Earlier this spring I found myself at a coffee shop on Thayer with one of our prospective hires and a colleague recently hired into the Department of Psychology. We were having an engaging conversation about the growing links between our two departments over the last year and the prospects of obtaining the space and financing necessary to develop an experimental laboratory that could be used by both groups. And then, as happened almost inevitably this year, the conversation turned to the economy. The psychologist argued that the discipline of economics was importantly responsible for the credit meltdown and that if we had listened to psychologists it wouldn’t have happened. Our visitor, obviously quite experienced in these sorts of discussions, agreed that economics had much to learn from psychology about how to design experiments and to think about individual and group behavior. But then he looked the psychologist squarely in the eyes and said, “Imagine that the President could have but one advisor and you could pick either the very best economist for this purpose or the very best psychologist. Whom would you choose?” The psychologist thereupon changed the subject.

It has indeed been an extraordinary year for the discipline of economics. Fundamental ideas in the field have been importantly challenged and we have already seen the beginnings of what will undoubtedly be years of work that will emerge about what happened. But in the end there is little question about where the world turned when it needed to find explanations and to look for solutions. I expect that there has never been a year when economists so dominated the front pages of the news. Economic commentary has reached so deeply into public culture that ad agencies have begun poking fun at us—you may have seen, for example, the mobile phone ad where a bunch of economists dressed in suits are sent forth to suburbia to help people sort out their cell-phone bills only to be met by slammed doors and the spray of a garden hose.

But what is also striking is that many of the economists making important policy decisions are principally scholars who, until quite recently, were engaged in academic research in top departments around the country. In short, there
NOTES FROM THE CHAIR

is something about the discipline of economics—not just the subject of inquiry but fundamentally the process of rigorous economic reasoning and debate—that makes the connection between academic research and policy making unusually tight.

Fortunately (from the perspective of the chair that has had to meet undergraduate enrollment demands, which were the highest in history), we did not lose any of our faculty this year to the policy world. But a couple of our former undergraduates have played key roles in response to the crisis. And I have taken tremendous satisfaction in the way that the department faculty has responded. Our discussions within the department have been stimulating and enlightening. It has been exciting to see the way that seemingly unrelated strands of faculty research and expertise (on housing markets, low-income countries, the effects of financial deregulation, corporate governance, and labor markets, for example) were brought together to help to inform and interpret the events as they unfolded. Our faculty panel that was hastily put together on October 3 in a matter of hours was a watershed event filling Salomon 001 to maximum capacity and then some. Our faculty have found innumerable ways to work the crisis into their lectures and to engage with our students about what was happening and why. Students began to see in a very practical way that the simple models that we teach were not just intellectual puzzles but part of a larger process of economic reasoning that can help one organize one’s thinking about difficult real-world problems.

With that said, I do not want to leave the impression that the Economics Department at Brown is an island unto itself. Indeed, we have made some interesting progress this year in terms of extending our reach to other parts of campus. Our hire in the junior market this year, Mark Dean, does work in economic theory and neuroeconomics. Neuroeconomics is an emerging field that evaluates economic models of behavior by using fMRI technology to measure the brain’s response to different kinds of economic decisions. His seminar in the department was much enriched by the presence of a number of faculty from Brown’s strong department in neuroscience. We have also recently received word that NSF has agreed to fund a program of fellowships for graduate students in economics, anthropology, sociology and political science in the area of inequality and development. A key element of this program will be providing the resources and training to help our students gain field experience in developing countries. Our hire from last year in environmental economics has begun an interesting project with a marine ecologist looking at the effects of poverty reduction on bio diversity along the Mexican coast. A number of our faculty also are involved with people at the medical school with projects on the effects of stress in pregnancy on child outcomes, nursing home entry decisions and their consequences for racial disparities in care, the role of caste networks in monitoring TB treatment compliance, the consequences of turnover in nursing staff for patient outcomes, and the long term effects of health care improvements in the south for African Americans in differences in educational outcomes by race. A striking feature of all these projects is that they are being carried out by core members of the economics faculty and thus, not surprisingly, bring state of the art methods in economic theory and econometrics to look at important problems in health.

It may seem a bit unusual to see topics of this diversity within an economics department—and in a sense it is. One thing I have noticed in my travels to other universities is that all too often economics departments have outsourced a significant fraction of applied research to policy schools, public health schools and the like and that this creates an unhealthy two-tiered system of economists—a department that is too distant from real world problems and applied researchers who do not feel pressure to keep their methodological skills at the frontier of the discipline. I think that the fact that Brown has avoided this problem is much to its credit. Indeed, I find myself continuing to press the importance of this model with the Administration as they consider how to get the most out of Brown’s many non-disciplinary units including the Watson Institute, the Center for Environmental Studies, and the Taubman Center for Public Policy and American Institutions.

In closing, I want to thank Louis Putterman, my associate chair, for putting this excellent edition of our newsletter together and to my express hope that you will enjoy reading about what we are up to. As usual we would appreciate your feedback, so feel free to email comments and question to me at afoster@brown.edu.

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Mark Dean joins us as an assistant professor having completed his PhD in economics at New York University in the summer of 2009. Originally from Sheffield in England, Mark gained degrees from Cambridge University and University College, London before working as an economist at the Bank of England for three years. Mark’s research is in the fields of behavioral and experimental economics: using the tools of economic theory to design laboratory experiments aimed at understanding the way that people behave in economic environments. He has also worked in the emerging field of ‘neuroeconomics,’ which uses data on brain activity to gain insights into the economic decisions that people make.

