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Director's Perspective

Sifting and Winnowing is Essential Step in Evidence-Based Policymaking

The La Follette School of Public Affairs has the mission not only of training policy professionals who then use their expertise to launch successful careers in the private, public, or non-profit sectors, but also of conducting research that seeks to improve the quality of public policy nationwide and around the world. Our faculty and students do this by supporting what is sometimes called "evidence-based" policymaking, the idea that policies should not be enacted without the backing of rigorous scientific study. And at the University of Wisconsin–Madison, we strongly believe in "the continual and fearless sifting and winnowing by which alone the truth can be found." This process often means challenging beliefs held by policymakers and other researchers.

My and my co-author's research on smoking bans offers one such challenge

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The Eurozone in Crisis: Origins and Prospects

By Menzie D. Chinn and Jeffry A. Frieden

The financial crisis gripping the eurozone countries seems incredibly complex, and although the reasons why their finances have come to grief are quite simple, the solution will not be easy. For the eurozone to resolve its crisis requires the political will to undertake painful measures, with serious distributional effects. As long as certain groups seek to avoid those costs, resolution of the crisis will be elusive.

The European financial crisis and the ensuing recession are of critical importance. The euro area is the world's largest economy; its trajectory has a powerful impact on the fortunes of Asia and even the United States. This effect is even stronger at a time when the world economy is so fragile.

The eurozone crisis is the result of at least two key weaknesses in the original project of European monetary integration. First, the common currency and its monetary policy were applied to a set of economies that were very different one from the other. In the lingo of economists, the original group of 12 nations—Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain—did not constitute an "optimal currency area." (Greece joined in 2001 between the euro's establishment and introduction.) The countries were subject to too diverse a set of economic shocks. They were not sufficiently integrated, and they lacked a fiscal union that could smooth out those shocks, compensating hard-hit economies with transfers from better-performing economies. Further, with the euro in place, the monetary policy of the new European Central Bank proved to be too loose for some countries and too tight for others.

The second weakness is that investors interpreted the creation of the union as an implicit guarantee of member countries' government debt. It seemed clear that if a serious financial crisis erupted in one eurozone member country, the risks of contagion to the rest of the zone and of a negative effect on the euro would force other countries to bail out the member in crisis. Investors believed this interpretation even though no such formal guarantees were made. These implicit guarantees were problematic because they pushed interest rates lower, which, in turn, gave governments, businesses, and households incentive to borrow more than they would have had they properly understood the risks. In other words, risk was underpriced due to the perception of an implicit guarantee. The result was that Europe, particularly Southern Europe, which experienced unnaturally low interest rates, borrowed far more than was sensible, and is now suffering from the resulting debt binge. And in certain countries, this problem of over-borrowing is compounded by a long-term problem of public spending on pensions and health care that has exceeded what the rate of economic growth made possible.

In the next section, we review the origins of the euro project. We then recount the ideas that underpinned the project and explain why some economists were skeptical. The current state of debate over possible solutions is next. We conclude with some views on the likely path forward.

The Origins of the Euro Project

The creation of the euro—formally the completion of Europe's Economic and Monetary Union—is the latest step in a long process of politically motivated economic integration. In the wake of World War II, political leaders of the main European countries sought to bind the economies of the former antagonists. First they established the European Coal and Steel Council, which harmonized trade in these critical commodities. This led to the 1956 creation of the European Economic Community, which, in principle, established a common market wherein goods were free to move across borders. This was quite an accomplishment, given that these countries had been at war a few years earlier.

After the breakdown of the fixed exchange rate system of Bretton Woods in 1971, the Europeans sought to minimize the variability of intra-Europe exchange rates. Central banks committed to intervening—by buying and selling foreign exchange—to achieve that aim. There was some modest success, especially after the 1979 establishment of the European Monetary System, which attempted to link other European Union (EU) member currencies to the Deutsche mark. After 1985, the system included most EU members and some nonmembers.

In 1992, EU members agreed to a program of economic and monetary union, the culmination of which would be the creation of a common currency called the euro and managed by the European Central Bank. The plan envisioned a multi-stage process toward this single currency. First, there would be a period of tight management by central banks so that currency values did not vary more than 3 percent from target, or "par," values. Finally, the currency values would, under the careful management of individual central banks, converge toward the final conversion rates, established by common agreement. Along the way, authorities would have to bring inflation down to a sufficiently low level so that the rates did not diverge substantially. In addition, the agreement required that, as a share of GDP, national budget deficits not exceed 3 percent, and government debt not exceed 60 percent (most countries failed to abide by these conditions). Despite the European Monetary System crises of 1992 and 1993, during which many member currencies were devalued or deviated from the par values by more than the allowed amounts (and Britain dropped out completely), the euro was put in place on January 1, 1999. The physical currency was rolled out in 2001. The eurozone eventually expanded to its 17 members.

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The Economic Calculus of the Euro

To comprehend the eurozone's difficulties, one must understand the economic logic of a currency union. In what is called the "optimal currency area" literature, Robert Mundell, Ronald McKinnon, and Peter Kenen laid out the conditions under which having a common currency makes sense for countries.

Having many currencies is bothersome and costly. The practice requires keeping track of many prices—after all, an exchange rate is essentially the price of foreign currency. But that price happens to fluctuate a lot minute by minute, day by day. In addition, when one is thinking about long-term projects such as investing across borders, this volatility can be very costly. The associated risk impedes the flow of goods and capital across borders. Currency unification produces substantial benefits, in particular by encouraging trade and financial integration. In the context of the EU's continuing quest for greater economic integration, a currency union appeared to be a logical next step.

However, a flexible exchange rate allows governments to adjust policy to changes in economic conditions. The exchange rate thus serves as a sort of macroeconomic "shock absorber." For instance, if demand for American cars decreases, a weakening of the dollar, which makes American cars cheaper for foreigners, can help offset the negative impact on the economy. Fixing one's exchange rate to a certain value or, at the extreme, giving up one's currency, eliminates that shock absorber. A transnational currency requires a nation's government to give up one of the most powerful tools of macroeconomic policy.

When do the benefits of an independent currency outweigh the costs? The answer depends on a lot of variables. However, some insights can be gleaned from an example. Consider Wisconsin and the rest of the United States. One could argue that if Wisconsin had its own currency, when demand for Wisconsin cheese fell, the Wisconsin dollar could lose value so that some of that demand could be made up by selling the cheese at a lower price (in U.S. dollars). But those sales would incur the cost of converting currency for each transaction, and indeed for every cross-border transaction, including those for banking and finance, as well as other goods and services.

Now, if Wisconsin and all the other states in the United States produced cheese (or an identical bundle of goods and services), then each state economy would be subject to the same shocks, and the argument for a monetary union would be stronger.

In the Wisconsin-U.S. case, being part of a monetary union make sense for two additional reasons. The first is that Wisconsin is part of a "fiscal union" that the federal government manages. Members of the U.S. fiscal union share the risks. When Wisconsin experiences a downturn, federally funded net transfers (unemployment insurance, reduced tax payments) increase, partially offsetting the negative impact. The second reason that monetary union works well for Wisconsin is that labor mobility is fairly high in the United States. When economic conditions deteriorate in Wisconsin, out-migration to the rest of the country increases, while in-migration decreases. Unemployment is less volatile with this "escape valve."

