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An Approach to Forecasting the Maine Economy: More Evidence

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News and Commentary: An approach to forecasting the Maine economy: More evidence

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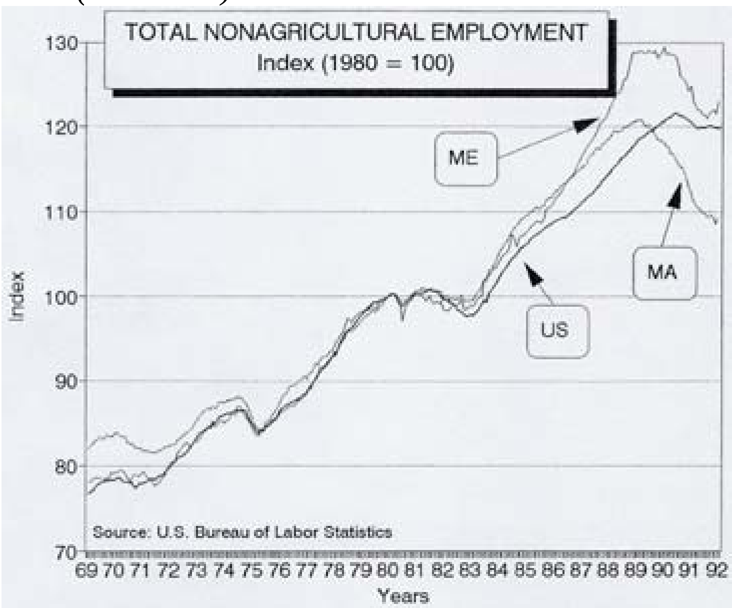
In the premiere issue of *Maine Policy Review*. I presented a methodology which could be used to analyze and forecast the Maine economy. Specifically, I stated that the Maine economy has historically followed the national economy, and that consequently changes in the national economy could be used to predict changes in the Maine economy. I also argued that Maine's economy would, from time to time, "import" short-term economic disturbances from Boston - the central city of New England (see Breece and Coulson, 1988). This latter element was the probable cause of the unprecedented economic growth that Maine experienced during the second half of the 1980s. The collapse in the Boston economy was also partially responsible for the severity of the current recession in Maine. This paper provides further evidence for the appropriateness of this methodology and provides some economic reasoning to explain why this effect occurs. In doing so, the spatial dynamics of the regional labor markets are investigated, and the findings are utilized to provide an outlook for the future.

Regional dynamics

To understand the proposed relationship between Boston and Maine, think of Boston as the point of impact of a stone dropped into a pond. The resulting ripples that travel across the pond correspond to the economic activity radiated from the central city to the rest of the region. Areas further from the central city receive the ripples later and in a lesser degree than areas closer to the central city. Therefore, the short-run activity level in Maine can be modeled by applying the hypothesis that the Maine economy is dependent upon the level of economic activity of Boston and the nation.[1]

Figure 1 displays nonagricultural employment from 1969 to the present for Massachusetts, New Hampshire and Maine. During this time span there have been three major economic expansions; 1969-1974, 1975-1982, and 1983-1989. During the first two expansionary periods and part of the third, employment in Maine followed the national trend. Between 1986 and 1990, however, employment in Maine out-paced the employment growth rates in Massachusetts and the nation. I hypothesize that the unprecedented employment growth in Maine occurred because the economic growth in the Boston area was restricted by severe labor shortages. This caused some of Boston's potential growth to be deflected towards New Hampshire and Maine. Furthermore, during 1989, the Boston economy entered a recession, and the combination of this and the continuing strong national economy resulted in an economic "soft-landing" in Maine between 1989-1990. Unfortunately, in 1990 the national economy also began to decline, which resulted in the eventual decline in the Maine economy.

