

The Pivotal Role of Private Enterprise in America’s Transportation Age, 1790–1860

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Abstract

From ratification of the Constitution until the U.S. Civil War, private enterprise radically improved the nation’s transportation infrastructure, specifically through the incorporation and subsequent physical creation of toll bridges and roads, canals, railroads, and transportation companies. Private transportation investment exceeded that of the state and national governments combined, primarily because private ventures, especially for-profit, joint stock corporations, provided transportation goods more efficiently than early governments could. Although the antebellum transportation system was imperfect, it greatly reduced travel times and freight costs and thus helped to make commodity and financial markets more efficient and the nation more politically unified than it otherwise would have been.

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I. Introduction

Assumptions and weakly documented claims to the contrary notwithstanding, America’s long Transportation Age (Goodrich 1970; Larson 2001) was largely led by private enterprises, especially for-profit, joint-stock corporations. Entrepreneurs and investors interested in both the direct profits and indirect benefits that bridges, canals, harbor facilities, railroads, stages, steamboats,¹ and turnpikes

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¹ Paul Paskoff argues that the “near absence of incorporated steamboat companies is hardly surprising.” It was surprising to me to read that, as there were hundreds of

could generate were the paramount players, not governments, which were chronically hampered by weak incentives and relatively susceptible to rent seeking. Entrepreneurs and corporate managers, though imperfect in specific cases, had better incentives to improve efficiency, to encourage innovation and the adoption of the most cost-effective technologies, and to make rational choices about the deployment of scarce resources.

Unable or unwilling to finance construction themselves, early U.S. governments often encouraged for-profit businesses to run the risks and reap the rewards of creating infrastructure improvements. Some private transportation enterprises took the form of sole proprietorships, partnerships, and unincorporated joint-stock companies. Except for the big water sailing ship trade, however, most entrepreneurial energies and private investment dollars were directed into corporations despite the considerable suspicion corporate enterprises aroused in some Americans (Davis 1917; Maier 1993; McCarthy 2003; Seavoy 1982). American entrepreneurs began experimenting with the corporate form in the 1780s but not until the 1790s did both governments and businessmen embrace it. By 1861, over 22,000 business corporations had been chartered throughout the United States, rendering it the world's most enthusiastic promoter of an increasingly flexible and sophisticated form of business organization (Wright and Sylla 2011).

II. The Corporate Form

Generally, entrepreneurs preferred the corporate form when the net benefits (benefits minus costs) of incorporating exceeded the net benefits of forming a sole proprietorship, partnership, or other type of organization. In some businesses, such as commercial banking and insurance, incorporation often delivered net benefits. In other industries, by contrast, businesses rarely sought corporate charters (Ellsworth 1972, pp. 399–402; Paskoff 1983). Incorporation entailed two major categories of costs. The first were internal agency conflicts between majority and minority shareholders, shareholders and bondholders, and shareholders and managers (Smith 1904, Book 5, Chapter 1, Part III, Article 1). Although impossible to eliminate, agency conflicts could be controlled if not minimized by adopting astute governance rules (Wright and Sylla, 2011). The second cost,

chartered steamboat companies formed before the Civil War (Paskoff 2007, p. 128). For a contemporary view of the role of private corporations, see Murat (1833, pp. 37–38).

that of obtaining a charter from the legislature, was generally minimal. Additional, usually minor, costs arose when a charter needed revision, as many did (Cadman 1949; Murphy 2008; Wright 1997; Anon. 1836; A Citizen of Philadelphia 1826).

The most significant benefit of a charter was that it enabled entrepreneurs to raise large sums of equity capital. Investors in corporations enjoyed several important advantages not generally available to sole proprietors or partnerships, including (1) perpetual succession, (2) the right to sue and be sued in the corporation's name, (3) limited liability and entity shielding, (4) sundry technical advantages of corporate over partnership law, (5) the ability to sell call options in the primary (issuance) market, and (6) the existence of liquid secondary markets for corporate stock and bonds. In addition to those unique advantages, corporations could generally do what proprietorships or partnerships could. When a large pool of capital was necessary to complete a project and a charter could be obtained relatively cheaply, the corporation was typically the preferred form of organization, especially among transportation entrepreneurs (Dodd 1954; Gunn 1988; Hurst 1970; Livermore 1935).