It is the study of neuroeconomics, and in particular the neurotransmitter dopamine, that has been the focus of Mark’s work at NYU. Neuroscientists have long suspected that dopamine plays a crucial role in the decision making process, and in the valuation of objects between which people have to choose. Early studies in animals showed that the brain releases dopamine when pleasant things happen – for example when a thirsty rat receives water, a hungry rat receives food, or any rat is shown pictures of attractive rats of the opposite sex. More recent studies have shown tantalizing evidence that dopamine also carries information about the beliefs that an animal has. It seems that dopamine only responds to pleasant events if they are unexpected (for example a thirsty rat is surprised by being given some water). This leads to the exciting possibility that dopamine can provide insight into two of the building blocks of economic choice: the ‘rewards’ that people seek to maximize, and the beliefs they have about future events.

In his work, Mark uses the standard tools of economic theory to develop experimental tests of the role of dopamine. The ‘reward prediction error’ model hypothesizes that dopamine encodes the difference between how good (or rewarding) an event is, and how good it was expected to be. Thus, unexpected water to a thirsty rat creates a positive reward prediction error (as the rat is pleasantly surprised), while water that the rat was expecting does not. Dopamine should therefore respond to the former but not the latter. Mark shows that the reward prediction error model depends on three fundamental properties, or ‘axioms’. In order to test these axioms, Mark uses functional magnetic resonance imaging (fMRI) technology to examine brain activity in human subjects as they perform simple economic tasks. This technology uses powerful electromagnetic pulses to measure brain activity in real time. In his experiments, Mark uses an fMRI scanner to measure dopamine activity as subjects receive different rewards at different levels of ‘surprise’. Excitingly, the experiments show that dopamine does indeed obey the properties of the reward prediction error model. Dopamine activity in humans contains interpretable information on rewards and beliefs.

Now that he is at Brown, Mark intends to continue his work on dopamine in collaboration with faculty in the psychology and neuroscience departments. Having established that the rewards prediction error model is the right way to think about dopamine, the next step is to use this insight to improve the models of economic behavior used in mainstream economics. In his next neuroeconomic work, Mark intends to use measurement of dopamine to understand the phenomena of ‘reference dependant preferences’, or the way in which the choices people make depend on their current expectations. In the future, Mark intends to turn his attention to what dopamine can tell us about the way people learn and form beliefs about their economic environment.

While enjoying his work on neuroeconomics, Mark is keen to stress that he is also interested in a broader range of economics topics. In other work, he has used more standard experimental economic techniques to study the phenomena of ‘status quo bias’, by which people are more likely to pick an alternative because it is the default option – for example the default investment fund in 401k retirement savings plans. Mark is currently interested in the relationship between status quo bias and the confusion that people experience in large or complicated choice sets. In the long run, Mark hopes to use these models of non-standard behavior to help our understanding of macroeconomic phenomena.
The spread of HIV/AIDS is a serious problem for the world. It has already been studied from several perspectives, including medical, epidemiological, sociological and also economic. However, within economics, one aspect that had not been studied was the application of the theory of social networks. This is surprising, since one would expect that the structure and evolution of social networks, viewed as entities that describe sexual behavior, must have some bearing on the problem and may shed new light on it.

To this end, the doctoral dissertation of one of us —Roland’s— is devoted to the study of fidelity networks. The two of us have joined forces in one of its chapters, and in a recent working paper of the department, we have undertaken the analysis of a fully dynamic model of such sexual networks. The analysis also provides answers to other interesting questions, such as: Why is it men that generally court women? Why do women seem to bear a greater share of the HIV/AIDS burden? What explains serial monogamy in some societies and stable polygyny in others? Obviously, all these questions are related to sex, a “good that we should consume only moderately,” according to Thomas Malthus, but “something that constitutes the primary drive of all humans,” according to Sigmund Freud, and so, we proceed to describe the model of fidelity networks.

The fidelity model proposes to study network formation in a two-sided mating economy, with men being one side of the market and women the other side. Men enjoy having relationships with women and vice-versa, but having multiple partners is an act of infidelity, something that is punished if detected by the cheated partner. It is assumed that infidelity is punished more severely for women than for men. We call fidelity networks those networks that arise from this environment. We study their static and dynamic stability. Static stability is a notion of equilibrium networks in an environment in which pairs of agents of opposite sex are given an opportunity to change their sets of partners: no individual wishes to sever an existing link in which he or she is involved, and no man-woman pair wishes to form a new link between them while perhaps severing others. Dynamic stability pays attention to the formation of networks over time and uncovers those network configurations that are more likely to emerge in the long run.

Utility functions turn out to be single-peaked, with utility being increasing to the left of the peak and decreasing to its right. The assumption that the punishment to women after infidelity is higher than it is for men leads to women having an optimal number of partners that is smaller than men’s. This implies that women are the “short side of the market” and therefore, men must compete for them. Indeed, under our assumptions, equilibrium networks are characterized by configurations in which each woman has exactly her optimal number of partners, while each man may be matched with anywhere from no woman at all to his optimal number.