Figure 1: Total Nonagricultural Employment
Index (1980=100)

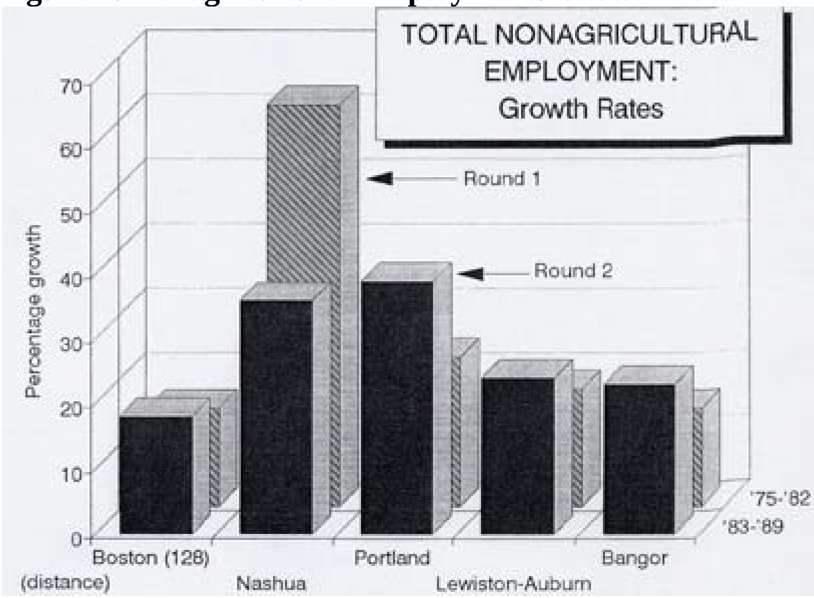


Source: U.S. Bureau of Labor Statistics

The economic wave

Many consider the early 1970s as a time when the manufacturing sector of the nation shifted towards "high-tech" products. Boston's early comparative advantage in this area caused national demand to be attracted towards Boston. In terms of our example, this "dropped the stone" into the New England economic pond. Since that time, the New England economy has experienced two expansionary periods: 1975-1982 (labeled "round 1" here) and 1983-1989 (labeled "round 2"). To analyze how an economic wave might be radiated from Boston to outlying regions, Figure 2 displays the growth rates in nonagriculture employment for the Boston (including the Route 128 beltway area), Nashua, Portland, Lewiston-Auburn and Bangor during these two economic boom periods. The metropolitan areas are displayed in order of location from Boston (on the horizontal axis), and one can envision Interstate 95 at the bottom of the figure. During "round I," Boston probably began to experience constraints on its growth, specifically through labor shortages, and therefore began to deflect economic activity to surrounding areas where labor was still in ample supply. The closest area, and first to be impacted, was Nashua, NH. While Boston was growing only at 14%, Nashua was growing at an unprecedented 62%. The next was Portland with 22% growth, then Lewiston-Auburn with 17% growth, and finally Bangor with 15% growth. This was the beginning of the economic wave traveling up Interstate 95. Because the economic growth impact area (Boston) was restricted by labor shortages, the surrounding areas experienced most of the growth.

