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policy brief

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Recovery.gov: Using the Internet to Accelerate and Improve Fiscal Stimulus

By Ward Hanson

“On a long-term, well planned and integrated employment program such as WPA, where projects must be sponsored by local citizens, and scrutinized by state and federal officials to see that they meet rigid procedural requirements, the projects are usually work that should be done even if there were no unemployed demanding jobs. It thus has a separate existence of its own. The consumer must want the product before the worker is put on the job.”

– Harry Hopkins, 1936,
Spending to Save

The American Recovery and Reinvestment Plan

Facing dramatic challenges to the financial sector and rapid reductions in consumer demand, the new administration is pursuing an aggressive stimulus plan. While all agree the cur-

rent situation is serious, there is active debate about the proper components of the plan. One of the most important disputes involves speed and the conflict of two opposing points:

- Components of the stimulus plan have very different fiscal multipliers that magnify the initial outlays and determine the plan’s eventual stimulus impact on the economy.
- Some of the components with the largest eventual fiscal multipliers, such as spending on physical infrastructure, are difficult to launch quickly and have more modest short-run effects. Tax cuts, on the other hand, have lower eventual multipliers but can be implemented quickly.

This presents a trade-off of speed versus effectiveness.

continued on inside...

About The Author

Ward Hanson studies the economics and marketing of high technology, especially the impact of information technology on business and policy. He is a Research Fellow in SIEPR’s Center for Employment and Economic Growth as well as SIEPR Policy Forum Director.



Dr. Hanson received his Ph.D. in Economics from Stanford University, and has been on the faculty of the University of Chicago Business School, Purdue University School of Management, and Stanford University’s Graduate School of Business. He has served in the U.S. Department of Energy, and assisted the Obama campaign’s Economic Growth and Innovation policy efforts.

SIEPR *policy brief*

How economic agents react to new information and changed circumstance shapes the speed of macroeconomic response. It has been a common observation that present-day business moves faster than ever, with information, services, and goods moving rapidly due to new technology. Currently we are seeing the negative consequences of this, as trouble originating in the U.S. housing and banking sectors spreads rapidly throughout the globe. It is also possible that this “acceleration technology,” especially online communication tools, can help relax the trade-off of stimulus speed versus near-term effectiveness. These same tools should permit more effective oversight and policy transparency, but only if policymakers invest resources and management skills to modernize governmental IT practices.

This policy brief highlights some of the Internet capabilities developed over the past decade and their use to reduce some of the difficulties of ramping up effective public works spending. This happens on a micro level. Central to this discussion are the processes of demand discovery for relevant projects, worker education and training for displaced workers, project coordination between governmental agencies and private companies, and public program transparency. The U.S. economy is huge, and

inertia is high. The Internet is not a “magic bullet” — and it’s no panacea for an economic situation involving a credit meltdown and seriously overstretched consumers. Nonetheless, as in other areas of the economy, the Internet can assist government officials, businesses, and citizens to do fiscal policy better, cheaper, and most importantly faster.

Recessions and Technology

The U.S. economy experienced five recessions in the last 30 years. Three were relatively mild (1979, 1992, and 2002). The 1982 recession was more severe, as is our current situation. In 1982 the unemployment rate topped at 11.2 percent. To exceed that number, one must go back to 1937.¹ Some economists fear this recession will also reach double-digit unemployment nationwide, as it already has in states such as Michigan. While monetary adjustments and counter-cyclical tax and spending policies suffice for normal business cycle swings, extreme conditions can render both of these approaches ineffective. We may be facing such a situation today. As a consequence, the Obama administration and Congress are engaging in aggressive fiscal stimulus to augment monetary policy.

Much has changed in the

economy during the 75 years since Harry Hopkins took charge of the Federal Relief Organization or Ronald Reagan and Congress dealt with the 1982 slowdown. One striking difference is technology. The world communicates very differently, and much more extensively, than it did during these previous eras.

