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An Approach to Forecasting the Maine Economy

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Until recently, the U.S. has enjoyed the longest peace-time economic expansion recorded in history. The main thrust of the expansion began in early 1983 when the economy experienced a structural shift away from manufacturing activities towards non-manufacturing activities. The economic expansion was extremely rapid and concentrated. Between 1980 and the height of the expansionary period, nominal personal income rose in the U.S., New England, and Maine by 110 percent, 130 percent, and 130 percent, respectively. During the same time, non-agricultural employment rose in the U.S., New England and Maine by 26 percent, 20 percent, and 28 percent, respectively. The unemployment rate fell to 3.5 percent in Maine and New England and to 5.5 percent nationwide.

The rapid expansion had a profound effect on the Maine economy. In terms of employment growth, the key industries were construction (118 percent growth), services (55 percent growth), wholesale and retail trade (55 percent growth), and finance, insurance and real estate (24 percent growth). While many people welcomed this economic growth, new concerns were being articulated and resulting public-policy proposals debated. The social concerns dealt with solid waste management, adequate and affordable housing, labor shortages, and education.

Beginning in 1989, the New England economy began to experience an economic slow-down. At the time, the slow-down was consistent with the "economic soft-landing" that was anticipated due to higher interest rates, caused by the Federal Reserve Bank's tight monetary policy. Unfortunately for New England, however, the economic slow-down turned into a severe recession. Maine's unemployment rate climbed to approximately eight percent, nominal personal income slightly declined by one percent (which represented a significant drop when adjusted for inflation), and employment declined by nearly six percent. The current social concerns are now connected with an ailing economy and state budget deficits.

A modeler's view of the economy

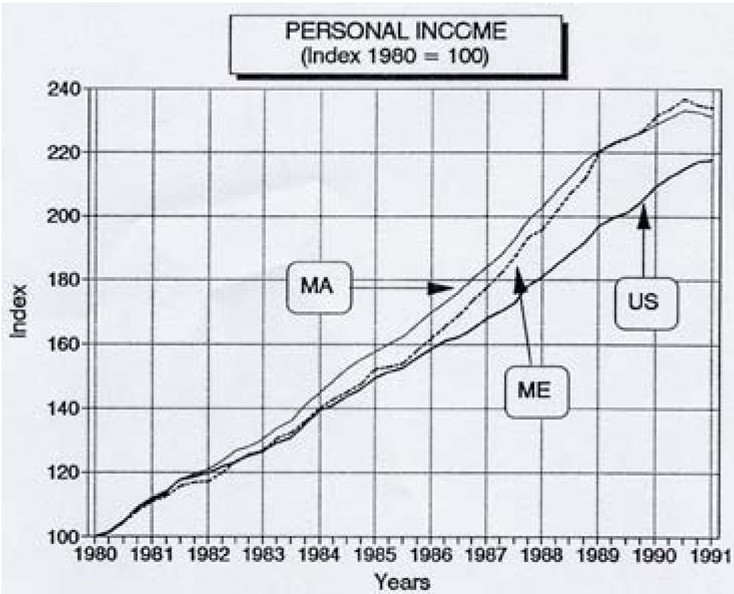
Analyzing a state economy is no easy task, and forecasting one - even in the best of times - is even worse. For one thing, the regional economic data upon which forecasters depend to measure economic activity is often limited and not available in a timely fashion. Consequently, it is difficult to determine the current situation, let alone the future. An overall measure of economic activity at the national level is gross national product (GNP), upon which most national forecasts are based. At the regional level, a comparable statistic is gross state product (GSP), which unfortunately is not regularly available. Consequently, most regional economists monitor total non-agricultural employment and personal income as proxies for GSP. In addition to limited regional economic data, state forecasting is further hampered by the lack of any "consensus" approach towards modeling.

There are numerous statistical methods which can be employed to model a state economy. Without investigating each one of these, let's investigate the most popular hypothesis: that the Maine economy is determined by national and regional economic trends. This is justified since Maine produces and exports goods and services to regional and national markets. National markets are usually fragmented, and therefore national aggregate statistics - namely national employment and personal income - are used to approximate the activity in these markets. In addition, economic theory suggests that regional markets are primarily located in a region's "central city" that is the hub of economic activity in the region, and radiates activity throughout the region. In New England, Boston is clearly the central city. To understand the relationship between Boston and the rest of New England, 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 that are located further from the central city receive the ripples later and in lesser degree than areas that are located near the central city. Therefore, one can model the activity level in Maine by applying the working hypothesis that the Maine economy is dependent upon the activity levels of Boston and the nation.

