 percent for American equities and extended this tax relief only to foreign corporations from a subset of countries. The division of countries into two separate groups was driven by regulatory concerns and was unrelated to future changes in investment opportunities or other regulatory efforts to change investment in these countries differentially. Given the relatively small share of their stocks held by American investors, it is unlikely that supply responses by foreign firms would be large. It is similarly unlikely that the effects of the reform on U.S. investors' portfolios would have been offset by clientele effects in asset markets. JGTRRA applied only to U.S. investor returns, leaving non-U.S. investor tax rates and asset demands unaffected.

This paper uses a difference-in-difference analysis that compares U.S. equity holdings in affected and unaffected countries. The international investment responses to JGTRRA were substantial, implying an elasticity of asset holdings with respect to taxes of -1.6. This effect cannot be explained by several potential alternative hypotheses, including differential changes in the preferences of American investors, or investment opportunities, or time trends in investment, or any changed behavior towards tax evasion. These results show how FPI, and portfolio decisions more generally, are influenced by taxation.

Corporate taxes and investor protections also have the potential to influence FPI by changing the relative attractiveness of FPI and FDI as means of achieving international diversification. Dharmapala and I analyze whether the composition of U.S. outbound capital flows reflects efforts to bypass home country tax regimes and weak host country investor protections.[2] The potential effects of taxation on FPI result from the interaction between home and host country taxes. In particular, the United States taxes multinational firms legally domiciled here on their worldwide income. As a consequence of this policy, U.S. investors should prefer FPI as a means of accessing foreign diversification opportunities, particularly in low-tax countries where the residual tax imposed by the United States will be most burdensome. In effect, FPI allows investors to avoid any residual tax on investment income earned abroad arising from the worldwide tax regime. Conversely, the absence of the residual U.S. tax should make U.S. equity FPI sensitive to variations in foreign corporate tax rates, even after controlling for any effects of corporate taxes on levels of U.S. FDI. As such, the worldwide system of taxing income may vitiate the diversification benefits of multinational firms. Additionally, concerns about the rights available to minority investors might tilt them towards accessing those opportunities via investments in U.S. multinational firms that globally undertake FDI, to ensure that investor interests are better protected.

Our cross-country analysis indicates that a 10 percent decrease in a foreign country's corporate tax rate increases U.S. investors' equity FPI holdings by 21 percent, controlling for effects on FDI. This suggests that the residual tax on foreign multinational firm earnings biases capital flows to low corporate tax countries toward FPI. A single-standard-deviation increase in a foreign country's investor protections is associated with a 24 percent increase in U.S. investors' equity FPI holdings. These results are robust to various controls, are not evident for debt capital flows, and are confirmed using an instrumental variables analysis. The use of FPI to bypass home country taxation of multinational firms is also apparent using only portfolio investment responses to within-country corporate tax rate changes in a panel from 1994 to 2005. Investors appear to alter their portfolio choices significantly to circumvent home and host country institutional regimes.

Causes and Consequences of Tax Avoidance

Changing patterns of multinational firm activity have drawn attention to the role of tax havens and their effects on neighboring countries. More generally, accounts of rising tax avoidance by firms have generated interest in the effects of tax avoidance on economies, tax authorities, and investors. International variation in tax systems and the activities of multinational firms together have allowed insight into the causes and consequences of tax avoidance.

Typical accounts of corporate tax avoidance characterize such activities as transfers from the state to investors. This view has been questioned by a line of inquiry that emphasizes the nature of the agency problem in firms. Such a perspective is recommended by the fact that the state can be characterized as the largest minority shareholder in most firms given their claim on pretax cash flows via the corporate tax system. Alexander Dyck, Luigi Zingales, and I analyze the interaction between corporate taxes and corporate governance.[3] We show that the characteristics of a taxation system affect the extraction of private benefits by company insiders. A higher tax rate increases the amount of income that insiders divert and thus worsens governance outcomes. In contrast, stronger tax enforcement reduces diversion and, in so doing, can raise the stock market value of a company in spite of the increase in the tax burden,

as evidenced by patterns from the Russian stock market. We also show that the corporate governance system affects the level of tax revenues and the sensitivity of tax revenues to tax changes. When the corporate governance system is ineffective (that is, when it is easy to divert income), an increase in the tax rate can reduce tax revenues. We test this prediction in a panel of countries. Consistent with the model, we find that corporate tax rate increases have smaller (in fact, negative) effects on revenues when corporate governance is weaker.

Dharmapala and I examine whether these interactions are relevant for American firms, particularly those that undertake activity in tax havens.[4] We test alternative theories of corporate tax avoidance that yield distinct predictions on the valuation of corporate tax avoidance. We then use unexplained differences between income reported to capital markets and to tax authorities to proxy for tax avoidance activity. These "book-tax" gaps are larger when firms are alleged to be involved in tax shelters. OLS estimates indicate that the average effect of tax avoidance on firm value is not significantly different from zero, but is positive for well-governed firms as predicted by an agency perspective on corporate tax avoidance.

We use an exogenous change in tax regulations that affected the ability of some firms to avoid taxes abroad — the onset of so-called "check the box" regulations — to construct instruments for tax avoidance activity. The IV estimates yield larger overall effects and reinforce the basic result that higher quality firm governance leads to a larger effect of tax avoidance on firm value. The results are robust to a wide variety of tests for alternative explanations. Taken together, the results suggest that the simple view of corporate tax avoidance as a transfer of resources from the state to shareholders is incomplete given the agency problems characterizing shareholder-manager relations. This paper builds on previous work[5] that develops this measure of corporate tax avoidance and examines why managers undertake tax shelters. We discuss the broader importance of the book-tax gap in a related paper.[6]

Aside from these interactions with the agency problem, tax havens are also of interest because they may have effects on tax revenues and real activity. C. Fritz Foley, James R. Hines, and I examine what types of firms establish tax haven operations and what purposes these operations serve.[7] Analysis of affiliate-level data for American firms indicates that larger, more international firms, and those with extensive intra-firm trade and high R and D intensities, are the most likely to use tax havens. Tax haven operations facilitate tax avoidance both by permitting firms to allocate taxable income away from high-tax jurisdictions and by reducing the burden of home country taxation of foreign income. The evidence suggests that the primary use of affiliates in larger tax haven countries is to reallocate taxable income, whereas the primary use of affiliates in smaller tax haven countries is to facilitate deferral of U.S. taxation of foreign income.

U.S. multinational firms are also more likely to establish new tax haven operations if their non-haven investments are growing rapidly, which generally confirms the notion that greater foreign investment increases the potential return to using tax havens. The analysis shows that 1 percent greater sales and investment growth in nearby non-haven countries is associated with a 1.5 to 2 percent greater likelihood of establishing a tax haven operation. This evidence also suggests that tax havens may serve to increase economic activity in nearby high-tax countries. Tax havens serve this function by indirectly reducing tax burdens on income earned in high-tax countries, and by attracting investment that may enhance the profitability of operations in those countries. Proximity allows firms to split up production processes and increases the extent to which firms can avoid taxes through transfer pricing. Evidence that firms with extensive nearby investments find it profitable to establish tax haven operations likewise implies that the availability of tax haven opportunities increases the attractiveness of investments in high-tax locations. While it is common to worry about the role of nearby tax havens in diverting economic activity, these results indicate that the opposite may well be the case, as the ability to reduce tax obligations through judicious use of tax haven operations may stimulate greater investment in their high-tax neighbors.

Domestic and Foreign Investment Interactions

There is considerable debate over the likely domestic effects of the rapidly increasing foreign activity by U.S. multinational firms. In particular, FDI flows to rapidly growing foreign markets generate fears that such investment displaces domestic employment, capital investment, and tax revenue. An alternative perspective suggests that growing foreign investment may instead increase levels of domestic activity by improving the profitability and competitiveness of domestic operations as firms expand globally. Very little empirical evidence is currently available with which to distinguish these views. The absence of evidence in this domain is particularly troubling because a central motivation for tax policy of foreign income has been "capital export neutrality," a notion in part predicated on the idea that outbound FDI represents lost investment.

Foley, Hines, and I report time-series evidence that aggregate foreign and do–mestic investment are positively correlated for the United States.[8] Such aggregate evidence is open to many alternative explanations. In one paper[9] we expand on this line of inquiry by using firm-level evidence and an instrumental variables strategy to overcome identification difficulties in this setting.

Firms whose foreign operations grow rapidly exhibit coincident rapid growth of domestic operations, but this pattern alone is similarly problematic, as foreign and domestic business activities are jointly determined. We use foreign GDP growth rates, interacted with lagged firm-specific geographic distributions of foreign investment, to predict changes in foreign investment by a large panel of U.S. manufacturing firms. Estimates produced using this

instrument for changes in foreign activity indicate that 10 percent greater foreign capital investment is associated with 2.2 percent greater domestic investment, and that 10 percent greater foreign employee compensation is associated with 4 percent greater domestic employee compensation. Changes in foreign and domestic sales, assets, and numbers of employees are likewise positively associated. Foreign investment also has positive estimated effects on domestic exports and R and D spending, suggesting that growth-driven foreign expansions stimulate demand for tangible and intangible domestic output. These results do not support the popular notion that greater foreign activity crowds out domestic activity by the same firms, instead suggesting that the reverse is true of foreign activity.

These findings further lend support to an alternative welfare metric for assessing the appropriate tax policy for foreign profits. The traditional welfare metric of capital export neutrality is predicated on the substitutability of foreign and domestic activity and recommends the taxation of worldwide income with credits for foreign taxes paid. An alternative welfare benchmark, capital ownership neutrality, has been developed recently, emphasizing distortions to ownership decisions and lost productivity in a setting where substitutability may not be complete, as suggested by these findings. The capital ownership neutrality benchmark recommends exemption of foreign income for national and global welfare maximization.

The Nature of Multinational Firm Activity

Analysis of microdata on American multinational firms collected by the Bureau of Economic Analysis has allowed for new insights into how patterns of FDI are shaped by variations in investor protections, political risk, capital controls, and currency crises. These studies also shed light on how these varying institutions influence local firms and how taxes shape multinational firm decisionmaking.

Pol Antràs, Foley, and I examine how costly financial contracting and weak investor protections influence the cross-border operational, financing, and investment decisions of firms.[10] We develop a model in which product developers have a comparative advantage in monitoring the deployment of their technology abroad. We demonstrate that when firms want to exploit technologies abroad, multinational firm activity and FDI flows arise endogenously when monitoring is not verifiable and financial frictions exist. The mechanism generating MNC activity is not the risk of technological expropriation by local partners but rather the demands of external funders who require MNC participation to ensure value maximization by local entrepreneurs. The model demonstrates that weak investor protections limit the scale of multinational firm activity, increase the reliance on FDI flows, and alter the decision to deploy technology through FDI as opposed to arm's length licensing. Using firm-level data, we test and confirm several distinctive predictions for the impact of weak investor protection on MNC activity and FDI flows.

Foley, Hines, and I examine the role of capital controls in influencing local borrowing rates and patterns of investment, financing, and transfer pricing.[11] Borrowing rates are 5.25 percentage points higher in countries imposing capital controls than they are elsewhere for affiliates of the *same* multinational parents. Multinational firms distort their reported profitability and their dividend repatriations in order to mitigate the impact of capital controls. Affiliates have 5.2 percent lower reported profit rates than comparable affiliates in countries without capital controls, reflecting, in part, trade and financing practices that reallocate income within a firm. The distortions to reported profitability are comparable to those that stem from a 27 percent difference in corporate tax rates. Dividend repatriations are also regularized to facilitate the extraction of profits from countries imposing capital controls. If capital controls impose costs through higher interest rates and the distortions associated with avoidance, then liberalizations of capital controls should have significant effects. In fact, affiliates experience 6.9 percent faster annual growth of property, plant, and equipment investment subsequent to the liberalization of controls, indicating that capital controls impose significant burdens on foreign investors.

