

The  
Economist

America's transport infrastructure

## Life in the slow lane

Americans are gloomy about their economy's ability to produce. Are they right to be? We look at two areas of concern, transport infrastructure and innovation

Apr 28th 2011 | from the print edition



ON FRIDAY afternoons, residents of Washington, DC, often find a clear route out of the city as elusive as a deal to cut the deficit. Ribbons of red rear-lights stretch off into the distance along the highways that radiate from the city's centre. Occasionally, adventurous southbound travellers experiment with Amtrak, America's national rail company. The distance from Washington to Raleigh, North Carolina (a metropolitan area about the size of Brussels) is roughly the same as from London's St Pancras Station to the Gare du Nord in Paris. But this is no Eurostar journey.

Trains creep out of Washington's Union Station and pause at intervals, inexplicably, as they travel through the northern Virginia suburbs. In the summer, high temperatures threaten to kink the steel tracks, forcing trains to slow down even more. Riders may find themselves inching along behind a lumbering freight train for miles at a time, until the route reaches a side track on which the Amtrak train can pass. The trip takes six hours, well over twice as long as the London-Paris journey, if there are no delays. And there often are.

America, despite its wealth and strength, often seems to be falling apart. American cities have suffered a rash of recent infrastructure calamities, from the failure of the New Orleans levees to the collapse of a highway bridge in Minneapolis, to a fatal crash on Washington, DC's (generally impressive) metro system. But just as striking are the common shortcomings. America's civil engineers routinely give its transport structures poor marks, rating roads, rails and bridges as deficient or functionally obsolete. And according to a World Economic Forum study America's infrastructure has got worse, by comparison with other countries, over the past decade. In the WEF 2010 league table America now ranks 23rd for overall infrastructure quality, between Spain

and Chile. Its roads, railways, ports and air-transport infrastructure are all judged mediocre against networks in northern Europe.

America is known for its huge highways, but with few exceptions (London among them) American traffic congestion is worse than western Europe's. Average delays in America's largest cities exceed those in cities like Berlin and Copenhagen. Americans spend considerably more time commuting than most Europeans; only Hungarians and Romanians take longer to get to work (see chart 1). More time on lower quality roads also makes for a deadlier transport network. With some 15 deaths a year for every 100,000 people, the road fatality rate in America is 60% above the OECD average; 33,000 Americans were killed on roads in 2010.

There is little relief for the weary traveller on America's rail system. The absence of true high-speed rail is a continuing embarrassment to the nation's rail enthusiasts. America's fastest and most reliable line, the north-eastern corridor's Acela, averages a sluggish 70 miles per hour between Washington and Boston. The French TGV from Paris to Lyon, by contrast, runs at an average speed of 140mph. America's trains aren't just slow; they are late. Where European passenger service is punctual around 90% of the time, American short-haul service achieves just a 77% punctuality rating. Long-distance trains are even less reliable.



The Amtrak alternative

Air travel is no relief. Airport delays at hubs like Chicago and Atlanta are as bad as any in Europe. Air travel still relies on a ground-based tracking system from the 1950s, which forces planes to use inefficient routes in order to stay in contact with controllers. The system's imprecision obliges controllers to keep more distance between air traffic, reducing the number of planes that can fly in the available space. And this is not the system's only bottleneck. Overbooked airports frequently lead to runway congestion, forcing travellers to spend long hours stranded on the tarmac while they wait to take off or disembark. Meanwhile, security and immigration procedures in American airports drive travellers to the brink of rebellion.

And worse looms. The country's already stressed infrastructure must handle a growing load in decades to come, thanks to America's distinctly non-European demographics. The Census Bureau expects the population to grow by 40% over the next four decades, equivalent to the entire population of Japan.

All this is puzzling. America's economy remains the world's largest; its citizens are among the world's richest. The government is not constitutionally opposed to grand public works. The country stitched its continental expanse together through two centuries of ambitious earthmoving. Almost from the beginning of the republic the federal government encouraged the building of critical canals and roadways. In the 19th century Congress provided funding for a transcontinental railway linking the east and west coasts. And between 1956 and 1992 America constructed the interstate system, among the largest public-works projects in history, which criss-crossed the continent with nearly 50,000 miles of motorways.

