Urbanization and American Economic Development, 1900 - 1930

Patterns of Demand in Baltimore and the Nation

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The definition of the role of the businessman in economic development continues to be one of the more interesting problems in business and economic history today. The field has been dominated for some time by historians of the entrepreneurial school. These historians, using the model developed by Joseph A. Schumpeter, have focused on the innovator as the dynamic element in economic growth. Certainly the introduction of these ideas in the early 1950's revitalized business history, and I feel that some of the very best historical sutdies came out of this background. Yet recently there has been a growing concern, not so much with the particular works produced by the entrepreneurial historians, but with the Schumpeterian model itself and its emphasis on the businessman and his innovations as the driving force of economic development. Robert Fogel has argued that there was a "broad supply of opportunity" in nineteenth century America and that chance, operating "within this set of opportunities," determined the course of growth not the entrepreneur. In short, these economic historians suggest that demand patterns rather than supply changes are the key to our understanding American development. It is with this context that my dissertation and its conclusions are set.

In examining the changes in demand patterns of the late nineteenth and early twentieth centuries, the most obvious shift

was the movement from a rural to an urban nation. Urbanization has, of course, long been mentioned by historians as a factor in economic development. Yet, I felt, that the process involved in the growth of the city and the relationship of this growth to the rest of the economy had been insufficiently explored. My study attempted to analyze one particular aspect of this problem, the nature of demand generated by the city governments. While I focused on the experience of Baltimore, a brief survey of national data indicated that the Baltimore experience was similar in many regards to that of other major cities, and I feel that the general conclusions have a broader validity than the single case which was examined.

The city government played a crucial role in this analysis because it was through its expenditures that many of the new urban demands were actualized. Using the government as the central element in my model, I concentrated upon developing conclusions about the factors that influenced the demand for city services, the response of the city government to those demands, and the impact of that response on the economy. As one might expect, the primary response to changing demands was a shift in the importance of the expenditures of the various city departments. In fact almost by definition the budgetary outlays reflected the demand patterns. But I also found that there was an institutional evolution which was an integral part of the city's response to growth. As Baltimore expanded, the old, informal, decentralized

administrative structure of the government was no longer capable of dealing either with large-scale operations or with the new technology which they required. "Boss rule" was inefficient not only because of malfeasance, but also because conditions demanded that the city perform new functions and expand older ones. In 1900 Baltimore adopted a centralized, functionally-departmentalized structure that was very similar to those being developed by contemporary businesses. Viewed from this perspective, the Progressive movement in Baltimore appeared to have been aimed at the adoption of an organization adequate to meet the new demands.

While these institutional changes were interesting, the other two areas turned out to be the real heart of the study. In trying to analyze the factors that influenced urban demand and hence city expenditures, I found it necessary to break the activities of the government first into functional departments, and then into operating and capital divisions. Instead of focusing my attention on the total demand for city services, I examined the demand for each of these subdivisions. I found that there were two basic factors that influenced the size of operating outlays in all of the departments: 1) population; and 2) per capita income. The level of capital expenditures, on the other hand, was determined by three things: 1) the rate of population growth; 2) per capita income; and 3) "technological imperatives." First let me review my analysis of the impact of population and income

As Baltimore grew, the rate of population expansion varied but was always positive. With a few exceptions, governmental operating cost rose throughout its history. However capital outlays depended on the rate of growth and therefore did not increase steadily. As growth slowed, the importance of the operating budget rose compared to the capital budget. This was probably the main factor that determined the changes in the composite expenditure pattern. The effect of rising per capita income was more subtle, and my conclusions here were not quite as firm. It was apparent though that income growth brought a demand for improved service in the existing operating departments and brought a demand for new services, some of which required capital investments. The main element, let me emphasize, in determining the relative importance of the various municipal activities was the population, its absolute level, its rate of expansion, and its distribution.

The third item that influenced capital outlays, "technological imperatives," grew out of population and income changes but were fundamentally different than the developments described above. I found that as Baltimore grew it went through a number of technological stages. Transition from one stage to another occurred when it was no longer possible to meet the needs of the city simply by expanding the old capital system. When such crises arose it was necessary to abandon the old capital and install a new capital system that embodied a new technology.

Crises of this type appeared in the road and sewage systems of Baltimore during the period covered by this study. In the sewage system, for example, cesspools could not meet the demands of the larger and denser population: The ground in much of the city had become saturated with sewage, and it was necessary to abandon the cesspool system in favor of modern, sanitary sewers. Because these technical crises were linked not only to population and income but also to the technological structure of the old capital system, they did not always arise in periods of rapid growth. In Balitmore I found large capital expenditures for roads and sewers in a decade of relatively slow expansion. Iechnological imperatives, therefore, introduced discontinuities in the course of urban development whose explanation required the use of a fairly complex analytical framework.