The following example is illustrative of this argument. There are 3 men and 3 women; each man desires 3 partners while each woman desires only 1. So in this economy, women can supply a total of only 3 links while men as a whole are demanding 9. It can be checked that networks $g_1$, $g_2$ and $g_3$ are equilibrium networks. In all three, each woman has exactly 1 partner, her optimal number. In $g_1$, each man is matched to a woman; in $g_2$, man $m_1$ is matched with two women, while $m_2$ is unmatched and $m_3$ is still matched with one; in $g_3$, $m_1$ is matched with all three women while the other men are unmatched.
Turning to dynamics, we analyze the long-run predictions of the fidelity model. We use two processes in which people form and sever links over time based on the reward from doing so, but may take non-beneficial actions with small probability. In the first process, an individual who invests more time in a relationship makes it stronger and harder to break by his/her partner; in the second, such an individual is perceived as weak or dominated. These two processes depict two sociological realities. Under the first process, we find that only egalitarian equilibrium networks (in which all agents have the same number of partners) —like g1 above— are the long run prediction, while under the second, only anti-egalitarian equilibrium networks (in which all women are matched to a small number of men) —like g3 above — are.

Suppose now that each agent in society can get infected by the HIV/AIDS virus due to some exogenous reason, such as a blood transfusion. Next, assume that those individuals directly or indirectly linked to an infected person become infected through sexual transmission. How the disease will spread depends on the specific network. Based on a novel approach to analyzing such diffusion in a network, we apply our results to find that under the first process, HIV/AIDS is equally prevalent among men and women in the long run, while under the second, women bear a greater burden. To see this, the reader can check that in g1 the expected number of men infected is 1, which equals the expected number of infected women (in both cases, the average of six 1’s). In contrast, in g3, while the former continues to be 1 (still the average of six 1’s), the latter is 2 (the average of four 3’s and two 0’s).

The key message is that female discrimination does not necessarily lead to higher HIV/AIDS prevalence among women in the short run, but it does in the long run. In the first process, which may resemble patterns in Western societies, the long run prediction does not favor women, even if the disease began affecting mostly males, as in the US. The second process, perhaps more related to sociological factors present in some African societies, identifies a serious gap in prevalence against women.

Roland Pongou is a candidate for the Ph.D. in Economics

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To Merge or Not to Merge? An Analysis of Indian Inter-state Bank Mergers

By Ghirish Pokardas’09

My thesis attempts to answer the question of whether inter-state mergers of Regional Rural Banks (RRBs) in India can serve as a hedge against state macroeconomic risk. The Indian government set up RRBs in 1976 to promote social democracy. It was believed that the larger privatized banks had deep industry ties which limited the spread of credit to the rural areas which RRBs were designed to serve.

Due to the function and size of RRBs, their loan portfolios are geographically biased. The aim of my senior thesis is to study whether geographic diversification of loan portfolios through mergers of the RRBs in different states could decrease exposure to macroeconomic risk. Taking RRBs’ loan portfolios from different states as assets in a ‘portfolio’, the portfolio method is employed to find how the risk-return characteristics of this ‘portfolio’ change after hypothetically simulated mergers of the loan portfolios of RRBs from different states. The assumption here, and that demonstrated in a 1994 study by Huh and Kim, is that the bad-loan rate is anti-cyclic with the booms and busts of the business cycle. As such, states with different business cycles should have geographically undiversified RRBs which experience bad-loan rates anti-cyclic with the business cycle of their own state, but different from those of other states.

The contribution of this thesis is to examine how mergers can contribute to the Regional Rural Banking industry, while simultaneously examining factors which hinder merger activity. Models of bank merger activity have been developed in the US and the EU and this thesis also adds by suggesting a more appropriate model to examine mergers for the Indian landscape and RRBs in particular. The model differs in that rather than examining a banking organization which has exposure across different economies and industries (like those in the US and EU), it accounts for the fact that RRBs are geographically segregated, and due to their history of being set up to serve a social function, the industries they serve are usually limited. For example, Gunther and Robinson (1999) consider the industries within US states as the financial assets which constitute the portfolio, and Goldberg and Levi (2000) use the EU member countries they study as the assets within the portfolio.

The thesis has both an empirical and a qualitative focus. Primarily, I show that potential benefits from mergers of
entities across states exist by measuring the correlation of the growth rate between these states. It is demonstrated a priori that RRBs that should be investing based on grounds of efficiency, or the ratio between return and risk, are not maximizing their efficiency due to the geographic bias of their loan portfolios. Following this, using data on loan portfolios from RRB-specific balance sheets, I merge the loan portfolios of the RRBs of different states with the aim of finding a weighted Pareto improvement (an improvement which makes at least one RRB better off while not making the other RRBs in the merger worse off) in the Sharpe ratio (a measure of the risk-adjusted return) of the ‘portfolio’.

The thesis additionally examines policy history regarding mergers in India and reasons that contribute to the low number of mergers. It is found that while recommendations for mergers have continually existed, political bureaucracy, history, banking capacity, size and social functions of RRBs have prevented merger activity. Lastly, the efficacy of RRBs is questioned as India moves from social development towards private sector-driven growth which best promotes modernization and financial liberalization, influencing the direction of credit.

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Ghirish Pokardas earned his B.A. in Economics in 2009 graduating with honors and magna cum laude. For his thesis he was awarded one of two Samuel Lamport Prizes in International Understanding.
THE EFFECTS OF RACIAL SEGREGATION AND DISCRIMINATION ON HEALTH: A STUDY OF INFANT MORTALITY RATES IN THE AMERICAN SOUTH, 1939-1959

By Alex Roehrkasse’09

From the beginning of the twentieth century to the end of World War II, the United States experienced a steady and significant narrowing of the black-white gap in infant mortality rates. However, the two decades between the Second World War and the passage of the Civil Rights Act of 1964 were uniquely characterized by a reversal in this trend, with white infant mortality rates showing marked improvements while those of blacks either stagnated or worsened, especially in the South. Importantly, at this time a significant proportion of black infant deaths were occurring in the post-neonatal period (between one month and one year after birth) from conditions such as pneumonia and diarrhea, which, in the event that proper hospital care was available, should not have been fatal.