But modern America is stingier. Total public spending on transport and water infrastructure has fallen steadily since the 1960s and now stands at 2.4% of GDP. Europe, by contrast, invests 5% of GDP in its infrastructure, while China is racing into the future at 9%. America's spending as a share of GDP has not come close to European levels for over 50 years. Over that time funds for both capital investments and operations and maintenance have steadily dropped (see chart 2).

Although America still builds roads with enthusiasm, according to the OECD's International Transport Forum, it spends considerably less than Europe on maintaining them. In 2006 America spent more than twice as much per person as Britain on new construction; but Britain spent 23% more per person maintaining its roads.

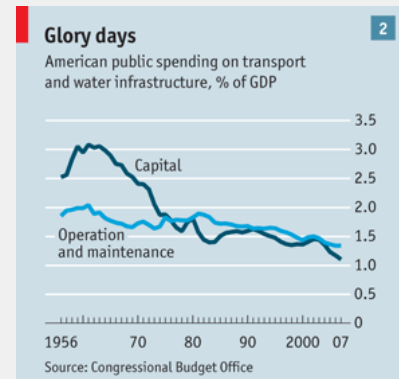
America's dependence on its cars is reinforced by a shortage of alternative forms of transport. Europe's large economies and Japan routinely spend more than America on rail investments, in absolute not just relative terms, despite much smaller populations and land areas. America spends more building airports than Europe but its underdeveloped rail network shunts more short-haul traffic onto planes, leaving many of its airports perpetually overburdened. Plans to upgrade air-traffic-control technology to a modern satellite-guided system have faced repeated delays. The current plan is now threatened by proposed cuts to the budget of the Federal Aviation Administration.

The Congressional Budget Office estimates that America needs to spend \$20 billion more a year just to maintain its infrastructure at the present, inadequate, levels. Up to \$80 billion a year in additional spending could be spent on projects which would show positive economic returns. Other reports go further. In 2005 Congress established the National Surface Transportation Policy and Revenue Study Commission. In 2008 the commission reckoned that America needed at least \$255 billion per year in transport spending over the next half-century to keep the system in good repair and make the needed upgrades. Current spending falls 60% short of that amount.

### If they had a little money...

If Washington is spending less than it should, falling tax revenues are partly to blame. Revenue from taxes on petrol and diesel flow into trust funds that are the primary source of federal money for roads and mass transit. That flow has diminished to a drip. America's petrol tax is low by international standards, and has not gone up since 1993 (see chart 3). While the real value of the tax has eroded, the cost of building and maintaining infrastructure has gone up. As a result, the highway trust fund no longer supports even current spending. Congress has repeatedly been forced to top up the trust fund, with \$30 billion since 2008.

Other rich nations avoid these problems. The cost of car ownership in Germany is 50% higher than it is in America, thanks to higher taxes on cars and petrol and higher fees on drivers' licences. The result is a more sustainably funded transport system. In 2006 German road fees



brought in 2.6 times the money spent building and maintaining roads. American road taxes collected at the federal, state and local level covered just 72% of the money spent on highways that year, according to the Brookings Institution, a think-tank.

The federal government is responsible for only a quarter of total transport spending, but the way it allocates funding shapes the way things are done at the state and local levels. Unfortunately, it tends not to reward the prudent, thanks to formulas that govern over 70% of federal investment. Petrol-tax revenues, for instance, are returned to the states according to the miles of highway they contain, the distances their residents drive, and the fuel they burn. The system is awash with perverse incentives. A state using road-pricing to limit travel and congestion would be punished for its efforts with reduced funding, whereas one that built highways it could not afford to maintain would receive a larger allocation.

Formula-determined block grants to states are, at least, designed to leave important decisions to local authorities. But the formulas used to allocate the money shape infrastructure planning in a remarkably block-headed manner. Cost-benefit studies are almost entirely lacking. Federal guidelines for new construction tend to reflect politics rather than anything else. States tend to use federal money as a substitute for local spending, rather than to supplement or leverage it. The Government Accountability Office estimates that substitution has risen substantially since the 1980s, and increases particularly when states get into budget difficulties. From 1998 to 2002, a period during which economic fortunes were generally deteriorating, state and local transport investment declined by 4% while federal investment rose by 40%. State and local shrinkage is almost certainly worse now.