While mass communication through radio and movies was already an effective tool in the 1930s, individualized communication was limited and expensive. Computing lay decades in the future, and there was very little of an information economy. For telecommunications and computing, even the early 1980s are the distant past. The United States still had a telephone system controlled by the Bell monopoly. IBM introduced its PC in late 1981, with a maximum of 256K RAM and an optional 10 MB hard drive. A consumer Internet did not exist, nor did America Online. Early experiments with the CompuServe online service were in progress, but connect time costs often exceeded \$5 per hour and content was extremely limited. Only governmental agencies and universities had access to the Arpanet, with fewer than 500 Internet hosts and the Web eight years in the future.

The situation now is vastly different. There are now more than 100 million Web servers

1 Sources used in this Policy Brief appear at the end.

worldwide and approximately 500 million Internet hosts. More than 1 billion individuals are online. In the United States more than 74 percent of adults use the Internet. Vendors compete to provide Internet service, wire line access, or cell phone connections. Much of the economy, as well as politics, moves faster and coordinates more closely than was possible in the 1980s. Manufacturers, wholesalers, and retailers speed orders through a global supply chain. Social networks extend the reach of friends and family and allow campaigns to raise unprecedented funds and coordinate millions of volunteers.

It is an open question how much these “new economy” tools can alter the effectiveness of public works spending. Improvements in computing and telecommunications have radically altered commerce and society. ICT tools should also be able to accelerate and improve fiscal policy. Repurposing private sector tools for public benefit, using software systems already debugged in commercial applications, promises powerful capabilities in short order. The Obama administration is aware of the power of the Internet, with plans to include extensive information on its new *recovery.gov* website.

Advising the Obama administration to use the Internet effectively to improve stimulus policy may seem redundant, like

pushing on an open door. This is certainly true in general — use of the Internet is an area where the Obama campaign operated “like a Silicon Valley startup.” Even so, the business of governance and economic stimulus is not the same as campaigning. For the political process, much of the focus is on locating and motivating activists. Once motivated, the Internet helps raise money, direct campaign activities, and promote voter turnout on Election Day. The goals for leveraging public spending have some overlap with these activities, but only partially.

Demand Discovery

One of the biggest criticisms of public spending arises from the delays needed to ramp up spending. Project inertia results in spending occurring later than desired and extending beyond the recession’s end. Although recessions cause much damage and lost potential, the contraction phase is much shorter than the expansion phase. Although the current contraction is already longer than the postwar average, even the 1982 contraction only lasted 16 months. This is a main reason OMB Director Peter Orszag is on record committing the administration to spending the stimulus funds within 18 months, and National Economic Council Director Larry Summers has strongly emphasized the need for speed.

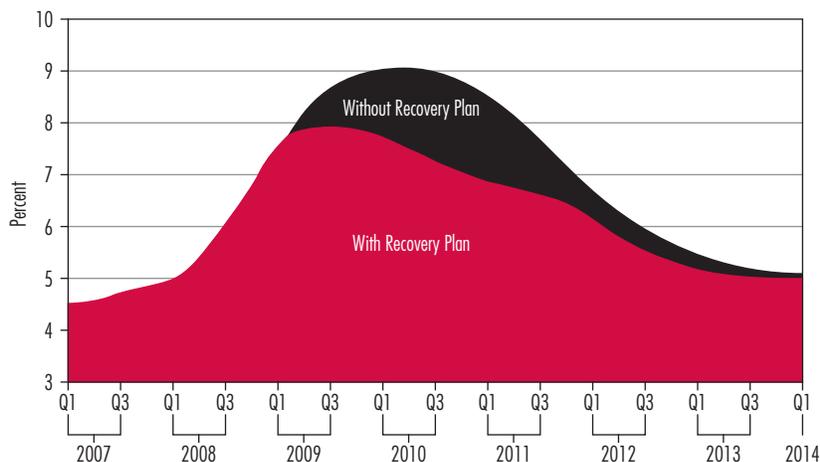
Table 1:
Average Length of
Post-WWII Business Cycles

The Problem of Fiscal Policy Speed	
Contraction Length	Expansion Length
10 months	57 months

Figure 1 illustrates the Obama transition team forecast of the movement of the economy with and without a stimulus plan. Without a stimulus, unemployment rises to 9 percent before recovering slowly. The impact of the stimulus is to trim these job losses and create a turnaround sooner. Accelerating economic activity is a central objective.

