

High Wages, Low Costs: A Connecticut Paradox?

BY SUBHASH RAY, LEI CHEN, AND
DENNIS HEFFLEY

The November election will bring a new round of claims about Connecticut's high wages, exorbitant rents, burdensome taxes, overall lack of competitiveness, and resulting job losses. Such claims have become so common, even during non-election years, that many voters accept the mantra of Connecticut's "unfriendly" business environment as fact. Yet, data from the 2007 Economic Census paint quite a different picture of the state's economic competitiveness in manufacturing.

Last March, Connecticut's business environment made the national press when United Technologies' CFO Gregory Hayes told Wall Street analysts that "Any place outside of Connecticut is low-cost." The immediate response of our elected officials ranged from outrage to full agreement, but even many of those who rose to defend the state's economic virtue—highlighting its skilled workforce, high quality of life, low corporate taxes and various business subsidies—may privately harbor the popular view expressed by Hayes and many other state residents.

HIGH-COST REPUTATION

Connecticut's high-cost reputation is bolstered by several studies that rank states by the "cost of doing business" (CODB). A 2007 report by the Milken Institute, based on 2006 data, ranked Connecticut as the 5th most expensive state for business. Only two other states in the continental U.S.—New York and Massachusetts—were more costly.

Business news channel CNBC also gave Connecticut a lackluster overall rat-

ing of 35th in its 2009 list of "America's Top States for Business" (<http://www.cnbc.com/id/31765930/>). CNBC's overall rating is based on 10 sub-indices, including a "cost of business" index that rated Connecticut the 4th most costly state, after New York, California and Hawaii. Iowa, South Dakota, Arkansas, Missouri, and South Carolina were judged to be the cheapest states for business.

There's no denying the popular perception, based on such reports, that Connecticut is an unattractive business location. But are these oft-cited rankings supported by sound analyses of available economic data? And if they are correct, why don't even more firms flee Connecticut for lower-wage states? We believe there are good answers to these questions—ones that may surprise and even encourage Connecticut businesses, residents, and public officials.

PROBLEMS IN MEASURING COMPETITIVENESS

A problem with the Milken Institute study and many others, including the CNBC report, is that they confuse *input prices* (wages, rents, energy prices, etc.) with *production costs*. Wages, for example, certainly influence costs, but they are not the whole story. Firms facing higher wages have an economic incentive to use labor more efficiently. Often this entails greater use of relatively less expensive inputs or of inputs that enhance labor productivity. Whether high wages necessarily imply high unit costs of production also depends on the prices of non-labor inputs, as well as the degree to which various inputs substitute for or com-

plement one another in the production process.

In short, the unit cost of producing a good depends on management skills and the technology of production as well as on input prices. High input prices foster the creative use of existing technologies and the development of new, more efficient ones. Focusing only on input prices, and especially the price of just one input such as labor, ignores basic economic principles and says little about the overall cost per unit of output. In fact, strange as it may sound, we'll later see that a state's average manufacturing wage tells us virtually nothing about its production costs per dollar of output.

Another problem with CODB indices is that the weights used to construct such measures are often rather arbitrary and altogether miss an important point. The Milken 2007 CODB table considers four input price sub-indices for wages, electricity, industrial rents, and office rents, each based on just one variable, with respective weights of 50%, 15%, 10%, and 5%. The remaining 20% weight is assigned to "tax burden." The source of the weights is unclear, but the fact that all are neatly divisible by 5 suggests that they may reflect someone's best guess rather than a systematic analysis.

More important, it's unclear why a common set of weights should apply to every state. For example, if producers in a high-wage state find it efficient to substitute other inputs for labor, the share of labor in total costs will be affected by both the higher wage and more conservative use of the expensive labor. The net effect on labor's share of total cost is ambiguous, but it likely will differ from the cost share of labor

in a low-wage state. Ultimately, market competitiveness depends on the overall cost per unit of output, not an index based on a common set of weights that, at best, may simply reflect the average mix of input expenditures across very different states.

THE DATA

Data for this analysis come from the U.S. Census Bureau's 2007 Economic Census of the manufacturing sector. Manufacturing jobs and the sector's competitiveness receive special attention from politicians, journalists and the public, especially in Connecticut and other states with a rich history of manufacturing. This attention may be misplaced, given the long-term trend in the relative importance of manufacturing, but more about that later.

The data show that some perceptions about Connecticut manufacturing are quite accurate. We are indeed a high-wage state. Using 2007 Economic Census data to calculate the average hourly wage of manufacturing production workers, Connecticut ranks 4th (\$21.28), after Michigan (\$22.39), Louisiana (\$21.89) and Wyoming (\$21.79). South Dakota (\$15.83), Mississippi (\$15.64), Arkansas (\$15.62) and Alaska (\$14.15) report the lowest average wages for manufacturing production workers.