A long-established U.S. policy is that the federal government will not "bail out" states that run into financial difficulties. This situation means that states with different fiscal positions are often charged different interest rates by financial markets. In the eurozone, investors' belief that a bailout would be forthcoming if a member state got into trouble considerably loosened European borrowing constraints.

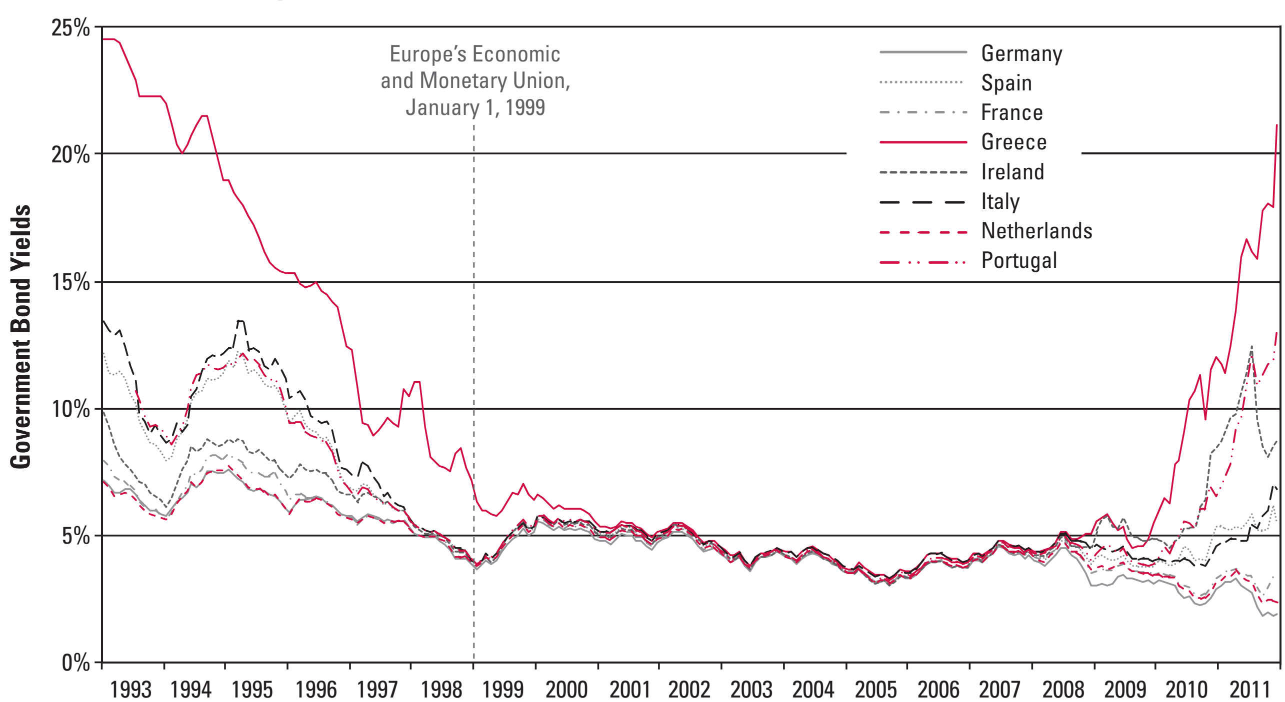
The argument that the euro area countries did not constitute an optimal currency area was well known prior to economic and monetary union. In a series of 1994 papers, economists Tamim Bayoumi and Barry Eichengreen measured the extent to which the shocks hitting the eurozone economies were different; they established that only a few economies could be construed to fit the requirements of symmetric shocks (the Northern European countries, within the eventual eurozone).

Of course, these conditions are not immutable. Since the late 1990s, the steady flow of edicts from EU headquarters in Brussels and the European economic plan known as the Lisbon agenda issued by the EU's European Council in 2000, sought to make individual economies more flexible and increase cross-country mobility of labor. Increasing trade integration (which would tend to be one result of reducing exchange rate volatility) would also make the effects of asymmetric shocks less pronounced. In addition, currency union seemed desirable to many as a way of encouraging further integration within Europe; if it had a (perhaps temporary) cost, that price might be worth paying. Finally, groups in the EU strongly favored Economic and Monetary Union because it promised to provide them with powerful benefits—firms and industries with major cross-border economic interests particularly stood to gain. For them, whatever problems Economic and Monetary Union might cause for the EU as a whole were counter-balanced by the positive impact.

While trade integration increased dramatically in the wake of Economic and Monetary Union, labor mobility did not increase sufficiently. While professionals can move without too much difficulty, lower skilled workers faced considerable impediments to relocation. In addition, cultural and linguistic ties seem to exert a substantial pull, keeping cross border labor flows small, by comparison to U.S. levels.

Why did the problems come to a head in the wake of the global financial crisis? First, from 1999 to 2007, following the euro's introduction, the eurozone faced a fairly benign economic environment. Whatever nationally specific economic developments took place were not so serious as to call into question the integrity of the eurozone as an economic unit. Second, as shown in Figure 1, the implicit guarantees associated with Economic and Monetary Union drove down interest rates toward German levels—even for the countries such as Greece that arguably had poorer fiscal prospects—and encouraged more borrowing, a situation that fed upon

Figure 1: European Sovereign Interest Rates, 10-Year Maturity



Source: European Central Bank (January 2012). Note: Greece entered the Economic and Monetary Union in 2001.

itself in a proverbial "self-reinforcing loop." The credit boom papered over problems.

In this sense, the apparent "disappearance of risk" in the eurozone paralleled the similar phenomenon in the United States. In the eurozone, the underpricing of risk resulted in excess borrowing by households, firms, and governments and in commensurate capital flows from Northern European countries to Southern European countries. In the United States, the private sector borrowed excessively, pulling in record capital inflows—manifesting in record current account deficits, as we reported in our 2011 book, *Lost Decades*.

When the global recession of 2008-09 struck, most eurozone governments went further into deficit, as social welfare and unemployment benefit payments increased and tax revenues collapsed. In some cases, the problem, which the recession aggravated, was a structural deficit associated with overgenerous social spending and insufficient tax collection. This scenario applies most profoundly to Greece. To a certain extent, it applies also to Italy, although a slow trend growth is driving the debt dynamics there. However, the characterization of excess public spending does not pertain to all the problem eurozone countries.

For instance, Ireland, in contrast, was a paragon of fiscal rectitude on paper. In the midst of a boom in financial and housing markets, the Irish government ran budget surpluses. With the financial crisis, the government implemented a complete bank deposit guarantee and subsequently bailed out major banks, resulting in massive increases in the government's debt. Similarly, Spain was running a budget surplus —until the collapse of its housing market.

The phenomenon of hidden government liabilities suddenly showing up at the onset of a crisis is not new. In fact, the East Asian crises of the 1990s brought to the fore the concept of "contingent liabilities." A government can look like it's in an enviable fiscal situation, when in fact the government is on the hook for massive debts, because it cannot allow a banking system to become insolvent.

This point highlights the linkage of the banking system debt problem with the sovereign debt problem. Portions of the banking system are insolvent. In the case of the United States, the federal government had the resources to bail out the financial system without seriously endangering its ability to borrow. In the eurozone, because some countries' governments already had high debt loads, the additional borrowing associated with bank bailouts would only make the sovereign debt problem worse.