International variations in political risk also can influence financing decisions of multinational firms. Foley, Hines, and I demonstrate that American multinational firms respond to politically risky environments by adjusting their capital structures abroad and at home.[12] Foreign subsidiaries located in politically risky countries have significantly more debt than do other foreign affiliates of the same parent companies. American firms further limit their equity exposures in politically risky countries by sharing ownership with local partners and by serving foreign markets with exports rather than local production. The residual political risk borne by parent companies leads them to use less domestic leverage, resulting in lower firm-wide leverage. Multinational firms with above-average exposures to politically risky countries have 8.4 percent less domestic leverage than do other firms. These findings illustrate the broader impact of risk exposures on capital structure.

Foley, Kristin J. Forbes, and I study the effects of financial constraints on firm growth by investigating whether large depreciations differentially affect multinational affiliates and local firms in emerging markets.[13] U.S. multinational affiliates increase sales, assets, and investment significantly more than local firms both during and after currency crises. The enhanced relative performance of multinationals is traced to their ability to use internal capital markets to capitalize on the competitiveness benefits of large depreciations. Investment specifications indicate that increases in leverage resulting from sharp depreciations constrain local firms from capitalizing on these investment opportunities, but do not constrain multinational affiliates. Multinational parents also infuse new capital in their affiliates after currency crises. These results indicate another role for foreign direct investment in emerging markets as multinational affiliates expand

economic activity during currency crises when local firms are most constrained.

The role of taxes in shaping financial and operating decisions has also been a prominent feature of these studies. The behavior of U.S. multinational firms consistently demonstrates that taxes play critical roles in shaping the volume and location of foreign investment, the financing of foreign investment, and the organizational structures of multinational firms. The papers also capitalize on the international variation faced by multinational firms to provide estimates of how taxes influence financial and investment decisions more generally.

For example, Foley, Hines, and I show that capital structure and internal capital allocations decisions respond significantly to tax differentials.[14] While other studies have not found significant effects, the setting of a multinational firm facing multiple tax regimes provides a cleaner setting for considering this question. Similarly, we have explored the role of tax and non-tax factors in dividend policy by looking at multinational firm repatriations.[15] We have also studied the sensitivity of investment to income and indirect tax differentials.[16] We have examined ownership and organizational form decisions.[17] Finally, the incidence of export subsidies was the motivation behind our investigation of the effects of WTO complaints against income tax incentives for exports.[18]

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[2] M. Desai and D. Dharmapala, "Taxes, Institutions, and Foreign Diversification Opportunities," NBER Working Paper No. 13132, May 2007.

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Labor Markets and Business Cycles

Robert Shimer*

Why are workers unemployed sometimes? Why do unemployed workers coexist with job vacancies? How much does the incidence and the duration of unemployment rise during economic downturns, and why? Much of my research during the last five years has tried to answer these questions by developing quantitative models of labor market dynamics and comparing the models' predictions with data, especially from the United States.

Lucas and Rapping's theory of intertemporal substitution in labor supply is the starting point for any modern analysis of employment fluctuations,[1] including the real business cycle model[2] and the New Keynesian model.[3] The key assumption is that workers decide how much to work at each point in time, taking the prevailing wage as given. To the extent that labor supply is elastic, hours of work fluctuate with movements in the wage.

While models based on intertemporal substitution are qualitatively consistent with the movement of hours of work over the business cycle, they run into at least two problems. First, a number of authors have argued that, from the perspective of a labor-market-clearing model, hours of work fluctuate too much at business cycle frequencies. Recessions look like times when the disutility of work increases. Equivalently, they look like times when labor income taxes rise, discouraging workers from supplying labor.[4] Neither possibility is empirically tenable. Second, models where workers

can decide how much to work at each point in time can generate movements in hours worked but do not generate unemployment, that is, non-employed workers who would like to work at the prevailing wage. This omission may have important implications for welfare, because workers who cannot find jobs at the prevailing wage but would like to have them are, by revealed preference, worse off than if they simply chose not to work at that wage. It also may have important consequences for the positive analysis of business cycles, because most cyclical movements in aggregate hours of work are explained by movements between employment and unemployment, not by movements in hours worked by employed workers.

Equilibrium search and matching models provide an ideal laboratory for understanding unemployment.[5] These models build on the idea that it takes workers time to find a job. Thus a worker entering the labor market, or a worker who loses her job, necessarily experiences a spell of unemployment. Moreover, unemployed workers are worse off than employed workers because they cannot work until they find a job. In this sense, this is a theory of unemployment, not just of non-employment.

Search and matching models also assume that firms must create job vacancies in order to find a suitable worker. A matching function determines the number of workers and firms that meet as a function of the unemployment and vacancy rates. Because of the frictions embodied in the matching function — the number of matches is smaller than either the number of unemployed workers or the number of vacancies — unemployed workers and vacant jobs necessarily coexist.

Fluctuations in the profitability of hiring a worker, possibly because of fluctuations in aggregate productivity, induce fluctuations in the number of job vacancies. When firms create more job vacancies, unemployed workers find jobs faster, pulling down the unemployment rate. Thus search and matching models naturally generate a negative correlation between the unemployment and vacancy rates, a robust feature of U.S. data.[6] The extent of the movement in unemployment and vacancies is limited by the behavior of wages, which many authors assume are bargained bilaterally between workers and firms. As firms create more jobs, workers grow less concerned with the risk of unemployment. This improves their threat point in bargaining, allowing them to obtain a higher wage. This, together with the reduced availability of labor, limits firms' willingness to create jobs and restores the economy to equilibrium.

My first paper in this area examined whether a search and matching model can quantitatively, not just qualitatively, match the cyclical behavior of unemployment and job vacancies.[7] I found that it could not. At business cycle frequencies, a standard calibration of the search and matching model generates about 10 percent of the observed movement in the vacancy-unemployment ratio in the United States in response to aggregate productivity shocks.

This failure of the baseline search model makes sense when viewed from the perspective of previous research on business cycles in competitive labor market models. Recall that such models are unable to explain why hours worked fluctuate so much over the business cycle, so recessions look like periods when the labor income tax rate rises. Relative to

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this frictionless benchmark, search frictions make it more costly for firms to adjust employment and hence tend to reduce the amplitude of fluctuations in employment. To phrase this differently, suppose that labor market data really were generated by a search and matching model, but an economist ignored the existence of search frictions and viewed the world through the lens of a frictionless model. He would be surprised that employment fluctuates so little at business cycle frequencies and might interpret this as evidence of a subsidy to labor supply during recessions. This is the opposite of what we observe in the data.[8] I conclude that, while search frictions may be important for understanding why unemployment and vacancies coexist, they do not provide a direct explanation for the volatility of hours worked.

One possible way to reconcile the baseline search and matching model with the data is to look at other shocks. The baseline model focuses on how adverse aggregate productivity shocks reduce firms' incentives to create jobs. Perhaps unemployment increases when there are more idiosyncratic shocks that induce firms to lay off workers, say "job destruction" shocks.[9] I find that while idiosyncratic shocks may create more unemployment, they have little effect on the vacancy-unemployment ratio. More precisely, an increase in the incidence of idiosyncratic shocks causes a direct increase in unemployment but also an increase in vacancies as firms create more jobs to absorb the newly unemployed workers. In reality, unemployment and vacancies are almost perfectly negatively correlated at business cycle frequencies, so this prediction is counterfactual. To the extent that recessions are characterized by an increased incidence of idiosyncratic shocks, this is an additional shortcoming of the basic model.

Motivated by this theoretical finding, I have reexamined evidence on the extent to which periods of high unemployment are in fact characterized by a high incidence of unemployment rather than a long duration of unemployment.[10]

Using unemployment duration data, I conclude that fluctuations in the probability of finding a job — unemployment duration — account for three-quarters of the overall movement in unemployment in the United States since 1948, while fluctuations in the exit rate from employment to unemployment — unemployment incidence — account for the remaining quarter. Evidence from the gross flow of workers between employment, unemployment, and out-of-the-labor-force suggest a similar conclusion. Although some details of this finding remain controversial, there is broad agreement that fluctuations in the job-finding rate explain the majority of changes in unemployment.[11]

Another possible explanation for the behavior of the unemployment rate and the job finding rates is that wages are more rigid in reality than in the baseline search model.[12] Recall that in response to a positive productivity shock, the baseline search model predicts that firms will create vacancies to take advantage of the resulting rise in revenue. The process stops when firms' profits return to the normal level, which happens for two reasons. First, as firms create more job vacancies, unemployment falls, making it harder to find a worker. Second, as unemployment duration falls, workers are able to bargain to a higher wage. If one mechanically shuts down the second equilibrating mechanism by making wages rigid, then the model generates large fluctuations in unemployment, potentially larger than those we observe in the data. The critical assumption is that wages in new employment relationships do not change, or at least do not change too much, in response to movements in aggregate productivity.[13] R.E. Hall has observed that this type of wage rigidity does not run afoul of the "Barro critique," that a matched worker and firm should not forego any of the potential gains from trade simply because they are bound to a rigid wage.[14] Unmatched workers might wish that wages were lower so as to increase firms' incentive to create jobs, but the nature of search frictions makes it impossible for them to

commit to receive a lower wage.

A third approach to reconciling theory with data is to move away from the assumption that a matching function explains why unemployment and job vacancies coexist. The starting point for such an analysis is R. Lagos's work on the matching process between taxicabs and riders.[15] He assumes that taxis and riders meet in spatially distinct locations, with each location clearing in the sense that vacant taxis and waiting riders do not coexist within a location. Nevertheless, there may be vacant taxis in one location and waiting riders in another; that is, they may coexist in the aggregate economy.

I have extended this idea to the labor market and evaluated the theory quantitatively.[16] There are many distinct labor markets, characterized by geography and human capital requirements. Within each market, there are typically many workers and many jobs. If there are more workers than jobs in a particular market, then some workers are unemployed, while the wage is driven down to the reservation wage of the marginal worker. If there are more jobs than workers, then some jobs are vacant and the wage is equal to the marginal product of labor. Thus labor allocations within each market are competitive. The key assumption is that it is costly for workers and jobs to move between markets, that is, to go to another city or to acquire a different type of human capital. This means that unemployment and low wages may prevail in one local labor market, while job vacancies and high wages exist in another.

In the simplest version of the model, the mobility of workers and jobs between markets is exogenous and idiosyncratic. Fluctuations in productivity induce fluctuations in the total number of jobs in the economy. When firms create new jobs, some are created in markets with unemployed workers, reducing the aggregate unemployment rate, while others are created in markets that already have vacant jobs, raising the aggregate vacancy rate. I find that this generates a negative correlation between aggregate unemployment and aggregate vacancies that almost per-

fectly matches the one we observe in the data. Moreover, when there are many jobs, so that the vacancy-unemployment ratio is high, unemployed workers are more likely to find a new job quickly because there is less competition from other workers. Thus the model is also quantitatively consistent with the relationship between these variables, which I call the "reduced-form matching function." Finally, the model produces a flow of workers who move directly from one job to another. When a job ends but the worker is located in a market with available vacancies, she accepts one immediately. The theory predicts that employer-to-employer flows should be procyclical and offset movements in the exit rate from employment to unemployment. Again, this is quantitatively consistent with the data.