Besides describing the pattern of municipal expenditures and the factors which influenced it, I attempted to evaluate the impact of this demand on the economy. It was readily apparent that the outlays of local governments exceeded those of either the state or federal units during this period. Moreover the municipalities formed a relatively important sector in the national economy. Approximately 6.4% of the total national wages and 10% of the net capital formation were dependent on the outlays of urban governments. In terms of national income, this sector was larger than either mining or construction and about equal to transportation.

In order to trace more precisely the manner in which municipal expenditures effected the economy, I sought to determine the impact of these outlays on the demand for particular products. I first approached this problem by preparing estimates of the production functions of the capital and operating divisions of the Baltimore city departments. Although the production functions were different for each department, I was able to identify some general patterns. In those departments where little capital was used, a large majority of the outlays consisted of payments to labor. In capital utilizing departments, about half of the expenditures were for wages and about half for materials.

Because of the low material consumption in operations, I focused my further analysis on the capital divisions. Using these production functions and data on national municipal expenditures, I identified nine industries in which the demand generated by city governments was an important factor. A time-series analysis confirmed the results of this direct estimation process. In general these industries, as one might expect, produced heavy construction materials such as sand, gravel, cement, and asphalt. Although such industries were not in the technologically advanced sector of the economy, most of them were rapidly expanding in the early twentieth century and they contributed to the growth of that period.

In addition to their direct impact on particular industries, municipal expenditures had the indirect effect of increasing

local aggregate income. Using the production functions already developed, I was able to advance a rough estimate of the regional income multiplier for municipal outlays. I found that because of the high labor costs and the use of heavy construction materials, most of which were produced locally, the regional multiplier was larger for city investment than it was for ordinary business investment. Funds spent for municipal capital construction did not immediately flow out of the area to purchase goods but instead added to local income. I concluded that the value of the multiplier was probably around two - somewhat smaller than national income multipliers but still significant. Let me point out though that in Baltimore, as in many cities, deficit financing could only be used for capital development, and so as population growth slowed in the twenties, this process became less important.

In both its direct and indirect impact, municipal expenditures appear to have been especially important in the period 1900-1930. In the thirty years prior to 1900, municipal capital outlays accounted for less than four percent of the national net capital formation. This figure rose to about ten percent in the three decades after 1900 and finally reached a peak of about 15% in the period 1909-1938. In the years following 1930, however, the data suggested that municipal outlays were playing a declining role in national capital formation. Because of its apparent importance to the economy I would have liked to have

been able to describe more closely the link between urbanization and the general economic cycles of the period but this was impossible due to data deficiencies. At least in one cycle, that of the 1920's, urban development preceded both the general upturn which followed 1921 and the general downturn after 1929. I would hesitate to say that urbanization was the only factor in the boom of the 1920's but certainly it was an important one. When in the last half of that decade, downturns in both the short-run and long-run trends in urban development coincided, economic stagnation was probably inevitable. Not only did 1927 bring a sharp cyclical fall in the capital outlays of city governments, but it also marked the closing of the period in which municipal capital development was a major growth sector in the economy. When recovery finally came, urban capital construction failed to reach its previous importance in the national economy.

There are two general conclusions that can be drawn from this study. To begin with, I feel that the data I present in the dissertation give strong support to my hypothesis that the urbanization process played an important role in this period of American economic development. This role was not that of the "leading sector" on which many entrepreneurial-oriented studies of economic growth have focused. The city government did not generate demand for technologically advanced goods. Instead, the municipal activities created opportunities for local businessmen, for contractors, and for suppliers of construction

materials. It directly and indirectly furnished employment to thousands. Urbanization stimulated demand in the traditional sectors and it generally strengthened the local and regional economies. But even though these activities did not involve advanced technology, they appeared to be crucial factors in determining the pace and timing of economic expansion.

Ihe second general point I want to emphasize concerns the model used. I am more convinced than ever that demand-side analysis offers the key to our understnading the course of modern American development. I focused on the municipal response to urbanization but the private sector also reacted to these changing demand patterns. Hopefully in future studies this analysis can be extneded to the rest of the economy. Whether or not further research proves that such extensions are valid, the results of my study have, I feel, already demonstrated that a demand-side approach can be useful in exploring certain aspects of economic growth. Clearly the demand patterns generated by urbanization were the major factors in determining the scope and scale of municipal expenditures. Since during this period the outlays of local governments were important elements in the national economy, urbanization, if only through this single institution, had a significant impact on the course of American economic and technological development.