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# The Distorting Effects of Transportation Subsidies

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violate the rights of third parties whose permission would be too expensive to obtain. The need to obtain that permission would indeed seriously impede what most environmentalists see as rampant—indeed reckless—industrialization.

The system of private property rights . . . is the greatest moderator of human aspirations. . . . In short, people may reach goals they aren't able to reach with their own resources only by convincing others, through arguments and fair exchanges, to cooperate.

In any case, the “efficiencies” resulting from subsidized centralization are entirely spurious. If the efficiencies of large-scale production were sufficient to compensate for increased distribution costs, it would not be necessary to shift a major portion of the latter to taxpayers to make the former profitable. If an economic activity is only profitable when a portion of the cost side of the ledger is concealed, and will not be undertaken when all costs are fully internalized by an economic actor, then it's not really efficient. And when total distribution costs (including those currently shifted to the taxpayer) exceed mass-production industry's ostensible savings in unit cost of production, the “efficiencies” of large-scale production are illusory.

Although critics on the left are very astute in describing the evils of present-day society, they usually fail to understand either the root of those problems (government intervention) or their solution (the operation of a freed market). In Progressive commentary on energy, pollution, and so on—otherwise often quite insightful—calls for government intervention are quite common. George Monbiot, for instance, has written that “[t]he only rational response to both the impending end of the Oil Age and the menace of global warming is to redesign our cities, our farming and our lives. But this cannot happen without massive political pressure.”

But this is precisely backward. Existing problems of excess energy consumption, pollution, big-box stores, the car culture, and suburban sprawl result from the “massive political pressure” that has already been applied, over the past several decades, to “redesign our cities, our farming, and our lives.” The root of all the problems Monbiot finds so objectionable is State intervention in the marketplace.

In particular, subsidies to transportation have probably done more than any other factor (with the possible exception of intellectual property law) to determine the present shape of the American corporate economy. Currently predominating firm sizes and market areas are the result of government subsidies to transportation.

Adam Smith argued over 200 years ago that the fairest way of funding transportation infrastructure was user fees rather than general revenues: “When the carriages which pass over a highway or a bridge, and the lighters which sail upon a navigable canal, pay toll in proportion to their weight or their tonnage, they pay for the maintenance of those public works exactly in proportion to the wear and tear which they occasion of them.”

This is not, however, how things were actually done. Powerful business interests have used their political influence since the beginning of American history to secure government fund-

ing for “internal improvements.” The real turning point was the government’s role in creating the railroad system from the mid-nineteenth century on. The national railroad system as we know it was almost entirely a creature of the State.

The federal railroad land grants included not only the rights-of-way for the actual railroads, but extended 15-mile tracts on both sides. As the lines were completed, this adjoining land became prime real estate and skyrocketed in value. As new communities sprang up along the routes, every house and business in town was built on land acquired from the railroads. The tracts also frequently included valuable timberland. The railroads, according to Matthew Josephson (*The Robber Barons*), were “land companies” whose directors “did a rushing land business in farm lands and town sites at rising prices.” For example, under the terms of the Pacific Railroad bill, the Union Pacific (which built from the Mississippi westward) was granted 12 million acres of land and \$27 million worth of 30-year government bonds. The Central Pacific (built from the West Coast eastward) received nine million acres and \$24 million worth of bonds. The total land grants to the railroads amounted to about six times the area of France.

Theodore Judah, chief engineer for what became the Central Pacific, assured potential investors “that it could be done—if government aid were obtained. For the cost would be terrible.” Collis Huntington, the leading promoter for the project, engaged in a sordid combination of strategically placed bribes and appeals to communities’ fears of being bypassed in order to extort grants of “rights of way, terminal and harbor sites, and . . . stock or bond subscriptions ranging from \$150,000 to \$1,000,000” from a long string of local governments that included San Francisco, Stockton, and Sacramento.

Government also revised tort and contract law to ease the carriers’ way—for example, by exempting common carriers from liability for many kinds of physical damage caused by their operation.

747 is essentially a spinoff of military production. The civil aviation system is, many times over, a creature of the State.

## The State and the Corporation

It’s hard to avoid the conclusion that the dominant business model in the American economy, and the size of the prevailing corporate business unit, are direct results of such policies. A subsidy to any factor of production amounts to a subsidy of those firms whose business models rely most heavily on that factor, at the expense of those who depend on it the least. Subsidies to transportation, by keeping the cost of distribution artificially low, tend to lengthen supply and distribution chains. They make large corporations operating over wide market areas artificially competitive against smaller firms producing for local markets—not to mention big-box retailers with their warehouses-on-wheels distribution model.

Some consequentialists treat this as a justification for transportation subsidies: Subsidies are good because they make possible mass-production industry and large-scale distribution, which are (it is claimed) inherently more efficient (because of those magically unlimited “economies of scale,” of course).

Tibor Machan argued just the opposite in the February 1999 *Freeman*:

Some people will say that stringent protection of rights [against eminent domain] would lead to small airports, at best, and many constraints on construction. Of course—but what’s so wrong with that?

Perhaps the worst thing about modern industrial life has been the power of political authorities to grant special privileges to some enterprises to

taxes on the trucking industry, and the rest is externalized on private automobiles.

This doesn't even count the 20 percent of highway funding that's still subsidized by general revenues, or the role of eminent domain in lowering the transaction costs involved in building new highways or expanding existing ones.