A related paper with Ehsan Ebrahimy analyzes a version of the model where the ability of workers and jobs to match is idiosyncratic, as might be the case within occupational and geographic cells.[17] The results are quantitatively similar. In response to a positive productivity shock, firms create more jobs, only some of which are suitable for unemployed workers. Thus unemployment falls and vacancies rise, in line with the data. Moreover, unemployed workers find jobs faster and employed workers are more often able to move directly to another job, again consistent with the data. In both papers, I find that the explicit model of the matching process also helps to amplify fluctuations in unemployment and job vacancies.

Finally, Fernando Alvarez and I[18] build on the Lucas-Prescott search model[19] and relax the assumption that mobility is exogenous. A large number of distinct labor markets produce heterogeneous goods. Idiosyncratic productivity shocks induce the reallocation of workers across labor markets. However, it is time-consuming for workers to switch markets. We argue that two distinct types of unemployment may arise in this framework. First, as in Lucas and Prescott's original article, workers are unemployed while they switch between markets. Second, under some conditions workers may be willing to wait in a labor market for conditions to improve, rather than switching to a new market. This type of "rest unemployment" is voluntary, in the sense that individuals choose not to work rather than taking a job at the prevailing wage. Nevertheless, they are worse off than their peers in labor markets that have experienced a more favorable sequence of shocks. Using data on the behavior of wages at the industry level, we argue that the rest unemployment (or low-search-intensity unemployment) may be an important component of the overall unemployment rate.

This paper does not speak directly to the cyclicality of unemployment and vacancies; however, the paper, and my recent research more generally, suggests that we should not necessarily think of unemployed workers as engaged in a search-intensive activity. Unemployment may instead be a consequence of adverse shocks to the value of human capital. Symmetrically, job vacancies need not be a sign of firms' effort to recruit new workers, but rather of their inability to do so. I am continuing to pursue the broader implications of these preliminary findings.

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[4]   See M. Parkin, "A Method for Determining Whether Parameters in Aggregative Models Are Structural," Carnegie-Rochester Conference Series on Public Policy, 29, 1988, pp.215–52; J.J. Rotemberg and M. Woodford, "Markups and the Business Cycle," NBER Macroeconomics Annual, 1991, pp. 63–121; R.E. Hall, "Macroeconomic Fluctuations and the Allocation of Time,"

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[5]   Important equilibrium search models include: C.A. Pissarides, "Short-Run Equilibrium Dynamics of Unemployment, Vacancies, and Real Wages," American Economic Review, 75(4), 1985, pp.676–90; and D.T. Mortensen and C.A. Pissarides, "Job Creation and Job Destruction in the Theory of Unemployment," Review of Economic Studies, 61(3), 1994, pp.397–415.
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[7]   R. Shimer, "The Cyclical Behavior of Equilibrium Unemployment and Vacancies," NBER Working Paper No. 9536, March 2003, and American Economic Review, 95(1), 2005, pp.25–49.
[8]   I develop this argument much further in a book manuscript entitled Labor Markets and Business Cycles.
[9]   In a series of papers culminating in a book — Job Creation And Destruction, MIT Press, 1996 — S.J. Davis, J.C. Haltiwanger, and S. Schuh argue that job destruction is more volatile than job creation at business cycle frequencies, consistent with an increase in idiosyncratic shocks during downturns.
[10]   R. Shimer, "Reassessing the Ins and Outs of Unemployment," NBER Working Paper No. 13421, September 2007.
[11]   M.W. Elsby, R. Michaels, and G. Solon reach a broadly similar conclusion in "The Ins and Outs of Cyclical Unemployment," NBER Working Paper

No.12853, January 2007. G. Ramey and S. Fujita find a roughly equal role for the two margins, but conclude that an increase in job loss Granger-causes a decline in the job finding rate in "The Cyclicality of Job Loss and Hiring," UCSD working paper 2008-08.

[12] I suggested this idea in the conclusion of "The Cyclical Behavior of Equilibrium Unemployment and Vacancies," and this point is made forcefully in R.E. Hall, "Employment Fluctuations with Equilibrium Wage Stickiness," NBER Working Paper No. 9967, September 2003, and American Economic Review, 95(1), 2005, pp. 50-65. A number of subsequent papers by Hall and others have built on these ideas.

[13] For a discussion of the distinction between rigid wages in new and existing employment relationships, see R. Shimer, "The Consequences of Rigid Wages in Search Models," NBER Working Paper No. 10326, February 2004, and Journal of the European Economic Association, 2(2–3), 2004, pp. 469–79.

[14] R.J. Barro, "Long-Term Contracting, Sticky Prices, And Monetary Policy," Journal of Monetary Economics, 3(3), 1977, pp. 305–16.

[15] R. Lagos, "An Alternative Approach to Search Frictions," Journal of Political Economy, 108(5), 2000, pp. 851–73.

[16] R. Shimer, "Mismatch," NBER Working Paper No. 11888, December 2005, and American Economic Review, 97(4), 2007, pp. 1074–1101.

[17] E. Ebrahimy and R. Shimer, "Stock-Flow Matching," 2008.

[18] F. Alvarez and R. Shimer, "Search and Rest Unemployment," NBER Working Paper No. 13772, February 2008.

[19] R.E. Lucas and E.C. Prescott, "Equilibrium Search and Unemployment," Journal of Economic Theory, 7(2), 1974, pp. 188–209.

NBER Profile: *Jay Bhattacharya*

Jay Bhattacharya is a Faculty Research Fellow in the NBER's Programs on Health Care and Health Economics and an assistant professor in the Centers for Health Policy and for Primary Care and Outcomes Research (CHP/PCOR) at Stanford University's Medical School. Bhattacharya earned his bachelor's and master's degree in economics, his M.D. in 1997, and his Ph.D. in Economics in 2000, all from Stanford University. He worked for three years as an economist at the RAND Corporation in Santa Monica, CA, where he also taught health economics as a visiting assistant professor at the University of California-Los Angeles.

Bhattacharya's research focuses on how insurance markets and government programs affect the health and well-being of a wide variety of vulnerable populations, including the elderly, obese populations, HIV patients, cancer patients, and disabled individuals. His work is widely published in economics, statistics, medical, and health policy journals.

Bhattacharya and his wife, Catherine Su, live in Los Altos, California with their children: Jodie, 7, Matthew, 3, and Benjamin, 1. Bhattacharya enjoys spending his free time playing with his kids, especially geeky video games. He also enjoys non-fiction books of all sorts. Most recently, he has been reading about the history and economics of ancient Rome.

NBER Profile: *Mihir A. Desai*

Mihir A. Desai is a Research Associate in the NBER's Public Economics and Corporate Finance Programs, the co-director of the NBER's India Program, and a Professor and Chair of the Doctoral Programs at Harvard Business School. His research focuses on international corporate and public finance.

Desai received a B.A. in history and economics from Brown University in 1989, an M.B.A. as a Baker Scholar from Harvard Business School in 1993, and a Ph.D. in political economy from Harvard University in 1998. In 1994, he was a Fulbright Scholar to India. Desai has taught at Harvard Business School since 1998.

His academic publications have appeared in various scholarly journals and he is currently an Associate Editor of the *American Economic Journal: Economic Policy*. He is also the author of *International Finance: A Casebook* (New York: John Wiley & Sons, 2006), which features his many case studies on international corporate finance.

Desai is married to Teena Shetty and they have twin girls, Mia Gitanjali and Ila Gayatri.

NBER Profile: *Robert Shimer*

Robert Shimer is a Research Associate in the NBER's Program on Economic Fluctuations and Growth and the Alvin H. Baum Professor in Economics and the College at the University of Chicago. He received his B.A. in economics from Yale University in 1990, his M. Phil. in economics from Oxford University in 1992, and his Ph.D. in economics from MIT in 1996.

Shimer began his academic career at Princeton University and joined the economics faculty at the University of Chicago in 2003. Shimer is a visiting professor at MIT this fall semester. He is also a consultant to the Federal Reserve Bank of Chicago, and is currently editor of the *Journal of Political Economy.*

Shimer's research looks at the topics of labor markets and macroeconomics. He has mainly focused on search frictions, but more recently become interested in the mismatch between workers' human capital and geographic location and the skill requirements and location of available jobs.

Shimer is married to Alicia Menendez, a Research Associate in the Harris School at the University of Chicago. When not in his office, Shimer enjoys skiing and scuba diving.

Conferences

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Frontiers in Health Policy Research

The NBER's "Frontiers in Health Policy Research" conference was held on June 11 in Washington, D.C. NBER Reseach Associates David M. Cutler of Harvard University, Alan M. Garber of Stanford University, and Dana Goldman of RAND Corporation, organized the meeting. These papers were discussed:

Katherine Baicker, Harvard School of Public Health and NBER, "Reform Proposals and the Market for Health Insurance"

Anupam B. Jena, University of Chicago; **John E. Calfee**, American Enterprise Insitute; **Dana Goldman**; **Tomas J. Philipson,** NBER and University of Chicago; and **Edward C. Mansley**, Merck & Co., "Me-Too Innovation In Pharmaceutical Markets"

Yaa Akosa Antwi, Carnegie Mellon University; **Martin Gaynor**, NBER and Carnegie Mellon University**;** and **William B. Vogt**, RAND Corporation and NBER, "Hospital Prices in the Wake of the 1990s Merger Wave:

Evidence from California"

Sherry A. Glied, Columbia University and NBER; **Ashwin Prabhu**, Columbia University; and **Norman Edelman**, State University of New York, Stony Brook, "The Physician Workforce as an Investment in Human Capital"

Phillip B. Levine, Wellesley College, and **Diane Whitmore Schanzenbach**, University of Chicago, "Children's Health and Educational Outcomes"

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The goals of different health reform proposals are varied, but at their core many aim to increase both the extent and the stability of health insurance coverage. Some propose to do this through the expansion of public programs, others through the reform of private health insurance markets, often coupled with the availability of subsidies for low-income or high-expenditure population. Some of these proposals are explicitly intended to affect the individual and small-group markets, while others may have unintended or indirect effects. These proposals have very different implications for the type of insurance policies that will be available, the number and composition of those covered by insurance, the cost of those policies (both in private premiums and in public expenditures), and the value and quality of care delivered through the health care system. A clearer understanding of these implications can help to facilitate a more realistic assessment of both the upside potential and the downside risks of different proposals. **Baicker** synthesizes existing evidence to shed light on the effect of different reform proposals. Proposals that focus exclusively on coverage threaten to be unsustainable, and

design details can have profound effects on the level and distribution of insurance coverage and on the value of care subsequently delivered. One of the key determinants of a policy's effects is the incentives it creates for individuals with different risk profiles to obtain insurance, firms to offer insurance, and insurers to provide high-value insurance to broad pools. Reforms that promote both broad coverage and high-value care can foster greater innovation, quality, and breadth of coverage.

Critics of me-too innovation often argue that follow-on drugs offer little incremental clinical value over existing pioneer products, while at the same time increasing health care costs. **Jena** and co-authors examine whether consumers view follow-on and pioneer drugs as close substitutes or distinct clinical therapies. For five major classes of drugs, the authors find that large reductions in the price of pioneer molecules after patent expiration — which would typically lead to decreased consumption of strong substitutes — have no effect on the trend in demand for follow-on drugs. Their findings are likely unaffected by health insurance, competitive pricing of me-toos, marketing, and switching costs.