Small ferries and bridges, modest harbor improvements, and even short turnpikes could be profitably run by sole proprietors or partnerships, but most sizable transportation projects benefited from obtaining a corporate charter.² Between 1790 and 1860, 10,808 transportation corporations formed in the United States under special acts of incorporation (Sylla and Wright 2012). (An unknown and for the most part unknowable number of others formed under general acts of incorporation in the 1840s and 1850s.) Bridges numbered 1,310, canals 404, ferries 165, harbor companies 199, mixed commercial companies 635, navigation and transportation companies 978, railroads 2,503, and turnpikes 4,614. Total authorized capitalization of those companies ranged between \$2.9 and almost \$4.5 billion. Unsurprisingly, railroads accounted for about 75 percent

² Jacob Witmer, for example, erected a “handsome bridge of 7 stone arches, the arches lined with marble,” over the Conestogo River in Pennsylvania at his own expense “under the privilege of a perpetual toll.” Some, like the Danville Toll Bridge in Virginia, were owned by partnerships. A few proprietary toll bridges, like the Pocomoke Bridge Company, formed joint-stock companies but did not bother to incorporate because they needed only a handful of neighborhood stockholders to fully capitalize them. Inexpensive eyeball monitoring of the bridge and its managers meant that such companies did not need to suffer the expense of obtaining a formal charter, though they conducted their affairs as if they were chartered (Gilpin 1926, p. 73; Farmers Bank of Virginia 1848; Clayvell 1829–1880).

of the total, followed by turnpikes, navigation and transportation companies, and canals.³

Well-governed corporations (alas, some were poorly managed [Littlefield 1984]) operated effectively at much larger sizes than other types of businesses did and, thanks to the profit motive, they constructed improvements more inexpensively than governments could, even using the same contractors that both typically relied upon to do the actual construction (Tanner 1840, p. 16; Dunbar 1915, p. 3:848; Taylor 1934, pp. 191–92). Transportation corporations had strong incentives to find ways of cutting costs without impeding service (Baldwin 1822; Boyd 1839). Their managers generally understood the importance of “locating” the routes of their improvements in the most economical places and of keeping the scope of improvements “commensurate, with its objects” (Tanner 1840, p. 24). They strove, for example, to dig canals that were not too narrow or too wide and tried to avoid laying a double railroad track where a single track with sufficient turnouts would suffice. Government leaders were typically less inclined to strict economy.⁴

³ Although more precise than previous estimates, the figures presented above remain imperfect because the authorized capitalizations of many transportation corporations were not specified in their charters and were coded as zero, undoubtedly an underestimate (Wood 1919, p. 9). On the other hand, not all transportation corporations that received special charters formed, successfully raised their minimum authorized capital, or completed the infrastructure improvements they promised to. The percentage that failed before the Civil War remains unknown but was undoubtedly nontrivial. In Pennsylvania, 84 of 146 turnpike companies chartered before 1821 actually began operations, completing 1,807 of the 2,521 miles they had been authorized to build. In New Jersey, only a little more than half of the 54 turnpikes chartered up to 1828 successfully constructed roads. One scholar concluded that “it is safe to say that at least one-third of the turnpike corporations chartered never built a mile of road” (Durrenberger 1931, pp. 55, 74, 107). The attrition rate among New England turnpikes was also approximately one-third (Taylor 1934, p. 164). It should be noted, however, that the failure of transportation corporations had little effect on contemporaries, most of whom realized that some “visionary enterprises . . . will fail in producing the anticipated results” (Tanner 1840, p. 23). Many also realized that a well-functioning financial system should drive inefficient private enterprises out of business, so the failure of individual corporations represented a highly successful system. Moreover, bankrupt transportation concerns often bequeathed to successors valuable tangible assets like right-of-ways, boats, freight cars, wagons, warehouses, and so forth.

