



Lessons from the Canal Boom in the USA 1820-40

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Article citation:

[Gaffney, Mason]. "Lessons from the Canal Boom in the USA 1820-40." N.d. Study guide.

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Lessons from the Canal Boom in the U.S., 1820-40

Kinds of winners, and their characteristics.

Basically, investment winners are "revolving funds" that actually do revolve, by getting early payoff.

a. Trunklines with best routes. Erie Canal; Delaware and Raritan (linking Phila and N.Y. Harbor, like the Jersey Turnpike today).

b. Trunklines that also serve as their own feeder lines.

This was the Erie, tapping its own route, the Mohawk Valley. As the Erie progressed incrementally, each stage generated its own traffic. Payout didn't wait until completion. The pot o' gold was not just at the end of the rainbow, but along each segment. Promoters and historians have obscured this by writing of "tapping the far-flung western trade," but that analysis is too temptingly dramatic, too easy, and misleading. It was mainly local Mohawk Valley trade that paid off the Erie. It is also true, and greatly important, that it tied the mid-Atlantic with the growing northwest, but it was its local success and strength that made that possible.

Ohio's several n-s canals enjoyed the same advantage, because parts of Ohio were closely settled before the canals came. (Cf. Trudy Wischemann's study of how SP R.R. in California's San Joaquin Valley chose routes to serve areas already closely settled, to generate traffic.)

c. Short coal lines. D&H, 1829 (hit Hudson at Kingston).

d. Key short passages. The Soo, linking Lakes Huron and Superior, 1855; Louisville's by-pass of rapids on the Ohio R.; the Illinois & Michigan Canal (but not until next cycle - it was premature in 1836); Welland Canal (Canadian), 1829.

e. Short lines focusing on a hub. Boston r.r.s. Network of roads around Nashville. PA's system of turnpikes and bridges preceding its canal fiasco: it had 56 turnpike corps. by 1825. Pittsburgh's short radials.

Atlanta, "resisting seduction by the siren magic of distant trade" (love that purple rhetoric of the Old South!) was the hub of a coherent state road and rail system that made good returns.¹

The brains, judgment, and leadership that created the compact radial systems around Atlanta, Nashville, Richmond, Mobile, and other places, would have made the south invincible in peace and war, had it not been for slavery and the plantation system of agriculture. These aborted the natural economic interchange between city and country that nursed along northern industry so well. They also forced southern leaders into their posture of continental imperialism, spreading the whole population thin over more territory than it could defend. Many of their people moved to growing towns and cities north of the Ohio, where they bred future Union soldiers and leaders like Abe Lincoln.

f. Technical innovation, timely and appropriate.

1817, the Pittsburgh Pike, a road replacing mere trails.

Riverboats replacing roads. (Fulton's Clermont, 1807, puts steampower on rivers; 1824, case of Gibbons v. Ogden, broke riverboat monopolies, opened rivers and the Great Lakes to competition.)

¹Atlanta's sound planning later turned to her destruction. General Sherman burned Atlanta precisely because it was so important. No one said life is always fair.

Erie Canal besting competing rivers (the Miss. and the St. Lawrence), from 1825.² It also, however, complemented Great Lakes shipping unleashed by Gibbons v. Ogden decision, 1824.

Rails besting canals. B&O completed, 1853, obsoleted C&O Canal.³ Penna. R.R. in the 1850s used the same route as the failed State Canal, and bested the Erie Canal while N.Y. again fell behind technologically, too wedded to its wonderful Erie Canal.

Clipper ships. In this era, Boston and Providence and other New England ports, rather than turn west, sunk their capital into ocean vessels, another whole story. Baltimore did both. In 1830 Britain reopened the West Indies to U.S. shipping. Steamships already existed, but for 30 years clipper ships, both English and American-built, were still faster. They linked Boston with San Francisco and China. Whaling and fishing, too, kept these sailing cities busy. New England also developed industries using water power. Its interior lines were short, unspectacular, and solvent.

g. Simple short lines between cities. SC had several, e.g. Charleston to Columbia. CT had New Haven-Hartford R.R., which succeeded even though completed in 1838, a bad time. The key word is "completed." The losers were lines left unfinished when the lights went out on new capital issues after 1837.

h. Low rates, marginal-cost pricing. This occurred in states that decided to promote canals using tax power: NY, OH. The Erie Canal was a famous bargain for shippers, tapping an elastic demand. In MD it was not the State, but the City of Baltimore, that underwrote Baltimore's external circulation, the B&O R.R. Baltimore also underwrote the Susquehanna Canal, raiding Pennsylvania's rich Susquehanna Valley. For the other extreme, see under "Losers," (g).