The hospital merger wave of the 1990s transformed the market for inpatient hospital care. There were about 1,199 mergers and acquisitions in the hospital industry between 1994 and 2005, with about 826 of these occurring between 1994 and 1999. **Antwi** and his co-authors document the trend in inpatient hospital prices before and after the wave of mergers in the mid-1990s using California financial data from 1992 to 2005. They measure price as net inpatient revenue per discharge and check that their results are robust to adjustment for patient demographics, DRG, and severity. They find a downward trend in price for private pay patients in the 1990s followed by a very sharp increase in price starting in 2000. Prices in 2005 were almost double prices in 2000. The authors do not see this sharp increase in net revenues for Medicare and MediCal patients. Nor does the increase in prices seem to be correlated with either the initial level or the change in hospital market concentration. Los Angeles County, where there were many mergers and consolidation, saw very small increases in price. Two regulations — the seismic retrofit mandate and the mandatory nurse staffing

ratio — affected hospital costs significantly. However, the cost increase attributable to the nursing staffing regulations was not large enough to account for the observed price increase, and the price increase was not substantially correlated with proxies for the costs of compliance with the seismic retrofit mandate. One possible cause for higher prices is the increase in inclusiveness of managed care provider networks and the concomitant decline in health plans' bargaining power. However, the evidence on this is largely anecdotal. Thus, the large price run-up since 1999 in California remains something of a mystery.

Glied and her co-authors offer a novel approach to workforce planning in the physician market. Rather than projecting the future demand for physician services, they use a human capital model to estimate the societal cost of producing a physician service. Social planners should choose the quantity of physicians such that the marginal societal cost of producing a physician service is equal to the marginal societal benefit obtained from the service. The same approach can be used to compare the marginal private benefits and mar-

ginal private costs of physician human capital and the resulting information can be used to assess whether physicians earn rents. The analysis concludes that the average social cost of each primary care doctor visit is between $54 and $77. This figure is at the high end of plausible estimates of the marginal societal value of these visits. The estimated private rate of return for primary care doctors falls in the range of 7–9 percent, suggesting that primary care doctors do not earn substantial rents. These results imply that expanding the supply of primary care physicians is unlikely to be a socially cost-effective way to deliver the marginal primary care service.

Levine and **Schanzenbach** examine the impact of public health insurance expansions through both Medicaid and SCHIP on children's educational outcomes, measured by fourth and eighth grade reading and math test scores, available from the National Assessment of Educational Progress (NAEP). They use a triple difference estimation strategy, taking advantage of the cross-state variation over time and across ages in children's health insurance eligibility. Using this approach, they find that

test scores in reading, but not math, increased for those children affected at birth by increased health insurance eligibility. A 50 percentage point increase in eligibility is found to increase reading test scores by 0.09 standard deviations. The authors also examine whether the improvements in educational outcomes can be at least partially attributed to improvements in health status itself. First, they provide further evidence that increases in eligibility are linked to improvements in health status at birth. Second, they show that better health status at birth (measured by rates of low birth-weight and infant mortality) is linked to improved educational outcomes. Although the methods used to support this last finding do not completely eliminate potentially confounding factors, the authors believe it is strongly suggestive that improving children's health will improve their classroom performance.

These papers will be published by Berkeley Electronic Press and will appear online at http://www.bepress.com/fhep/frontiers/. They will also be available at "Books in Progress" on NBER's website.

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TAPES Conference on Income Taxation

The NBER's Trans-Atlantic Public Economics Seminar tackled the topic of income taxation this year. The group met on June 12 and 13 at the Paris School of Economics. Conference organizers Roger H. Gordon, University of California, San Diego and NBER, and Thomas Piketty, Paris School of Economics, chose the following papers to discuss:

Hanming Fang, Duke University and NBER, and **Daniel Silverman**, University of Michigan and NBER, "Time Inconsistency and Welfare Program Participation: Evidence from the NLSY" Discussants: Raj Chetty, University of California, Berkeley and NBER, and Helena Skyt Nielsen, University of Aarhus

Justine S. Hastings and **Ebonya L. Washington**, Yale University and NBER, "The First of the Month Effect: New Evidence for the Optimal Timing of Food Stamp Benefits" Discussants: Nada Eissa, Georgetown University and NBER, and Camille Landais, Paris School of Economics

Marieke Huysentruit, London School of Economics, and **Eva Lefevere**, University of Antwerp, "Child Benefit Support and Method of Payment: Evidence from a Randomized Experiment in Belgium" Discussants: Eric Maurin, Paris School of Economics, and Marc Gurgand, Paris School of Economics

David Neumark, University of California, Irvine and NBER, and **William Wascher**, Federal Reserve Board, "Does a Higher Minimum Wage Enhance the Effectiveness of The Earned Income Tax Credit? " Discussants: James M. Poterba, MIT and NBER, and Paul Bingley, University of Aarhus

Paul Bingley, and **Ian Walker**, University of Warwick "The Labor Supply Response to In-Work and In-Kind Transfer Reforms in the UK" Discussants: Martin Feldstein, Harvard University and NBER, and David Neumark

Gabrielle Fack and **Camille Landais**, Paris School of Economics, "Are Fiscal Incentives Towards Charitable Giving Efficient? Evidence from France" Discussants: Wojciech Kopczuk, Columbia University and NBER, and Daniel Silverman

Eric Maurin, and **Dominique Goux**, DARES, "Preschooling and Female Labor Supply" Discussants: Amalia Miller, University of Virginia, and Thomas Piketty

Helena Skyt Nielsen and **Torben Sørensen**, University of Aarhus, and **Christopher Taber**, University of Wisconsin and NBER, "Estimating the Effect of Student Aid on College Enrollment: Evidence from a Government Grant Policy Reform" Discussants: Marieke Huysentruit, London School of Economics, and Julien Grenet, Paris School of Economics

Amalia R. Miller, University of Virginia, and **Lei Zhang**, Clemson University, "The Effects of Welfare Reform on the Academic Performance of Children in Low-Income Families" Discussants: Ebonya Washington and Gabrielle Fack

Raj Chetty and **Emmanuel Saez**, University of California, Berkeley and NBER, "Optimal Taxation and Social Insurance with Crowdout of Private Insurance" Discussants: Roger H. Gordon, and Andrew Clark, Paris School of Economics

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Fang and **Silverman** empirically implement a dynamic structural model of labor supply and welfare program participation for never-married mothers with potentially time-inconsistent preferences. Using panel data on the choices of single women with children from the NLSY 1979, they estimate the degree of time-inconsistency and its influence on the welfare take-up decision. With these estimates, they conduct counterfactual experiments to quantify the utility loss stemming from the inability to commit to future decisions, and the potential utility gains from commitment mechanisms such as welfare time limits and work requirements.

Previous research has used survey and diary data to document the fact that Food Stamp recipients decrease their expenditures and their consumption of food throughout the benefit month, which begins on the date that benefits are distributed. The reliance on survey and diary data, however, has meant that researchers could not test two rational hypotheses for why food consumption is cyclical. Using detailed grocery store scanner data, **Hastings** and **Washington** ask: 1) whether cycling is attributable to a desire for variation in foods consumed, leading to substitution across product quality within the month; and 2) whether cycling is driven by variation in food prices throughout the month. They do not find support for either of these hypotheses. They find instead that the decrease in food expenditures is driven largely by reductions in food quantity, not quality. They further show that the grocery retailer responds to the large predictable increase in purchases: prices for foods purchased by benefit households vary pro-cyclically with demand. Benefit households therefore could save money by delaying their food purchases until later in the month. The researchers conclude, concurring with previous literature, that food cycling behavior is most likely attributable to short-run impatience.

Huysentruit and **Lefevere** analyze a randomized experiment that sheds light on the role of standard information, goal framed

information, and decision task complexity in the choice of method of payment by child benefit recipients. The experiment encouraged a random sample of 19,707 beneficiaries to change from payment by check to payment via direct transfer. The experiment multiplied by more than four times the switching rate of these treated individuals (relative to controls). Simple, low-cost additions to the standard, informative letter (drafted by government) successfully increased individual switching rates. Adding a flyer-specific plan supplement to the standard letter produced the largest effect, particularly among population groups (like female, elderly, and long-term unemployed beneficiaries) who are often less financially literate and otherwise hard to reach (that is, they did not significantly respond to the letter plus flyer or letter alone). The researchers provide a simple, behavioral economics' interpretation to account for their results.

Neumark and Wascher explore how the effects of the Earned Income Tax Credit (EITC) are influenced by the level of the minimum wage. In principle, such interactions can occur if low-skilled individuals who are eligible for the EITC are more productive and have higher reservation wages than other low-skilled individuals. The results here indicate that the EITC boosts employment and earnings for single women with children, and coupling the EITC with a higher minimum wage appears to enhance this positive effect. In contrast, the earnings of less-skilled minority men appear to be more adversely affected by the EITC when the minimum wage is higher. At the family level, a higher minimum wage appears to increase the poverty-reducing effects of the EITC for families with children; in that sense, a higher minimum wage does appear to enhance the effects of the EITC. But whether the policy combination of a high EITC and a high minimum wage is viewed as favorable or unfavorable depends in part on whose incomes policymakers are trying to increase.

The principal U.K. in-work cash transfer program for households with children has a minimum work requirement that was reduced in 1988 from three to two days per week. At the same time, the cash value of the credit was increased, and eligibility to associated in-kind child nutrition programs was removed. This was effectively a partial, but variable, cash-out of these in-kind transfers that depended on household demographics. The principal out-of-work cash transfer program continued to provide eligibility to the in-kind transfers. Bingley and Walker estimate a model of labor supply and participation in multiple programs using a sample of lone mothers drawn from repeated cross-section surveys that bridge the reform. Their focus is on the effect of in-kind transfers on labor supply and they exploit the reform for identification and allow for participation in the in-work cash program and several in-kind programs. They find that in-work cash and in-work in-kind transfers both have large positive labor supply effects. There is, however, some utility loss from program participation and this is larger for cash than for child nutrition programs. This implies that the partial cash out of the in-kind benefits can be shown to have reduced labor supply.

Fack and Landais develop new estimates of price and income elasticities of charitable contributions that avoid the usual empirical pitfalls (simultaneity and endogeneity of price and income variables) encountered in previous literature. They focus on the French tax reduction system by which every taxpayer gets the same reduction rate, whatever the income or the level of its gift may be. The researchers use time variations in the reduction rate in order to identify the elasticity of charitable giving to tax incentives, based on data from a unique sample of the French Fiscal Administration, with more than 500,000 taxpayers every year. Their estimation technique investigates distributional effects using a multi-step censored quantile regression estimator which deals with heavy censoring with minimal assumptions. Their results demonstrate that the elasticity of charitable giving with respect to tax subsidy is weaker than previously found, and is also strongly heterogenous, in particular with the level of income. This suggests that a tax subsidy scheme varying with income might be more efficient than a unique reduction rate for all taxpayers.

French children start public pre-elementary school either the year they turn two or the year they turn three. Maurin and Goux provide the first comprehensive evaluation of the effect of this unique early schooling policy. Using the discontinuities in enrollment rates generated by the eligibility rules, they find that pre-elementary school availability has a significant employment effect on single-parent families, but no effect on two-parent families. Also, they show that substituting one year of pre-elementary school for one year of alternative modes of childcare has no significant effect on two year olds' subsequent educational outcomes. Overall, given its relatively low cost for society (compared to existing alternatives), pre-elementary school is more cost-effective than existing alternative modes of childcare for two-year olds in France.

Nielsen, Sørensen, and Taber investigate the responsiveness of the demand for college to changes in student aid arising from a Danish reform. They separately identify the effect of aid from that of other observed and unobserved variables such as parental income. They exploit the combination of a linked aid scheme and a reform of the student aid scheme to identify the effect of direct costs on college enrollment. To allow for heterogeneous responses attributable to borrowing constraints, they use detailed information on parents' assets. They find that enrollment is less responsive than other studies suggest and that the presence of borrowing constraints only deters college enrollment to a minor extent. This is, however, in large part because of subsidies already being substantial.