Connecticut fares only slightly better in the average cost of hiring a non-production manufacturing employee. New Jersey tops the high-pay list, with an average annual salary of \$76,268, Connecticut ranks 6th at \$71,733 and Hawaii trails the 50-state list with a figure of \$46,787. So, in manufacturing, it's not just hourly production workers that cost more to hire in Connecticut; non-production workers also earn more here than in most other states. In fact, the "Connecticut premium" (percentage above the 50-state average) is the same 15.1% for salaried non-production workers and hourly production workers. Perhaps complaints about "overpaid" blue-collar workers and technicians ought to

be expanded to include white-collar employees, but there are other, more fundamental problems with using the pay of any one group to judge a state's competitiveness.

CALCULATING UNIT COSTS

As noted earlier, production costs are not solely determined by wages, or even wages plus the costs of providing fringe benefits such as health insurance. Costs also depend on the prices of other inputs, as well as the ability of firms to find the most efficient input mix, given local input prices and available technologies. The Economic Census data for 2007 can be used to calculate the overall unit cost of producing a dollar's worth of manufactured goods in each state.

In Connecticut, for example, the total value of shipments (\$58.405 billion) plus net inventory changes (\$0.325 billion) gives the total value of gross output (\$58.730 billion) in manufacturing. On the cost side, total labor costs (\$13.377 billion) include the annual payroll (\$10.345 billion) and employers' payments for fringe benefits (\$3.032 billion) such as health insurance, pension plans, and other fringes. Other outlays include: the total cost of materials used in production (\$23.672 billion); a catchall category labeled "total other expenses" (\$6.874 billion) that includes a variety of services as well as taxes and license fees; and annual capital costs (\$2.642 billion). The latter figure is the sum of depreciation (\$1.207 billion), rental payments (\$0.398 billion), and imputed interest costs (\$1.037 billion). [Note: we calculate the imputed interest costs, essentially the opportunity cost of holding physical assets, by applying a 5% rate of interest to the average book value of depreciable assets.] Summing these costs and dividing the result (\$46.565 billion) by the value of gross output gives the average unit cost (\$0.793 or 79.3¢) of producing a dollar's worth of manufacturing output in the state.

Using the same definitions and data from the same source, we calculated the cost of producing a dollar of manufacturing output for each state. The bar graph on the next page shows results for the 50 states, as well as the 50-state average (83.3¢). By this more comprehensive measure of cost, Vermont has the dubious distinction of being the most costly manufacturing state in the nation: a dollar of manufactured goods costs 95.9¢ to produce in the land of good dairy and small profits. Other New England states with high manufacturing costs include New Hampshire and Rhode Island, 2nd and 3rd highest, at 93.5¢ and 93.0¢, respectively.

At the other end of the spectrum, North Carolina lives up to its reputation as a low-cost state for manufacturers: each dollar of output costs just 71.8¢ to produce, almost 14% below the 50-state average. But, according to the federal data, Oregon fares even better as a site for manufacturers: 70.6¢ produces a dollar's worth of output in the Beaver State. Other low-cost states include Virginia (76.8¢), Arizona (76.8¢), New York (78.1¢), Wyoming (78.9¢), New Mexico (78.9¢) and, yes, Connecticut (79.3¢). As a manufacturing site, we fare better than either Massachusetts (83.0¢) or New Jersey (84.1¢), often seen as two of our key competitors for Northeast manufacturing.

HIGH WAGES ≠ HIGH COSTS

The analysis makes it quite clear that a high average wage does not necessarily imply high production costs. In fact, the calculated unit cost of manufacturing output is essentially uncorrelated with the average hourly wage of production workers. The scatter plot on page 10 bears this out: there is no positive relationship between wages and unit costs, as indicated by the virtually flat regression line and the near-zero R-squared value (0.0036). Also note that even states with rather low unit costs, in the lower portion of the scatter plot—North Carolina, Oregon and

Connecticut, for example—have very different wages. Again, this illustrates the point that overall unit cost, not the price of a single input, determines a state’s manufacturing competitiveness. It also might explain why, despite frequent complaints about workers’ high wages, we haven’t seen a mass exodus of Connecticut manufacturers to other

states. Apart from New York, the nearest state with a lower unit cost of manufacturing is Virginia, which has been a prime competitor in shipbuilding, one of our traditional defense manufacturing strongholds. Yet, even though production worker wages in Virginia (\$17.36) are 18.4% lower than in Connecticut (\$21.28), its unit-

cost advantage is just 2.5¢ per dollar of gross output.

