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INTERMETROPOLITAN TRENDS IN
ADMINISTRATIVE EMPLOYMENT

By
HILARY R. SHEEHAN

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INTERMETROPOLITAN TRENDS IN ADMINISTRATIVE EMPLOYMENT

by

Hilary Sheehan


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Intermetropolitan Trends in Administrative Employment

Hilary R. Sheehan

ABSTRACT

This paper examines trends in the distribution of the administrative and control functions of the private sector among SMSAs. Business service employment, normalized by SMSA population size is used as an indication of these trends. An increase in the concentration of business service employment was found.

This paper investigates trends in the distribution of the administrative and control functions of the private sector among standard metropolitan areas or "SMSAs". The hypothesis is that the distribution has become more concentrated during the past twenty years. Confirmation of the hypothesis would indicate that the control functions of the economy have become increasingly concentrated in a few cities and hence segregated from other aspects of production.

The premise underlying this paper is that the intermetropolitan distribution of business service employment gives an indication of the intermetropolitan concentration of the top portions of the corporate hierarchy. A concentration of national and regional corporate headquarters within an SMSA would certainly attract a large business service sector. Business service firms however also cater to establishments serving local consumers. This paper measures the size of an SMSAs business service sector relative to its
population base in order to separate the two components of business service demand. If an SMSA business service sector grows during the sample period at the same rate as the population, there is no evidence of administrative employment.

The methodology used in this paper is designed to ascertain not necessarily where corporations are headquartered but where the actual managerial and administrative functions take place. There are often tax incentives for firms to locate their nominal headquarters in one place while administrating the company elsewhere. In addition, most corporations have multi-layered hierarchies which include many regional and subregional offices. These offices may be controlling large portions of the company, a phenomenon missed by methodology which examines only the location of company headquarters.

A crucial black box in this formulation is the demand function for business services. Demand for business services has expanded during the sample period both in absolute terms and as a proportion of total services.¹ However, the size and other characteristics of the firms demanding these services is unknown. For any given task, firms face the choice of whether to hire their own in-house units to provide these services or whether to hire business service firms. Contracting with an outside firm provides economies of scale unattainable by small firms while even large firms may require specialized

¹ Nationwide ratio of business service employment to total service employment:

<table>
<thead>
<tr>
<th>Year</th>
<th>1958</th>
<th>1967</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.21</td>
<td>.32</td>
<td>.36</td>
</tr>
</tbody>
</table>

Source: See the Appendix.
outside expertise for some jobs. Conversely in-house units can be better attuned to the idiosyncrasies of the organization and be more flexible toward corporate requirements. Identifying the source of business service demand is not possible without further investigation since there are plausible contradictory tendencies in the demand for business services.

Relevant Research

Confirmation of the hypothesis would be consistent with the scenario developed by Allan Pred to explain the pattern of increasing concentration in the distribution of corporate headquarters among SMSAs.² Pred hypothesizes that collocation economies of scale provide incentives for corporations to choose their headquarters in cities with large corporate sectors—cities which specialize in the administrative functions of the private sector. Improvements in communications and transportation during the sample period have been highly conducive to this type of centralization.

Thomas Stanbach and Robert Cohen addressed the same type of questions in their analysis of metropolitan specialization. Cohen's approach was to examine the distribution of advanced corporate service jobs over time. Those cities with the largest proportion of these types of jobs would be those specializing as the locations of the administrative echelons of the private sector. Stanbach similarly looked at the employment composition of a metropolitan area to determine its economic specialization. Both authors found a tendency for the same cities to consistently maintain a strong business

service sector over the past few decades. In contrast, cities with specializations such as manufacturing were unable to attract a significant amount of administrative employment.

Methodology

The salient difference between this paper and other research on employment distribution is the definition of concentration employed. Concentration is defined as occurring in those SMSAs where the business service employment figures are disproportionate with population. An expansion of producer service employment which was related to an increase in city size would not indicate an increase in administrative specialization, since firms which cater to the local population also use business services. Thus the impacts of changing population distribution are excluded from the analysis in an attempt to identify cities with rapidly expanding administrative sectors.

Normalizing business service employment in terms of local population serves two purposes in identifying cities with a high concentration of administrative employment. First, the procedure excludes from the analysis demand for business services generated by firms which serve consumers directly. Second, the population levels can be interpreted as approximating local employment levels. Cities which have a high concentration of corporate regional and national headquarters would demand business services disproportionate to the number of people employed at the location. In this sense

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metropolitan areas with an abundance of business service employment relative to population levels can be interpreted as specializing in administrative employment.