During the 1990s, U.S. welfare policy underwent dramatic reforms aimed at promoting employment and reducing dependence. Although the immediate effects on adult labor supply and family income have been studied extensively, this paper is the first to evaluate the long-run effects on children's well-being. Using a decade of national math achievement data, and controlling for contemporaneous changes in education policy and environment, Miller and Zhang associate welfare reform with relative improvements in low-income students' test scores. Larger gains occur in states with greater initial welfare caseloads and caseload reductions. Preliminary analysis shows relative improvements in low-income children's time use and parental interaction.

Chetty and Saez characterize the welfare gains from redistributive taxation and social insurance in an environment where

the private sector provides partial insurance. They analyze a model in which adverse selection or imperfect optimization in the private sector creates a role for government intervention. They generalize earlier elasticity-based formulas for optimal taxation and insurance to allow for endogenous private insurance. The simple formulas they derive provide a method of mapping estimates of the degree of "crowd-out" of private insurance into quantitative predictions for optimal policy. Empirical applications to unemployment and health insurance show that taking private market insurance into account matters significantly for optimal benefit levels.

These papers will be considered for publication in a special issue of the *American Economic Journal: Economic Policy* and will be posted at "Books in Progress" on NBER's website.

Nineteenth Annual EASE Conference

The NBER, the China Center for Economic Research, the Chung-Hua Institution for Economic Research, the Hong Kong University of Science and Technology, the Korea Development Institute, the Productivity Commission of Australia, the Singapore Management University, and the Tokyo Center for Economic Research jointly sponsored the NBER's 19th Annual East Asian Seminar on Economics on June 19-21. Takatoshi Ito, University of Tokyo and NBER, and Andrew K. Rose, University of California, Berkeley and NBER, organized the conference, which focused on "The Demographic Transition in the Pacific Rim." These papers were discussed:

Ronald Lee, UC, Berkeley and NBER, and **Sang-Hyop Lee** and **Andrew Mason**, University of Hawaii, "The Demographic Transition and Economic Growth in the Pacific Rim"
Discussants: Jocelyn Finlay, Harvard University, and Jong-Wha Lee, Asian Development Bank

Fumio Ohtake, Osaka University, and **Shinpei Sano**, Kobe University, "The Effects of Demographic Change on Public Education in Japan"
Discussants: Daeil Kim, Seoul National University, and Chang-Gyun Park, Chung Ang University

Naohiro Ogawa, **Amonthep Chawla**, and **Rikiya Matsukura**, Nihon University, and **Andrew Mason**, "Japan's Unprecedented Aging and Changing Intergenerational Transfers"
Discussants: Worawan Chandoevwit, TDRI, and Alejandro Herrin, Philippine Institute for Development Studies

Chin Hee Hahn, KDI, and **Chang-Gyun Park**, Chung-Ang University, "Demographic Transition, Human Capital Accumulation and Economic Growth: Some Evidence from Cross-Country and Korean Micro Data"
Discussants: Meng-Chun Liu, Chung-Hua Institution for Economic Research, and Chulhee Lee, Seoul National University

Meng-Chun Liu, and **Gee San**, National Central University, "Population Aging and Industrial Competitiveness: The Case of the Electronics Industry in Taiwan"
Discussants: Francis Lui, Hong Kong University of Science and Technology, and Jinyoung Kim, Korea University

Peta Furnell, **Harry Greenwell**, and **Julie Tinnion**, Australian Treasury, "Population Aging and Higher Net Migration: Implications for Australian Long-Term Demographic and Economic Projections"
Discussants: Douglas Almond, Columbia University and NBER, and Noriyuki Takayama, Hitotsubashi University

Chulhee Lee, "Labor-Force Participation of Older Males in Korea: 1955-2005"
Discussants: Kyungsoo Choi, KDI, and Fumio Ohtake, Osaka University

Noriyuki Takayama, Hitotsubashi University, "Pension Issues in Japan: How Can We Cope with the Declining Population?"
Discussants: Worawan Chandoevwit, TDRI, and Hyung Pyo Moon, KDI

Hisam Kim, KDI, "Intergenerational Transfers and Old-Age Security in Korea"
Discussants: Jiyeun Chang, Korea Labor Institute, and Peta Furnell

Douglas Almond, Columbia University and NBER; **Lena Edlund**, Columbia University; **Hongbin Li**, Tsinghua University; and **Junsen Zhang**, Chinese University of Hong Kong, "Long-Term Effects of Early-Life Development: Evidence from the 1959-1961 China Famine"
Discussants: Ronald Lee, and Naohiro Ogawa, Nihon University

David E. Bloom, Harvard University and NBER, and **David Canning** and **Jocelyn E. Finlay**, Harvard University, "Population Aging and Economic Growth in Asia"
Discussants: Roberto Mariano, Singapore Management University, and Kwanho Shin, Korea University

Francis T. Lui, Hong Kong University of Science and Technology, "Demographic Transition, Childless Families and Economic Growth"
Discussants: Hongbin Li, Tsinghua University, and Roberto Mariano, Singapore Management University

Lee, **Lee**, and **Mason** note that declining mortality followed by declining fertility over the demographic transition initially will produce

decades of rising child dependency, then decades of improving support ratios as child dependency falls (the "first dividend" that raises per capita consumption, other things equal), and finally population aging. India and ASEAN are in the first dividend period; China and Korea are near its end; and Japan's population is aging. Between 2008 and 2050, Japan's support ratio will decline by 25 percent, Korea's by 22 percent, and China's by 14 percent; and India and ASEAN's support ratios will rise. Population aging and the forces leading to it can produce not only frightening declines in support ratios, but also very substantial increases in productivity and per capita income by raising physical and human capital intensity. Longer life, lower fertility, and population aging all raise the demand for wealth to provide for old age consumption. This raises capital per worker (the "second dividend") despite declining aggregate saving rates, unless the increased demand for wealth is met through increased familial or public pension transfers for old age support: institutions and policies matter. Lower fertility and mortality are associated with higher human capital investment per child, and with rising labor productivity. Together, these positive changes likely will outweigh the problems of declining support ratios as population ages.

Population aging affects the structure of government expenditure in various ways. In addition to the effects on aggregate expenditures, population aging affects per capita expenditures on such things as education and social welfare by changes in political power. If the elderly have selfish and shortsighted preferences, they may use their political power to reduce expenditures on compulsory education not directly related to benefits for themselves. On the other hand, the elderly may support the maintenance of government expenditures on compulsory education if they are altruistic or long-term decisionmakers. Using prefectural panel data from 1975 to 2005, **Ohtake** and **Sano** analyze the relationship between the age structure of the population and public expenditure on compulsory education. Their estimated results indicate that the ratio of the elderly population had positive effects on per-student government expenditures on compulsory education in the 1970s and 1980s. This rela-

tionship was reversed in the 1990s. Because the elderly began to live independently from children old enough to receive compulsory education, they may have become less concerned about public expenditure on compulsory education. However, the reversal cannot be explained by the change in living arrangements of the elderly in this analysis. The researchers speculate that the change was caused by the change from the national government to the local governments in the subsidy system for compulsory education.

Ogawa and his co-authors analyze some important effects of Japan's unprecedented population aging on its postwar economy, drawing heavily on the computed results of the NTA-Japan project, ranging from the first and second demographic dividends to the life-cycle reallocations. They also shed light on the rapidly changing roles of public and familial support systems for the elderly in Japan, which have evolved together with the family organizational transformation and the rapid development of the social security system over the past several decades. One of the principal findings of this paper is that an effective use of the demographic dividends, particularly the accumulated second demographic dividend, which is likely to remain substantial for the next few decades, appears to be an attractive policy option for Japan in order to place its future economic growth on a steady path. Another important finding derived from this study is that, since the bursting of the bubble economy in the early 1990s, the Japanese elderly have been informally playing the role of the society's safety net by providing financial assistance to their adult children and/or grandchildren through the traditional familial transfer mechanism.

Hahn and **Park** offer some empirical evidence, at both the macro and micro levels, for a possible linkage between demographic transition and long-term economic performance. Based on theoretical works by Becker, Murphy, and Tamura (1990), Tamura (1995), and Lucas (2002) among others, they present two hypotheses on the linkages among human capital accumulation, change in demographic structure, and economic growth. Theoretical works show that an increase in the rate of return to human capital may trigger a shift from

low-growth high-fertility Malthusian equilibrium to high-growth low-fertility development equilibrium by stimulating human capital investment and substitution of quantity for quality of children. One can infer that these theoretical studies predict a positive correlation between *the speed of demographic transition* and *the speed of economic growth*. Faster demographic transition is also related to faster accumulation of human capital, because the main driving force is the increase in the rate of return to human capital investment. Using a traditional cross-county growth regression framework and newly suggested measures of speed of demographic change, the researchers find positive answers for both of the hypotheses. They also provide supporting evidence for the quality-quantity trade-off hypothesis with micro-level household survey data from Korea where they have observed some of the fastest economic growth and demographic change.

Liu and **San** find that, of the electronics firms in Taiwan surveyed, 64 percent of them agree that the aging problem will have an adverse impact on Taiwan's electronics industry, while only 35 percent of the firms surveyed do not agree that it will have such an impact. They also find that the possible reasons for the aging problem having such an adverse impact are the inevitable difficulties faced in recruiting skilled manpower, together with the outward relocation of electronics firms in Taiwan. The relaxation of the relevant labor laws that enable part-time workers to participate more actively in the labor force and the relevant child-care policies that enable female workers to participate more in Taiwan's labor market might lead to a reduction in the possible adverse impact of the aging problem on the electronics industry in Taiwan.

Australia is nearing the end of a "demographic sweet spot" that has resulted in relatively low total dependency ratios, high labor force participation, and higher levels of GDP per capita. Over the coming years declining mortality, together with relatively low fertility, will lead to a very different, older population structure. While declining mortality, in particular, is to be welcomed, the process of population aging presents important economic and fiscal challenges. **Furnell** and her co-authors show how higher migration can

mitigate somewhat the economic and fiscal impacts of population aging through its impact on Australia's demography and labor force participation. Specifically, drawing on the long-term projection methodology used in the Australian second *Intergenerational Report*, they compare the outcomes of that report with a 'high immigration scenario." These projections, which focus on the impact of migration on demography and the labor force, should be interpreted in the context of the broader economic effects of immigration.

Lee estimates the labor force participation rate (LFPR) of older males in Korea from 1955 through 2005, and analyzes the effects of several determining factors on labor-force participation decisions at older ages. The LFPR of older men increased substantially from the mid-1960s to the late-1990s. This pattern is in sharp contrast to the historical experiences of most other OECD countries, where the LFPR of older males declined rapidly over the last century. The rise in the LFPR of older males in Korea between 1965 and 1995 is largely explained by the dramatic increase in the labor-market activity of the rural elderly population. The results of regression analyses suggest that the acceleration of population aging in rural areas because of the selective out-migration of younger persons was the major cause of the sharp increase in the LFPR of older males. It is likely that the relative decline of the rural economy in the course of industrialization made it increasingly difficult for the rural elderly population to save for retirement.

Takayama begins with a brief sketch of Japanese demography and its impact on financing social security. He then explains the Japanese social security pension program and summarizes Japan's major pension problems. He further examines the 2004 pension reform and uses a balance-sheet approach to analyze its economic implications. His paper discusses future policy options for pensions, as well. Financial sustainability of social security pensions is not often attained, even when income statements show a surplus. The balance-sheet approach is an indispensable tool for people to understand the long-run financial sustainability of social security pensions and to

evaluate the varying financial effects of different reform alternatives. When it comes to social security pensions, the most important question is whether they are worth buying. Contributions must be much more directly linked to old-age pension benefits, while an element of social adequacy has to be incorporated into a separate tier of pension benefits financed by sources other than contributions. Takayama also shows that a shift to a consumption-based tax to finance the basic pension in Japan will induce smoother increases in pension burdens among different cohorts.