The Hospital Survey and Reconstruction Act of 1946 was the main federal mechanism by which hospital expansion and new construction was funded over this period. The Hill-Burton Act, as it was popularly known, was intended to extend adequate hospital care to rural and impoverished areas of the country where hospital facilities were sparse and of poor quality. However, the law was unique in being the only piece of federal legislation passed in the twentieth century that included a “separate but equal” clause. In the South, this meant that the law effectively proliferated the racially exclusionary provision of health services until the passage of the Civil Rights Act.

My research finds that a causal link can be drawn between the effects of the Hill-Burton program on the distribution and quality of health facilities and race differentials in infant mortality rates in the South. Making use of original county- and hospital-level data that provide information on hospital resources and admissions, service conditions of births, and race-specific infant mortality rates in Alabama, Mississippi, Illinois and New York, I find strong evidence that the distribution of new and expanded hospital facilities over this period affected Southern blacks’ and whites’ access to health care in drastically different ways. For example, Southern counties in which few white births initially occurred in hospitals converged strongly to those counties with high in-hospital birth rates over the period of analysis. It is in these same counties that the greatest decreases in white post-neonatal mortality are seen. No such convergences in black in-hospital birth rates are consistently evidenced, nor are corresponding improvements in post-neonatal health. That is, increases in white access to health care were strongly correlated with improvements in white infant mortality rates, whereas both black access and outcomes experienced no significant change.

I counter competing hypotheses that downplay the effects of segregation and discrimination and seek to explain these differences along demographic or socioeconomic lines by demonstrating that race differentials in hospital access and corresponding infant health outcomes were growing not only across counties but within them. In the case of Mississippi, I show that quantitative changes in hospital access even had qualitatively different effects on infant mortality rates across race, demonstrating that the segregationist mantra “separate but equal” was in fact anything but. Altogether, these findings suggest that the changes in the distribution of health facilities and access thereto brought about by the Hill-Burton Act played a significant role in the widening of the black-white infant mortality gap unique to this period.

The research questions posed by this historical project are particularly germane to current U.S. health care policy in light of recent increases in the U.S. black-white infant mortality gap. Public and legislative debates over the period of my analysis about how best to address inequalities in access to health care are a striking precedent to contemporary discussions about inequality in health care access. Research that aims at furthering an understanding of the determinants of health care access and inequalities therein also has relevance to health care policy in developing world contexts where discrimination along ethno-racial lines may also be significant.

Alex Roehrkasse earned his B.A. in Economics in 2009, graduating with honors and magna cum laude. For his thesis and overall performance in the concentration, he was awarded one of two Samuel Lamport Prizes in International Understanding.
The Economic and Financial Crisis: A Symposium

The 2008-09 academic year coincided with the most dramatic financial and economic crisis since the 1930s. Twice during the year, students flocked to a large auditorium in Salomon Hall to hear views on the crisis from Brown’s own macroeconomists, professors Peter Howitt, Ross Levine, and David Weil. Here, they share their views with our readers.

The Financial and Economic Crisis: A Long Term Perspective

By Peter Howitt
Professor of Economics and Lyn Crost Professor of Social Sciences

Does the current economic situation mark a distinct break from the past? Are we now in a new world where the old rules of economics no longer apply? The answers to these questions depend on your perspective. On close inspection, the dramatic events that have shaken the world since the summer of 2007 have been driven by complex financial arrangements like collateralized debt obligations, credit default swaps, liquidity puts, conduits and structured investment vehicles, that had not been dreamed of when the central institutions and regulatory structures that dominate our financial system were first created, or when the basic outlines of conventional economic theory were first laid out. These arrangements seem to have gone amok under the old rules.

"Judged by the size of fall in the stock market, huge losses by major banks and disruption of global credit markets, the latest financial crisis is far more severe than the average ... so it is hardly surprising that we are now in the worst recession in 70 years with our national debt exploding and housing prices continuing to fall."

As is often the case, however, a more distant look that focuses on broad macroeconomic forces rather than on microeconomic details reveals a pattern that has been observed many times before. And those patterns contain valuable lessons that can guide us in finding our way out of the current crisis.

In particular, financial crises have taken place many times in the past. A recent paper by Carmen Reinhart of the University of Maryland and Ken Rogoff of Harvard looks at a sample of 66 countries, including all the currently leading...
industrial countries, since 1800, and identifies a total of 268 financial crises. Within the United States alone they identify 13 crises, the most recent of which before the current one was the savings and loan crisis of the 1980s.

Economists like Reinhart, Rogoff, Michael Bordo of Rutgers, the late Charles Kindleberger of MIT, and Carlotta Perez of Venezuela have shown that that there is a particular anatomy of financial crises.

1. The crisis is typically preceded by a period of unusually rapid expansion of credit, typically through a combination of domestic money supply growth and the inflow of foreign capital.
2. This credit expansion initially finances investments in a new technology that produces exceptionally high returns, but then the expansion spreads to other sectors.
3. Credit expansion is followed by a run up of major asset prices, almost always including real estate prices.
4. Just before the crisis there is a halt in the run up of asset prices.

