Research

A Mythguided Love Affair with High-Speed Rail

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Since the debut of President Obama's original stimulus package in 2009 the Administration has enunciated a vision of high speed rail in America. To that end the President allocated $8 billion to be spent over two years and an additional $1 billion to be spent over five years, with ten rail corridors identified. That vision of high speed rail was reiterated in the State of the Union Address when he argued for giving 80 percent of Americans access to high speed rail. This week the Vice President laid out a plan to spend an additional $53 billion over the next six years building that vision.

Many problems exist with this proposal, the first being that $53 billion is not close to enough to build High Speed Rail. Only last year Amtrak estimated that High Speed Rail just on the North East Corridor would cost $117 billion (in 2010 dollars) . Moreover, the Administration's vision extends beyond the densely populated Northeast corridor to encompass "emerging and regional corridors." Rather than encouraging transparency by identifying the full cost of its vision, the Administration has chosen to dribble the funding out in the hope that having spent heavily it will be more difficult to not fully fund and complete the system.

A review of the Amtrak proposal shows that the system envisioned would never come close to repaying its costs. As forecast by Amtrak, the fully built High Speed Rail in the Northeast Corridor (HSR-NEC) would have annual revenues of $2.533 billion. Operating and Maintenance Costs would come to $1.605 billion yielding an operating profit of $928 million. But fully amortizing the construction costs (over 30 years at an interest rate of 4.5 percent — roughly the rate on 30 year Treasury debt) adds an additional $7.2 billion in annual costs. The HSR-NEC therefore is designed with a built in loss of $6.25 billion per year.

To put this in perspective, Amtrak envisions 17.7 million passengers a year, yielding an average fare of $143 per trip. Each of these trips would have a built in subsidy of $353 per passenger. That passenger subsidy is calculated from the debt service cost on the initial construction less the projected operating profit and assumes that the operating profit is returned to the Treasury. If, as Amtrak argues for, the operating profit is retained for investment in additional high speed rail, the subsidy rises to $406 per passenger.

A sensitivity analysis shows that additional fiscal dangers exist in this proposal. If Operating and Maintenance Costs are only 5 percent higher than forecast, the operating profit of $928 million disappears and becomes an annual operating loss of $757 million. A combination of 20 percent higher costs, 20 percent lower revenue (if, for example, airlines competitively reduce fares to retain traffic) coupled with the construction subsidy creates a system with a built in loss of $14 billion a year.

Given this bleak financial analysis, it should come as no surprise that two states – Wisconsin and Ohio – have already rejected the high speed rail funding in the stimulus bill. Cost forecasts are notoriously optimistic. In 2008 The Department of Transportation analyzed 21 transit projects (including commuter rail, light rail, heavy rail, and bus rapid transit) and found that, on average, their costs exceeded early estimates by 40 percent. Similarly, a subset of 18 projects showed that on average actual ridership was only 61 percent of ridership forecast when the project was envisioned. Only two projects (both light rail) met or exceeded their ridership

forecasts .

The Administration's vision for high-speed rail is likely a fiscal black hole. The North East Corridor is the most densely populated section of the country, the one most accustomed to rail travel, and the area with the best public transportation system to accommodate rail travelers once they reach their destination. Amtrak's fiscal projections for this project may be the best that can be expected for any of the high speed rail corridors promoted by the Administration.

Is High Speed Rail Profitable in Europe?

In part the fascination with High Speed Rail can be explained by the popular belief that, done properly, it can be profitable. But as the Amtrak Inspector General pointed out in 2008 , European rail systems are the recipients of numerous subsidies and operate under a complex structure that makes profit and loss of specific operations difficult to determine. In France, for example, the French National Railway (SNCF, Société Nationale des Chemins de fer Français) operates the high speed TGV (Train à Grande Vitesse), regional passenger service, and freight service. The railroad system itself is actually divided among two entities: SNCF runs the trains while a separate entity (RFF, Réseau Ferré de France) owns the track and is responsible for maintenance. RFF pays SNCF to perform the actual maintenance while SNCF pays RFF access fees to use the rails.

The French government provides a subsidy to the RFF for track renewals, a capital increase of around €1 billion to offset the cost of debt assumed from SNCF, and a payment to cover the gap between the infrastructure fees charged SNCF and the actual cost of maintenance. In addition, the French government provides direct subsidies to SNCF to pay for subsidized travel afforded large families (those with three or more children), members of the military and police. Most significantly, the government makes a payment to SNCF to defray its extraordinary pension costs. These pension costs are driven by a large number of retirees relative to active workers, and to the French system of "Special Pensions" under which retirement age in the rail system is between 50 and 55. All told, various levels of French government provided over €7.8 billion in annual subsidies to the rail system as recently as 2005, the most recent year for which data is available.

Rail Security

In his State of the Union address, President Obama told us that High Speed Rail could get us to our destinations "without a pat-down." Just a week later the US State Department issued a travel alert for the United Kingdom citing "the potential for terrorists to attack public transportation systems, aviation and other travel infrastructure."

Since 9/11 793 deaths worldwide have resulted from terror attacks on rail systems, both urban and inter-city (non-conflict zones only). This includes 191 deaths in Madrid when ten bombs exploded in 2002, 39 in London in 2005 as part of a coordinated attack that also claimed 13 bus riders, and 209 dead in 2006 in Mumbai. In contrast, only 42 deaths have been aviation related, with 36 of these occurring this past month in Moscow when an explosive device was detonated in the international arrivals hall, an area of the airport that was unsecured in Moscow and which is unsecured in the US as well.

The aviation security infrastructure, although far from perfect, includes matching of ticket purchasers against a terrorist list, mandatory check of identification at the airport, screening of cargo carried in passenger planes, screening of checked and carry-on baggage. None of these are implemented in a systematic way for rail travel. Not because rail is inherently safe, but because its characteristics make it difficult to provide the same level of

security as aviation. It is hard to envision spending over a hundred billion dollars on a new high speed rail system without implementing security measures to protect it. Eurostar, the operator of the trains in the Channel tunnel has this to say about passenger screening on its web site:

Eurostar terminals x-ray all luggage and security screen all passengers and their hand luggage. They also have measures in place that are not visible. Eurostar works with the authorities in France, UK and Belgium to ensure its security measures meet their requirements as well as extra measures over and above what the authorities ask for.

Great ready: here comes the "pat-down."

Needed: A Rational Discussion of Transportation Needs

The Administration is right to point out that our highways and airspace are congested and unable to handle their existing traffic burden. But at the same time it cannot simply propose to build large infrastructure programs without a clear enunciation of the federal government's role in freight and passenger transportation, what they will cost to build and operate, and why the specific proposals are better than others. For whatever faults exist in the highway system, it at least has a revenue stream that places the costs on the user. Those users already pay a significant portion of the mass transit system via diversions from the Highway Trust Fund to the mass transit account. If, as the Administration argues, there is a compelling national interest in developing high speed rail, then there needs to be an open and frank dialogue over how it will be paid for and who will pay for it.

[1] "A Vision for High-Speed Rail in the Northeast Corridor." Amtrak, September 2010

[2] "The Predicted and Actual Impacts of new Starts Projects – 2007: Capital Cost and Ridership," US Department of Transportation, Federal Transit Administration. The three excluded projects did not include ridership forecasts.

[3] Evaluation Report E-08-02, "Public Funding Levels of European Passenger Railroads." Amtrak Office of Inspector General, April 22, 2008.

[4] Competition in the Railway Industry: An International Comparative Analysis. Jose A. Gomez, Gines de Rus