⁴ “There are palpable objections to States assuming any industrial employment, when individuals can be found with adequate means. The vigilance of individual supervision, and the keenness of private interest, secure an economy, which is

III. Managing Corporate Transportation Infrastructure

The most profitable type of improvements, bridges and railroads, were able to minimize free riders (toll avoidance), and, due to their physical superiority over alternative technologies, were able to capture significant market share. Unlike bridges, railroads were able to capture the profits of both supplying a right-of-way and of transporting people and goods. Canals were typically less profitable than railroads because they usually did not capture transport profits. They suffered little from toll avoidance but most lost market share to railroads as the latter became more powerful and reliable. Turnpikes were the least profitable of all (Taylor 1934, pp. 266–82). Although most toll roads were relatively inexpensive to build and maintain, toll avoidance was rampant and no transport profits could be had because roads were open to everyone, even pedestrians and livestock on the hoof (Durrenberger 1931, p. 120; Taylor 1934, p. 200). Finally, moving people or goods by water or rail, especially with the aid of steam power, was inherently superior to moving them via various horse-drawn wheeled vehicles. A single horse, it was said, could pull as much weight on a canal as 40 horses could on a turnpike. Management quality and special circumstances (like local market power and competition from steam ferries), however, doomed some bridges and railroads and rendered some turnpikes and canals valuable (Taylor 1934, pp. 266–74; Pirtle, n.d., Cox [1832?], pp. 24–25). The profitability of carriers (navigation companies, like steamship lines, and transportation companies, like stagecoach lines) also lay mostly in the efficiency of their management.

“Many public works have been procrastinated, and others completely wrecked” by bad management, explained railroad engineer W. Milnor Roberts in 1851 (p. 9). Managerial skill and incentives were the most important variables. Where both skill and incentives were lacking, projects failed regardless of ownership (corporate or government) or type of improvement (bridge, canal, railroad, road) (Dunbar 1915, p. 3:820). Where one or the other was absent, projects floundered until the underlying problem was identified and rectified or the work was abandoned. Failures and delays were costly, but for that very reason, investors sought to minimize them.

never obtained where the loss caused by neglect is not borne in its entire weight by the guilty party, but is divided among a multitude” (Smith 1853, p. 259).

For-profit corporations dominated the transportation sector before the Civil War because they were, in most instances, the most efficient available means of building the physical infrastructure and transportation networks that the burgeoning nation needed. Corporations were better able than simpler forms of business organization and governments to overcome capacity constraints in capital, contracting, and engineering and managerial expertise (Smith 1853, pp. 258–89; Murphy 2008, pp. 259–62). Moreover, the competitive, for-profit nature of the early American transportation network spurred the relatively rapid development and proliferation of a wide range of cost-cutting or quality-enhancing technologies.

Despite facing tremendous physical and intellectual barriers, antebellum entrepreneurs managed to greatly improve American transportation infrastructure. In the 1790s, traveling overland was slow, arduous, and expensive. To get from Philadelphia to Pittsburgh took nine days, most of it after Shippensburg, where the stage lines ended and travelers were obliged to proceed on foot or overpriced horseback (Dunbar 1915, pp. 1:325–26, 331). Due to the difficulties of overland travel, water transportation was used whenever possible, in liquid form on rivers, lakes, and oceans and solid form (snow and ice) when available (Dunbar 1915, 2:420, 3:750–51; Anon. 1845, pp. 16–17). Even water travel, however, was slow, especially upstream. It took about ten weeks to paddle a canoe up the Ohio River from St. Louis to Pittsburgh, so some travelers actually found it better to walk instead (Dunbar 1915, pp. 1:330–32).

