

## Crisis Economics

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TO UNDERSTAND THE CHALLENGE government economists have faced over the past year and a half, it is useful to imagine the case of a physician trying to treat an ill patient. The patient presents herself in terrible shape; the physician has never treated a condition with symptoms quite like hers before; and the causes of the ailments are unclear. The doctor remembers reading about a similar case in medical school—and, trying to recall as much of his training as possible, he endeavors to come up with a theory as to why the patient is sick and to determine what will make her better.

In an ideal world, the doctor would run a controlled experiment: He would assemble 100 patients with similar symptoms, give 50 of them the medicine that seems most likely to work and the other 50 a placebo, and then see whether the patients on the medicine in fact improved. But the doctor does not have 100 patients—he has only one. So, based on his assessment of what is causing the patient's troubles, and the most likely remedy, he takes a risk and administers the medicine.

The patient, however, returns a few weeks later; this time, her symptoms are worse. What, then, should the doctor conclude? He might decide that he gave the patient the wrong medicine. Or he might determine that the patient was even sicker than he originally thought, and thus that the medicine should be administered at an even higher dosage. Either conclusion is plausible, but there is no way the doctor can be sure. What he does know is that he must act before the situation gets even worse.

When the Obama administration came into office, the American economy was one very sick patient. To complicate matters, the financial crisis and the recession that ensued did not neatly follow the pattern of

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past downturns—instead combining a collapse of the housing market, a credit crisis, failures of large financial firms, and an assortment of other worrisome symptoms. Still, the new administration’s economic advisors had no choice but to diagnose the problem and propose solutions. There was, however, little room for trial and error: Their only laboratory was the very economy they were seeking to heal, and time was of the essence, as markets continued to plunge, jobs swiftly evaporated, and bad news mounted.

In an economic assessment they released in January 2009, President Obama’s advisors concluded that, if they did nothing, the unemployment rate would reach 9%—its highest level since 1983. So they developed their medicine: an ambitious plan to stimulate the economy by spending a great deal of taxpayer money. According to their estimates, that stimulus would help keep the unemployment rate from exceeding 8%. Today, however, the unemployment rate is nearly 10%. Clearly, things have not gone as the president’s advisors expected.

For economists, this raises some obvious questions. Why were the administration’s projections off the mark? What should their experience teach us regarding stimulus policies in future downturns? And what can the government do now, as unemployment remains very high, to help the patient heal faster? Trying to resolve these questions illustrates not only the difficulty confronting policymakers in a crisis, but also the inherent limitations of the economics profession—limitations that both economists and politicians would be wise to keep in mind.

#### TEXTBOOK EXERCISES

To the question of why their patient—the U.S. economy—did not respond as expected, the Obama team’s answer is that the patient was sicker at the beginning of 2009 than they had originally thought, not that they administered the wrong medicine. The spending-heavy fiscal stimulus, they argue, was the right approach and did some good; if the stimulus bill had not been enacted, unemployment today would be even higher. The reason the stimulus failed to cure the economy’s woes is not that it was the wrong course of treatment: It simply wasn’t a big enough dose. (Hence the repeated calls for a “second stimulus.”)

There is no way to decisively prove or disprove the Obama administration’s argument. All we can do is consider its premises. On that front, the reasoning emerging from the Obama White House has not been

arbitrary, or even purely political. Rather, it represents the application of standard textbook theory — in this case, the theory that evolved from the work of John Maynard Keynes, the great British economist of the early 20<sup>th</sup> century.

According to Keynesian economics, the business cycle reflects not the wonders of Adam Smith's invisible hand of the marketplace but rather market failure on a grand scale. Extreme and sustained unemployment during a recession, Keynesians argue, results from a decline in overall (or aggregate) demand in the economy. When the economy is knocked off balance by serious economic shocks, the government can help restore normalcy by increasing demand through government spending. And because the influx of government spending drives businesses to hire and consumers to spend, its impact is multiplied.

Generations of Keynesian economists have sought to model and quantify how that “multiplier” would function in different economic conditions. But most Keynesian economists have agreed that the multiplier effect of government spending is larger than that of the other approach to injecting demand into the economy — cutting taxes — because money from tax cuts might be saved rather than spent.