In all four respects, the current crisis fits the pattern. Starting in the 1990s, aggressive Fed policy under Greenspan and a large US current account deficit combined to fuel massive credit expansion in the US economy. Early on the credit financed highly productive investments in information technology, but then it spread into housing and consumer debt. The NASDAQ bubble was followed by the housing bubble, which finally came to an end in late 2006, just before our crisis began.

The aftermath of the typical financial crisis also has a particular anatomy:
1. The chance of recession is much higher right after the crisis breaks than in other times. The bigger the crisis the more likely and the bigger the recession.
2. Government debt expands rapidly for several years after the crisis.
3. It takes much longer for real estate prices to rebound than it does for stock prices – on average 4 to 6 years.

Again, the current situation seems to fit the pattern. Judged by the size of fall in the stock market, huge losses by major banks and disruption of global credit markets, the latest financial crisis is far more severe than the average in the Reinhart-Rogoff sample, so it is hardly surprising that we are now in the worst recession in 70 years with our national debt exploding and housing prices continuing to fall.

A long term perspective also allows us to see that market forces alone will not get us out of this mess, at least not for a long time. No matter how much we might marvel at what Adam Smith called the “invisible hand” of the market, even Smith realized that there are limits to the invisible hand when it comes to financial crises. The evidence suggests that letting market forces operate freely in financial markets often produces macroeconomic instability, and that heavily regulated financial markets produce few crises. For example, there were hardly any financial crises at all during the Bretton Woods period that started in 1944 and continued through to the early 1970s, during which period international financial markets were more heavily regulated than in any time before or after.

Moreover, the experience of the Great Depression taught us all that a laissez-faire attitude to economic policy will not just make a financial crisis more likely; it will also prolong the subsequent recession. The evidence here is so strong that even Milton Friedman, that great apostle of free market capitalism, argued that government has an obligation to expand credit (in the form of high powered money) to avert the kind of financial collapse that characterizes the most severe depressions, and that the Fed’s failure to fulfill that obligation in the early 1930s was what made the Great Depression so great.

Fortunately, no one understands the lessons of the Great Depression more than Fed Chairman Ben Bernanke or the Chair of the President’s Council of Economic Advisors Christina Romer. Under Bernanke the Fed has allowed the supply of high powered money to almost triple over the last year, and has come up with innovative ways to keep credit flowing where deleveraging has destroyed private sources of credit. And, at the President’s urging, Congress has passed the biggest stimulus package ever, in sharp contrast to what Hoover did in the early years of the Great Depression, and even to the comparatively modest attempts of FDR.

In light of the historical record we have to be realistic when judging the success of these monetary and fiscal policies. Given the evidence it seems unlikely that any policy will succeed in arresting the rise in unemployment, the fall in housing prices or the drop in aggregate output in short order. I would judge the policies to have been successful, or perhaps just lucky, if recovery begins before the end of 2010.
SAVE THE BANKS

By Ross Levine
James and Merryl Tisch Professor of Economics and Director of the William R. Rhodes Center for International Economics and Finance

As Obama begins his fourth week as the 44th President of the United States, the economy is deteriorating rapidly, some of its major banks are failing, and his advisors are developing recovery plans. The central role of banks in this crisis motivates two basic questions about the government’s response: Should tax payers pay to fix the banking system? If so, how?

Should taxpayers save banks? People are losing their jobs, their savings, and their homes. The average tax payer did not cause banks to fail and has probably never heard of credit default swaps, Fitch, or collateralized debt obligations. Yet, the average tax payer is facing an estimated bill of $20,000 each to save the banks. Are there good economic reasons for using tax payer money in this way?

Yes. Well-functioning banks are crucial for a successful economy and we are unlikely to have well-functioning banks for a long time unless the government gets involved. Virtually all businesses need banks. For example, imagine that you borrow a $100,000 to start a business on Thayer. Further imagine that the business is going great. With the earnings, you pay the interest on the loan, your workers, your rent, and you have enough left over to pay yourself a nice salary that allows you to take out a mortgage for your house. Now, imagine that the bank experiences problems and demands that you pay back the loan, but you do not have $100,000. You sell the business’s equipment, fire the workers, stop paying rent, and fall behind on your own mortgage. Your unemployed former workers reduce their expenditures, further damaging the economy.

Moreover, without a well-functioning banking system, potential entrepreneurs cannot initiate new projects. Difficult times create opportunities. As entrepreneurs exploit these opportunities and start new businesses, the economy begins to recover. Yet, the absence of a well-functioning banking system will stymie the ability of entrepreneurs to start new businesses and ignite the recovery. Put differently, the US economy is founded on private entrepreneurship, and private entrepreneurship is founded on a well-functioning banking system. The current banking system is broken.

While these arguments suggest that a well-functioning banking system is crucial for economic success, they do not necessarily imply that taxpayers should pay to fix the banking system. Why not simply allow bankrupt banks to go bankrupt?

The reason for using tax payer money to help in saving the banks is that it will take a long time for the market to fix the banking system, which will cause the economic crisis to worsen and severely delay new entrepreneurial activity. A slow bankruptcy in which bits and pieces of financial firms are sold to disparate buyers is particularly problematic because finance is based on information. When a financial conglomerate is broken up and sold quickly to raise money to pay creditors, the intangible assets associated with knowing clients and markets are degraded, if not completely lost, further impeding the financial system from funding existing businesses and new entrepreneurs.