Figure 2: Nonagricultural Employment: Growth Rates

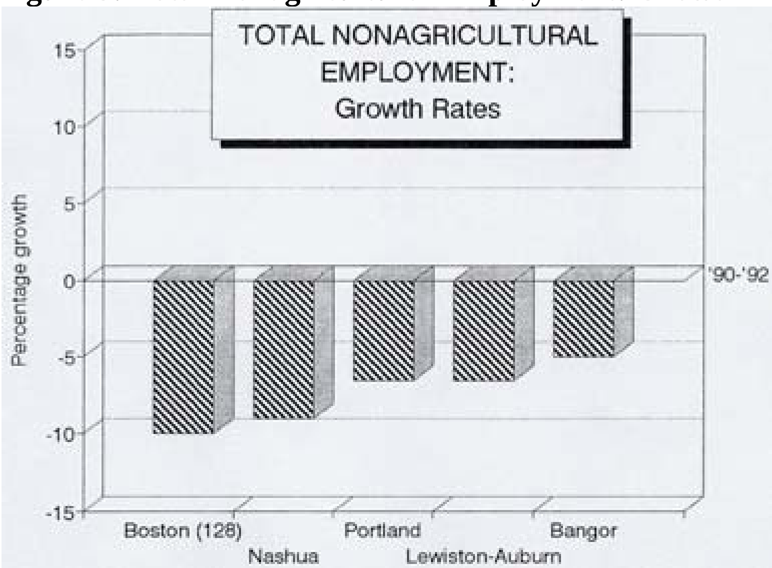


Source: U.S. Bureau of Labor Statistics

Round 2 in Figure 2 is the 1983-1989 economic boom. Again, Boston's growth was constrained, and economic activity was deflected north. This time, Nashua also began to experience constraints on its growth because labor markets had already tightened in round 1. Therefore, economic growth was deflected further north to areas with abundant labor supply. The growth rates for Portland, Lewiston-Auburn and Bangor are greater during round 2 than in round 1. In other words, the crest of the wave migrated north from Nashua to Portland. In summary, the economic areas closest to Boston experienced greater growth sooner than did the outlying areas.

Unfortunately, the economic boom periods ended, and a recession began in 1990. Figure 3 displays the decline in employment for the four metropolitan areas between 1990 and the present. Boston experienced the largest employment decline of all the metropolitan areas, since there is no constraint on the downside of an economy. Notice that the declines are smaller the further away an area is from Boston. In other words, the economic wave works in reverse.