Using this approach, one can begin to explain the roots of the economic expansion in Maine. Historically, Maine and New England grew at approximately the national growth rate. Then in 1983 the nation began its economic expansion, causing the New England and Maine economies to grow along with it. However, New England - mainly Boston - began to out pace the rest of the nation. Its 128 beltway, lined with high-tech industries, started to rapidly expand, along with the business and banking services industries (caused by the deregulation of the banking industry). This caused a tremendous jump in the activity level in Boston - "the Massachusetts' miracle" - which began to "overheat" the local economy by creating housing shortages, labor shortages, and increased costs of doing business. The increase in economic activity was radiated out to the rest of New England, including Maine, by firms relocating to lower-cost areas with adequate labor supplies and housing. In Maine, the economic growth was observed traveling north along 1-95, affecting Portland, Lewiston-Auburn and finally Bangor (although much later and to a lesser degree).

We can now apply this approach to the current economic situation. Figure 1 shows nominal personal income for the nation, New England and Maine. Notice that before 1983, all three economies grew at approximately the same rate. After 1983, the growth in the Massachusetts' economy began to outpace the nation. In mid-1985, the Boston economy began to deflect some of its growth outward, causing Maine to also grow above the national growth rate. Then starting in mid-1989, the Massachusetts' growth in personal income began to flatten out, and consequently so did Maine's. Fortunately, however, the persistent growth in national personal income worked to support personal income in Maine, keeping its decline to a modest one percent.

Figure 1: Personal Income
Index (1980 = 100)



Source: U.S. Bureau of Economic Analysis

Figure 2 displays the same effect more dramatically in terms of employment. Between 1983 and 1986 all three economies began to grow. Then in mid-1985 employment in Maine began to rapidly expand mainly due to constraints on the Boston economy (severe labor and housing shortages). Employment in Massachusetts during 1989 was very interesting because it began to peak out while employment in the nation continued to grow. Since employment in Maine is hypothesized to be dependent upon both the Massachusetts economy, which was declining, and U.S. employment, which was continuing to grow, the combined effect resulted in an economic "soft-landing" for Maine. Then in 1990, employment in the nation also declined, contributing to the negative forces on Maine's employment, and resulting in its eventual decline.

Figure 2: Total Nonagricultural Employment
Index (1980 = 100)

Source: U.S. Bureau of Labor Statistics

The future

To produce a short-run forecast for Maine requires that we first obtain some insight into the future of the national and Massachusetts economies. Unfortunately, the current outlook for each of these economies is bleak. National economic forecasters are now anticipating a "double dip" recession, or in other words, a continuation of the current recession. Short-run forecasts of the Massachusetts' economy are also not very optimistic, in light of the proposed cuts in national defense spending, the ailing high-tech industries, and the consolidation of the banking industry.

Utilizing our working hypotheses for the Maine economy and the insight we obtained from the 1989-1990 period, we can now investigate the necessary economic conditions that must occur for the current recession in Maine to end, or in other words, for the downward slide in the economy to bottom out. The answer is clear; at a minimum, either the national economy or the Boston economy must first bottom out. The most likely scenario unfortunately is that neither one of these two economies have yet bottomed out, and therefore Maine's economy has not either. The next most likely scenario is that the national economy has bottomed out but that Boston's economy has not. In this scenario, the most optimistic outlook for Maine is that its economy has bottomed out and will experience a period of no-growth. The least likely scenario, but most optimistic, is that both the national and Boston's economies have bottomed out and are beginning to grow. Needless to say, Maine's economy would be expected to grow under these circumstances.

In conclusion, the most likely outlook for the Maine economy is a continued, yet slow, decline in economic activity until the national economy has unambiguously bottomed out. Furthermore, growth in the Maine economy will not occur until there is growth in the national economy and the Boston economy shows signs of bottoming out. Specifically, with the recent pickup in consumer retail sales and a slower rate of decline in employment in Maine, Massachusetts and the nation, Maine should experience only a moderate economic decline for the rest of this year, and begin to bottom out during the first half of next year. When economic growth does reappear in Maine, it will most likely be moderate and will not occur until the second half of 1992. Furthermore, it will take several years before we return to the 1989 employment levels that we once enjoyed.

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