To Obama-administration economists, as well as to many others, the recession that followed the financial crisis of 2008 seemed like a classic case of decline in aggregate demand. Because of the credit crisis, people were not able to obtain loans — for homes, cars, business equipment, or any of the countless other transactions that rely on credit in today's economy. And because people were unable to obtain loans, these sales and purchases couldn't take place, resulting in a significant drop in demand across the economy.

So, inspired by the view that fiscal policy can prop up aggregate demand, Obama's advisors (and their congressional allies) began to design a stimulus plan heavy on direct government spending. A few days before President Obama's inauguration, his economic advisors released a document titled “The Job Impact of the American Recovery and Reinvestment Plan,” in which they detailed some of their economic assumptions. They determined that the “government-purchases multiplier” — that is, the multiplier for direct spending — would be 1.57, while the tax-cut multiplier would be 0.99. In other words, every dollar spent by the government would yield \$1.57 in aggregate demand, while every dollar in reduced taxes would yield only 99 cents in increased

demand. And because 1.57 is larger than 0.99, the Obama team concluded it was better to increase spending than to cut taxes.

Obama and his advisors arrived at these numbers through a standard macroeconomic model of the sort economists have been using for years. Such models take various past relationships among economic variables (inflation and unemployment, for instance) and extrapolate them into the future. In essence, the economy is modeled as a system of equations, each describing how one variable responds to many others. University of Chicago economist (and Nobel laureate) Robert Lucas famously criticized these models for lacking an appreciation of people's changing expectations; many economists, however, still find such models valuable, and have continued to employ them for forecasting and policy analysis.

The question for economists now is whether the administration's assumptions, and the model based on them, were correct. After all, if we could be sure their model was right, we would know what to conclude when their stimulus plan was followed by 10% unemployment: The patient was sicker than they thought, and unemployment would surely have been higher still if not for the stimulus. (Indeed, since Obama's advisors do believe their model was right, this is the conclusion they have reached.)

The trouble is, we have no way of knowing for sure if the model was in fact correct. To react to a model's failure to predict events accurately by insisting that the model was nonetheless right — as Obama's economic advisors have done — is hardly the most obvious course. Careful economists should instead respond with humility. When their predictions fail — as they often do — they should not dig in their heels, but should instead be willing to go back to their starting assumptions and question their validity.

#### ECONOMIC HUMILITY

Macroeconomists especially have good reason to be humble, for there is a great deal we do not know. Teaching the "Principles of Economics" course at Harvard — a full-year survey — I start each year with what we economists are confident is true, and then move to material that is less and less certain as the course progresses. We look first at supply and demand, the theory of comparative advantage, profit maximization, and marginal revenue equaling marginal cost — the premises that almost every economist shares and accepts. As the course goes on, we move from micro to

macroeconomics: examining classical monetary theory, growth theory, and, at the very end of the year, the theory of business cycles. This is the topic we economists understand least of all: We are still deeply divided on the validity and utility of the basic Keynesian paradigm. But it is precisely the topic that government macroeconomists work on most, especially during times of recession.

Even as a believer in many aspects of Keynesian theory, I appreciate that one cannot approach this subject matter without showing some humility. Economics is a young science, and much of our knowledge is necessarily tentative. Humility need not result in resignation or fatalism; nor does it mean we can't make economic policy. But it should mean that we constantly test our assumptions and policies against real-world results. We should seek in retrospect the data we cannot have in advance, and use those data to improve both our understanding of the economy and the policies we put in place.

At first glance, the Obama administration would seem to be taking such an empirical approach. In an attempt to “know” as much as possible about the consequences of the stimulus bill, the administration has been compiling data to measure its effects. Indeed, the vaunted stimulus web site ([recovery.gov](http://recovery.gov)) claims to provide state-level job-creation “data,” reported to two decimals of accuracy.

In reality, however, this ostensible effort at transparency is actually the least credible part of the whole case for the 2009 stimulus bill. For one thing, the reporting errors involved in the data collection are enormous, as hardly anyone accurately fills out the government's questionnaires about the jobs “saved or created” with stimulus money. Some employers, for instance, have counted money used to provide pay raises to existing employees as “creating” jobs. Thus the *Wall Street Journal* reported last November that the Mid-Willamette Valley Community Action Agency in Oregon had claimed to create 205 jobs with its \$397,761 in stimulus money — spending less than \$2,000 per “new” job.