One area where Internet tools can help accelerate fiscal policy is through more rapid and more accurate demand discovery. A number of the initiatives included in the stimulus plan call for decentralized spending, reaching millions of households and thousands of public buildings and projects. Citizens signing up online can rapidly measure pent-up demand and direct resources to the appropriate households. The ability of the federal government to rapidly accumulate individual responses and interactions is much higher than in previous severe downturns. Recent experience with the Do Not Call and the Digital TV Coupon lists illustrate this potential.

FIGURE 1
Unemployment Rate With and Without the Recovery Plan



Source: C. Romer and J. Bernstein, “The Job Impact of the American Recovery and Reinvestment Plan,” Jan. 2009.

The Do Not Call and Digital Converter Coupon Lists

The Federal Trade Commission’s Do Not Call list demonstrates that the federal government can effectively use the Internet to coordinate tens of millions of individual choices. Launched in late June 2003, the automated sign-up procedure accommodated millions of registrations per day without difficulty or inaccuracy. An individual lists a phone number with the Do Not Call list to block telemarketers from calling with unsolicited offers. There is no consumer fee, a key to rapid and broad adoption. The program is self-financing through database access fees paid by the telemarketing industry. Prior to calling a potential phone number, a telemarketer must verify this number is not on the list. Fees

are proportional to the volume of numbers checked.

Consumers sign up using one of two methods. One method bypasses the Internet, with the user calling a toll-free number. A far more popular method is online sign-up with user confirmation. A consumer visits the FTC website and enters one or more phone numbers along with an e-mail address. The FTC sends an e-mail to this address, and the phone number enters the database when confirmed by the consumer’s response.

Americans submitted more than 10 million phone numbers for protection in the first four days. By the end of the program’s first four months there were 5 states with more than 50 percent of households signed up, 17 with between 40 and 50

percent, and 19 with between 30 and 40 percent. Of the states with lower percentages than this, many of them already had state-level lists that reduced the perceived need to sign up. As of October 2008, more than 172 million home and cell phone numbers appear in the Do Not Call database.

Automation allows the FTC to maintain database accuracy. The biggest challenge is detecting and deleting the phone numbers reassigned due to consumers dropping phone service, often because of a change of residence. Monthly data scrubbing against a national database of phone numbers is relatively cheap and reduces the number of improper listings to far less than 1 percent. Now operating for more than five years, the Do Not Call list demonstrates that self-selection by motivated consumers can function rapidly and accurately. Somewhat surprisingly, analysis indicates few underserved demographic segments. The main criticism of the list is that it is too effective at reducing telemarketing and the impact this has on the advertising plans of companies wishing to sell using this approach.

The TV Converter coupon program at the NTIA gives consumers \$40 coupons toward the purchase of a digital TV converter box for otherwise obsolete analog televisions. By January 2009, the system had issued 44 million coupons with 19 million

redeemed, 14 million expired, and 11 million still in process.

The converter program demonstrates some of the challenges of using the Internet. The NTIA has been so successful in soliciting requests that it spent all of its allotted money and now is putting requests on a waiting list for additional funds. Congress may delay the digital switch to June, rather than the original February, allowing replenishing of the funding to clear the backlog.

Both the Do Not Call and TV Converter programs are “proofs of concept” that the federal government can cost-effectively register choices of millions of households in a matter of days. Web forms and server-based databases keep the transaction costs low. As with many other agencies, the Web is also used to detail rules and regulations for business partners making the converter boxes and redeeming the coupons.