States can make bad planners. Big metropolitan areas—Chicago, New York and Washington among them—often sprawl across state lines. State governments frequently bicker over how (and how much) to invest. Facing tight budget constraints, New Jersey's Republican governor, Chris Christie, recently scuttled a large project to expand the railway network into New York City. New Jersey commuter trains share a 100-year-old tunnel with Amtrak, a major bottleneck. Mr Christie's decision was widely criticised for short-sightedness; but New Jersey faced cost overruns that in a better system should have been shared with other potential beneficiaries all along the north-eastern corridor. Regional planning could help to avoid problems like this.

### What is to be done?

The rehabilitation of America's transport network will be neither easy nor cheap. To make the necessary repairs and upgrades, America will need to spend a lot more. In a deficit-conscious environment, that will require new revenue. The most straightforward first step would be a rise in fuel-tax rates, currently at 18.4 cents a gallon. But petrol-tax increases are even more unpopular than deficits, and rises may prove riskier as oil prices increase.

Some in Washington would rather take their cut further away from consumers. A tax on oil, rather than petrol, could be a little easier for consumers to stomach. America's big oil producers signalled openness to a similar policy during negotiations over the ill-fated



Please, not again

but bipartisan Kerry-Graham-Lieberman climate bill. It could return as a means to fund infrastructure.

Economists press for direct user fees. An early Obama administration flirtation with a tax on miles driven attracted little support, but some cities have run, or are thinking of running, pilot schemes. Congestion charges present another possibility. State governments have increasingly turned to tolls to fund individual projects, but tolling inevitably meets stiff public resistance. Meanwhile, Manhattan's attempt to duplicate the congestion charges of London and Stockholm failed to win the necessary political support, despite the offer of a generous federal subsidy in return for trying the experiment. An earlier attempt to auction scarce landing and departure slots at New York's three large airports faced stiff resistance from airlines and was ultimately killed.

Whatever the source of new revenue, America's Byzantine funding system will remain an obstacle to improved planning. Policymakers are looking for ways around these constraints. Supporters of a National Infrastructure Bank—Mr Obama among them—believe it offers America just such a shortcut. A bank would use strict cost-benefit analyses as a matter of course, and could make interstate investments easier. A European analogue, the European Investment Bank, has turned out to work well. Co-owned by the member states of the European Union, the EIB holds some \$300 billion in capital which it uses to provide loans to deserving projects across the continent. EIB funding may provide up to half the cost for projects that satisfy EU objectives and are judged cost-effective by a panel of experts.

American leaders hungrily eye the private money the EIB attracts, spying a potential solution to their own fiscal dilemma. But there are no free lunches. To keep project costs down, the bank must offer low rates, which depend in turn upon low capital costs. That may be impossible without government backing, but the spectacular failure of the two government-sponsored housing organisations, Fannie Mae and Freddie Mac, illustrates the dangers of such an arrangement. The EIB mitigates this problem by attempting to maximise public return rather than profit. To earn funding, projects must meet developmental and environmental goals, along with other requirements. But giving the bank a public mission would invite congressional oversight—and tempt legislators to meddle in funding decisions. The right balance of government support and independence may prove elusive.

Budget crises could give a boost to public-private partnerships. Partnerships can be a useful way to screen out poorly conceived projects that are unlikely to generate the promised returns. No private firm will bid to build and operate a project that will probably fail to cover its costs through toll or fare revenue. Well-designed contracts can also improve incentives by giving the construction firm a long-run interest in the project. Infrastructure projects built through public-private partnerships in Britain and Chile, where the arrangement is far more common than in America, have sometimes, though not always, been completed more cheaply and quickly than public plans.

At the state and local level transport budgets will remain tight while unemployment is high. With luck, this pressure could spark a wave of innovative planning focused on improving the return on infrastructure spending. The question in Washington, apart from how to escape the city on traffic-choked Friday afternoons, is whether political leaders are capable of building on these ideas. The early signs are not encouraging.

Mr Obama is thinking big. His 2012 budget proposal contains \$556 billion for transport, to be spent over six years. But his administration has declined to explain where the money will come from. Without new funding, some Democratic leaders have warned, a new, six-year transport bill will have to trim annual highway spending by about a third to keep up with falling petrol-tax revenues. But Republicans are increasingly sceptical of any new infrastructure spending. Party

leaders have taken to using inverted commas around the word “investment” when Democrats apply it to infrastructure.

Roads, bridges and railways used to be neutral ground on which the parties could come together to support the country’s growth. But as politics has become more bitter, public works have been neglected. If the gridlock choking Washington finds its way to America’s statehouses too, then the American economy risks grinding to a standstill.

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