IV. Increased Efficiency

As the nineteenth century progressed, travel times plummeted. When completed in May 1800, the Santee Canal made it possible for boats to pass between the Santee and Cooper Rivers in South Carolina in just eight or nine hours without suffering the expense and trouble of portage (Anon. 1800, p. 3). Thousands of similar improvements made across the nation over decades added up to real change. Circa 1800, travel times from New York to Boston, Charleston (SC), New Orleans, Chicago, and San Francisco were four, ten, twenty-seven, forty-two, and untold weeks, respectively. With each passing year, travel times slowly improved, typically first in the east and the north and later in the west and the south (Dunbar 1915, pp. 2:656–90). On the eve of the Civil War, one could travel from New York to Boston in less than a day, make it to Charleston or Chicago in two, New Orleans in five, and San Francisco in only

twenty-eight (Carter et. al. 2000, p. 4:779). Passenger rates fell, too. In 1816, it took 5.5 days and cost \$47 to travel from Philadelphia to Quebec. By 1860, the same trip could be accomplished in just over two days for less than \$19 (Taylor 1951, p. 141). That was no aberration, as over the period average passenger rates fell by about half on stagecoach lines, to about 5 cents per mile. Slower canal boats charged only 1.5 to 2 cents per mile while faster ones cost 3 to 4. Passenger fares on steamships were pricey at first but eventually dropped to levels reputed to be the lowest in the world. By 1850, anyone with 50 cents could travel from New York to Albany via steamship in just eight hours (Taylor 1951, pp. 142–44). Train travel also got cheaper, decreasing from 5 cents per mile in the 1830s to an average of 2.44 cents per mile by 1859 (Fishlow 1972, p. 498; Durrenberger 1931, pp. 26, 127).

Freight shipment times also dropped dramatically. By 1860, steamships and trains moved freight five times faster than by wagon and canal boat (Taylor 1951, p. 139). Freight rates also decreased markedly (Fishlow 1972, p. 484; Taylor 1951, pp. 132–38). Better roads and wagons meant that wagon freightage costs were cut in half, from 30 to 15 cents per ton per mile (ton-mile), between 1794 and 1850. Downstream river costs dropped even more in percentage terms, from 1.5 cents per ton-mile in 1790 to 0.5 cents by 1840. Upstream costs plummeted from about 10 to 1 cent per ton-mile between 1789 and 1825, partly due to the introduction of river steamboats. But clearly other factors were at play, too, as canal freight rates dropped from 8 cents per ton-mile circa 1800 to less than a penny by the Civil War. The Lehigh Coal and Navigation Company's forty-six-mile long canal from Mauch Chunk to Easton, Pennsylvania, for example, allowed for the cheap transport of tens of thousands of tons of coal annually (Anon. 1830, p. 2). Railroad rates dropped, too, from around 7 cents per ton-mile in the early 1830s to less than 3 by the war's outbreak (Carter et al. 2000, p. 4:781; Fishlow 1972, p. 498; Lindstrom 1978, pp. 112–19).

The transportation network also became more robust over time, providing more options for travelers in terms of mode of travel, route, and time of departure (Anon. 1836, pp. 14–15; Anon. 1848, pp. 16–20). Overall quality increased, too (Lehman 1992, p. 163; Bunker 1831, p. 15; California and New York Steamship Company 1857, p. 5; Dunbar 1915, pp. 3: 1,111–12), with one writer asserting that “*comfort and safety*” roughly doubled with the advent of railroads (Anon. 1848, p. 4; Newkirk 1839, p. 8). By the 1850s, foreign

travelers commented how inexpensive and easy it was to travel between America's major cities. Travel within those cities was also greatly improved by innovations like privately owned and operated horse-powered omnibus trolleys (Steen 1966, p. 47; Bolling 1838–39, p. 11; Dunbar 1915, pp. 3:1,017–32).