The results of gathering economic data this way can be downright comical. A shoe-store owner in Kentucky who sold boots to the U.S. Army Corps of Engineers (for work on a project made possible by stimulus funds) claimed to have created nine jobs with \$889 — a feat that would certainly make him the most efficient job creator in the country. The store owner apparently reasoned that he was creating one job for every pair of boots he sold the Army; after all, a soldier could not go to work on

the project without a pair of boots. The episode received attention only because a reporter discovered the ridiculous claim, and the owner then asserted that he had been confused by the government form.

The administration has nevertheless accepted such reports, using them as the basis of their stimulus evaluations. But even if the reporting were perfectly correct, the exercise would still make little sense as a way of assessing the broader macroeconomic effects of the stimulus money. When we talk about the impact of government purchases on aggregate demand, and therefore on job creation, we must take into account an enormous number of “general equilibrium effects” — that is, the indirect effects that occur as one economic variable influences another, which in turn influences yet another, and so on. Such effects can be modeled and analyzed to some extent, but they cannot possibly be captured by crude job-creation surveys, or easily conveyed through administration web sites and talking points.

These general equilibrium effects are tremendously important to the economy — sometimes in positive ways, sometimes in negative. The positive effects are those that underlie the conventional Keynesian fiscal-policy multipliers: Higher government spending leads to higher incomes for some people, which causes higher consumption, and therefore higher incomes yet again, such that the effect cascades and multiplies. Economists can certainly track some of these effects, but the “data” on [recovery.gov](http://recovery.gov) cannot possibly account for them.

The negative effects are even more challenging to trace. For example, if people observe the government issuing substantial debt (required to finance a stimulus), they may anticipate higher future taxes and therefore cut back on their current consumption. Increased government borrowing may also drive up long-term interest rates, which could make it difficult for people to borrow money and could therefore reduce spending today. Obviously, [recovery.gov](http://recovery.gov) has no way to take account of these consequences, either.

So even if recipients of stimulus funding filled out their government reports reliably and correctly, the data they provided would not accurately describe the effects of the stimulus on job creation. Nor would data about job creation by itself actually resolve the underlying question about the administration’s economic-recovery effort: whether it was right to pursue a spending-heavy stimulus plan, instead of one focused more on tax cuts.

## TAXING LESS OR SPENDING MORE

Addressing this question requires not only data about the past year or two, but also analysis of some key assumptions at the core of the administration's approach to fiscal policy. In particular, that approach seems to take for granted that *the* question in choosing between spending and tax cuts is which would have the greater multiplier effect, and that the answer to that question is spending rather than tax cuts.

The first assumption overlooks an important difference between spending and tax cuts in the context of economic stimulus. When the government is seeking to revive its sick patient—the economy—time is of the essence. And time must be considered in any analysis of multipliers and other economic effects of stimulus policy. Chief among these considerations is whether government can spend money both quickly *and* wisely.

Many of us can draw on our own experiences in addressing that question. Anyone familiar with government projects even at the municipal level knows that the process is usually prolonged and onerous. Even if the design phase is managed well, the project is built efficiently, and the end product proves to be of good use to the community—all big “ifs”—the time involved in debating project proposals, securing approval from citizens and local boards, planning the design, hiring contractors, and completing the construction often stretches to years. Cram the process into a dramatically shortened time frame, and the likelihood that the project will be an example of “wise” government spending diminishes significantly. Expand the scope of the government spending from town planning to national fiscal policy, and the likelihood shrinks even further.

This is not just a matter of government waste, but also a question of whether money spent under such circumstances actually helps the economy grow in a way that best enhances citizens' well-being. Whenever public money is involved, it is important to ask whether the spending will produce something society needs, or wants, to improve the general economic climate. Money spent on a new road that allows farmers to get their products to market faster and in better condition, for instance, creates more value than money spent building a “bridge to nowhere,” even if both projects create the same number of construction jobs.

To look at it another way: If a person pays his neighbor \$100 to dig a hole in his backyard and then fill it up again, and the neighbor hires

him to do the same, government statisticians will report that the economy has created two jobs and that the gross domestic product has risen by \$200. But it is unlikely that, having wasted all that time digging and filling, either person is better off—economically or otherwise. Each person's net financial gain is zero, and all anyone has to show for the effort is a patch of fresh dirt in the backyard, which is unlikely to improve anyone's standard of living.