Clearly, the problem countries need additional resources from outside—either from multilateral institutions or other eurozone countries, a reduction in their burdens, or both. This condition is unavoidable for a resolution of the crisis.

Possible Solutions

Experts have made innumerable proposals for solving the eurozone debt crisis. But once one understands that solution requires a net transfer of resources, then the set of options is reduced considerably.

A prefatory statement: Greece is not the problem; it is too small to have a regionwide impact. However, Spain and Italy are much more serious situations. In this light, the proposal for stricter fiscal requirements is nothing more than window dressing to assuage popular criticism of bailouts.

The only viable options are the following:

- Continued austerity measures.
- Northern European transfers to the Southern European countries, directly or in the form of the restructuring of Southern European debts to the detriment of Northern European creditors.
- Breakup of the Economic and Monetary Union and a complete or partial dissolution of the eurozone.

The first option is pretty much current policy. Although there is talk of voluntary debt write-downs for Greece, this policy is not on the table for the other problem eurozone countries. But the austerity measures required to hit the targets envisioned by the pact agreed to in 2011 will only exacerbate the incipient eurozone-wide recession (thus making the targets even harder to achieve). At some juncture, at much greater cost in terms of unemployment and lost output, the debts will be eventually written down. The private sector will bear some of the cost, as will the creditor governments. The apportionment of costs is the problem, and the attempts to shift the burden will delay resolution. As a consequence, the total cost will be much larger, so, in this case, the game is negative sum, not zero sum.

The downside risk is great. A prolonged period of economic stagnation is not to be taken lightly; the years between the first and second world wars stand testament to the fact that such conditions lead to social unrest and dangerous political upheavals.

From our perspective, it is important to understand that large net transfers from Germany and other Northern European states to the periphery countries will result in a more rapid resumption of growth. The transfer takes place by way of a bigger bailout fund, financed by the surplus countries, and a bigger reduction in debt loads via write-downs. In certain countries, social welfare spending programs will require larger, more comprehensive, reforms than in others. Clearly, this situation is true in Greece. It is also true in Italy.

Spending cuts will not be enough; spurring long-term growth is equally important—perhaps more important, in the case of Italy. But whether a similar prescription for Ireland would be productive at all is unclear. The likelihood of success would be greater if the European Central Bank was to ease liquidity concerns, as it has started to do, by purchasing large amounts of government bonds—the European equivalent of quantitative easing.

However, European Central Bank actions along these lines is a necessary, but not sufficient, condition. In our view, the bank has to address the key problem associated with the eurozone: the lack of an exchange rate adjustment mechanism. Exchange rate changes facilitate shifts in relative prices. In the absence of exchange rate changes, alterations of relative prices have to take place via nominal price changes. When wages are what have to fall, the process can be a long, drawn-out affair, associated with persistent and elevated unemployment. A tacit acceptance of a higher target inflation rate (which would allow faster adjustments in real wages) would facilitate adjustment to full employment—and would more rapidly erode the real debt burden faced by the debtor countries.

The idea that the Northern European countries can avoid these net transfers is a chimera. If the transfers do not occur by way of an orderly debt write-down, they will be effected by outright debt defaults. The resulting social and economic costs will likely be much larger than any coordinated approach.

The third option, a complete or partial breakup of the eurozone, might prove to be less costly than either of the previous two choices. However, tremendous uncertainty is associated with this path. Although a breakup would allow for adjustments of exchange rates in a way that would lead to a faster recovery, the resulting chaos associated from litigating all the trillions of euros worth of contracts could far outweigh those benefits. Hence, this option has so much downside risk that it cannot be contemplated. Sad to say, the current political paralysis in Europe's capitals has increased the possibility of such a catastrophic outcome.

Looking Ahead

What are the prospects for a positive outcome? While we hope for the early recognition of the need for North-South transfers, recapitalization of the banking system, and accelerated inflation, our observation of the political process makes us pessimistic. Thus far, electorates in the creditor countries do not seem to be convinced that transfers are necessary. As long as this characterization holds true, progress toward a true solution will be elusive.

Much more likely will be a process of lurching from one crisis to temporary palliative to the next crisis. In that scenario, recovery will be years off. ◆

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Housing Vouchers and Recipient Earnings

By Deven Carlson

The Section 8 housing voucher program is in high demand, as evidenced by lengthy waiting lists and the large number of recipients. The program, which is designed to enable "very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market," served more than 2.2 million households containing more than 5 million individuals in 2008, according to the U.S. Department of Housing and Urban Development (HUD). However, like most policies, the Section 8 program has had some unintended consequences. In particular, some components of the program design appear to result in short-term declines in recipient earnings. The good news is that slight changes to the program have the potential to correct this problem and lead to higher incomes for voucher recipients.

Using detailed data from the state of Wisconsin, my colleagues and I compared the earnings of Section 8 voucher recipients to those of non-recipients with similar earnings histories, county of residence, demographic characteristics, and other measures. The results of this research (reported in the fall 2008 *La Follette Policy Report*) indicate that, on average, receipt of a Section 8 voucher reduces earnings by about 10 percent in the first year of receipt. These negative effects fade in subsequent years and after six years there is no evidence of a difference in the annual earnings of recipients and non-recipients. This pattern has been detected by other studies of the program as well.

Several features of the Section 8 program design can explain this initial and pronounced negative effect on recipient earnings. First, the voucher program requires participants to contribute 30 percent of their income toward rent. This provision is intended to ensure that, to the extent possible, recipients contribute to their housing costs. Yet it also effectively acts as a 30 percent tax on their earnings. As any economist will tell you, taxes create a negative incentive to work.

Second, the Section 8 rental subsidy increases a recipient's overall income, which provides an incentive for recipients to reduce their earnings from paid work. Referred to as the "income effect," this phenomenon occurs because the rental subsidy that accompanies voucher receipt allows households to have the same, or even higher, level of income while working fewer hours.

Third, to continue to receive a Section 8 voucher, individuals must fall below an income ceiling. Exceeding it by even a few dollars can jeopardize receipt of a voucher worth thousands of dollars annually. Voucher recipients are quite aware of this eligibility threshold and may take steps to ensure they stay below it.

Finally, Section 8 voucher recipients often relocate when they first receive their vouchers. Although this relocation may be beneficial in the long-term, it likely disrupts social and labor market networks in the short-term. These disruptions may help explain initial reductions in earnings, as recipients move and take time to find new jobs.

Although our research raises concerns about the short-term earnings effects of Section 8 vouchers, we also uncovered some evidence in a follow-up study that may help policymakers mitigate these negative impacts.

In our second analysis, we compared the earnings of voucher recipients to the earnings of public housing residents in Milwaukee, the majority of whom reside in Hope VI projects, a HUD program to "eradicate severely distressed public housing."

Hope VI residents are subject to many of the same program design features as Section 8 voucher recipients—they must contribute 30 percent of their income toward rent and the Hope VI program pays the remainder. Milwaukee Hope VI residents must also, however, sign a lease addendum that requires them to be working or taking steps to become employed.

When we compared the earnings of these two groups in the first year of receiving housing assistance, we found that residents of Hope VI units earned, on average, about 10 percent more than voucher recipients. Because both groups are subject to similar program design features, this finding suggests that requiring residents to sign a lease addendum stipulating that they will be employed or looking for employment can reduce the negative effect of voucher receipt on earnings.