The early transportation network, however, remained disjointed, more a series of loose connections than an articulated national system (Larson, 2001, p. 259). Travel over the era's best transportation technology, the railroad, was hampered by the existence of numerous short roads and the use of a dozen different gauges, ranging from 4 feet 3 inches to 6 feet (Dunbar 1915, 4:1,393), which combined to necessitate numerous layovers, intercompany transfers, ferriages, and so forth (Dunbar 1915, pp. 3:1,112–24; Fishlow 1972, p. 494). After lauding the Michigan Central Railroad on its accommodations, for example, one passenger suggested six improvements, including shorter stopovers, checking baggage all the way through to each passenger's destination, not leaving passengers on the tracks at night, and improved seating, ventilation, and customer service (Anon. 1850b, p. 2). Another major irritant was that rates on some lines fluctuated greatly, especially on newer, more sophisticated routes—like ocean steamers plying the waves between New York and San Francisco—causing considerable consternation among travelers (California and New York Steamship Company 1857, p. 1; Anon. 1854, p. 16). Most horrifically, steamboat engines exploded at an alarming rate despite the development of pressure release valves and other safety devices (Paskoff 2007, p. 3; Bunker 1831, p. 21; Silliman 1833).

Problems persisted because there was no “revolution” in transportation, no short period of rapid, transformative change. Instead, the decrease in travel times, inconveniences, and costs was a gradual process driven by competition (Taylor 1951, p. 153; Taylor 1934, pp. 169ff; Anon. 1850a, p. 3; Anon. 1860, p. 1; Dunbar 1915, pp. 1:329, 334, 336–37, 3:743–44, 750). Major technological breakthroughs like steamships and railroads did not emerge fully formed but rather took decades to develop completely and to proliferate widely. Moreover, many small innovations, some technical and others organizational, played an important if sometimes underappreciated role in the improved efficiency of the U.S. transportation network. Although relatively unimportant individually, thousands of such incremental improvements combined over the years to create enormous savings of time, effort, and money (Breck

1818, p. 11; Dunbar 1915, pp. 3:749–50; Durrenberger 1931, p. 119; Shirley 1881, p. 352; Bolling 1838–39, p. 48; Anon. 1841, p. 7; Anon. 1852, p. 18; Anon. 1850c, p. 2; Bolling 1838–39, p. 9).

V. Governmental Inputs

Before the Civil War, the federal government's role in planning, funding, and directly constructing infrastructure projects was limited mainly to improvements viewed as facilitating interstate coastal and international commerce and strengthening national security (Edling 2003). Lighthouses, ports, military forts, and munitions installations were priorities. Spending accelerated following the 1803 purchase of the Louisiana Territory, which catalyzed the construction of military outposts in the West and a \$50,000 appropriation in 1807, attached to the Coastal Survey Act, to catalogue and map the Atlantic and Gulf Coasts. Although Treasury Secretary Albert Gallatin and President Thomas Jefferson both supported federal internal improvement projects, little direct funding materialized for reasons both institutional and ideological. Congressmen were loath to support improvements that did not directly benefit their districts, the federal government lacked the capacity to tax selectively the beneficiaries of targeted infrastructure spending, and important politicians cast doubt on the constitutionality of federal funding for such programs. The national government collected tolls from users but found it impossible to fund projects by assessing secondary, tertiary, and indirect beneficiaries, such as local land and business owners and their customers and suppliers.

Moreover, the Southern-dominated Senate sought to protect slavery by limiting the federal government's scope (Bruchey 1965, pp. 124–27) and executive opposition scuttled the few bills Congress managed to pass. James Monroe vetoed legislation that would have made annual appropriations for the National Road, and Andrew Jackson dashed any hopes of further federally owned improvements by giving said road to the several states through which it ran. And by vetoing the Maysville Road Bill, he effectively quashed the federal government's direct investment in transportation corporations (Larson 2001, pp. 182–85; Ha 2009; Scheiber 1982; Clanin 1982). In all, federal internal improvement expenditures, about \$1 million per year on average before the Civil War, were inconsiderable by modern standards and compared to private, corporate inputs. Only if they were made at crucial chokepoints that private entrepreneurs would not touch, a dubious supposition in many ways, could they be

considered crucial to transportation system development. Federal roads and other improvements may have increased population densities in the western territories, but the economic benefits of that are difficult to parse (Malone 1998, pp. 49–50, 117–20).