Private individuals don't usually spend their money on things they don't want or need. So when money is kept in the hands of citizens, and transactions take place in the private sector, there is less cause to worry about inefficient spending. The same cannot always be said of government. This means that government spending designed to stimulate the economy must first be subjected to serious cost-benefit analysis, which is hard to do in a big rush. Not all government spending is created equal—and rushed spending is, in many important ways, likely to be less efficient and less useful than spending that is carefully planned.

The administration's second assumption, meanwhile, is a matter of academic theories about the sizes of the relevant economic multipliers. Textbook Keynesian economics tells us that government-purchases multipliers are larger than tax-cut multipliers. And, as we have seen, the Obama administration's economic team consulted these standard models in deciding that spending would be significantly more effective than tax cuts.

But a great deal of recent economic evidence calls that conclusion into question. In an ironic twist, one key piece comes from Christina Romer, who is now chair of Obama's Council of Economic Advisers. About six months before she took the job, Romer teamed up with her husband and fellow Berkeley economist David Romer to write a paper ("The Macroeconomic Effects of Tax Changes") that sought to measure the influence of tax policy on GDP. Crucial to the Romers' method was their effort to identify changes in tax policy made during times of relative economic stability, and driven by a desire to influence economic behavior or activity (to encourage growth, say, or reduce a deficit), rather than those changes made in response to a recession or crisis. By studying such "exogenous" tax-policy changes, the Romers could be more confident that they were in fact measuring the effects of taxes and not those of extraneous conditions.

The Romers' conclusion, which is at odds with most traditional Keynesian analysis, was that the tax multiplier was 3—in other words,

that every dollar spent on tax cuts would boost GDP by \$3. This would mean that the tax multiplier is roughly three times larger than Obama's advisors assumed it was during their policy simulations.

Of course, it could be that *all* multipliers are larger than previously assumed. Perhaps fiscal policy has such a great influence over our economy that, if the tax multiplier is 3, the government-spending multiplier is 4 or 5. We don't know from the Romers' study; they did not analyze government-spending multipliers, only tax multipliers. But several studies on government-spending multipliers have been conducted using techniques similar to those used by the Romers. And none has found government-spending multipliers to be so large as to justify assumptions about the inherent superiority of government spending over tax cuts.

Some excellent work on this topic has come from Valerie Ramey of the University of California, San Diego. Ramey finds a government-spending multiplier of about 1.4 — a figure close to what the Obama administration assumed, but much smaller than the tax multiplier identified by the Romers. Similarly, in recent research, Andrew Mountford (of the University of London) and Harald Uhlig (of the University of Chicago) have used sophisticated statistical techniques that try to capture the complicated relationships among economic variables over time; they conclude that a “deficit-financed tax cut is the best fiscal policy to stimulate the economy.” In particular, they report that tax cuts are about four times as potent as increases in government spending.

Perhaps the most compelling research on this subject is a very recent study by my colleagues Alberto Alesina and Silvia Ardagna at Harvard. They used data from the Organization for Economic Cooperation and Development to identify every major fiscal stimulus adopted by the 30 OECD countries between 1970 and 2007. Alesina and Ardagna then separated those plans that were in fact followed by robust economic growth from those that were not, and compared their characteristics. They found that the stimulus packages that appeared to be successful had cut business and income taxes, while those that evidently did not succeed had increased government spending and transfer payments.

The data in the Alesina-Ardagna study are mostly European; only a small portion comes from the United States. But the evidence leads to conclusions that are very similar to those from Mountford and Uhlig's work using American data. These conclusions are also consistent with the work of Ramey and the Romers, which looked at the historical

record to identify multipliers. There appears to be a growing body of evidence, then, suggesting that taxes may be a better tool for fiscal stimulus than conventional models have indicated.

Why would that be? At this point, there is no clear-cut answer, but it is easy to come up with plausible conjectures. The most obvious candidate would be the supply-side effects of tax cuts. Tax rates, for instance, clearly influence work incentives. And economists who focus on supply-side incentives argue that Keynesians overestimate the importance of aggregate demand while underestimating the role that people's willingness to work and invest plays in the performance of modern economies.

But even if one believes that aggregate demand drives the economy in the short run, as many Keynesians do, it would still be wise to acknowledge that taxes affect aggregate demand in ways that are not included in the textbook Keynesian model. When we change tax laws, we typically do not just write checks to taxpayers. Usually, we change marginal tax rates — adjusting corporate or personal income taxes, or perhaps instituting tax credits or similar policies to drive incentives in some particular way. These measures have more complicated and nuanced effects on aggregate demand than the textbook Keynesian model assumes. They involve far more than simply changes in cash flow; most notably, they involve changes in marginal incentives, often including direct encouragement to spend.