Based on these results, policymakers should consider adjusting aspects of the Section 8 program to continue to help individuals secure safe, sanitary, and affordable housing without creating incentives for short-term reductions in earnings. ◆

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Need-Based Financial Aid and College Persistence: Impacts of the Wisconsin Scholars Grant

By Sara Goldrick-Rab, Douglas N. Harris, Robert Kelchen, and James Benson

The individual and social benefits of a college education are substantial. Even in the midst of recession, the unemployment rate of bachelor's degree recipients is less than half that of high school graduates who never attended college. College graduates earn nearly $400,000 more than high school graduates over a lifetime, and some evidence suggests that the returns are larger for students who are the least likely to complete college degrees.

The recent expansion of college enrollment has not been matched by a comparable expansion of college completion, as the proportion of the population attaining some college has grown much faster than the proportion completing bachelor's degrees. Low rates of college completion are especially prevalent among students from socioeconomically disadvantaged families. Some have suggested that these trends may be partly attributable to rapid increases in the costs of college attendance unmatched by increases in student financial aid, leading to growth in the net price. Research often suggests that low-income families are especially price sensitive, even after a family member makes the initial decision to attend college.

Efforts to discount the price of college are widespread. More than $177 billion in financial aid was distributed to undergraduates in academic year 2010–11. This sum includes $47 billion in federal grants ($34 billion of which was the Pell Grant), almost $30 billion in institutional grants, $9 billion in state grants, and nearly $7 billion in private grants. The remainder consisted of loans, work-study funds, and tax credits. In comparison to the average cost of tuition and fees (currently $8,244 for in-state students at public universities), grants are fairly small: an average Pell is $3,828, and state grants are about $620 per full-time-equivalent student.

Prior research indicates that the impacts of financial aid on college completion are modest. For example, a 3-5 percentage point increase in attainment is associated with a $1,000 increase in aid. Findings like these prompt people in policy circles to ask whether need-based financial aid should be reformed by attaching additional conditions. Among the most common and popular conditions, especially for state aid programs, is the requirement that students also have strong academic preparation for college.

Policymakers need to know whether need-based financial aid grants without minimum standards for academic preparation promote college persistence among students from low-income families. In this brief we describe a study in which we leveraged the random assignment of a need-based Wisconsin financial aid grant to address that key policy question.

Methods

We examined the Fund for Wisconsin Scholars, a private nonprofit program that provides need-based grants to a randomly selected group of Pell Grant recipients attending Wisconsin's 13 public universities. Like the federal Pell Grant program that provides aid to college students, the Fund for Wisconsin Scholars has income, enrollment, and grade requirements for renewal. However, unlike Pell grants, Wisconsin Scholars grants are first awarded after students enroll in college and thus are exclusively focused on increasing the number of students from low-income families earning college credits and degrees. As long as students remain Pell-eligible, enroll full-time, and make satisfactory academic progress at a public university in Wisconsin, they receive an additional $3,500 grant each year for up to 10 semesters.

We examined the effects of the Fund for Wisconsin Scholars by collecting extensive data on 1,500 full-time students who were freshmen in 2008, including 600 students who were offered the Wisconsin Scholars Grant and 900 students who were not. Since the members of both groups had the same characteristics (e.g., family background and academic preparation) before being offered the grant, and random assignment determined the offer, all differences in subsequent outcomes are appropriately attributed to the grant offer itself. The Institute for Education Sciences considers this experimental approach "gold standard."

Fifty-seven percent of the full sample is female, 24.6 percent are members of a racial/ethnic minority group (e.g., black, Hispanic, Southeast Asian, and/or Native American), and 53.4 percent are first-generation college students. In fall 2008, the average adjusted gross income of their parents was just less than $30,000, and the average expected family contribution was $1,633. Because of the grant's eligibility criteria,

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their mean age was just older than 18, and just 2.7 percent were independent for tax purposes. Thus our sample is most comparable to younger Pell recipients who attend public universities mostly full-time.

We measured preparation for college according to whether students received the federal Academic Competitiveness Grant (ACG). That grant, which ended in 2010, was available to Pell recipients who enrolled full time and completed a "rigorous high school curriculum" with a 3.0 high school grade-point average. In Wisconsin, a rigorous curriculum means a student passed two advanced placement or international baccalaureate courses; or completed four years of English, three years of math with one course beyond Algebra I, three years of science, three years of social studies, and one year of foreign language, fine arts, or technical education. These standards, in place for Wisconsin students who graduated in 2007 or 2008, exceed the requirements for graduation from a public high school. Fully 80 percent (1,200) of the students in this study met the ACG standards; in comparison about 25 percent of all Wisconsin college freshmen and sophomores did so. Because nearly all remaining 300 students in our sample missed the competitiveness grant criteria by only a few courses, we distinguish between "well-prepared" students with the ACG and "modestly prepared" students without the ACG. We do not believe any of the students in our sample were academically "unprepared" for college.

Findings

As indicated in Table 1, we find evidence that different students respond differently to the offer of financial aid. We report comparisons based on whether students were offered the grant rather than whether they received it, since only the offer was made at random. However, take-up rates were high (92 percent), and, thus, estimates of the effects of receipt are not significantly different from the effects of the offer. We identified widely divergent effects of the Wisconsin Scholars Grant for students with more and less rigorous high school preparation, beginning in the first term in which they were notified about the grant. For modestly prepared students, we estimate that the offer of the grant caused a 12.5 percentage point increase (from 77.6 percent to 90.1 percent) in students completing 12 or more credits in that first term. Offer of the grant reduced the number of modestly prepared students completing 11 or fewer credits. Offer of the Wisconsin Scholars Grant correlates to an immediate improvement of grade-point average, from a 2.2 (C) to a 2.7 (C+). (All results we present are statistically significant unless otherwise indicated.)

Among modestly prepared students, the effects grew steadily for the two years. We measured continued enrollment in college based not only on whether students continued to enroll at the institution where they began, but whether they enrolled at any of the 92 percent of colleges and universities that participate in the National Student Clearinghouse—the nation's only source for tracking students across schools. Many students who were not offered the Wisconsin Scholars Grant and who were only modestly academically prepared left college: 22.2 percent did not enroll for a second year of college, and another 27.2 percent did not enroll for a third year. The offer of the grant appears to have reduced attrition. By spring 2011, nearly three years after the program began, the benefit of being offered the Wisconsin Scholars Grant was 15.9 percentage points (81.7 percent of the treatment group of students offered the grant was still enrolled, compared to 65.8 percent of the control group). In total, from 2008 to 2011, the offer of the grant increased the number of completed credits by 10.4 and improved grade-point average from 2.2 to 2.6.