Energy Retrofits, Broadband Access, and Other Stimulus Components

Even in the depths of the Great Depression, with more than 20 percent unemployment, the goal of public works programs quickly shifted from simple labor absorber to the usefulness and productivity of the money spent. In part this involves the efficient matching of resources and needs. Several of the ideas advanced in the stimu-

lus plan are in a position to take great advantage of online tools to diffuse accurate information, sign up appropriate households, and deliver potential payment vouchers. These include energy retrofits, residential and commercial solar power, and access to high-speed broadband.

Internet capabilities provide many opportunities to improve upon energy efficiency efforts of previous eras. In many ways this is a perfect stimulus opportunity — a program that is labor intensive, uses a mix of skilled and semi-skilled labor, and provides capital improvements yielding an ongoing stream of benefits. It should work better now than in previous decades. Analysts can use the Internet to quickly estimate possible savings by location and type of structure. Retrofit work crews can efficiently assemble for remote and on-site thermal imaging, materials estimation, actual implementation, and follow-up. Agencies can sponsor training videos and tutorials using new media venues such as YouTube, iTunes, and many others. The Internet’s power to organize should make it possible to quickly and accurately sign up neighborhoods, encouraging those signed up to recruit neighbors. Once a reasonable number of qualifying homes in an area sign up, crews can more cost-effectively serve the local area.

Additional recovery com-

ponents, in areas such as renewable energy, broadband, or mortgage refinancing, will rely on qualifying households to request the service. Many consumers will be unsure whether they qualify and whether the services are cost-effective even with the stimulus incentives. Address-specific tools can help here as well. In the House version, broadband assistance is limited to underserved locations. This can be easily verified with the tools used for the Do Not Call list. Commercial services already provide easy-to-use calculators based on satellite images of buildings, local utility rates, actual consumer spending, solar panel costs, and state and federal tax credits to determine whether solar panels make economic sense. These can be adapted and popularized by agencies responsible for the renewable programs or with financial assistance.

Project Coordination

Global business supply chains rely heavily on the Internet and software services to coordinate such diverse activity as component manufacturing in China, service support in India, and final assembly, distribution, and retail in the United States. These powerful tools, accustomed to handling “industrial strength problems,” are widespread in industry. Commercial activities developed over the last decade of online commerce point the way for much more

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powerful and complicated uses. Companies such as Alibaba.com connect thousands of Chinese small manufacturers to retail outlets worldwide. Many of these coordination tools facilitate complex activities and provide powerful new tools for locating appropriate workers, coordinating “shovels in the ground,” and encouraging collaboration between different jurisdictions. A fiscal policy using modern procurement methods, online conferencing, Web-enabled forms, project management software, and other tools of the Web services era should foster more rapid federal and state coordination of infrastructure projects.

Not all of the useful coordination is between governments and contractors. One of the strongest Internet aspects of the Obama presidential campaign was a software system coordinating local efforts and volunteer participation. The software helped arrange social meet-ups, automatically describe events to relevant local users, send e-mails to the proper volunteers, and provide many other coordinating mechanisms. These tools can help improve governance.

Worker Retraining

A third major avenue for online efforts involves worker training, both the quick training of potential infrastructure workers and the more in-depth needs of displaced workers seeking new careers. The economy is

more complex and skill intensive than during previous serious recessions, and even semi-skilled projects rely on more capital equipment than picks and shovels. Online training and demonstrations can fill in skills and shorten the time between application and useful worker contributions. Creating and delivering these training materials provide a valuable form of new economy infrastructure. More comprehensive and credentialed training, the type needed for fundamental worker retraining, can also benefit greatly from new online tools.

Commercial training sites such as Lynda.com use browser-based online demonstrations and tutorials to deliver in-depth training in using sophisticated software programs. Specialized sessions and webinars are now common in the marketing community, and firms use them to train widely dispersed audiences. Commercial services such as Netflix, Amazon, and TiVo use broadband connections to stream video on demand onto living room televisions. These platforms can just as easily deliver training videos into the home, while maintaining high quality and an ability to appropriately price and control availability.