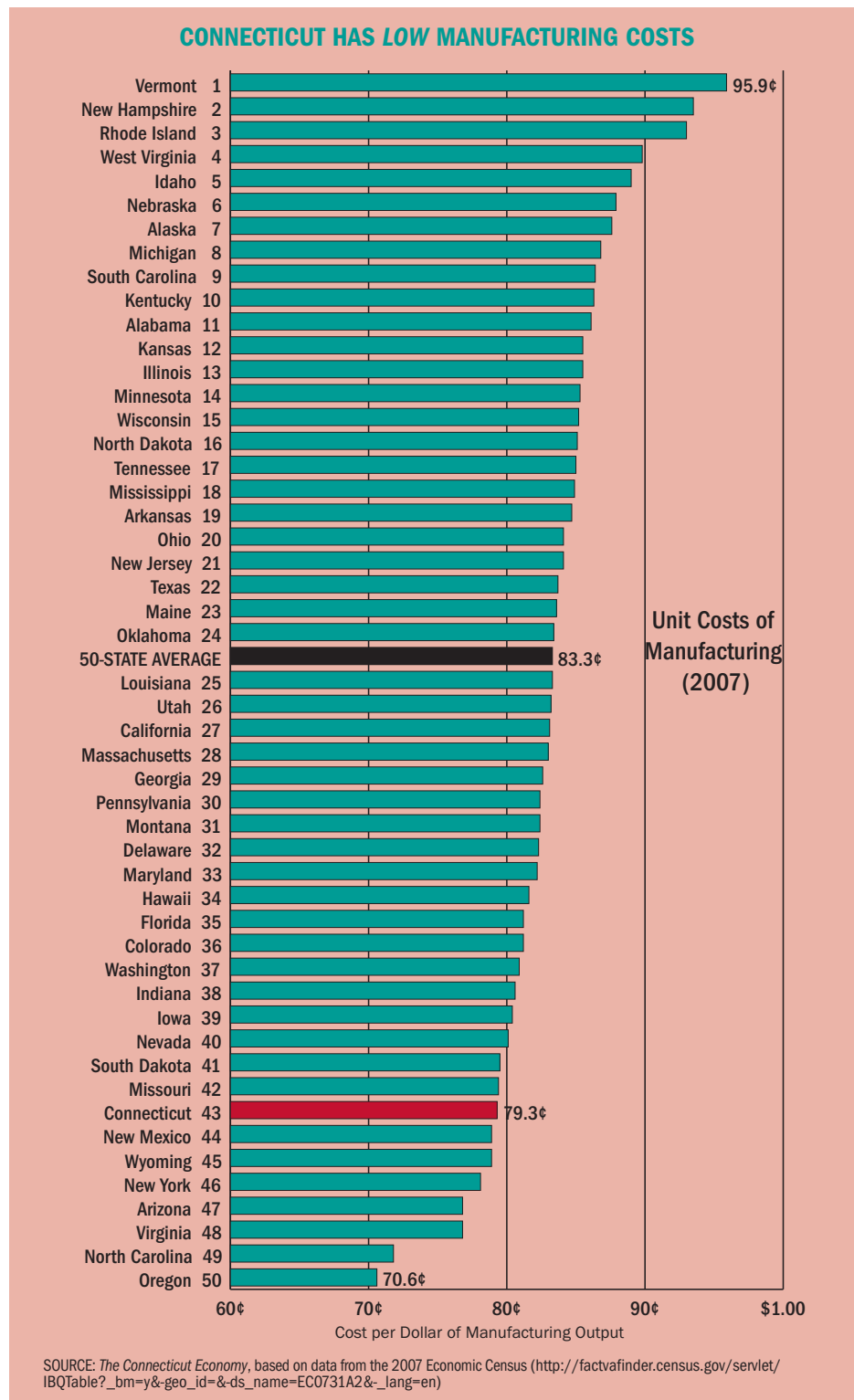
SWIMMING UPSTREAM

Another problem with the claim that Connecticut’s loss of manufacturing employment has been driven by high wages is that it fails to explain why the decline is so pervasive across nearly all states, and even across most mature economies. For years, Connecticut has been losing manufacturing employment, both in absolute terms and as a share of total employment, but this is hardly unique to our state. The final graph on page 10 shows the share of manufacturing in total employment for Connecticut and the U.S., from 1939 through 2009. Connecticut once had a much higher concentration of manufacturing than did the U.S., but over time the state has converged toward the declining national norm. Peaking during World War II, the U.S. share of nonfarm employment in manufacturing has declined from 37.9% in 1943 to 9.1% in 2009, while Connecticut’s manufacturing share has fallen from 56.5% to 10.6%—still 1.5 points above the national figure.

