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## On time, on budget

Peter Bernstein's new "Wedding of the Waters: The Erie Canal and the Making of a Great Nation" (Norton, \$24.95) is the story of a perfect outcome. For those who associate epic capital-investment projects with multibillion-dollar errors, Bernstein's history will most pleasantly stretch the mind. The Erie Canal, a 363-mile-long ditch dug between 1817 and 1825 to connect Lake Erie with the Atlantic Ocean via the Hudson River, was a miracle of human enterprise.

It is the kind of miracle that would not be allowed to unfold in just the same way today. Nothing looked less miraculous as it came crashing down on the heads of the innocents than the Panic of 1819. But the panic led to a depression, and the depression to a deflation, and the deflation to a collapse in interest rates and wages. By 1820, as Bernstein relates, the "canal commissioners were drawing contracts at prices 30% to 40% below what they had paid during the first three years of construction." Today, the Federal Reserve would stop the deflation in its tracks. Then, again, maybe it would also stunt the progress of the canal.

Altogether, there's remarkably little in Bernstein's splendid history to remind the modern reader of such contemporary mega-projects as Boston's Big Dig, the Eurotunnel or the build-out of the U.S. fiber-optic network. The canal was a case of Murphy's Law in reverse. Almost everything that could go right did. The promoters underpromised and over-delivered. They adhered to budgeted costs, steered clear of scandal and—though they did not strictly intend it—transformed not

only the U.S. economy but also the world's. "Designed by a small group of surveyors with no civil engineering experience but a great talent for improvisation and innovation," Bernstein writes, "the canal's 83 locks enabled boats to travel a total of 675 feet up and down from one end to the other, over hill and dale, and over 18 aqueducts." Not bad for government work.

Yes, this was an undertaking of the state of New York, the very one that, in 2005, can hardly enact a budget, let alone balance one. However, under the leadership of Gov. De Witt Clinton, New York conceived, built, financed and operated this most significant public work. It took not a dollar of federal money but borrowed from its yield-starved citizens. The going rate of interest was 6% to start, 5% post-panic. As there was no state income tax in that distant day, the bonds offered no after-tax yield pickup. Nor, until 1821, did they come backed by the state's full faith and credit. Investors assumed equity risk without the real prospect of equity returns—indeed, in view of the precarious circumstances, without the certain prospect of any returns. Then, again, as Bernstein observes, the savers of that time had precious few investment alternatives. Especially in the wake of the 1819 pileup, 5% "must have looked good."

Visionaries had long talked about building an artificial waterway to connect the American West with the Atlantic coast. George Washington was among the first to build one. But his Patowmack Co. ended up bankrupt in 1810, after 26 years of operations (the Father of His Country had died in

1799), leaving behind no notable asset except the C&O Canal in Washington, D.C., alongside which today it is pleasant to run. "Suppose," Bernstein challenges his readers, "we had to bet today on which project would turn out to be the more successful effort, geography aside: a profit-seeking venture controlled by one of the great executives and administrators of all time, or a state-financed project managed by a committee of politicians. The choice seems to be an obvious one. . . . Yet the privately owned and operated Patowmack Company ended up a financial failure and finished way behind schedule, while the committee of politicians who managed the construction of the Erie Canal would oversee their novel, complex and gigantic project with high success. . . . The long odds would have come out a big winner on that bet."

There were plenty of bears on the idea of the Erie Canal in the years before the 1817 ground breaking. President Thomas Jefferson, no small visionary himself in some real-estate matters (he bought the Louisiana Territory), called the scheme "little short of madness." But the canal's boosters persisted, year after year, as Bernstein relates, despite war, political reversals and the ridicule "of those microcosmic minds which, habitually occupied in the consideration of what is little, are incapable of discerning what is great," to quote Gouverneur Morris, one of the greatest of the die-hard bulls.

Events proved that Clinton, Morris et al. had the facts on their side. They also—in one important particular—had the wind at their backs. In the half-

decade preceding the start of construction, there was a great monetary boom. Bank notes in circulation expanded at a rate of 19% a year from 1811 to 1816. New banks proliferated. According to a committee of the Pennsylvania Legislature, money was “so profuse that the managers of the banks were fearful that they could not find a demand for all they could fabricate, and it was no infrequent occurrence to hear solicitations urged to individuals to become borrowers, under promises of indulgences most tempting.”

So the promoters of the Erie Canal were doubly blessed as to monetary timing. The impetus to break ground coincided with a shower of bank credit. But actual construction occurred in the wake of a great contraction. Credit-induced optimism helped to launch the project;

depression-induced deflation to bring it to a successful completion (and close to the budgeted cost of \$7 million).

But we are giving more weight to monetary and banking forces than the author does. Bernstein emphasizes the genius of the instigators, the commissioners and the doers, the latter including the men who ingeniously devised ways to pull down trees and yank up stumps. “[A]ny large modern corporation could envy the commissioners’ style of management and organization,” he writes. “Considering the uncongenial landscape to be crossed, the sheer magnitude of the whole project and the lack of experience in designing, organizing and supervising anything of this nature, their performance was remarkable.”

As was the outcome: A canal that

bridged the Appalachians, bonded the Western territories with the East, inspired a wave of innovation (as reflected by the number of patents awarded along the path of the canal), redrew the world’s trade routes and put the “empire” in Empire State.

“The spirit of change, speed and innovation was energized along the entire route of the Erie Canal and the new localities connected to it by later canals and railroads,” Bernstein writes. “Entrepreneurial activity was exploding. As a German visitor described his trip to America as late as 1857, ‘Ten years in America are like a century elsewhere.’”

It is good for a congenial bear to know that economic miracles do occur. And it is good for a congenial bull to realize that they occur very infrequently.



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