We have seen recent examples of how such changes in incentives can influence behavior. One of the most noteworthy has been the Cash for Clunkers program, which wasn't a tax cut, but wasn't a classic form of Keynesian stimulus spending, either: It was an incentive program to induce personal spending by individuals. Owners of older, less energy-efficient vehicles received a voucher for between \$3,500 and \$4,500 (depending on differences in fuel economy), which they could apply only to the purchase of new, more energy-efficient vehicles. In the course of the program's two-month run (in July and August of last year), the government spent nearly \$3 billion on these rebates.

Economists will no doubt long debate whether Cash for Clunkers passed a cost-benefit test. (Some early results, from Burton Abrams and George Parsons of the University of Delaware, suggest not.) But the fact that people responded to the incentive as they did — nearly 680,000 cars were purchased — suggests that a broader, more comprehensive program

of incentives, such as an investment tax credit, might have stimulated spending even more.

Of course, not all tax cuts or credits are created equal, just as not all direct government spending is. One popular idea in recent years, for instance, has been a tax cut for businesses that make new hires. Indeed, the jobs bill signed by President Obama in March put in place a targeted payroll-tax exemption for some small businesses that hire people who have been unemployed for two months or more; several members of Congress have proposed broader tax cuts for businesses that hire new employees. The premise behind these policies is that, because unemployment is so high even as the economy begins to recover, we should create incentives for businesses to place unemployed workers into jobs.

There is a case to be made for a broad-based payroll-tax cut that might have this effect, but a narrower tax cut for new hires suffers from some major flaws. The basic problem is that we do not know how to properly define—or enforce a definition of—a “new hire.” Presumably we do not want a business to hire Peter by firing Paul and to then call Peter a new hire; this would cause a great deal of inefficient churning in the labor force (not to mention a great deal of unpleasantness for all the Pauls).

Usually when tax credits for new hires are proposed, the idea is to establish some baseline employment—based on a firm’s labor force a year or two earlier—and give credit to businesses that meet or exceed their baselines. But relying on such baselines can be problematic. Consider an industry hit particularly hard by a recession—say, construction—in which employment is well below the baseline established for new-hire tax breaks. Because a few new hires would still not make these firms eligible for the tax credits, these firms would have no marginal incentive to hire additional workers. Conversely, industries that have been expanding would be rewarded for hires they might have made even without the tax incentives. This policy, then, would likely create tremendous disparities across industries that could be both inequitable and inefficient. It would also create perverse incentives in favor of new firms: By definition, all employees of a new firm are “new hires.” This could even give existing firms an incentive to, say, lay off the janitorial staff and hire instead an independent janitorial contractor that just started up as a new firm, since the cost per worker to the old firm could well be lower.

Attractive as such ideas may seem at first, targeted tax cuts and incentives are in fact very difficult to implement properly. If tax cuts

indeed make for better fiscal stimulus than direct government spending, they should be broad-based cuts or incentives, rather than narrowly tailored interventions.

Here again, the fiscal-policy decisions of the past year and a half have not been implausible or inexplicable—but they have also not been empirically shown to work. The data point to other approaches.

#### ECONOMICS AND POLITICS

It may seem unfair to criticize government economists working under great pressure in the midst of a crisis. After all, they are not in fact doctors treating patients. They work for politicians, who must take into account not just economic theory and data but also voter attitudes and political realities. Economic policy is not just applied economics.

But economists are social scientists, not politicians. And whether they work for the government or have the luxury of merely observing the scene from an ivory tower, the integrity of the profession and the importance of the work involved demand that they be subjected to critical judgment; they must be compelled always to submit their assumptions, data, models, and conclusions to careful scrutiny. The foremost job of economists is not to make the lives of politicians easier, but to think through problems, to examine all the available information about the problems' causes and potential treatments, and to propose the solutions most likely to work.

This is a simple point, but one that is easy to forget. As Milton Friedman once put it: “The role of the economist in discussions of public policy seems to me to be to prescribe what should be done in light of what can be done, politics aside, and not to predict what is ‘politically feasible’ and then to recommend it.”

In a time of economic uncertainty and political turmoil, we economists—both in and out of government—could hardly do better than to follow Friedman's sage advice.