A key application area for tools such as these is in the transition to digital medical records. The stimulus bill contains \$20 billion dollars devoted

to the movement to electronic record keeping. The full cost of a transition to interoperable medical records will be much higher than this, with some estimates more than 10 times this amount in private and public monies. This is a major effort of business process redesign, as less than 10 percent of U.S. hospitals currently have suitable systems in place. These same studies find these investments would likely have a high rate of return and lower medical costs automatically.

Successful technology adoption often requires adaptation and process redesign to fully deliver the productive benefits. First efforts tend to archive information in a digital format. Next steps are the one-for-one substitution of a digital method instead of paper-based approaches. While this substitution can result in substantial savings, the true benefits of the digital approach occur when participants rework medical processes to better leverage technology. This will require nurses, doctors, and other personnel to both acquire skills and appropriate IT to make this a reality.

Transparency

Providing transparency is a fourth major opportunity for innovation. No package of government aid is without controversy, allegations of special favors, or waste. A commitment to good government is not

enough; the Internet can help explain and document the flow of funds. This data, combined with “citizen journalism” and local involvement, serves as a deterrent to bad practice. It can also provide templates and case studies from successful projects.

Transparency can go beyond simple lists of projects and spreadsheets showing costs. Video is a natural opportunity. Innovative companies are pioneering methods of producing and distributing inexpensive professionally filmed short videos. Using a franchise-like system with national reach, crews are available in most metropolitan areas and can film and upload professional quality short videos for less than \$1,000. A library of such projects could help detect poor performance and highlight successful approaches. As in social networking sites, these videos can serve as the seed for textual commentary, photos, and other material submitted by regular citizens. This serves twin goals of eliminating waste and accelerating the diffusion of good approaches.

Improving Governmental IT Capabilities

Federal and state government information technology capabilities have not kept pace with private firms in terms of pay scales, talent, and work environment. Ultimately, the new administration will have to aggressively invest in infor-

mation technology if it is to achieve many of its goals. The stimulus bill already commits a major expenditure on medical information technology, with an emphasis on improving the ability of the federal government to track and control health care spending. This will require more than hardware and will take considerable managerial effort.

For the current economic situation, policymakers must work with the systems they have or those that can easily be ported from the outside. Fortunately, many of the recent Internet tools rely on modular Web services that can be quickly adapted to new purposes. One of the first tasks of the nation’s new Chief Technology Officer should be to assist efforts to apply these tools to improving the stimulus plan implementation. In parallel with this shorter-term project, a major effort should be made to bring the federal government’s IT capabilities in line with the private sector.

Sources and Additional Reading

Dating of recessions comes from the National Bureau of Economic Research Recession Dating Committee, chaired by Robert Hall. Internet host numbers come from the Internet Domain Survey. Usage numbers come from the Pew Internet Project, CIA Factbook, and the International Telecommunications Union.

For a discussion of the performance of the Do Not Call List see H. Varian, F. Wallenberg, and G. Woroch, (2005), “The Demographics of the Do-Not-Call List,” *IEEE Computer Society*, pp. 34-39. See also the Annual Report to Congress for Fiscal Year 2007: National Do Not Call Registry, Federal Trade Commission, July 2008 and the FTC website. Information on the digital transition couponing program comes from the NTIA website. The special issue of Health Affairs September/October 2005 contains a wide-ranging discussion of the cost and benefits of electronic medical systems.

Data on the stimulus bill reflects the first week of February 2009, with the forecast of stimulus plan impacts by Romer and Bernstein based on the proposal as of early January. Examples of private sector Internet capabilities come from the author’s research and personal communication; for additional detail see Ward Hanson and Kirthi Kalyanam, (2007), *Internet Marketing & e-Commerce*, Thomson South-Western, Mason.

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