But, does saving the banks mean saving existing shareholders and creditors?

One way to save the banks is to boost the value of bank assets, and thereby help existing equity and bond holders. This was and remains the core strategy of both the Bush and Obama Administrations. For example, as part of the proposed public/private investment fund, the government will subsidize the purchase of bank assets by private entrepreneurs, which will boost bank balance sheets, enriching current bank stock holders. As another example, the Federal Reserve has guaranteed many bank liabilities, which directly helps bank creditors, and indirectly helps bank equity holders by allowing banks to borrow less expensively than they otherwise would. Similarly, the Federal Reserve has guaranteed many bank assets, which further boosts the value of bank equity. As a final example, the government paid an enormous premium, when it purchased bank equity in November, which directly aided bank equity holders and creditors.

One problem with this strategy involves fairness. Is it appropriate to use tax dollars to enrich the owners and large creditors of banks that helped trigger the current crisis? Or, as Obama argued: “We do not disparage wealth, we do not begrudge anyone for achieving success and we certainly believe success should be rewarded. But, what makes people upset and rightfully so are executives being rewarded for failure.”

Beyond fairness, the strategy of saving banks by protecting existing owners and creditors will hinder the creation of a well-functioning banking system, which is the core reason...
for using tax payer funds to save the banks in the first place. Well-functioning banks require owners and creditors with lots of their own wealth on the line. It is the fear of losing money that incentivizes owners and creditors to induce banks to behave prudently. They must know that they can lose. In other words, individual investors in banks must fail now to save the very financial system that we need for sustaining growth in the future.

In summary, yes, it is in the public interest to use some tax payer funds to restore our banking system to financial health, but tax payer funds should only be used after bank shareholders and uninsured creditors have experienced substantial loses. Indeed, a healthy banking system going forward requires that we not bailout existing shareholders and creditors.

**WILL U.S. ECONOMY EXECUTE A PERFECT PIROUETTE, OR FALL ON ITS FACE?**

By David Weil
Professor of Economics

These are extraordinary economic times. Unemployment is at levels not seen since the early 1980s. Millions of American families are losing their homes and tens of millions more have seen vast quantities of wealth in the forms of housing and stocks vaporized. The government is bailing out banks, auto companies, and Lord knows who else. Soon to come are massive changes in financial regulation, and, biggest of all, health care reform.

"Almost all economists agree that ... fiscal expansion, by raising the demand for goods and services either directly by government or indirectly by households that find themselves with more money left after taxes, has ameliorated the severity of the recession so far."

Amidst all this novelty it seems a bit churlish to argue that ten years from now, when we look back on this period of crisis, the policies that we will talk most about will be the same government budget issues that economists have been droning on about for the last 20 years. But there is a good case to be made that this really is where the action is.

Let’s start with the numbers. The federal budget deficit rose from $161 billion in 2007 and $459 billion in 2008 to $1.67 trillion in 2009. The Congressional Budget Office estimates that under the President’s budget, the federal debt held by the public will rise from 41% of GDP in 2008 to 70% in 2012 and 80% in 2017. Debt levels like these have not been seen in this country since the early 1950s.

These enormous deficits are due to many factors including declining revenue in response to the slowing economy and the demands of bailing out the financial and auto industries. But one of the biggest contributors to the deficit is deliberate fiscal policy: The Obama administration’s stimulus program of tax cuts (roughly $300 billion) and spending increases (roughly $470 billion) designed to counteract the recession. Almost all economists agree that this fiscal expansion, by raising the demand for goods and services either directly by government or indirectly by households that find themselves with more money left after taxes, has ameliorated the severity of the recession so far. Estimating exactly how many jobs have been “created or saved” is a difficult business – but clearly more people are working now because of the fiscal expansion.

So if big deficit spending is saving or creating jobs, what is the issue? Shouldn’t we have even more of it? There are two basic issues with deficit spending. First, like any other borrowing, the deficits run up as part of the fiscal stimulus will someday have to be paid back. Buying things now with money that we will pay back later is not necessarily a bad idea. Indeed, if the money goes to projects that had to be done soon anyway, such as repair or construction of infrastructure, then we really are killing two birds with one stone. The danger, of course, is that in the rush to get money out the door, we will end up buying things that future taxpayers will not be happy to have to pay for (my favorite...
example: high speed rail from Los Angeles to Las Vegas).

The second issue is that a government that wants to borrow a lot of money needs to find people willing to lend to it. One of the ironies of the economic crisis so far has been that even though it started in the United States, money has flowed into, rather than out of, the country. Historically, countries that are heavily dependent on foreign borrowing are not treated so kindly by foreign lenders. Were we a typical country experiencing an implosion of our financial system following the bursting of a real estate bubble, we could add a depreciating currency and sky-high interest rates to our list of woes.

Already, as financial panic in the rest of the world recedes, global investors are starting to cast a warier eye at the long term soundness of the United States. This is reflected in rising long term interest rates over the last few months. Whether that wariness grows, either into a full-fledged run on dollar assets or a more pedestrian rise in the interest rates we have to pay on our borrowing, depends on how the markets assess the future of US fiscal policy.

The ideal fiscal policy to help us out of the current crisis while neither unduly burdening future taxpayers nor trashing our credit with the rest of the world is to do a sort of fiscal pirouette: ramp up deficits for the next few years then, as the economy returns to full employment, reverse course and drive the deficit down to a level consistent with long-run fiscal responsibility.