²This is an odd one, technologically, since the canal boats were drawn by mules plodding along a towpath, while the "older" form of transportation was now using steam. Canals were an ancient technology in Europe and Asia, they were only new in the U.S. at this time.

³Another factor here is that the C&O Canal leads only to Washington, which never developed as anything but a political city. The B&O used the Potomac route upstream, but then headed n.e. to Baltimore. There was also the C&O R.R.

i. Lines serving territory already settled. These were also called "exploitive" projects. In MA they were called "dowager" lines because, like a rich widow, they required no handouts.

10. Kinds of losers, and their characteristics

a. Parallel imitators playing catch-up, "a day late and a dollar short." Good principles are so easily twisted and misapplied! The PA State Canal; the Indiana Canal, using Wabash and Maumee Rivers; the Hoosac Route in n.w. Massachusetts; the Stump House Mountain Tunnel route, SC.

b. Gold-plated monuments, overdesigned, long a-building while technology raced ahead elsewhere. Worst case was the C&O Canal. It was "built not just for the present generation, but for all ages yet to come," proclaimed its rhetoricians, but it was obsolete before it was ready to use. "Prompter completion, less elaborate, would have given a longer period of usefulness," tersely quoth its epitaph. (Cf. modern nuclear generating stations, e.g. in WPPSS.)

c. Postmature completions, after others had won the race. E.g., Chesapeake and Delaware (cutting thru narrow neck of Delmarva Peninsula). This was Philadelphia's best route to Pennsylvania's own Susquehanna Valley, but they were too slow: Baltimore got there first, while PA money was being squandered on the moonstruck Juniata line to Pittsburgh.

d. Hosts with too many parasites. Cross-subsidy is the political price paid for state financing. All canals suffered from this, even the best, the Erie. The strongest ones earn enough surplus to tolerate this; others were bankrupted and destroyed.

"Simple justice to the regions" was the motto of legislators from remote hilly counties wanting a cut of the pie. It is the American version of "French equity." The surpluses generated by the sound lines are dissipated, in whole or part, to build sub-economic lines in losing territory.

PA was a prime example of "Garbage-can Socialism." That describes a system where private firms get to run the turnstiles, while governments get to build the losing feeder

lines (and then get blamed for being "inefficient," whether they are or not). By 1842, ran up debt of \$42m, huge for its times. Cf. cost of Erie Canal, \$7m.

VA, too, dissipated much of its surpluses on subeconomic local lines. So did MD, but MD had the advantage of being smaller. It also got federal aid for its C&O Canal. Meantime, Baltimore wisely went it alone.

e. "Opening up new lands," with "promotional" (as contrasted with "exploitive") lines. Promotional lines, built ahead of demand, often could not meet debt service while waiting for demand to materialize. The very presence, or just the promise, of the line normally caused speculators to overprice lands, waiting for the kill.⁴ Actual settlers and producers, who would generate paying traffic, would then leapfrog over them, seeking cheaper lands. NY and OH offset this by taxing the land, which also served to hold down canal tolls. Western New York and Ohio were settled by New Englanders, who traditionally settled compactly. Their culture, compared with others, was hostile to land speculation.⁵ Elsewhere, high tolls stifled demand and drained canal finances.

f. Vested interests in old technology. Riverboat interests, who once monopolized our rivers, opposed canals. The old south, with its many navigable rivers, was wedded to its romantic "steamboat-round-the-bend" culture. Even progressive NY, after its Erie Canal triumph, opposed the next wave of innovation, the railroad, and fell behind its rivals PA and MA, which it had just overwhelmed.

⁴Henry George went to the gist of this anomaly, writing of a later railroad boom. "The first effect of the land grant is to hasten settlement by getting a railroad built; the second effect is to retard it by raising the price of lands." Henry George, 1871, Our Land and Land Policy, p.28.

⁵This was far from automatic. In New York State the settlers struggled for decades with the Hudson Valley aristocracy and big city financiers, a long and fascinating story. Gov. DeWitt Clinton was the political genius who found their common interest in the Erie Canal.

g. Overpricing services. It is hard to believe now, but Pennsylvanians believed in 1830 that their State canal would bring in enough revenues not just to pay for itself, but to let all other taxes be eliminated. It was to support the whole State - they dreamed of a taxless state! Accordingly, they set the toll rates too high, and discouraged traffic.