Early on, state governments also resisted embarking on large scale infrastructure projects. Like the federal government, states' fiscal and managerial capacities were limited. While the federal government relied primarily on the tariff, states collected user fees and always-controversial taxes on real estate. As a result, state revenue streams were generally insufficient to fund an ambitious improvement agenda, especially given most taxpayers' skepticism regarding the government's ability to effectuate it in a cost-effective manner. Pennsylvania's legislature, for example, helped to complete projects through remote areas where profits were unlikely to be earned, but in the more settled parts of the state, it looked to private enterprise and the prospect of profits to provide funding (Dunbar 1915, p. 3:785; Durrenberger 1931, p. 55).

Governments with some fiscal capacity typically found it politically difficult to decide which projects to fund. It was widely known that transportation improvements attracted "new interests and business connections" and diverted them from "those localities or communities that have inertly permitted themselves" to be passed by, so demand for improvements was widespread and persistent and politicians who favored one town or region over another, even if for good reason, were certain to incur the wrath of voters (Dodge 1854, p. 33; Larson 2001, p. 264). Also, state legislators often did not know one another very well, faced frequent elections, and met for only a few weeks per year, rendering them less likely to owe one another favors or to build durable political alliances. Log rolling, while not unknown, was therefore less prevalent than omnibus bills, which were usually too expensive and grandiose to make it out of committee (Dunbar 1915, 1:320–21). Finally, in the nation's first few decades, neither the federal nor state governments had much appetite for borrowing, and their antidebt sentiments were reinforced by the default of several heavily indebted states in the early 1840s (Thies 2002; Wright 2008). In 1848, for example, one corporation noted that it had been chartered primarily because "the state had no revenues or resources of her own . . . [and] her citizens had . . . a salutary caution against incurring a public debt" (Anon. 1848, p. 7).

Governments created and maintained some bridges, canals, improved rivers, harbors, railroads, and roads. Together, the federal

and state governments expended about \$187 million on such projects (Malone 1998, pp. 17, 121–36). Governments also invested in local bridges and roads, an estimated \$125 million by local governments and \$300 million by states (Durrenberger 1931, p. 43; Goodrich 1960). Three quarters of the total government investment in canals, over \$130 million, was public due to the large state-owned canal systems of New York, Pennsylvania, Ohio, Indiana, and Illinois (only about 12 percent of the shares of private canals were owned by governments) (Bruchey 1965, p. 132; Goodrich, 1970 p. 297). New York's system was highly profitable at first, but the other states were not able to emulate its success and even exacerbated the recession that followed the panics of 1837 and 1839 (Dunbar 1915, pp. 2:691–740, 3:823). Pennsylvania spent some \$25 million to connect Philadelphia to Pittsburgh and the northern corners of the state with a hodge-podge of mostly unprofitable railroads and canals that it later sold to private companies (Dunbar 1915, p. 3:828; Anon. 1845; Stuyvesant 1837, p. 6; Fishlow 1972, pp. 478–79; Durrenberger 1931, p. 139). Heavily indebted Ohio also sold off or abandoned most of its portfolio of partially completed improvements (Dunbar 1915, pp. 3:821 n.2, 835–39). Indiana's and Illinois's state canals were also unprofitable, even though both were aided by federal land grants (Fishlow 1972, pp. 480–81). After defaulting on its bonds, Maryland offered to turn over control of its interests in several transportation infrastructure companies to bondholders (Roberts 2012, pp. 74–76). Due to such fiscal disasters, which included defaults by several other states as well, a spate of states ratified new constitutions that sought to limit government borrowing (Thies 2002).