This is pretty much exactly what the Obama administration says it intends to do... (indeed the web site of Office of Management and Budget currently advertises that we are entering “A new era of Fiscal Responsibility”.)

The Republican Party, which bears primary responsibility for the great waves of fiscal irresponsibility under Ronald Reagan and George W. Bush, has now found religion on the question of deficits. But the apparent bipartisan support for fiscal responsibility masks the extremely difficult choices that will have to be made to significantly cut the deficit. A reasonable fear about the current stimulus spending is that many of the big projects being started will neither be finished nor practical to stop a few years down the road (in this sense, tax cuts might have been a better way to handle the bulk of the stimulus). The Obama administration is committed to cutting health care costs while at the same time extending benefits to millions of currently uninsured households – this may not actually be possible. As for the Republicans, it is not clear that the party’s newfound fear of debt will trump its aversion to significant tax increases, especially at the high end of the income distribution, without which serious deficit reduction is inconceivable.

Whether the fiscal policy pirouette is actually executed will determine whether history judges the current policy to be an effective response to the current crisis or the spark that lights the fuse of the next one.
The racial wage gap

Many researchers have documented that black workers in America earn less than their white peers, partly because the average black worker has less education and experience than his white counterpart. But even after stripping out all observable differences between workers, there remains an unexplained shortfall in the wages of black workers compared with white ones. Economists call this the “racial wage gap”.

At least some of the racial wage gap seems to reflect racial prejudices. For example, Bertrand and Mullainathan (2004) show that American firms are one-and-a-half times as likely to interview a person they think is white than one they think is black, even if both have identical qualifications.2

Competition as disinfectant

Gary Becker, a Nobel-prize winning economist, argued in 1957 that intensified competition was critical for reducing the racial wage gap. Mr. Becker explained that because discrimination arising from the prejudices of employers was economically inefficient, it would be harder to get away with the more competition there was. For example, a biased monopolist might hire a more expensive white worker even though a cheaper, more productive black one was available. But if another firm entered the market, it could produce its goods more cheaply by hiring the black worker that the monopolist had turned down. By discriminating less, it could undercut its rival. Mr. Becker did not argue that competition would get rid of bias or even necessarily reduce it. Rather, he argued that competition could greatly soften the economic effects of a given amount of bias on the part of employers.

Becker’s model also implied that competition would have a greater effect where the existing degree of racial bias was greatest. To see this, consider the extreme. If employers have no racial biases, then competition will not affect the racial wage gap. Thus, it is important to consider the degree of racial bias in an economy when evaluating the impact of competition on the racial wage gap.

Was Becker right?

We decided to evaluate Becker’s theory empirically. We use the deregulation of the American banking industry—a process that had increased competition, but had nothing to do with the pre-existing levels of black and white pay. Before the mid-1970s most American states had laws preventing banks incorporated in one place from opening branches in other states, or even from opening branches in other areas in the same state. One consequence of these branching restrictions is scant competition and a highly localized, monopolistic banking industry, with many businesses or would-be entrepreneurs having access to only one bank. Beginning in the 1970s, though, a combination of technological and legal changes increased competition in the industry. For example, the invention of the ATM (and a court ruling that ATMs were not branches) extended the reach of banks beyond their narrowly defined domains of operation. Over time, state after state removed geographic restrictions on banks’ operations.

The consequences, as has been widely documented, were dramatic from a business point of view. Increased competition between banks led to lower overheads and lower interest rates on loans. People who wanted to start businesses found it easier to obtain financing. The proliferation of new firms produced more intense competition in all parts of the economy, not just the banking industry.

By using bank deregulation to demarcate periods of higher and lower competition, we tested whether the resultant change in competition triggered by bank deregulation affected the racial wage gap.

But, we needed another key ingredient to test Becker’s theory appropriately. We needed to compare the degree of pre-existing racial bias across states. We did this by contrasting actual rates of interracial marriage with what would result if people were randomly matched to partners. A bigger difference between the predicted rate of intermarriage and the actual rate is a crude measure of the degree of racial bias. We then divided states into those above and below the median level of racial bias, remembering that Becker predicts the impact of competition on the racial wage gap will be greater in more racially biased states.


Competition reduced the racial wage gap

Confirming Becker’s theory, we find that the racial wage gap declined the most in states with an initially high degree of racial bias after they deregulated their banking industry and benefited from a surge of business start-ups. For high-bias states, about 22% of the racial gap had been “competed away” within five years of deregulation. Black workers reported more hours of work and higher hourly wage rates than before deregulation. There was little change in states with a low degree of racial bias before deregulation.

The increase in competition did not wipe out racial discrimination. Perhaps the increase was insufficient, or perhaps other factors shape the racial wage gap. As Becker and others have stressed, competition does not help reduce bias if the desire to discriminate comes from consumers or workers; it only limits the ability of biased owners to act on their prejudices.

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Voluntary Certification and Air Quality in Mexico

By Emilio Gutierrez Fernandez

The adverse effects of pollution on health are well documented by an extensive and growing literature. As a result, increasing attention is put into understanding the channels through which pollution control policies can be successful in different contexts. Among the available policies of this kind, voluntary certification programs have not escaped the scrutiny of researchers and policy makers.