They did not invent that notion out of nothing. President John Quincy Adams in 1828 had forecast such a future for the Federal government, based on developing the west and selling public lands. It was in the air. They could look across the Delaware R. and see the State of NJ actually making good money from its canals, which were short and rich, because NJ is small, and strategically located. Its D&R Canal, chartered by the State, paid tonnage taxes. Thus, States can collect \$ by leasing out their eminent domain. D&R Canal provided much of NJ state rev for the next 40 years. It was a money-tree, like finding oil. PA could also see NY making money on the Erie. Their mistake was to think they had equally good routes.

h. The fallacy of comprehensive planning. Then, as now, there is something gripping and compelling about a "comprehensive" plan for the whole state. All the interdependent pieces are fitted into a whole, beautifully coordinated.

The trouble with such plans is, they do not allow for staging, and natural growth. The demand is not there all at once, it dribbles in slowly, one settler at a time. Likewise, capital is not available to build all at once. Given that, priorities are needed: one reach or region should develop first, others wait. Comprehensive planning seldom allows for that, especially when logrolling legislatures get ahold of it.

Many states, like Illinois, drew up comprehensive statewide plans. In practice that meant, each year, a little money spent here, a little spent there, and not enough spent anywhere to complete a project and get it going to recover the capital sunk in it.⁶ The young Abe Lincoln, lawyer and legislator, was active seeking State aid for navigation on the Sangamon River in his district.

⁶In the 1920s California developed a comprehensive water plan, the "Marshall Plan," for irrigation and city water supply. Only a small part of the original Plan was ever built.

i. Excessive e-w emphasis, when more economic routes were n-s. Each state wanted to establish its own route to the unorganized western lands, and was leery of becoming colonialized by more urban states to its north or south.

Rivers and valleys on the east and Gulf coasts mostly run n-s. Beginning in Maine, there are the Penobscot, Kennebec, Merrimack, Narragansett, Thames, Connecticut, Housatonic, Hudson, Delaware, Susquehanna, Patapsco, Patuxent, Potomac, Shenandoah, Rappahannock, York, James, Roanoke, Cape Fear, Yadkin (Pee Dee), Catawba (Wateree), Congaree, Santee, Broad, Savannah, Altamaha, etc. Running south to the Gulf are the Suwanee, Chattahoochee, Apalachicola, Escambia, Alabama, Tombigbee, Pascagoula, Pearl, Sabine, etc. Angling into the Mississippi are the Big Black, Yazoo, Red, White, St. Francis, Ouachita, etc. Some of these routes should have been more developed and used.

j. Exclusive or over-reliance on distant targets and far-flung colonies. E.g., CT's Farmington Canal was projected to link New Haven with the St. Lawrence, going north up the Connecticut R. It got as far as Westfield, MA, 1829; never paid a dividend; and soon gave way to the Hartford-New Haven R.R., completed in 1838. Other, more notorious examples have been given: Maumee-Wabash, Philadelphia -Pittsburgh via Juniata V., Richmond - Ohio River, etc.

In Summary, the problem that makes losers losers is that they are "non-revolving funds," or sinks of capital. Capital goes in, but never comes back out. Virginia was an example. Interest on the James River debt ate up the fund. It was called, in the language of the times, "a moth on the fund, in violation of the principle on which created." The principle was that the fund should revolve. Thus, the fund was moth-eaten and lost before it ever financed a canal or a rail to the Ohio, its original objective.⁷

⁷How does a revolving fund work? I once belonged to a Committee of economists that published a book a year. We began with a stake of \$10,000. As each book sold out it returned \$10,000 for the next. Thus, over several years, we published nine books: \$10,000 financed \$90,000 of work. That is how capital is supposed to work. It stops, however, when a product fails to sell.

11. A "winner" is not always more socially useful than a "loser." A postmature line is a winner because demand is there panting for it, but the early settlers may have lost a lot in the meantime. That describes the Delaware and Raritan Canal, opened in 1829. The route was so profitable in prospect that a private firm paid the State of NJ a big sum up front for the R.O.W., and also shared tolls with the State, and made out anyway. Those are good clues that it should have been opened sooner, in the general interest. Ideally, then, a canal (or other transportation line) should be opened in sync with private land development, so neither loses time waiting for the other.

That is the exception, however. Most of the reasons given above why winners are winners, and losers are losers, remain just as valid in the big picture as they seem in the small.