Kim looks at intergenerational transfers in Korea, focusing on children's financial assistance to their elderly parents. Even though it is not always sufficient, financial help from adult children has alleviated income deficiency among Korean elderly, as at least 30 percent of income for those in their seventies comes from their children's transfers. Using data from the Korean Longitudinal Study of Ageing (KLoSA) and the Korean Retirement and Income Study (KReIS), Kim finds that altruism is the main motive for familial transfers in Korea and that positive expectations about public support decrease elderly parents' net transfer receipts in the family. The exchange motive, however, also appears to operate, in the form of more transfers to parents who look after their grandchildren. The family fixed-effect models using the KLoSA sibling sample show that the eldest son still undertakes the heaviest burden of supporting his elderly parents through financial help or co-residence with them. In addition, a child's additional year of education only leads to an additional net transfer of 90,000 won (roughly 90 dollars) per year for the elderly parents, implying that child education can hardly be a retirement plan. Moreover, the familial support mechanism has been deteriorating in Korea, and the burden of supporting the increasing number of elderly has been shifting from families to government; within a family, it has been shifting from the eldest son to the elderly parents themselves. Therefore, individuals need better planning for retirement and longevity risk. The government too should consider ways to reduce poverty among the elderly, including promoting elderly employment, enhanc-

ing long-term saving incentives, and making pension reforms.

Almond and his co-authors estimate the effects of maternal stress and malnutrition using the Chinese famine of 1959–61 as a natural experiment. Observed forty years later, in the 2000 China Census (1 percent sample), famine survivors showed impaired literacy, labor market, wealth, and marriage market outcomes. In addition, maternal malnutrition reduced the sex ratio (males to females) in two generations — those prenatally exposed and their children — presumably through heightened male mortality. This tendency toward female cohorts can be interpreted in light of the Trivers-Willard (1973) hypothesis, according to which parents in poor condition should skew the offspring sex ratio toward daughters. Hong Kong Natality microdata from 1984–2004 further confirm this pattern. The persistence of poor nutrition in China — particularly in rural areas and among girls — suggests that health and economic outcomes will be compromised well into the twenty-first century.

The decline in the total fertility rate between 1960 and 2005, coupled with an increase in life expectancy and the dynamic evolution of past variation in birth and death rates, is producing a significant shift in age structure in Asia. The age distribution has shifted from one with a high youthful population share to one with a high old-age population share. **Bloom** and his co-authors illustrate the role of these separate forces in shaping the age distribution. They also argue that the economic consequences of population aging depend on behavioral responses to the shift in age structure: the female labor force participation response to the decline in fertility, child quality/quantity trade-off in the face of the fertility decline, savings adjustments to an increase in life expectancy, and social security distortions insofar as the pace of life expectancy improvements is faster than the pace of policy adjustments. They estimate the association between old- and young-population shares and economic growth. Their results suggest that population aging does not, and will not, significantly impede the growth of income per capita in Asia.

In recent decades, several East Asian economies have been going through a rapid

demographic transition. With total fertility rates well below the replacement ratio, childless families not surprisingly have begun to emerge on a large scale. For example, in Hong Kong, where the total fertility rate is less than one, 30 percent of the women in their mid-forties do not have any children at all, and this ratio is increasing quickly.

This poses new challenges, not only to public policymaking but also to the theoretical literature on the quality-quantity tradeoff of children. When there are no children, the vehicle for human capital investment may disappear. **Lui** presents a model that that can naturally generate the demographic transition with a corner solution occurring

at zero fertility. Using a variety of models to analyze the data collected from a survey conducted before the spring of 2008, Lui verifies that parental human capital is a very significant factor affecting the fertility rate. Moreover, several important factors that may have an impact on the demographic transition and zero fertility are identified.

31st International Seminar on Macroeconomics

NBER's 31st International Seminar on Macroeconomics (ISOM) took place on June 20 and 21 in Ljubljana, Slovenia. Slovenia is the first of the transition economies to have achieved access to the euro.

This was the thirtieth anniversary of the first ISOM meeting in Paris. ISOM Chair and NBER Research Associate Jeffrey Frankel of Harvard University and Christopher Pissarides of the London School of Economics organized this year's program.

The conference was hosted by the Slovenia's central bank, and Dr. Marko Kranjec, the Governor of the Bank of Slovenia, delivered opening remarks. The conference included the following paper presentations and discussions:

Matthieu Chemin, University of Quebec at Montreal, and **Etienne Wasmer**, Sciences Po Paris, "A Note on the Employment Effects of the 35-Hour Workweek Regulation in France" Discussants: John Abowd, Cornell University and NBER, and Christopher Pissarides

Richard Baldwin, Graduate Institute, Geneva and NBER, and **Virginia Di Nino**, Bank of Italy, "Trade Pricing Effects of the Euro" Discussants: Philippe Bacchetta, University of Lausanne, and Jose

Manuel Campa, IESE Business School and NBER

Dalia Marin, University of Munich, "The New Corporation in Europe" Discussants: Josef Brada, Arizona State University, and Polona Domadenik, University of Ljubljana

Laura Alfaro, Harvard University and NBER; **Andrew Charlton**, London School of Economics; and **Fabio Kanczuk**, Universidade de Sao Paulo, "Firm-Size Distribution and Cross-Country Income Differences" Discussants: Jeffrey Frankel, and John Haltiwanger, University of Maryland and NBER

Paul R. Bergin, University of California, Davis and NBER, and **Ching-Yi Lin**, University of California, Davis, "Exchange Rate Regimes and the Extensive Margin of Trade" Discussants: George von Furstenberg, National Science Foundation, and Stephen Redding, London School of Economics

Mark P. Taylor and **Hyeyoen Kim**, University of Warwick, "Real Variables, Nonlinearity, and European Real Exchange Rates" Discussants: Charles Engel and Kenneth West, University of Wisconsin and

NBER

Stephanie E. Curcuru and **Charles P. Thomas**, Board of Governors of the Federal Reserve System, and **Francis E. Warnock**, University of Virginia and NBER, "Current Account Sustainability and the Relative Reliability of the International Accounts" Discussants: Michael Dooley, University of California, Santa Cruz and NBER, and Daniel Gros, Centre for European Policy Studies

Carmen M. Reinhart, University of Maryland and NBER, and **Vincent R. Reinhart**, American Enterprise Institute, "Capital Flow Bonanzas: An Encompassing View of the Past and Present" Discussants: Francesco Giavazzi, MIT and NBER, and Sebnem Kalemli-Ozcan, University of Houston and NBER

Richard H. Clarida, Columbia University and NBER, "Reflections on Monetary Policy in the Open Economy" Discussants: Paolo Pesenti, Federal Reserve Bank of New York and NBER, and Frank Smets, European Central Bank

France's 1998 implementation of the 35-hour workweek has been one of the greatest regulatory shocks on labor markets. Few studies evaluate the impact of

this regulation because of a lack of identification strategies. **Chemin** and **Wasmer** find that for historical reasons, because of the way Alsace-Moselle was returned

to France in 1918, the implementation of France's 35-hour workweek was less stringent in that region than in the rest of the country. Yet they find no significant dif-

ference in employment with the rest of France, which casts serious doubt on the effectiveness of this regulation in raising employment.

Baldwin and **Di Nino** investigate whether the euro boosted Eurozone integration by impeding pricing-to-market behavior. They study the pricing strategies of exporters from 20 countries (Eurozone and non-Eurozone) to identify variations in the average cost mark-up and exchange rate pass through. Their preliminary findings suggest that the euro has not accelerated the speed of convergence of export prices within the area but rather has brought about a one-time jump in convergence around the date of its adoption. Pricing-to-market estimations reveal no changes in the average markup or in the exchange rate pass through elasticity. Overall, they find that the euro's introduction has had little impact on trade pricing behavior.

In the last 15 years the nature of the corporation has been changing. This has involved a change in management style to more decentralized and less hierarchical decision-making, a stronger focus on "core competences", the emergence of talent as the "new stakeholder" in the firm, and the organization of the corporation in an international value chain in which different stages of production are taking place in different countries. At the same time, the firm boundaries have been shifting, leading to outsourcing of firm activities on the one hand and merger activities on the other. **Marin** explores the role of international trade and foreign direct investment and the opening up to the former communist countries as the driving forces behind the emergence of the "new corporation" in Europe. She also examines the challenges these changes in corporate organization may pose, in particular in the areas of trade policy and human resource policies.

Using firm-level data for 79 developed and developing countries, **Alfaro** and her co-authors investigate whether differences in the allocation of resources across plants that are heterogeneous in size are a significant determinant of cross-country differences in income per worker.

The researchers use a standard version of the neoclassical growth model augmented to incorporate monopolistic competition among heterogeneous firms. For their preferred calibration, the model explains 58 percent of the log variance of income per worker, as compared to the 42 percent success rate of the usual model.

Bergin and **Lin** find that currency unions and direct exchange rate pegs raise trade through distinct channels. Panel data analysis of the period 1973–2000 indicates that currency unions have raised trade predominantly at the extensive margin, the entry of new firms or products. In contrast, direct pegs have worked almost entirely at the intensive margin, increased trade of existing products. The authors develop a stochastic general equilibrium model, featuring price stickiness and firm entry under uncertainty, to understand this result. Because both regimes tend to reliably provide exchange rate stability over the horizon of a year or so, which is the horizon of price setting, both lead to lower export prices and greater demand for exports. But because currency unions historically are more durable than pegs over a longer horizon, they encourage firms to make the longer-term investment needed to enter a new market. The model predicts that whenever exchange rate uncertainty is completely and permanently eliminated, all of the adjustment in trade occurs at the extensive margin.

Taylor and **Kim** carry out an analysis of European real exchange rate behavior before and after the implementation of Economic and Monetary Union (EMU). In particular, in an explicitly nonlinear framework, they model real exchange rates for a number of EMU and non-EMU countries against Germany, and they allow for variation in the equilibrium level of the long-run equilibrium real exchange rate using either relative productivities or real diffusion indexes. The estimated models show that real variables are a significant determinant of long-run real exchange rates when incorporated into a nonlinear framework. The researchers also find that the speed of adjustment is generally faster after the implementation of EMU.

Curcuru, Thomas, and **Warnock** provide a brief but relatively complete survey of various theories that have been offered regarding the sustainability of the U.S. current account deficit. They focus on the data these theories rely on, provide an evaluation of the relative reliability of data on various subcomponents of the international accounts, and through this analysis weigh in on which theories are better supported by the data. Their analysis of the dark matter theory from a relative data reliability perspective is that it fails because it is built on the assumption that an item that is largely unmeasured is the most accurate component of the entire set of international accounts. Their analysis of the exorbitant privilege theory requires much more depth, as they must first construct estimates of adjustments for known shortcomings in the accounts. After plugging various holes in the accounts, they find that the positive returns differential the United States earns on its net international investment position is much smaller than implied by the exorbitant privilege theory.

A considerable literature has examined the causes, consequences, and policy responses to surges in international capital flows. A related strand of papers has attempted to catalog systematically the current account reversals and capital account "sudden stops." **Reinhart** and **Reinhart** offer an encompassing approach with an algorithm cataloging capital inflow bonanzas in both advanced and emerging economies during 1980–2007 for 181 countries and 1960–2007 for a subset of 66 economies from all regions. In line with earlier studies, this study shows that global factors — such as commodity prices, international interest rates, and growth in the world's largest economies — have a systematic effect on the global capital flow cycle. Bonanzas are no blessing for advanced or emerging market economies. In the case of the latter, capital inflow bonanzas are associated with a higher likelihood of economic crises (debt defaults, banking, inflation, and currency crashes). Bonanzas in developing countries are associated with pro-cyclical fiscal policies and attempts to curb or avoid an

exchange rate appreciation — very likely contributing to economic vulnerability. For the advanced economies, the results are not as stark, but bonanzas are associated with more volatile macroeconomic outcomes for GDP growth, inflation, and the external accounts, lower growth, and sustained declines in equity and housing prices will follow at the end of the inflow episode.