Figure 3: Total Nonagricultural Employment: Growth Rates

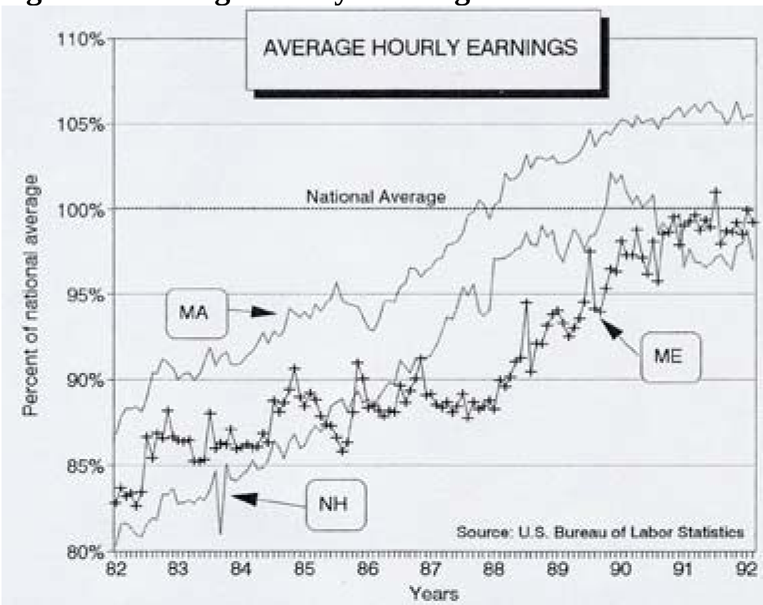


Source: U.S. Bureau of Labor Statistics

Regional labor markets

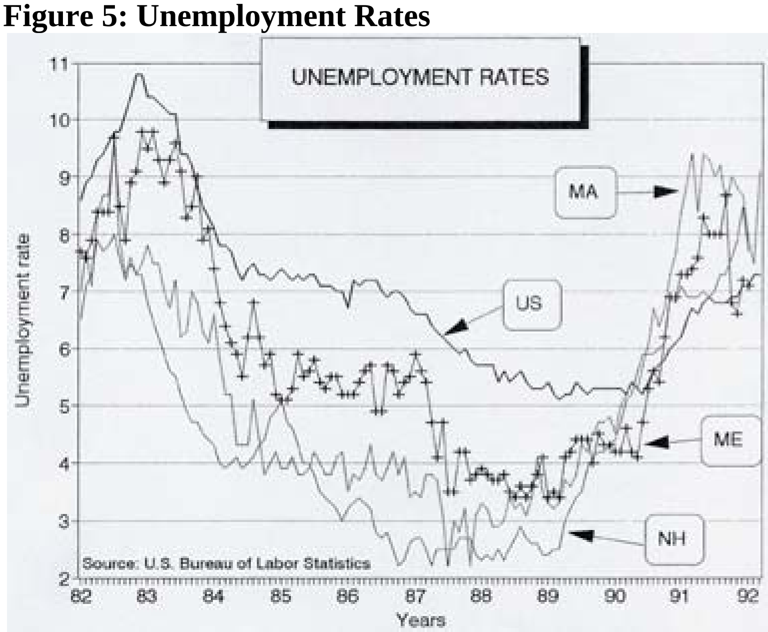
Labor costs are a significant ingredient in a firm's location decision. Firms are attracted to low labor-cost areas and repelled from high labor-cost areas. Figure 4 displays the relative average hourly earnings as compared to the national average for Maine, New Hampshire and Massachusetts from 1982 to the present time. Specifically, the diagram shows that in 1982, the average hourly earnings in Massachusetts were approximately 87% of the national average, and Maine and New Hampshire were at approximately 84% and 82%, respectively. Figure 5 displays the unemployment rates for these three states and the nation during the same time period. The combination of these two figures indicates the relative tightness of the regional labor markets. This information suggests the probable cause of the recent economic boom period in New England. It also explains why Maine's economy out-paced the nation beginning in 1986, why the Boston area experienced a recession before the rest of New England, and why Maine and New Hampshire also experienced recessions.

Figure 4: Average Hourly Earnings



Source: U.S. Bureau of Labor Statistics

Figure 5: Unemployment Rates



Source: U.S. Bureau of Labor Statistics

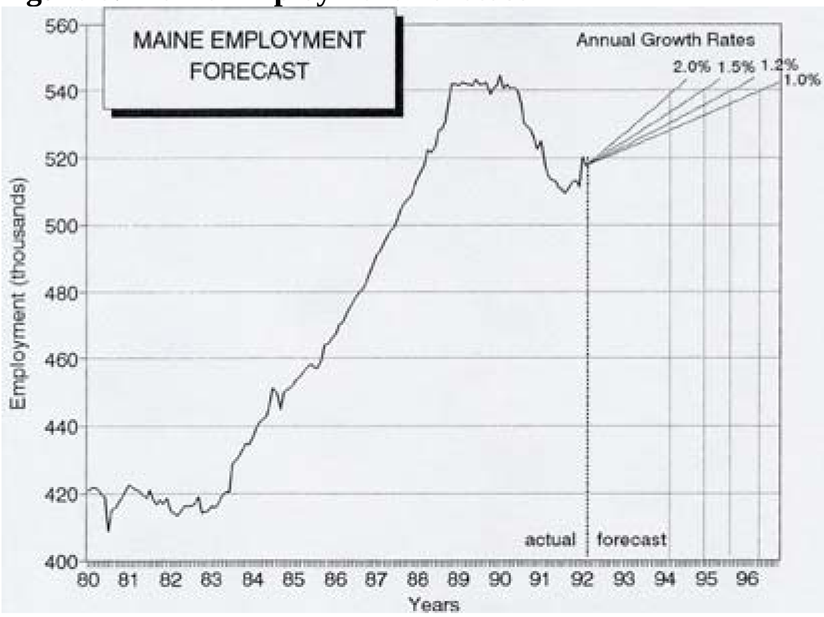
Notice that the relative wage rates for the three states in the early 1980s were well below the national average, and that the unemployment rates were not significantly different from the national rate. There was ample labor supply in New England to support economic growth and at relatively cheap rates. The combination of an excellent labor market and Boston's comparative advantage in "high-tech" manufacturing attracted new firms to the area, which resulted in a prolonged boom period for New England. However, as the Boston economy grew, labor became relatively scarce and the relative wage rate began to increase and the unemployment rate fell. This continued until 1986, when Massachusetts and New Hampshire both experienced severe labor shortages, which resulted in sharp increases in their relative wage rates and drastic declines in their unemployment rates (to approximately 2.2%). This indicates that both states were experiencing constraints on their economic growth. Maine, on the other hand, continued to have an ample labor supply, as evidenced by the low relative wage rate and higher unemployment rate. The combination of the tight labor market in Massachusetts and New Hampshire and an abundant labor supply in Maine caused firms to be drawn into Maine, which resulted in Maine's unprecedented economic growth during the second half of the 1980s. Then, as in the two neighboring states, Maine's relative wage rate increased and the unemployment rate decreased as a result of the new economic growth. During this time, we can see that Boston had the tightest labor market, as evidenced by the highest relative wage rate and lowest unemployment rate. Boston's tight labor markets were followed by New Hampshire and then Maine.

