

## Micro Economics



# Building Broadband as Economic Stimulus

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.....Although you might not have noticed, a bit of Internet infrastructure hitched a ride on that US\$787 billion stimulus bill recently passed by the US Congress and signed by President Obama. A small part of the bill (just over \$7 billion) devotes funds to building more broadband and wireless services, mostly in rural areas.

Why does the bill devote any money to Internet infrastructure? Is this anything more than digital pork for hog farms? In this column, I review the broad ideals motivating these provisions, and the pragmatic issues that arose during the attempt to realize those ideals. The juxtaposition of these ideals and practical matters illustrates the general issues of this stimulus bill.

### Why pass a stimulus bill?

The stimulus bill didn't pop out of nowhere. It's a reaction to a liquidity trap. This will take some explaining.

The last few economic months have been the worst in decades. The US economy has experienced large declines in production, massive layoffs, and a big reduction in consumer confidence, with almost no end in sight to the downhill trajectory. Except at Apple and a few other companies, every executive on the planet expects things to get worse.

How did this happen? To make a long story short, it started with financial innovation in housing mortgages. Some very bad decisions by the leverage masters in

many financial firms spread systemic risk to others in the country. Once the housing bubble popped, these financial positions had to be unwound, and there were too few real assets to back up the paper value, diminishing the book value of any financial institution holding paper. Ouch.

It didn't happen overnight. Insiders to economic policy had feared the worse for some time. For well over a year, Federal Reserve chairman Ben Bernanke had been taking aggressive actions to forestall a financial collapse. The problems just became visible in late fall when the Fed and the Treasury had to ask for Congressional appropriation to begin propping up banks with bailout money.

Although I think these actions probably prevented a major economic catastrophe, they weren't enough to stave off something a little less awful. Sometime in the fall of 2008, the US economy began a precipitous drop into a self-reinforcing tailspin. The US isn't experiencing the bank runs of the 1930s (at least not yet), but it's almost as bad. After the banking system almost collapsed in the fall, many US asset markets lost 20 percent or more of their value in a short time. That goes for stocks, land values, homes, mutual funds, 401Ks, endowments, and other paper investments. Double ouch.

In mid-December interest rates hit zero because—let me oversimplify a

complicated situation for the column's sake—the Federal Reserve couldn't lend money at any positive interest rate. This is such an unusual outcome, let me say it a different way: Few firms believe their investments will generate positive returns in the short run. In other words, businesses are so pessimistic that they turned down an offer of almost free money! This is known as a liquidity trap.

That's where the stimulus bill comes in. The Fed can't forestall an economic downturn if no one will respond to its actions, even at zero interest rates. So the policy makers in the incoming administration concluded that they needed to do something more.

The core of the new idea is targeted, timely, and temporary federal expenditure. If it drives up demand for goods and services it might help reduce the pessimism, slowing the self-reinforcing downward cycle.

### The timing is unfavorable

I've summarized the motivation and rationales behind the stimulus bill. Implementation is a different story. There just isn't much precedent for federal expenditure that is both timely and targeted.

More to the point, little federal expenditure has ever tried to quickly address an economic downturn with as large a scale program as this stimulus bill proposes. The key word is "quickly." Federal expenditure is rarely temporary. Although it can change by hundreds of

billions of dollars over the long haul, it doesn't tend to react to economic downturns in a matter of months.

The team of economists in this administration (as well as the prior one) knows this. As a result, the policy conversation in Washington found a label for what was desired—that is, “shovel-ready” infrastructure projects. Shovel-ready is a label for infrastructure projects with refined plans and identifiable goals, where the expenditure can quickly be applied. In practice this means road and bridge repair, stalled hospital construction, and other unfunded mandates at the state and local government levels. Extending broadband would likewise employ lots of construction workers to dig ditches, lay fiber, and so on.

On closer examination, however, broadband has an obvious problem. To wit, it is not 2001, with the digital build out just on the horizon. Rather, in 2009 we're at the end of the first wave of broadband's build out. Wherever broadband was cheap to build, cable and phone companies built it in the last decade.

Almost by definition, unfortunately, that leaves nothing inexpensive to do now. The costs for building broadband in small towns, in isolated locations, or at farmhouses dotting country roads all throughout the rural US are brutal. Reaching an urban household costs as little as \$200, but reaching an expensive location starts at \$1,000. Reaching a farmhouse can easily cost \$10,000.

A recent survey of households, conducted by the Pew American and Internet Project, provided further reason for pessimism. Households have three potential reasons for not using broadband: high price, lack of availability, and lack of appeal. The survey showed that about 4.5 percent of US households (just over 5 million) claim that lack of availability stopped them from getting broadband and that lack of appeal far outweighs the other two (see [http://www.pewinternet.org/PPF/r/273/report\\_display.asp](http://www.pewinternet.org/PPF/r/273/report_display.asp)).

In short, whereas a rural build out addresses a real problem for some rural households and might put some people

to work, a couple of billion dollars won't wire up many homes, and many do not want it anyway. This fact gives any frugal policy maker some pause.

### Choices, choices, choices

Politicians are well aware that the economic panic will eventually subside. When it does, the public will evaluate this program with the benefit of hindsight and will want to know how the project isn't just plain pork. Politicians must consider whether these investments will look wise in the future. There are two diametrically opposite views as to whether they will look wise.

Taking this long view, the administration will have four choices in the next five years for investment in broadband access. Two of the choices are distinct versions of wireline delivery systems—fiber to the home (such as FiOS) or a cable-modem platform with faster bandwidth. Two are wireless data-delivery systems—WiMax or 4G upgrades to 3G networks (generally called Long-Term Evolution [LTE]).

Which of these should the US government subsidize? One view argues for none; the other argues against wireline broadband.

The first view holds that governments aren't in the business of picking technological winners. Such choices are complex and difficult to make, and government bureaucrats are no better (and potentially worse) than their private-sector counterparts at assessing what users will favor five years from now. In this view, the stimulus bill picks a winner by opting for whatever is expedient today. Hence, the subsidies in the stimulus bill could tilt technology markets in one direction and seemingly for rather myopic reasons. These choices might look very dumb a few years from now.

The other view starts from the opposite place—namely, that governments should subsidize technologies with a public purpose. In this view, a federal government plan to subsidize wireless technologies might make sense because the public benefits of

accelerating these technologies appear larger. That argument goes like this: Faster wire-line broadband might lead to more video and bigger peer-to-peer files, but that really only benefits a few fanatics. In this view, government should stay out of investing in a frontier applications with only niche appeal.

In the meantime, accelerating development of a channel for delivering mobile data could lead to a new killer app (beyond the iPhone and Blackberry), or, better yet, spur the development of a mass market. A third competitive mass-market channel could lower prices for wireless and wireline data services and reduce many net neutrality concerns. That's a much bigger payoff for society, and, hence, wireless technologies are more deserving of a subsidy.

### Broadband subsidy or digital pork?

At the end of the day, I hope the stimulus package puts more people to work than the employees at a few Washington DC law firms. Yet, I'm just not sure that it will.

Political insiders fought over the nuances of language. Many of Washington's talking heads staked positions on the provisions affecting broadband so they could take positions in later debates. Many lobbyists tried to protect their clients' interests.

More to the point, the bill generated a rash of attempts to tie legal conditions on the grants, (mostly) favoring open access or net neutrality concerns. It also generated attempts by lobbyists to alter language to give various companies tax breaks.

How did it all end up? While I can see the broad outlines, I really cannot fathom the legal details. It takes a different kind of expertise than I possess to figure out what ended up inside the bill's final draft.

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