Clarida's paper provides some intuition and quantitative insight into monetary policy choices faced in the open economy. The theoretical sections of the paper focus on three main building blocks: the "open economy" IS curve, the open economy Phillips curve, and the open economy Taylor rule. The following results are based upon a benchmark specification of the model, which assumes that the elasticity of substitution in consumption is less than one: first, in general there will be a spillover from foreign output to potential domestic output — potential output in

the open economy is not a closed-economy construct and cannot be defined without reference to global developments. Second, in general there will be a spillover from foreign output growth to the domestic neutral real interest rate -- again the "domestic" neutral real interest rate cannot be defined without reference to global developments. Third, a more open economy may be expected to have a flatter Phillips curve. Finally, Clarida reviews a novel empirical implication of a version of this model, one that is supported in the data: that bad news about inflation will be good news for the exchange rate under a version of inflation targeting, notwithstanding an assumption that PPP (purchasing power parity) holds in the long run. He also introduces a new way to calibrate forward looking central bank policy rules using financial market data on real interest rates on inflation indexed bonds and breakeven inflation rates instead of the instrumental variable, GMM approach intro-

duced in his earlier work. He applies this approach to the Fed and ECB (European Central Bank) reaction functions since 2000 and finds that it accounts well for policy with much less emphasis on interest rate smoothing than in prior work. According to this analysis, variations in the neutral real interest rate, perhaps caused by the "global saving glut" and enhanced financial integration in a world of inflation targeting central banks, have played an important role in Fed policy this decade. For the ECB, the results are less clear cut because of the limited issuance of inflation indexed bonds during much of the sample, but are nonetheless encouraging.

A selection of these papers will appear in an NBER volume published by the University of Chicago Journals Division. They will also be available at "Books in Progress" on the NBER's website.

NBER Conference in Beijing

The tenth annual NBER-CCER Conference on China and the World Economy took place at the China Center for Economic Research (CCER) in Beijing on July 2-4. The conference program was jointly arranged by the National Bureau of Economic Research, the CCER at Beijing University, and Tsinghua University.

At this conference, the discussion topics presented by Chinese participants included: how factor income is distributed in China; the Chinese real estate

market; the importance of productivity growth in China; an evaluation of China's poverty alleviation program; and stock market valuation, and the inelastic demand for stocks, in China.

U.S. participants at this year's conference were: NBER President Emeritus Martin Feldstein of Harvard University, and Professor Shang-Jin Wei of Columbia University and NBER, both serving as the U.S. conference organizers; Gita Gopinath of Harvard University; Jens

Ludwig and Tomas Philipson, University of Chicago; and Charles Hulten, University of Maryland. They discussed: international trade and finance; the economics of crime; the Chinese saving puzzle; the importance of productivity; and health economics.

The entire conference program with links to other related information is available on the NBER's web site at www.nber.org/china.

NBER News

New Directors for Public Economics Program

NBER Research Associates Raj Chetty and Amy N. Finkelstein now co-direct the NBER's Program on Public Economics, replacing James M. Poterba who became NBER's President on July 1. Chetty is a tenured Associate Professor of Economics at the University of California, Berkeley. Finkelstein is a Professor of Economics at MIT.

Twenty-ninth NBER Summer Institute Held in 2008

In the summer of 2008, the NBER held its twenty-ninth annual Summer Institute. Nearly 1800 economists from universities and organizations throughout the world attended. The papers presented at dozens of different sessions during the four-week Summer Institute covered a wide variety of topics. A complete agenda and many of the papers presented at the various sessions are available on the NBER's web site by clicking Summer Institute 2008 on our conference page, www.nber.org/confer.

Market Design Working Group

The NBER's newest Working Group, focusing on Market Design, was established this fall. NBER Research Associate Susan Athey of Harvard University and NBER Faculty Research Fellow Parag Pathak of MIT will co-direct the group.

Over the past two decades, economic research and ideas have played an increased role in the practical organization and design of markets. Some examples include auctions for spectrum, electricity, Treasury bills, timber, and other commodities; tradable permit systems for pollution abatement and other environmental regulations; internet search advertising; market mechanisms for innovation; labor market clearinghouses; centralized systems for the allocation of organs; formal procedures for student assignment; and other related matching and trading processes. In each of these cases, both theory and empirical and experimental research have influenced the design of market institutions.

"Market design" examines the reasons why markets institutions fail and considers the properties of alternative mechanisms, in terms of efficiency, fairness, incentives, and complexity. Research on market design is influenced by ideas from industrial organization and microeconomic theory; it brings together theoretical, empirical, and experimental methods, with an aim of studying policy-relevant tradeoffs with practical consequences. The NBER's Market Design Working Group seeks to create a forum for bringing together leading researchers in the field of Market Design. To encourage research on Market Design, the Working Group will host a series of workshops where new work will be presented.

Program and Working Group Meetings

Japan Project Meets

The NBER together with the Center on the Japanese Economy and Business, The Center for Advanced Research in Finance, the European Institute of Japanese Studies, and the Australia-Japan Research Centre held a project meeting on the Japanese economy in Tokyo on June 24 and 25. The organizers of the meeting were: Magnus Blomstrom, NBER and Stockholm School of Economics; Jennifer Corbett, Australia-Japan Research Centre; Fumio Hayashi, NBER and the University of Tokyo; Charles Horioka, NBER and Osaka University; Anil K Kashyap, NBER and the Graduate School of Business, University of Chicago; and David Weinstein, NBER and Columbia University. The following papers were discussed:

Joe Chen, **Yun Jeong Choi**, and **Yasuyuki Sawada**, University of Tokyo, "Suicide and Life Insurance"
Discussant: Emily Oster, University of Chicago and NBER

Jose A. Lopez and **Mark M. Spiegel**, Federal Reserve Bank of San Francisco, "Foreign Entry into Underwriting Services: Evidence from Japan's 'Big Bang' Deregulation"
Discussant: Takeo Hoshi, University of California, San Diego and NBER

Kimie Harada, Chuo University, and **Takatoshi Ito**, University of Tokyo and NBER, "Did Mergers Help Japanese Mega-Banks Avoid Failures? Analysis of the Distance to Default of Banks"
Discussant: Joe Peek, University of Kentucky

Kazuki Onji, Australian National University, and **David Vera**, Kent State University, "Tax Law Asymmetries and Income Shifting: Evidence from Japanese Capital Keiretsu"
Discussant: Yishay Yafeh, Hebrew University

Shiro Armstrong, Australian National University, "Interaction Between Trade, Conflict and Cooperation: The Case of Japan and China"
Discussant: Matthew Slaughter, Dartmouth College and NBER

Migiwa Tanaka, Bank of Japan, "Deflation in Durable Goods Markets: An Empirical Model of the Tokyo Condominium Market"
Discussant: Christopher Mayer, Columbia University and NBER

David Weinstein, and **Christian Broda**, University of Chicago and NBER, "Exporting Deflation? Chinese Exports and Japanese Prices"(NBER Working Paper No. 13942)
Discussant: Shujiro Urata, Waseda University

Kiu-Sik Bae and **Dong-Bae Kim**, Korea Labor Institute; **Hiroyuki Chuma** and **Isao Ohashi**, Hitotsubashi University; and **Takao Kato**, Colgate University, "High Performance Work Practices and Employee Voice: A Comparison of Japanese and Korean Workers"
Discussant: Jesse Shapiro, University of Chicago and NBER

Chen and his co-authors investigate the nexus between life insurance and suicide behavior using OECD cross-country data from 1980 to 2002. They find that for the majority of observations, there is a positive relationship between the suicide rate and life insurance density (that is, the premium per capita). Because life insurance policies pay death benefits even in suicide cases after the suicide-exemption period, the presence of adverse selection and moral hazard suggests an incentive effect that leads to this positive relationship. The novelty of this analysis lies in the use of cross-country variations in the length of the suicide-exemption period in life insurance policies as the identifying instrument for life insurance density. These results provide compelling evidence suggesting the existence of adverse selection and moral hazards in life insurance markets in OECD countries.

Lopez and **Spiegel** examine the impact of foreign underwriting activity using issue-level data in the Japanese "Samurai" and euro-yen markets over the period from 1992 to 2001. They find that the firms in these markets who chose Japanese underwriters over their foreign counterparts tended to be Japanese, riskier, smaller, seasoned, and collateralized. What determines underwriting fees? While the data in this study confirm that Japanese underwriters charged higher fees and spreads on average, the authors find that after conditioning for issuer characteristics, the residual charges of Japanese underwriters were actually lower than those of their foreign competitors. However, after accounting for the endogeneity of issuer choice, they find that firms tended to choose the proper nationality of underwriter — in the sense that switching from a Japanese underwriter to a foreign one, or vice versa, would be predicted on average to result in an increase in underwriting fees. Finally, the researchers examine the impact of the 1996 liberalization

of foreign access to the "Samurai" bond market. They conduct a matching exercise, using yen-denominated issues in the euro-yen market as a control sample and find that deregulation led to a statistically and economically significant decrease in underwriting fees in the Samurai bond market.

In the 1990s, several large Japanese banks failed for the first time in Japan's postwar history. As the financial environment was deteriorating further, several remaining banks decided to merge, presumably to make their operations more efficient and to avoid failures. **Harada** and **Ito** define, measure, and analyze the distance to default (DD) — a concept in corporate finance — of Japanese large banks, in order to establish whether mergers in the late 1990s and 2000s made the merged banks financially more robust. The novelty of this paper is its development of a method of estimating the DD for banks that experience a merger, and applying the method to the Japanese banking data. The researchers find: 1) financial soundness of a merged bank depended heavily on that of the pre-merged banks. Merger did not seem to add a special value to financial health. A merger of sound (unsound) banks produced a sound (unsound, respectively) merged financial institution; and 2) not only did merger itself not improve the DD of the pre-merged banks, but a merged bank often experienced negative DD right after the merger. These findings are consistent with the view that merger was not intended to enhance bank operations, but rather to take advantage of the perceived too-big-to-fail policy. Another interpretation is that mergers intended to enhance efficiency resulted in failed implementation of true operational efficiency — quick integration of computer operation systems and duplicating branch networks.

The asymmetric treatment of positive and negative income can create a tax incentive to engage in within-jurisdiction income shifting under a corporate income tax (CIT) that does not allow for the consolidation of group income. **Onji** and **Vera** aim to provide a justification for a group tax system by offering systematic evidence on the effects of taxes on within-group transfers. In the context of the Japanese CIT of the early 1990s, they develop a model of a corporate group that predicts different optimal shifting schedules for subsidiaries with paid-in capital above and below 100 million yen, because of the progressivity in the CIT. Using company-level data on 33,340 subsidiary-time pairs from 1988, 1990, and 1992, they find evidence consistent with their prediction. This finding underscores the importance of accounting for group behavior in the design of CIT.

Armstrong analyzes the complex interaction between trade and politics using Granger causality tests. The purpose here is to determine the presence and direction, both positive and negative, of causation between trade and political events and to gauge an idea of the lag length of causality. The study focuses on the Japan-China relationship where trade is growing quickly despite long standing political distance between the two countries. Armstrong also examines the other important political and economic partner for both countries, the United States, by way of comparison. There is evidence of Granger causality with the presence of lag lengths, and the direction of causality being different for each bilateral relationship. The economic relationship underpins and constrains the political relationship between Japan and China, while an increase in positive political news and a decrease in negative political news promote trade to some degree.