A strongly skewed distribution of business service employment as measured by this methodology would indicate a large domain for business services (using the jargon of central place theory). However, excessive business service employment in relation to population would be a departure from traditional central place theory because the employment is unrelated to city size. Also central place theory would suggest that all national headquarters would be located at the largest city in the nation with each subnational headquarters being located in the largest city in the region. Thus this methodology provides a test of central place theory as applied to business service employment and corporate hierarchies.

The investigation used data for eighty SMSAs for the years 1958, 1967, and 1977. The business service employment data was collected from the Census of Selected Services. Concentration was measured using a gini coefficient. The gini coefficient is defined for this paper to be the ratio of the area of the region below a hypothetical lorenz curve to the area of the entire triangle below the diagonal. Since the smaller the area of the region below the curve, the smaller the gini coefficient, small gini coefficients are associated with skewed distributions of business service employment. The following

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4 The figures exclude non-payroll establishments such as self employed individuals and limited partnerships. The number of employees on payroll was used as the number of employees for business services. These statistics are collected for a specific week which varies between census years. Changes in the reporting of proprietorships and partnerships during the sample period precluded their inclusion in the employment figures.
procedure was used to calculate the gini coefficients.

For each SMSA

\[ \text{bus.ratio} = \text{percentage of the sample's total business service employment located in each SMSA} \]

\[ \text{pop.ratio} = \text{percentage of the sample's total population located in each SMSA} \]

The eighty points would then be:

For \( n = 1 \) to 80:

\[ \sum_{i=1}^{n} \text{pop.ratio}_i , \sum_{i=1}^{n} \text{bus.ratio}_i \]

To derive the area underneath the lorenz curve:

\[ \sum_{n=1}^{80} \left( \frac{\text{emp}_{n-1} - \text{emp}_{n-1}}{2} \right) \frac{\text{pop}_{n-1} - \text{pop}_{n-1}}{\text{emp}_{n-1} - \text{pop}_{n-1}} \]

The gini coefficient would then be:

\[ (0.5) - (\text{area the curve calculated above}) \]

The gini coefficients were:

\[
\begin{array}{ccc}
1958 & 1967 & 1977 \\
.366 & .292 & .216
\end{array}
\]
I also calculated gini coefficients for a smaller sample, excluding the three largest cities in business service employment and population- Chicago New York, and Los Angeles. The gini coefficients for the smaller sample were:

1958  1967  1977
.344  .268  .204

Both samples revealed increasing concentration in the distribution of business service employment. The smaller sample demonstrated and even greater degree of concentration than the larger sample. The difference between the two samples is explained by the decrease in the share of total business service employment located in the three largest SMSAs as described in Table 1. Table 2 provides a more detailed description of the change in business service employment distribution. All eighty SMSAs were ranked according to the share of the sample's total business service employment and then split into nine groups of ten SMSAs each. For each group and each year, the groups total share of population and business service employment were calculated. These two proportions were then used to calculate the ratio of the group's business service employment share to its population share.

The top group was the only one to have its share of the sample's business service employment decline during from 1958 to 1977. Table 3 demonstrates the way in which the decline in the top group's share of business service employment increased the shares of the other groups. The top group's loss in share was primarily absorbed by the groups ranked 3, 4 and 5.
TABLE 1
Shares of Business Service Employment Located in the 3 Largest SMSAs

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>.281</td>
<td>.136</td>
<td>.246</td>
<td>.137</td>
<td>.182</td>
<td>.138</td>
</tr>
<tr>
<td>Chicago</td>
<td>.116</td>
<td>.066</td>
<td>.095</td>
<td>.070</td>
<td>.076</td>
<td>.073</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>.105</td>
<td>.077</td>
<td>.106</td>
<td>.064</td>
<td>.100</td>
<td>.051</td>
</tr>
<tr>
<td>Total of top three</td>
<td>.502</td>
<td>.279</td>
<td>.447</td>
<td>.271</td>
<td>.358</td>
<td>.262</td>
</tr>
</tbody>
</table>

Note: Each share is the proportion of total sample employment or total sample population contained in the SMSA. The bottom row gives the proportion of total sample employment and population attributable to the three SMSAs.

Source: See the Appendix.