These are powerful trends that will not be easily reversed. Growth sectors in Connecticut and the U.S. have been in areas that require high-skill services, such as health care, financial services, software development, and education, and it’s unlikely this secular pattern will suddenly reverse. A healthy economy requires a balance of activities, and manufacturing is certainly part of that mix. But our ability as a state to establish and maintain an appropriate mix of industries is better served by a critical analysis of where we stand, rather than unexamined claims about high costs that repel, rather than attract, employers and much-needed jobs.

FINAL THOUGHTS AND CAUTIONS

Why does Connecticut fare well in this more complete assessment of unit manufacturing costs? First, much to their credit, Connecticut firms have



likely made sensible adjustments to the prevailing structure of input prices by economizing on more expensive inputs, making fuller use of relatively cheaper inputs, and developing more efficient production methods.

In addition, Connecticut enjoys a prime location. Sandwiched between two major metropolitan areas, one of which also serves as a world financial center, this favorable site inevitably brings higher rents. But those rents buy ready access to markets for materials, various types of skilled labor, and the highly specialized inputs that modern manufacturing requires. Unfortunately, site advantages can be eroded by deterioration in transportation infrastructure, and there is growing evidence that the state may need to invest more heavily in road, rail and airport facilities, or better manage its current transportation system to remain a favorable place for manufacturing (see Edward Deak's article on page 6).

While this more complete analysis of manufacturing costs, based on Economic Census data rather than a handful of questionable indices, casts a different light on the state's busi-

ness environment, some cautions are needed. First, we think it's reasonable to compare the cost of producing a dollar's worth of manufactured goods across states, but it would be useful to control for different types of manufacturing, perhaps by regressing the calculated unit costs on measures of product mix. This would require some care, since any measure of product mix is inherently endogenous: the mix influences unit costs and vice versa.

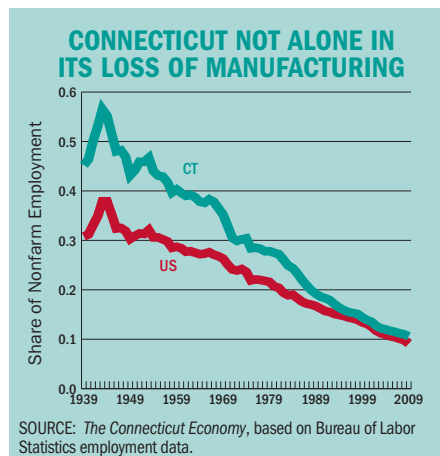
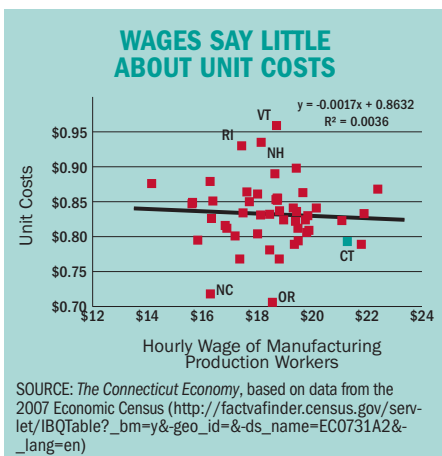
Second, although the Economic Census offers a fairly complete tally of costs, including "taxes and license fees," this category excludes corporate income taxes. Direct comparisons of corporate income tax rates are not simple (see: http://www.taxadmin.org/fta/rate/corp_inc.pdf), but it appears that Connecticut's flat 7.5% rate is in the middle of the pack, and below that of neighboring Massachusetts (8.75%) and Rhode Island (9.0%). New York's rate is 7.1%, and low-cost North Carolina's rate is 6.9%, just 0.6 percentage points below our own.

A third caution involves the input-substitution described earlier in the article. While we suspect that Connecticut manufacturers have been

able to achieve relatively low unit costs by substituting other inputs (e.g., automated machinery, and contract labor) for regular employees, this will be seen as skillful management by some parties and a source of job losses by other groups.

Fourth, our analysis was purposely restricted to manufacturing because this sector garners so much public attention. But, given the long-term shift away from manufacturing, it would be useful to undertake a comparable analysis for other major sectors—something we plan to do.

Finally, while industry leaders and public officials should be careful about misrepresenting Connecticut as a high-cost manufacturing state, we also cannot afford to ignore the importance of maintaining a favorable business environment. This includes efforts to keep costs and taxes down, streamlining state and local regulations and requirements, and providing the public services and infrastructure needed to support businesses and their workers—no small task.



Subhash Ray is a professor of economics and Lei Chen is an assistant professor in residence at the University of Connecticut.