In contrast, offer of the Wisconsin Scholars Grant is estimated to have negative effects on well-prepared students,

Table 1: Impact of the $3,500 Grant on Student Outcomes, by High School Academic Preparation

	Modestly Prepared Students		Well-Prepared Students		Significant Difference between Groups?
	No Grant	Grant	No Grant	Grant	
Number of terms enrolled (out of six)	4.8	5.4***	5.5	5.3**	Yes
Percentage enrolled three years after starting college	65.8	81.7**	85.9	79.7**	Yes
Number of credits completed	56.0	66.4**	73.2	69.8	Yes
Grade-point average	2.2	2.6***	2.7	2.7	Yes
Percentage working 20 or more hours per week in year 2	33.5	16.3**	23.5	17.9	No
Change in percentage working 20 or more hours per week from year 1 to year 2	22.4	4.7**	11.4	10.0	Yes
Sample size	111	71	360	286	(p<.10)

Notes: Enrollment is measured anywhere, using National Student Clearinghouse data. It is not retention at first college attended. No effects on transfer were observed. * represents p<.10, ** represents p<.05, and *** represents p<.01 for within-group differences.

beginning with the term after the grant was initially offered. In the second semester, 79 percent of students with the grant offer completed 12 or more credits, compared to 84.8 percent of the control group. While attrition from college was lower for well-prepared students, offer of the Wisconsin Scholars Grant exacerbated attrition by 6.2 percentage points (79.7 percent of the treatment group compared to 85.9 percent of the control group was still enrolled in spring 2011). No positive benefits on grade-point average were observed for well-prepared students.

The varied impacts on educational outcomes were somewhat echoed in influences on student behaviors. We examined the effect of offering the Wisconsin Scholars Grant on the amount of time students worked, particularly rates of intensive work (20 or more hours per week). We found some differences in behaviors between the two groups of students. For example, 16.3 percent of modestly prepared students assigned to receive the grant worked 20 or more hours per week during their second year of college, compared to 33.5 percent of control students. The impact on work was much smaller for well-prepared students: 17.9 percent for awardees, 23.5 percent for non-awardees. While the difference in impact on the amount of work in year 2 for the two subgroups is not statistically significant, the impact on changes in work behaviors over time is—the grant seems to have stemmed what otherwise would have been a sharp increase in rates of intensive work only for modestly prepared students.

A Possible Explanation for Negative Effects: Loss of Grant Aid

We find that since academically well-prepared students had higher average family incomes, and thus were less likely to maintain Pell-eligibility (a requirement for renewal of the means-tested Wisconsin Scholars Grant), they were more likely to lose the Wisconsin Scholars Grant.

When students lose Pell eligibility they often lose most or all of their need-based grants, including federal, state, institutional, and private scholarships. Of course, losing the Wisconsin grant due to Pell ineligibility implies that the student's family gained resources that, in theory, would offset the lost financial aid. However, the additional income likely would be due to a parent and not necessarily shared with the college student. Loss of financial support generates an increase in the net cost of attending college as students continue from one year of college to the next.

In theory, students who get more aid should be better off financially than students who receive less aid. Our study suggests, however, that for academically well-prepared students, the positive effects of the $3,500 Wisconsin grant (if any) were more than offset by subsequently losing that grant. Of the 92 percent of students who received the Wisconsin Scholars Grant in the first year, a sizable fraction lost the grant: 8.5 percent of modestly prepared students lost it, compared to 16.3 percent of well-prepared students.

Although students offered the Wisconsin Scholars Grant initially had more money than students in the control group, losing the grant meant that their aid packages decreased in value more than they would have if they had not initially received the extra $3,500. Loss of the Wisconsin Scholars Grant was partially, but not fully, offset by the restoration of aid that had been crowded out by its inclusion, and by a reduction in tuition costs if students dropped to part time. In this case, after their first year of college, academically well-prepared students initially offered the Wisconsin Scholars Grant experienced a loss of financial aid (and thus an uptick in their college costs) of $1,166 more than was lost by similar students not initially offered the Wisconsin grant. After the second year of college, grantees lost another $856 in aid, compared to their control group counterparts. By the third year a simple comparison of the total financial aid received by students assigned to get the extra grant and those who were not reveals that the grant provided no additional money to well-prepared students in that year.

The loss of aid may have influenced students in several different ways. They may have become frustrated or stressed—a situation behavioral economists call "loss aversion." Or students may have made decisions in their first year of college under the assumption that the funds would continue, placing themselves in difficult financial positions once the money was pulled away.

Implications

One interpretation of our results is that they suggest a need to better target financial aid programs. Convincing those who distribute financial aid to narrow their focus and doing so without introducing complexity to the application for financial aid are two major challenges. Our results can only speak to how the Wisconsin Scholars Grant affected college persistence—it says nothing about for which groups grant aid most affects the decision to attend college or where to attend. However, the evidence at least tentatively implies that resisting the desire to change eligibility requirements to focus on high-achieving high school students may produce more cost-effective results.

There may be some utility in considering our findings in relation to the many proposals around the country to increase tuition or cut financial aid in response to financial crises. If loss aversion is common among students who are economically vulnerable, such moves could reduce retention rates and possibly graduation rates as well, especially if cuts affect current students. Instead, states and institutions could avoid changing course for students who are already enrolled, implementing changes only for new students. This proposal is similar to efforts to set tuition for four- or five-year periods.

Finally, this study's results indicate a need to more carefully consider the benefits and costs of front-loading financial aid. This practice, which means that institutions award students with more grant aid as freshmen to attract them and then gradually give less over time, is widely utilized as a mechanism to affect college choices. However, making the loss of aid a built-in part of the system may reduce the benefits associated with grants partially or even entirely. ◆

Policy Responses to the Recent Poor Performance of the U.S. Labor Market

By Robert Haveman, Carolyn Heinrich, and Timothy Smeeding

The U.S. labor market has been reeling since the onset of the Great Recession in December 2007. Public concern has largely focused on the unemployment rate, which rose to double digits and has stalled at more than 8 percent. This rate is unacceptably high, and macroeconomic policy efforts have been unsuccessful in bringing it down.

The overall unemployment rate, however, masks more fundamental and troublesome developments. Perhaps the most serious is the precarious situation of working-age men with modest education and few job skills, who increasingly find themselves unemployed, underemployed, or out of the labor force. These workers are some of the nation's most vulnerable. Some are older, some are younger, but they have in common limited schooling and deficient basic skills. They are also disproportionately racial minorities or foreign born.

Twenty percent of American men of prime working age (25-54) group are not working (compared to less than 5 percent in the 1950s) and 35 percent of those men of prime working age without high school diplomas are out of the labor force. Among low-income young men, particularly minorities, the jobless rate is shockingly high: more than 30 percent of black males ages 16-24 are unemployed, and the rate is even higher for the teenagers in this group. These figures don't count those who have given up on finding work.

Some of the unemployed, mainly those who are older and who had long work histories before extended unemployment, have become recipients of Social Security Disability Insurance (SSDI) benefits. About a decade ago, 5 million Americans collected federal disability benefits; there are now more than 8.2 million recipients. The record extension of unemployment insurance benefits has also protected most of the unemployed with work experience from severe hardship. For those who do not qualify for unemployment insurance or SSDI, lives have been disrupted, with serious implications for physical and mental health and family well-being. Even for those who qualify, future benefits are uncertain.

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Underlying these developments is the direction of technological change and workplace organization, with machines replacing less-skilled workers and more-skilled workers running and repairing the machines. More open international borders have led to the substitution of lower-paid foreign workers for U.S. workers who have few skills and only modest education. The outcome of these trends will determine job prospects, especially for men with few job skills and modest education.

Many in lower-paying jobs have taken pay cuts and see few career possibilities and stingy nonwage benefits. Indeed, the fast-growing personal service sector (retail sales, cashier, customer service) now accounts for more than 20 percent of jobs, with a large majority paying wages below $15 per hour. The traditional manufacturing and construction path from high school to the middle class has largely dried up for younger workers. Other constraints on labor market flexibility also contribute, including prevailing wage standards (including minimum wages), union wage contracts, and fringe benefits and payroll taxes that businesses are required to pay. These arrangements mean employers tend to find hiring low-skilled workers an unprofitable proposition.