Throughout the 1990s, the supply of new condominiums in Tokyo significantly increased while prices persistently fell. **Tanaka** investigates whether the market power of condominium developers is a factor in explaining the outcome in this market and whether there is a relationship between production-cost trend and the degree of market power that the developers were able to exercise. To answer these questions, Tanaka constructs and structurally estimates a dynamic, durable goods oligopoly model of the condominium market that incorporates time-variant costs and a secondary market. The estimates and counterfactual experiments using the estimated model yield the following results: first, there is no evidence that firms in the primary market have substantial market power in this industry; second, the counterfactual experiment shows that inflationary and deflationary expectations about production-cost trends have asymmetric effects on the market power of condominium producers: the increase in their markup when cost inflation is anticipated is significantly higher than the decrease in the markup when the same magnitude of cost deflation is anticipated.

Between 1992 and 2002, the Japanese Import Price Index (IPI) registered a decline of almost 9 percent and Japan entered a period of deflation. **Weinstein** and **Broda** show that much of the correlation between import prices and domestic prices was attributable to formula biases. Had the IPI been computed using a pure Laspeyres index, like the CPI, it hardly would have moved at all. A Laspeyres version of the IPI would have risen 1 percentage point per year faster than the official index. Second, they show that Chinese prices did not behave differently from the prices of other importers. Although Chinese prices are substantially lower than the prices of other exporters, they do not exhibit a differential trend. However, the authors estimate that the typical price per unit quality of a Chinese exporter fell by half between 1992 and 2005. Thus the explosive growth in Chinese exports is attributable to growth in the quality of Chinese exports and the increase in new products being exported by China.

Using a unique new cross-national survey of Japanese and Korean workers, **Bae** and his co-authors report the first systematic evidence on the effects on employee voice of High Performance Work Practices (HPWPs). They find for both nations that: 1) workers in firms with HPWPs aimed at creating opportunities for employees to get involved (such as shop floor committees and small group activities) are indeed more likely to have stronger senses of influence and voice on key shop floor decisionmaking than other

workers; 2) workers whose pay is tied to firm performance are more likely to have a stake in firm performance and hence demand such influence and voice; and consequently 3) workers in firms with HPWPs are more likely to make frequent suggestions for productivity increases and quality improvement. Therefore, this paper contributes to a small yet growing new empirical literature that attempts to understand the actual process and mechanism through which HPWPs lead to better enterprise performance.

Economic Fluctuations and Growth Research Meeting

The NBER's Program on Economic Fluctuations and Growth held its annual summer research meeting in Cambridge on July 12. Andrew B. Abel, Wharton School and NBER, and Ivan Werning, MIT and NBER, organized the meeting. These papers were discussed:

Andrew Atkeson, University of California, Los Angeles and NBER; **V.V. Chari**, University of Minnesota and NBER; and **Patrick J. Kehoe**, Federal Reserve Bank of Minneapolis and NBER, "Sophisticated Monetary Policies"
Critic: Marco Bassetto, Federal Reserve Bank of Chicago and NBER

George-Marios Angeletos, MIT and NBER, and **Alessandro Pavan**, Northwestern University, "Policy with Dispersed Information on Aggregate Shocks"
Critic: Harold Cole, University of Pennsylvania and NBER

Francisco J. Buera and **Giorgio E. Primiceri**, Northwestern University and NBER; **and Alexander Monge-Naranjo**, Northwestern University, "Learning the Wealth of Nations"
Critic: Daron Acemoglu, MIT and NBER

Valerie A. Ramey, University of California, San Diego and NBER,

"Identifying Government Spending Shocks: It's All in the Timing"
Critic: Jordi Gali, CREI and NBER

Mark Aguiar, University of Rochester and NBER, and **Erik Hurst**, University of Chicago and NBER, "Deconstructing Lifecycle Expenditure"
Critic: Fatih Guvenen, University of Minnesota and NBER

Robert E. Hall, Stanford University and NBER, "Sources and Mechanisms of Cyclical Fluctuations in the Labor Market"
Critic: Robert Shimer, University of Chicago and NBER

The Ramsey approach to policy analysis finds the best competitive equilibrium given available instruments but is silent about how to get there uniquely. Many ways of specifying monetary policy lead to indeterminacy. Sophisticated policies do not. They depend on the history of past actions and exogenous events, they differ on and off the equilibrium path, and they can uniquely produce any desired competitive equilibrium. This result holds in two standard monetary economies and is robust to trembles and imperfect monitoring. The result implies that adherence to the Taylor principle is unnecessary. **Atkeson**, **Chari**, and **Kehoe** also show that such adherence is inefficient.

Information regarding commonly-relevant fundamentals (such as aggregate productivity and demand conditions) is widely dispersed in society, is only imperfectly aggregated through prices or other indicators of aggregate activity, and cannot be centralized by the government or any other institution. **Angeletos** and **Pavan** seek to identify policies that can improve the decentralized use of such dispersed information without requiring the government to observe it. They show that this can be achieved by appropriately designing the contingency of taxation on ex post public information regarding the realized fundamentals and aggregate activity. When information is common (as in the Ramsey literature), or when agents have private information regarding only idiosyncratic shocks (as in the Mirrlees literature), the contingency on fundamentals alone suffices for efficiency. When agents instead have private information regarding aggregate shocks, the contingency on aggregate activity becomes crucial. An appropriate combination of the two contingencies then permits the government to achieve the following goals: 1) dampen the impact of noise on equilibrium activity, and hence reduce non-fundamental volatility, without also dampening the impact of fundamentals; 2) improve the aggregation of information through prices and macro data; 3) restore a certain form of constrained efficiency in the decentralized use of information; and 4) guarantee that welfare increases with the provision of any additional information.

Buera and his co-authors study the evolution of market-oriented policies over time and across countries. They consider a model in which own and neighbors' past experiences influence policy choices through their effect on policymakers' beliefs. They estimate the model using a large panel of countries. They find that there is a strong geographical component to learning, which is crucial to explaining the slow adoption of liberal policies dur-

ing the post-war period. This model also predicts that there would be a substantial reversal to state intervention if the world now was hit by a shock of the size of the Great Depression.

Do shocks to government spending raise or lower consumption and real wages? Standard VAR identification approaches show a rise in these variables, whereas the Ramey-Shapiro narrative identification approach finds a fall. **Ramey** shows that a key difference in the approaches is the timing. Both professional forecasts and the narrative-approach shocks will Granger-cause the VAR shocks, implying that the VAR shocks are missing the timing of the news. Simulations from a standard neoclassical model in which government spending is anticipated by several quarters demonstrate that VARs estimated with faulty timing can produce a rise in consumption even when it decreases in the model. Finally, Ramey introduces a new variable that is based on narrative evidence and is much richer than the Ramey-Shapiro simple military dates. Shocks to this variable also lead to declines in consumption and real wages.

Aguiar and **Hurst** revisit two well-known facts regarding life cycle expenditures: the familiar "hump" shaped life cycle profile of nondurable expenditures; and that cross-household consumption inequality increases steadily throughout the life cycle. The authors show that the behavior of total nondurables masks surprising heterogeneity in the life cycle profile of individual sub-components. They find that three categories account for nearly the entire decline in mean expenditure post-middle age: food, transportation, and clothing/personal care. All other nondurable categories studied — including housing services, utilities, entertainment, domestic services, charitable giving, gambling, and so on — show no decline over the life cycle. Similarly, nearly all of the increase in cross-sectional inequality is driven by these same three categories. Excluding food, clothing, and transportation from the measure of nondurable expenditures reduces the increase in consumption inequality by a factor of eight, and removes nearly all of the increase post-middle age. The authors show that the categories driving life cycle consumption are either inputs into market work (clothing and transportation) or are amenable to home production (food). Changes in the opportunity cost of time will cause movements in expenditure on such goods even if there is no change to life time resources. The patterns documented in this paper suggest that prior inferences from consumption data regarding the extent of uninsurable risk faced by households are sensitive to the inclusion of work related expenses and the home production of food. The disaggregated consumption data also pose a challenge to models that emphasize intertemporal substitution or movements in income, including standard models of precautionary savings, myopia, and limited commitment, to explain the life cycle profile of expenditures.

Hall develops a model that accounts for the cyclical movements of hours and employment in the United States over the past 60 years. The model pays close attention to evidence about preferences for work and consumption. About a third of cyclical variations in total hours of work per person are in hours per worker and the remainder in the employment rate, workers per person. Hall shows that reasonable volatility in the driving force and a reasonable elasticity of labor supply provide a believable account of the observed cyclical movements in hours per worker. He defines and estimates an employment-rate function, analogous to the supply function for hours per worker. His work differs from previous attempts to place cyclical movements of total hours on a labor supply curve by its explicit treatment of unemployment in a framework parallel to the supply of hours of work by the employed.

Bureau Books

Asset Prices and Monetary Policy

Asset Prices and Monetary Policy, edited by John Y. Campbell, is available from the University of Chicago Press. This NBER Conference Report costs $85.00.

Economic growth, low inflation, and financial stability are among the most important goals of policymakers, and central banks — such as the Federal Reserve — are key institutions for achieving these goals. In *Asset Prices and Monetary Policy*, leading scholars and practitioners probe the interaction of central banks, asset markets, and the general economy to forge a new understanding of the challenges facing policymakers as they manage an increasingly complex economic system. The contributors examine how central bankers determine their policy prescriptions with reference to the fluctuating housing market, the balance of debt and credit, changing beliefs of investors, the level of commodity prices, and other factors. At a time when the public has never been more involved in stocks, retirement funds, and real estate investment, this insightful book will be useful to all those concerned with the current state of the economy.

John Y. Campbell is a Research Associate in the NBER's Programs on Asset Pricing, Economic Fluctuations and Growth, and Monetary Economics. He is also the Morton L. and Carole S. Olshan Professor of Economics at Harvard University.

The Analysis of Firms and Employees: Quantitative and Qualitative Approaches

The Analysis of Firms and Employees, an NBER Conference Report edited by Stefan Bender, Julia Lane, Kathryn Shaw, Fredrik Andersson, and Till von Wachter, will be available in October from the University of Chicago Press. The price of the volume is $90.00.

Economists increasingly are studying the long-term impact on workers of globalization, outsourcing, and technological change. *The Analysis of Firms and Employees* presents new findings about these effects by examining the interaction between the internal workings of businesses and outside influences from the market, based on data from countries around the globe. The result is an enhanced insight into the dynamic interrelationship between firms and workers.

The distinguished team of researchers assembled here examines the relationships between human resource practices and productivity, changing ownership and production methods, and expanding trade patterns and firm competitiveness. With analyses of large-scale, nationwide datasets as well as focused, intensive observation of a few firms, *The Analysis of Firms and Employees* will challenge economists, policymakers, and scholars alike to rethink their assumptions about the workplace.

Stefan Bender is a senior researcher at the Institute for Employment Research. Julia Lane is senior vice president of Economics, Labor, and Population Studies at the National Opinion Research Center at the University of Chicago and a senior research fellow at the U.S. Bureau of the Census. Kathryn L. Shaw is a Research Associate in the NBER's Programs on Productivity and Labor Studies and the Ernest C. Arbuckle Professor of Economics in the Graduate School of Business, Stanford University. Fredrik Andersson is a senior research associate of the Cornell Institute for Social and Economic Research and a research fellow with the Longitudinal Employer-Household Dynamics Program (LEHD), U.S. Bureau of the Census. Till von Wachter is a Faculty Research Fellow in NBER's Program on Aging and an assistant professor of economics at Columbia University.

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