As for the civil aviation system, from the beginning it was a creature of the State. Its original physical infrastructure was built entirely with federal grants and tax-free municipal bonds. Professor Stephen Paul Dempsey of the University of Denver in 1992 estimated the replacement value of this infrastructure at \$1 trillion. The federal government didn't even start collecting user fees from airline passengers and freight shippers until 1971. Even with such user fees paid into the Airport and Airways Trust Fund, the system still required taxpayer subsidies of \$3 billion to maintain the Federal Aviation Administration's network of control towers, air traffic control centers, and tens of thousands of air traffic controllers.

Eminent domain also remains central to the building of new airports and expansion of existing airports, as it does with highways.

Subsidies to airport and air traffic control infrastructure are only part of the picture. Equally important was the direct role of the State in creating the heavy aircraft industry, whose jumbo jets revolutionized civil aviation after World War II. In *Harry Truman and the War Scare of 1948*, Frank Kofsky described the aircraft industry as spiraling into red ink after the end of the war and on the verge of bankruptcy when it was rescued by the Cold War (and more specifically Truman's heavy bomber program). David Noble, in *America by Design*, made a convincing case that civilian jumbo jets were only profitable thanks to the government's heavy bomber contracts; the production runs for the civilian market alone were too small to pay for the complex and expensive machinery. The

Had railroad ventures been forced to bear their own initial capital outlays—securing rights of way, preparing roadbeds, and laying track, without land grants and government purchases of their bonds—the railroads would likely have developed instead along the initial lines on which Lewis Mumford speculated in *The City in History*: many local rail networks linking communities into local industrial economies. The regional and national interlinkages of local networks, when they did occur, would have been far fewer and far smaller in capacity. The comparative costs of local and national distribution, accordingly, would have been quite different. In a nation of hundreds of local industrial economies, with long-distance rail transport much more costly than at present, the natural pattern of industrialization would have been to integrate small-scale power machinery into flexible manufacturing for local markets.

Alfred Chandler, in *The Visible Hand*, argued that the creation of the national railroad system made possible, first, national wholesale and retail markets, and then large manufacturing firms serving the national market. The existence of unified national markets served by large-scale manufacturers depended on a reliable, high-volume distribution system operating on a national level. The railroad and telegraph, “so essential to high-volume production and distribution,” were in Chandler's view what made possible this steady flow of goods through the distribution pipeline: “The revolution in the processes of distribution and production rested in large part on the new transportation and communications infrastructure. Modern mass production and mass distribution depend on the speed, volume, and regularity in the movement of goods and messages made possible by the coming of the railroad, telegraph and steamship.”

## The Tipping Point

The creation of a single national market, unified by a high-volume distribution system, was probably the tipping point between two possible industrial systems. As Mumford argued in *Technics and Civilization*, the main economic reason for large-scale production in the factory system was the need to economize on power from prime movers. Factories were filled with long rows of machines, all connected by belts to drive shafts from a single steam engine. The invention of the electric motor changed all this: A prime mover, appropriately scaled, could be built into each individual machine. As a result, it was possible to scale machinery to the flow of production and situate it close to the point of consumption.

With the introduction of electrical power, as described by Charles Sabel and Michael Piore in *The Second Industrial Divide*, there were two alternative possibilities for organizing production around the new electrical machinery: decentralized production for local markets, integrating general-purpose machinery into craft production and governed on a demand-pull basis with short production runs and frequent shifts between product lines; or centralized production using expensive, product-specific machinery in large batches on a supply-push basis. The first alternative was the one most naturally suited to the new possibilities offered by electrical power. But in fact what was chosen was the second alternative. The role of the State in creating a single national market, with artificially low distribution costs, was almost certainly what tipped the balance between them.

The railroads, themselves largely creatures of the State, in turn actively promoted the concentration of industry through their rate policies. Sabel and Piore argue that “the railroads’ policy of favoring their largest customers, through rebates” was a central factor in the rise of the large corporation. Once in place, the railroads—being a high fixed-cost industry—had “a tremen-

dous incentive to use their capacity in a continuous, stable way. This incentive meant, in turn, that they had an interest in stabilizing the output of their principal customers—an interest that extended to protecting their customers from competitors who were served by other railroads. It is therefore not surprising that the railroads promoted merger schemes that had this effect, nor that they favored the resulting corporations or trusts with rebates.”

## Reprising the Role

As new forms of transportation emerged, the government reprised its role, subsidizing both the national highway and civil aviation systems.

From its beginning the American automotive industry formed a “complex” with the petroleum industry and government highway projects. The “most powerful pressure group in Washington” (as a PBS documentary called it) began in June 1932, when GM president Alfred P. Sloan created the National Highway Users Conference, inviting oil and rubber firms to help GM bankroll a propaganda and lobbying effort that continues to this day.

Whatever the political motivation behind it, the economic effect of the interstate system should hardly be controversial. Virtually 100 percent of roadbed damage to highways is caused by heavy trucks. After repeated liberalization of maximum weight restrictions, far beyond the heaviest conceivable weight the interstate roadbeds were originally designed to support, fuel taxes fail miserably at capturing from big-rig operators the cost of pavement damage caused by higher axle loads. And truckers have been successful at scrapping weight-distance user charges in all but a few western states, where the push for repeal continues. So only about half the revenue of the highway trust fund comes from fees or fuel