Wage gaps between higher- and lower-skilled workers have increased, due to falling demand for modest-skilled workers and the failure of the nation's higher education system to generate the more highly educated and skilled workers needed for the growing high-skilled sector. Many young men (under age 30 with no more than a high school degree), 70 percent of whom are fathers and unlikely to be living with their children, are in this situation. Others have abandoned the formal workforce and coped with declining economic fortunes in ad hoc and often unproductive ways. The social support system is designed primarily to help people working in low-paying jobs and living with children—typically not absent fathers. Long-term unemployment for young adults has created permanent scars that will reduce earnings growth.

This deep labor market polarization reflects two developments. The first is an increase in high-skilled, high-wage jobs (and, to a smaller extent, low-wage, low-skilled jobs). This trend reduces relative opportunities for workers with some schooling but few technical skills who in prior years held routine-task production and clerical middle-wage jobs. The second development is a flat high school graduation rate and poor college graduation rates—particularly among men.

What Can Policy Do?

A combination of fiscal stimulation and monetary easing are two tools that economists and policymakers suggest to address recession, but they have little to offer to improve the labor market. The U.S. Federal Reserve has unleashed much of its stimulus arsenal, including U.S. Treasury bond buybacks, and has driven interest rates to unprecedentedly low levels. There is little interest in fiscal stimulation given the current budget situation. Neither cuts in public spending nor increases in taxes will offer the sort of stimulation necessary to improve the U.S. labor market. Both approaches reduce demand for goods, services, and workers

Most economists support the view that tax increases are less likely to increase unemployment than spending cuts — although the debate is complex. A tax increase is likely to reduce savings, especially tax increases imposed on higher-income households. However, when government cuts spending, overall demand for goods and services also falls by about this same amount. And when government transfer payments are cut, lower-income families, who don't save much to begin with, lose a larger proportion of their incomes—and the bulk of the income reduction shows up as a cut in family spending.

Work and investment incentives play a role in this debate about how best to put people to work during this period of slack labor demand. Some experts urge tax cuts, pointing to how lower taxes increase the rewards for working and saving. The most recent evidence, however, suggests that these effects are small; for example, an increase in tax rates by 10 percent is estimated to reduce reported income due to reduced work and entrepreneurship by about 2 percent. Similarly, spending cuts might have a longer-run effect as cuts in public spending for infrastructure investment, education, or science could reduce employment and economic growth.

None of these considerations blunt the fact that no matter how fiscal tightening is pursued, such a step is unlikely to increase jobs. Tighter fiscal policy will not solve the problems of a shortage of labor demand and the lack of skills and training possessed by the large pool of low-skilled, low-educated unemployed workers, particularly men. Addressing these problems will require more expansive, creative, targeted measures.

European and U.S. Responses to Economic Downturns and Joblessness

The menu of policies to improve wage and skill imbalances and address labor market polarization is much larger than what the United States is pursuing. Here we mention the most prominent policies used in the United States and Western Europe.

Western European countries have been the most creative and persistent in implementing labor market policies to create jobs and maintain current ones. To learn from their efforts, we begin by asking what these countries have done and have since abandoned and then what they are doing now that we might emulate.

Experts now generally agree that 1980s polices designed to move older workers into retirement at earlier ages and to open up jobs for younger workers were not successful. While expanded early retirement options surely worked, jobs for youth did not appear. Large unfunded public pension and disability programs emerged due to earlier retirement. Indeed, rapidly growing disability rolls have led several countries to tighten eligibility and to stabilize the rolls. Early retirement programs have been curtailed and social retirement pension generosity has decreased. Because U.S. benefit levels are already modest by European standards, the main lesson is the need to rein in growth in the SSDI program.

While European Union (EU) nations have tended to share the pain of recessions more equitably than U.S. states, the European Central Bank's monetary policy, along with poor enforcement of deficit limits, has kept these nations from effectively bringing the standard monetary and fiscal tools to bear on labor market problems. Instead, these nations have adopted other approaches.

Indeed, while many EU nations have suffered the same or greater decline in gross domestic product (GDP) during the Great Recession than has the United States, some of them—especially Germany and Belgium—have been much more successful in maintaining employment. Many others have suffered the same younger under-skilled worker job loss as in the United States.

The most successful EU nations have employed an armada of programs during the recession, including government supported short-time work programs (e.g., job sharing), which led to reduced hours of work instead of layoffs. Additionally "working time accounts" avoided overtime payments to workers whose total working hours were at or below average for the firm, again protecting older and more advantaged workers. These strategies are untried in the United States.

Training, Retraining, and Job Search

Europeans also have strong programs for worker (re)training, coupled with job-search assistance, more commonly known as active labor market policies. The most well-known of these are the Danish "flex-security" labor market policies that combine flexible employment standards designed to make hiring and firing easier depending on production with effective retraining institutions and generous (but time-limited) income support programs. Other EU nations have maintained or expanded core job-search assistance and have provided more targeted re-employment services, including training opportunities, for the most hard-to-place unemployed.

U.S. employers, rather than the public sector, account for the lion's share of spending on formal workplace training—including activities such as on-the-job training, customized training, work-based learning, and tuition assistance.

Expenditures on these private-sector programs exceeded $109 billion in 2005 (at a time when the federal government was spending about $5 billion on workforce development programs). A drawback is that employer-based training efforts disproportionately go to better-educated and skilled workers and exclude unemployed people and low-skilled workers. The United States also spends far less on workforce development compared to many of its international counterparts: in 2005, U.S. labor market policy expenditures were approximately 0.4 percent of GDP, with countries such as Germany, the Netherlands, and Denmark outspending the United States by as much as 10 times.

The American Recovery and Reinvestment Act of 2009 allocated approximately $2 billion to expand the federal Workforce Investment Act (WIA) adult training activities to improve individual skill levels and job seekers' employment prospects. Research suggests that the timing of extra public dollars for training could not be better, as the opportunity costs—or "lock-in" effects—of training are likely to be lower at a time when unemployment rates are high and employment opportunities are poor. The latest evaluation evidence also indicates that these extra dollars would best be directed toward programs serving disadvantaged adults. Such programs are more effective than the WIA and Trade Adjustment Assistance programs serving dislocated workers. A 2008 non-experimental evaluation of WIA programs found the average increment in earnings for adult women (associated with receipt of training) to be 26 percent of their average earnings, with the impact for adult men around 15 percent of average earnings. This same study found no evidence that WIA dislocated worker training programs produce benefits.

U.S. research that examines training outcomes over a longer follow-up period supports strategies that combine skills acquisition (particularly through customized community and technical college training programs) with job search efforts that encourage participants to be selective in job entry, with average increases in participant earnings on the order of 20-25 percent over five years. Further, while youth training programs have been much maligned as generating low returns, a recent review of the evidence points to some promising strategies that combine academic and work-oriented activities and promote more intensive youth engagement in these programs. The Career Academies program, for example, organizes youth into small, intensive learning communities that blend academic, career, and technical curricula. The program establishes partnerships with local employers to provide career awareness and work-based learning opportunities for at-risk students. An eight-year, experimental evaluation of Career Academies showed significant reductions in high school dropouts and higher monthly earnings, months worked, hours worked per week, and hourly wages for participants, compared to control youth.