Typically, these programs give firms certificates (that can be used for marketing purposes, for example) in exchange for successful compliance with specific pollution emissions standards. Many believe that if these certificates allow firms to sell their products at higher prices (for example), their existence can contribute to reduced emissions. However, by design, these programs require firms to self-select into participation. Firms which choose to get certified are then fundamentally different from those which do not. In other words, it is hard to figure out what their emissions would be in the absence of the program. As a result, most of the existing empirical literature evaluating programs of this kind finds conflicting results when trying to determine if reductions in emissions are due to their existence.

Nevertheless, the popularity of these programs is not only widespread in the developed world, but it extends to low and middle-income countries, where pollution is likely to have larger effects on health due to poorer nutrition and lower income. Moreover, pollution abatement policies in one country can have impacts on other countries’ economies through various channels (trade, global warming, etc.). Thus, spending some time understanding the effectiveness of voluntary compliance in low- and middle-income countries seems of special interest. However, in a context in which consumers are more concerned about their immediate needs than about how much pollution was generated in the process of producing the goods they are buying, can voluntary certification be an effective tool?

Andrew Foster and I have spent the last two years trying to answer this question for the Mexican context. In particular, our research evaluates the direct and indirect effects of the Mexican Clean Industry Program, through which participating firms receive a Clean Industry Certificate if they prove compliance with the current legal pollution emissions standards set by the authorities.

Our research differs from previous studies of this kind because, first, we do not attempt to understand the Clean Industry Program as an isolated pollution control effort, but rather as part of a set of tools used by the Mexican authorities to control firms’ emissions. The Mexican Environmental Protection Agency (PROFEPA) also inspects firms at random, more or less frequently depending on their size and what they produce, and fines them any time that they are found to be in non-compliance with environmental regulation. Additionally, we put together a data set which, from satellite imagery, calculates measures of pollution concentrations in the atmosphere at a very detailed geographic level, from 2000 until 2006. These data let us overcome the main empirical problem that most studies evaluating pollution abatement policies face: the lack of measures of pollution concentrations. Indeed, the lack of ground measures of pollution outside of large metropolitan areas in countries like Mexico represents a major obstacle for evaluation purposes.

The satellite images we use exploit the distortion of the light between the earth’s surface and the satellite, and convert it
into a measure of Aerosol Optical Depth (AOD). The basic intuition behind this measure is that if the light gets distorted between the earth’s surface and the satellite, it must be the result of the presence of tiny particles in the air. Previous research has shown that AOD is strongly correlated with ground measures of concentrations of particulate matter. So, given the context and the data we use, how does our research contribute to the understanding of the effectiveness of voluntary certification?

The tools provided by simple economic theory allowed us, on one hand, to get a better sense about how to compare participating firms with those not participating in the program. And, given that our framework incorporates the behavior of the regulator (who learns from certification), it let us show that the effectiveness of the program is not related only to reductions in emissions by participating firms, but also to the program’s effect on those who do not participate. We show that participating firms are those with lower costs of complying with emission standards - in other words, the cleanest. However, if a firm gets certified, it not only reveals information about itself, but also about others. Simply by revealing itself as a “clean” firm, it also reveals others as “not so clean firms.” Uncertified firms producing goods similar to those of certified ones are not getting certified for a reason, and that reason is that they are likely to not be complying with the pollution emissions standards. Given this, the authorities learn, from the certification process, which the cleaner (and dirtier) firms are in each sector. As they can decide how often to inspect different firms depending on what they produce, they stop spending resources inspecting certified firms. Rather, they increase inspections for non-certified firms producing goods similar to those of certified firms. In other words, certification serves then as a screening tool that reduces the cost of inspection in sectors with a high percentage of certified firms.

Therefore, the effects of voluntary certification should not only be measured for certified firms but also for non-certified ones. The introduction of the Mexican Clean Industry Program has two main effects: the direct effect, which has received most of the attention in past empirical literature evaluating other voluntary certification programs, if participating firms reduce their emissions as a result of the program; and an indirect effect, which operates through an increase in the chances of being inspected for non-certified firms in heavily certified sectors.

While aggregate data at the industrial sector level support the hypothesis that both effects are present in the Mexican context, the satellite-based measures of pollution concentrations in the atmosphere allowed us to perform a much more detailed test. We were able to measure both the direct and indirect effects of certification in terms of their contribution to changes in pollution concentrations in the atmosphere. To do this, we assigned monthly measures of AOD to all the zip codes in a data set that list more than 30,000 Mexican industrial plants. The data on firms includes information on their size, which is of crucial importance to measure the indirect effects of certification because the Mexican authorities almost never inspect plants with less than ten employees. Our results show that particulate matter concentrations decrease significantly in zip codes with certified firms. They also decrease in areas with non-certified firms belonging to highly certified industrial sectors (in other words, firms that produce similar goods as certified firms). However, pollution concentrations do not go down around firms with less than ten employees, which are not subject to inspections.

The firm-level data, together with the satellite-based measures of pollution concentrations, support our hypothesis: the direct effect of certification is non-negligible, but also not the only one. Authorities and non-participating firms also respond to the existence of the program. Future studies evaluating policies of this kind should then take into account the fact that consumers, authorities and non-participating firms are likely to react to the existence of these programs and to other firms getting certified, and not only focus on measuring their direct effects. Having shown the usefulness of satellite-based data to measure pollution concentrations in the atmosphere, we are providing evidence that these studies can be carried out even in contexts in which ground measures of pollution concentrations (or emissions) are not available.

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Mexican industrial installations such as those pictured above are the subject of Emilio Gutierrez Fernandez’s research on voluntary certification and air quality in Mexico.