The tight labor market in Boston continued until 1988, when its relative wage rate reached the national average. Shortly thereafter, Boston lost its comparative advantage of cheap labor (as compared to the rest of the nation) and fell into the present day recession (see Figure 1). With the wage rate pressure still on for New Hampshire and Maine, their wage rates also approached the national average in 1990. Soon after they reached the national average, their economies also dipped into the current recession.

The outlook

Historically, employment in Maine has tended to follow the national trend. However, in the latter half of the 1980s, a growth "bubble" in excess of the national rate developed in Maine, with the most likely cause being the Boston economy. However, with Boston's expansionary growth period over, the "bubble" in Maine burst, and Maine seems to be drifting back to the national average. Recent signs indicate the Maine economy may be bottoming out, and the national economy is also probably bottoming out. Perhaps with a little luck, Maine will return to the historical trend of following the nation. With modest growth forecast for the nation, Maine could experience moderate annual growth between 1% to 2% in the near future. As Figure 6 indicates, if the Maine economy does experience 2% annual growth, then we should get back to the previous peak (1990) employment levels in about 1994. If the growth rate is 1%, then returning to the peak 1990 employment levels will be delayed until about 1996. Although the future growth rate is hard to predict, it is fairly clear that substantial growth in Maine will not occur until the Boston area economy begins to improve and the relative wage rate in Maine improves (that is, falls relative to the national average) to attract new businesses.

Figure 6: Maine Employment Forecast



However, the New England economy and the Maine economy, specifically, have experienced structural change and are sailing into uncharted territories. For as far back as the data goes, Maine has always had a relative wage rate well below the national average. Furthermore, Maine's relative wage rate has always been lower during times of high unemployment, and higher during times of low unemployment. This acted as a self-correcting mechanism. During times of recession, the relative wage rate would fall to make Maine's labor attractively priced in the national market. Today, however, not only is Maine attempting to compete nationally with an uncompetitive relative wage rate, but Maine is also experiencing simultaneously high unemployment rate. Maine's relative wage rate seems to be somewhat rigid and has not fallen to help correct the situation, as it did in previous recessions. This development is new to Maine, and could have significant consequences for the future.

References:

Breece, James H. 1991. "An Approach to Forecasting the Maine Economy." *Maine Policy Review*. Vol.1. No.l . pp.145-149.

Breece, James H. and N. Edward Coulson, 1988. "Dynamics of the Transmission of Employment Effects Across Metropolitan Areas." *Urban Studies*. 25, pp.145-149.

Endnotes:

1. The material in this article was first presented at the Nineteenth Annual Governor's Economic Development Conference, The University of Maine, May 13,1992.

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