The reauthorization of WIA is overdue, and the program faces long odds of avoiding deep funding reductions. In the past, programs serving disadvantaged adults have typically received about half of the funding allocated for dislocated worker programs. These services benefit persons who, as measured by their unemployment rates, are in most dire need of them—primarily the young, low-skilled men and women who are very loosely attached if not already disconnected from the labor force—and who have been most dramatically affected by the recent deep recession as well. For these low-skilled older youth and adults, federal training programs should be maintained, as they will play a key role in linking them with opportunities to increase their education and skills, and ultimately, their employment and earnings as the U.S. economy recovers.

Unemployment Insurance

Many nations have used unemployment insurance (UI) and serial extensions of support as the primary tool to support incomes when experienced workers are unemployed. However, economists recognize the importance of work disincentives and benefit dependence inherent in these programs. EU nations often require job search, active labor market policies, and/or income-tested benefits after unemployment benefits have exceeded a certain period, e.g., one year. In the United States, serial extensions of UI in response to the Great Recession have reached beyond two years, though at relatively low benefit rates. These benefits have mainly gone to older, more established workers, while younger workers, with limited work histories, often don't qualify. While workers ages 16-29 accounted for almost 40 percent of the unemployed in 2009, they constituted 20 percent of all UI recipients. Of all the unemployed in this age group, one-third received UI benefits.

"In-Work Benefits"

More targeted programs aimed at low-income working families who find some work but not enough to ensure self-sufficiency are called "in-work benefit schemes." Many nations use such programs to increase pay when wages are low. These schemes bolster earned income and increase work time in many nations (e.g., Canada, the Netherlands, United Kindom, Ireland and France, amongst others). The U.S. in-work benefit —the Earned Income Tax Credit (EITC)—was budgeted at $76 billion for 2011 and is effective in raising work-related income. Although the EITC is a highly effective antipoverty device, support is not available to single men who are fathers and pay child support, because the children typically reside with their mothers.

Employment Subsidies

Using tax transfer policy to stimulate jobs for lower-skilled workers is not a new idea in Europe or in the United States. Most advanced countries have attempted a variety of such measures, with varying degrees of success. For instance, reductions in social security contributions and scaling-up of hiring subsidies are two such tools. Most of the successful measures are targeted at workers with low levels of skill and education and with bleak labor market opportunities, including minorities, youths, older workers, disabled workers, and single mothers. So far, targeted and marginal employment subsidies seem to have worked better than general payroll tax cuts and employment subsidies for workers who lost jobs in the Great Recession.

The U.S. policy to reduce employer and employee payroll taxes by 2 percentage points in 2011 and 2012 does not seem to have been particularly well targeted or effective in raising employment for younger, less skilled workers. Based on European experiences, an employment subsidy policy targeted at, say, the first $25,000 in wages only or a policy offering a larger subsidy for additional workers added to the work force seems to be a better policy choice for expanding employment. Indeed, an employer-based marginal employment subsidy would provide financial incentives to employers who hire low-skilled workers over and above the numbers they would otherwise hire. Such a subsidy would affect the decisions of firms regarding the number of workers to hire and the demographics of those new hires. The New Jobs Tax Credit that was in place in the United States during the late-1970s is an example of such a program. Evaluations concluded that it was a potent and cost-effective measure to increase employment of low-skilled workers.

Measures such as the New Jobs Tax Credit would alter the terms on which lower-skilled workers are hired. They would make hiring low-skilled workers a more profitable and attractive proposition by offsetting constraints on labor demand due to market rigidities and by countering trade and technological forces that curtail employment of less-skilled workers. The policies intend to increase the returns to employers from labor by less-skilled workers, and, in the process, lower business costs and increase output.

In early 2012, a $140 billion bill extending emergency jobless benefits (and a temporary cut to payroll taxes) was passed and signed. Several parts of that bill work toward modernizing the current unemployment insurance system. Now, states can use some of their UI money to encourage unemployed workers back into the work force, including wage subsidies to firms for taking on and retraining jobless workers. The bill also requires states to confirm that persons receiving long-term benefits are engaged in job searches, giving states a window into counseling unemployed workers or providing other job search services. Provisions in the bill also enable and encourage "work sharing" programs designed to reduce layoffs. While these are relatively small steps, they do reflect several of our suggestions and indicate a recognition that the problems with our current UI system need to be addressed; if expanded significantly, they could lead the nation into a new framework for attaining increased work and earnings.

Summary

The U.S. labor market response to the Great Recession has been tepid, modest, and untargeted compared to EU nations. Macro-economic policy is at an impasse as fears of greater deficit spending collide with proposals to increase spending on job creation programs. Many of the programs and policies being implemented in Europe are not being pursued in the United States.

On the microeconomic frontier, the response has been very uneven. Most middle-aged and more established unemployed workers have been supported through extended unemployment, and many will end up on the disability insurance rolls where policies and procedures to encourage work have yet to be instituted. All of those with jobs benefited from gross payroll tax reductions; those without jobs have been largely neglected. Younger workers who are not eligible for UI and cannot find jobs are at greatest risk. They are falling further behind as we turn the corner of the recession.

Income support programs like Food Stamps (now the Supplemental Nutrition Assistance Program, or SNAP), UI and the EITC have helped to mitigate the effect of the recession on those who qualify, but they have not generated jobs, especially not for people most affected by the recession. As the income support components of the 2009 American Recovery and Reinvestment Act and the 2010 Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act are trimmed by deficit reduction efforts, forestalling increases in the nation's poverty rate will be difficult. More jobs that pay decent wages are needed and in short order.

Additional education and training of the more general kind, e.g., increasing four-year college graduation rates, will take a long time to bear fruit. There is more hope for shorter-term vocational training programs, especially in growing personal service sector jobs, but again the effort is relatively feeble.

As for what can be done now, some marginally employed and non-employed workers are now involved in formal and informal training programs that will impart some job relevant skills. More people could be encouraged to do the same. Employers must play an important role in offering training opportunities that lead to decent jobs with chances for advancement, working together with the public sector as in Western Europe, especially for young low-skilled men and women. It appears that there is room for employers to invest more in these workers, too. Since the trough of the recession, more than 85 percent of the growth in national income through the first quarter of 2011 has gone to profits and capital incomes.

Supply-side and demand-side approaches are designed to improve the employment prospects of disadvantaged workers by generating ongoing job creation pressures at reasonable cost. By targeting the additional employment on segments of the labor market with the most severe unemployment problems, they promise to increase employment and output without significant inflationary pressure. Measures such as these directly alter the wage structure in private labor markets, raising the take-home pay of low-skilled workers relative to those with more secure positions in the labor market. Their potential is to reduce inequality in employment and earnings in a way that encourages independence, work, and initiative. Clearly, jobs programs for the most disadvantaged Americans would do more to ameliorate employment and earnings disparities than recent stimulus-oriented proposals for job creation, such as revenue sharing with state governments or additional infrastructure spending, which might help some stay employed or increase employment among select groups (e.g., seasoned construction workers), but would do little for the many who are not working. ◆

Director's Perspective

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to conventional wisdom. States and municipalities enacted smoking bans with the laudable intention to reduce exposure to secondhand smoke and thereby improve public health. We tested the claim that smoking bans would reduce the incidence of acute myocardial infarctions (AMI or heart attacks), one of the arguments made to get policymakers to adopt smoking bans. Before making up his or her mind about a ban, an "evidence-based" policymaker would ideally demand empirical support for the argument that smoking bans lead to fewer heart attacks. What evidence is there?