Because their costs fell on all taxpayers (and not mainly on voluntary stockholders as in the case of failed corporations), the failure of most major government public transportation systems had a dampening effect, largely reversing the confidence in government works created by the Erie Canal (Scheiber 1982, pp. 20–21), which after its initial success also ran into difficulties due to political pressures to build numerous branches of dubious commercial merit (Bernstein 2005; Miller 1962; Murphy 2008; Durrenberger 1931, p. 101). Considerable disagreement over the “*nature* of the public improvements,” especially the railroad's role, further eroded confidence in government-owned transportation endeavors (Bullock 1837).

VI. The Benefits of Corporate Transportation Networks

In the end, then, internal improvements “constructed at length, at immense cost of private wealth, and at the hazard of private fortunes” (Anon. 1848, p. 5), not taxpayer dollars, drastically reduced the costs of transporting goods and people within the rapidly growing United States and generated economic benefits that more than offset the deadweight losses created by the high tariffs on imports imposed after the War of 1812 (Bernstein 2008, pp. 316–37). Specifically, lower transportation costs had four major salubrious effects on the economy (Freeman 2001, p. 708).

First, lower costs increased competition among producers by allowing goods to be shipped longer distances.⁵ Increased competition reduced producers’ market power and hence decreased prices and increased quantities consumed (Fishlow 1972, pp. 468–72; Lindstrom 1978, pp. 101–12; Anon. 1847). By using a canal instead of a river, for instance, lumbermen were no longer “compelled to overstock the market at the Spring freshet, and thus subject themselves to diminished prices and unreasonable exactions. They could send their lumber to market when they have it ready, when most convenient, and when the prices should suit them best” (Anon. 1845, p. 18; Haddock 1845, p. 4). Similarly, turnpikes increased competition by roughly doubling the distance that farmers found it profitable to bring bulk products to market and also allowed artisans to compete against others many miles away (Opal 2008, pp. 63–67). Between 1820 and 1860, the inflation-adjusted volume of long-distance domestic trade increased by an order of magnitude, though the coastwise trade (conducted largely by private sailing ships) accounted for somewhat more than half of the increase (Taylor 1951, pp. 173–75).

The second salubrious effect of decreased transportation costs and larger markets was increased labor specialization and hence lower production costs, all else constant. Third, inexpensive transportation

⁵ Rothenberg (1992, p. 95) downplays the importance of turnpikes in New England because she found “only one entry for a turnpike toll” in the 1,827 farm produce wagon shipments that she analyzed. Her findings undoubtedly underestimate actual turnpike usage, specifically the use of annual passes and shunpikes. Taylor (1934, p. 229) concluded that almost nine out of ten factories in inland Connecticut were served by turnpike roads. In her classic study of Philadelphia’s regional economy, Diane Lindstrom (1978, pp. 93–119) argued that “behind every major American city lay a productive hinterland” connected to it by canals, improved rivers, turnpikes, and eventually steamship packets and railroads. See also Durrenberger (1931, pp. 33–34).

increased the flow of financial, human, and physical capital, thereby allowing the economy to react more swiftly to a variety of shocks (Richmond, Fredericksburg, and Petersburg Railroad 1834; Baltimore and Susquehanna Rail Road Company 1835; Godman and Roberts 1851; Tanner 1840, p. 16; Tucker 1843, p. 202; Stockwell 1854, p. 32). Fourth, internal improvements increased economic and political stability by “strengthening the interest of distant states in each other” (Cary 1844, p. 36. See also Tanner 1840, 17; Anon. 1826, p. 5; A Citizen of Philadelphia 1826, p. 3; Fernon 1854, 5; Durrenberger 1931, p. 129; Murphy 2008, p. 201).

By helping to tie the Union together, private enterprise in the transportation sector ironically helped to strengthen a federal government that later replaced private ownership of internal improvements with the cost overruns, delays, and waste inherent in government ownership of the means of production and distribution. When advocates of big, intrusive government point to transportation infrastructure as an area where government intervention is obviously warranted, they go beyond the evidence. The nation was first tied together economically and politically by canals, railroads, turnpikes, and steamships built by entrepreneurs and funded largely by private corporate investors, not by taxpayer-funded river improvements or government-owned roads.

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