TABLE 2
Employment and Population Shares for Grouped SMSAs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>.140</td>
<td>.128</td>
<td>1.094</td>
<td>.133</td>
<td>.136</td>
<td>.978</td>
<td>.149</td>
<td>.141</td>
<td>1.057</td>
</tr>
<tr>
<td>3</td>
<td>.127</td>
<td>.147</td>
<td>.864</td>
<td>.147</td>
<td>.163</td>
<td>.902</td>
<td>.178</td>
<td>.177</td>
<td>1.066</td>
</tr>
<tr>
<td>4</td>
<td>.072</td>
<td>.088</td>
<td>.818</td>
<td>.076</td>
<td>.108</td>
<td>.704</td>
<td>.104</td>
<td>.124</td>
<td>.839</td>
</tr>
<tr>
<td>5</td>
<td>.040</td>
<td>.163</td>
<td>.245</td>
<td>.053</td>
<td>.119</td>
<td>.445</td>
<td>.056</td>
<td>.081</td>
<td>.691</td>
</tr>
<tr>
<td>6</td>
<td>.021</td>
<td>.039</td>
<td>.538</td>
<td>.025</td>
<td>.045</td>
<td>.556</td>
<td>.027</td>
<td>.047</td>
<td>.574</td>
</tr>
<tr>
<td>7</td>
<td>.010</td>
<td>.028</td>
<td>.357</td>
<td>.013</td>
<td>.030</td>
<td>.433</td>
<td>.015</td>
<td>.034</td>
<td>.441</td>
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<tr>
<td>8</td>
<td>.009</td>
<td>.041</td>
<td>.220</td>
<td>.022</td>
<td>.041</td>
<td>.537</td>
<td>.027</td>
<td>.044</td>
<td>.614</td>
</tr>
<tr>
<td>9</td>
<td>.000</td>
<td>.011</td>
<td>.000</td>
<td>.012</td>
<td>.000</td>
<td>.000</td>
<td>.003</td>
<td>.012</td>
<td>.250</td>
</tr>
</tbody>
</table>

Note: The Emp and Pop columns denote the business service employment and population share for each group and year. The Ratio column denotes the ratio of the employment share to population share for each group year.

Source: See the Appendix.
TABLE 3
Change in Share of Business Service Employment between 1958 and 1977

<table>
<thead>
<tr>
<th>Rank</th>
<th>Change in Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.142</td>
</tr>
<tr>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>3</td>
<td>.050</td>
</tr>
<tr>
<td>4</td>
<td>.051</td>
</tr>
<tr>
<td>5</td>
<td>.032</td>
</tr>
<tr>
<td>6</td>
<td>.006</td>
</tr>
<tr>
<td>7</td>
<td>.005</td>
</tr>
<tr>
<td>8</td>
<td>.018</td>
</tr>
<tr>
<td>9</td>
<td>.003</td>
</tr>
</tbody>
</table>

Source: See the Appendix.
Conclusions

The results indicate an increase in the concentration of business service employment and hence in administrative employment during the sample period. Although the share of business service employment accounted for by the largest SMSAs declined, other SMSAs near the top of the ranking expanded their share considerably. Furthermore the largest SMSAs throughout the period had more business service jobs per capita than the smaller SMSAs— as was demonstrated by the small gini coefficients and the values for the "ratio" statistic.

These findings are indicative of a trend toward the separation of administrative functions of corporations from the production of goods and services. In conjunction with the increasing dispersal of production sites, the results indicate a new spatial form for the economy.

Appendix

Data Preparation

Most of the sample SMSAs have been redefined by the Census Bureau during the sample period. To obtain consistent definitions of these SMSAs the census figures have been adjusted so that the SMSAs have the same boundaries in each year. Some county data must then be added or subtracted from the SMSA data so that information from the same SMSA for different years will correspond to a consistent geographical area. For some SMSAs, information for several years was missing. These numbers were derived using a procedure which uses state
data to impute missing county and SMSA data.  

Population Estimates

The metropolitan area population data for 1977 were derived from a Bureau of Census Current Population Report entitled "Estimates of the Population of Counties and Metropolitan Areas July 1, 1976 and July 1, 1977". The 1958 and 1967 population figures were estimated using the 1960 Population Census in conjunction with the 1977 population estimates. A straight line interpolation was used to estimate the SMSA population data for 1958 and 1967.

\[
\begin{align*}
pop77 &= 1977 \text{ population} \\
pop60 &= 1960 \text{ population} \\
difference &= pop77 - pop60 \\
1958 \text{ population estimate} &= pop60 - \frac{2}{11}(difference) \\
1967 \text{ population estimate} &= pop60 + \frac{7}{11}(difference)
\end{align*}
\]

There were no SMSA statistics published for New England in 1977. Although all of the county data was present, these figures were not broken into the components of which these SMSAs are composed. The 1977 population figures were estimated using the following procedure for each New England SMSA:

\[
\frac{(1970 \text{ SMSA})(1977 \text{ county})}{1970 \text{ county}} = \text{missing SMSA data for 1977}
\]

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where 1970 county and 1977 county are the total populations of all counties partially contained in the particular New England SMSA.

Data Sources

Population


Business Service Employment


Bibliography


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