In general there is extremely strong evidence that sizable exposure to secondhand smoke is potentially harmful. The U.S. Surgeon General has reported (based on numerous epidemiologic and laboratory studies) that secondhand smoke exposure leads to increased rates of cardiovascular disease, respiratory illness, and lung cancer. Moreover, laboratory studies support the notion that exposure to secondhand smoke can predispose non-smokers to an elevated risk of heart attack. Epidemiologic studies typically compared outcomes of non-smoking spouses of smokers and non-smokers. Most systematic syntheses of the research literature suggest that chronic exposure to secondhand smoke increased risk of AMI by 20 to 30 percent.

So although chronic exposure to secondhand smoke is harmful (and no amount of secondhand smoke is likely to be beneficial), we know less about the degree of harm caused by intermittent exposure to secondhand smoke, as might be caused by exposure to cigarette smoke in public places such as bars or restaurants.

An "evidence-based" policymaker would ideally demand empirical support for the argument that smoking bans lead to fewer heart attacks.

As evidence accumulated on the potentially harmful effects of secondhand smoke, many U.S. employers began restricting smoking in the workplace. Following these private restrictions and a few isolated smoking bans enacted in the 1980s, communities in California increasingly banned smoking in workplaces, restaurants, and bars in the early 1990s. Many other states and municipalities followed. In addition to these local policies, several prominent politicians advocated a national policy banning smoking in public places.

Although these bans have proven popular, prior to our study the U.S. scientific literature had only examined the imposition of smoking bans in a few small U.S. regions. For example, studies have found that heart attack rates decreased approximately 40 percent in Helena, Montana, and 27 percent in Pueblo, Colorado, (relative to surrounding communities) following the imposition of smoking bans. These studies on the health effects of smoking bans share a common methodology: Each compares the change in the incidence of AMI in a single community that passed a smoking ban with the change in the incidence of AMI in a small set of nearby communities that had not passed bans (and a few studies do not employ a set of control communities at all). The Institute of Medicine summarized these and other studies of communities inside and outside the United States and concluded that smoking bans led to a 17 percent reduction in heart attacks in the first year following their implementation.

Yet, a policymaker should not be content with this limited body of evidence. These prior U.S. studies and the Institute of Medicine report are problematic for a number of reasons. First, the underlying studies tend to be small, examining only a few regions that may not be representative of typical U.S. communities. Although analyses can control for unobserved factors, a simple comparison of two communities may yield unrepresentative results. Second, publication bias may have prevented null effect studies from being published—meaning that publishers squelched studies that found no improvement in public health due to smoking bans, thus biasing overall impressions from the literature. Third, the reason for the tremendous declines in the incidence of AMI reported in the small-scale studies is unclear, which makes their results less certain.

To provide better evidence, my co-authors and I addressed these issues in a study recently published in the *Journal of Policy Analysis and Management.* We analyzed the impact of U.S. public smoking restrictions on heart attacks in a large, heterogeneous group of U.S. communities. We used the same methods as previous studies, but rather than examining one (perhaps non-representative) community at a time, we analyzed hundreds of communities that adopted smoking bans. We compared the change in heart attacks that occurred in these communities as they adopted bans with changes in heart attacks in communities that did not adopt. We simulated the results from all possible small-scale studies using subsamples from national data to see whether the established literature suffers from publication bias.

We used data from the American Nonsmokers' Rights Foundation to identify all states and municipalities that implemented restrictions on smoking in workplaces, bars, or restaurants between 1990 and 2004. We examined a variety of outcomes, including deaths from heart attacks and hospitalizations for heart attacks using data from three large, nationwide data sources: the Multiple Cause of Death database, Medicare claims, and the Nationwide Inpatient Survey, collected by the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality. We separately examined the elderly and working age adults. We also examined hospitalizations for asthma for children and for working age adults.

While we suspected that estimates of 40 percent declines in heart attacks following the adoption of smoking bans published in some studies are too large to be credible, we also suspected that these bans would lead to improvements in health, just smaller ones. We were surprised to find that workplace smoking bans or bans in general are not associated at all with reductions in mortality due to heart attack, nor with reduction in hospital admissions for heart attack among working-age adults or among older adults.

Workplace smoking bans or bans in general are not associated at all with reductions in mortality due to heart attack, nor with reduction in hospital admissions for heart attack among working-age adults or among older adults.

We did find evidence that suggests smoking bans may lead smokers to smoke more at home. While asthma admissions decline among working-age adults following the imposition of smoking bans, they increase among children.

What is a policymaker to do?

In the case of the claim of smoking bans reducing heart attacks, not much. The responsibility lies with the scholars who produce the evidence. Why do we find different results than those in published studies and summarized by the Institute of Medicine? We believe the existing literature suffers from publication bias—authors would never submit a study with the finding that smoking bans increase heart attacks because such a finding is ludicrous (and would never be published). However, authors are delighted to submit studies showing the opposite even though, as we have demonstrated, comparisons of small communities are equally likely to find large increases in heart attacks as large declines in heart attacks because of the large year-to-year variability in the incidence of AMI in small communities.

To demonstrate this bias, we plotted all possible paired comparisons of changes in heart attack incidence after a workplace smoking ban to changes in randomly selected control regions to simulate all the possible small-scale studies that could have been conducted. While the mean measured effect of workplace smoking bans on heart attack admissions is close to zero, 10 percent or greater declines and 10 percent or greater increases in hospital admissions for heart attacks are common. The results of this simulation shows that results from prior small sample studies, which found very large decreases in hospital admissions and mortality due to heart attack following the enactment of smoking bans, are feasible. But these large effects are due to statistical noise. Results with the opposite sign and of similar magnitude are also feasible and should be equally common (but are never published).

We find no evidence that legislated U.S. smoking bans were associated with short-term reductions in hospital admissions for AMI (or for any other disease) among the elderly, children, or working-age adults.

How should an "evidence-based" policymaker use this new evidence?

Smoking bans should be enacted after a consideration of all of the costs (and benefits) of smoking in public places. While the short-term health benefits of smoking bans that were used to argue in favor of smoking bans appear to be an illusion, there are other potential benefits of banning smoking in public places. First, non-smokers often do not enjoy being in areas filled with tobacco smoke; one does not need evidence of negative health consequences to understand that smoking can impose negative externalities on non-smokers. Prior to a ban, non-smokers might have avoided businesses with high secondhand smoke levels. After a ban, non-smokers could gain comfortable access to these businesses even though this benefit would not result in reduced hospitalization or death rates for heart attack. Second, longer-term health benefits from smoking bans might not be easily found in research studies—both our study and other studies are only designed to identify the short-term benefits of smoking bans. Third, smoking bans may induce smokers to quit or discourage nonsmokers from starting smoking. Thus, while no evidence suggests that smoking bans lead to a reduced incidence of heart attacks, I do not believe that this lack of evidence is sufficient reason for evidence-based policymakers to begin reversing the smoking bans they have already put in place.

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