

OFFICE BUILDINGS AND THE ROLE OF DOWNTOWN IN THE POLYCENTRIC CITY

by Wayne Archer and Marc T. Smith

Urban form has evolved rapidly in the past two decades from the traditional urban pattern where economic functions are found predominantly in the central business district. Today suburbia has more economic activity than downtown by several measures.^(28,23,10) The emergence of polycentric cities^(12,14,18,26) and the continued expansion of that form suggests the future role of downtown may simply be as one node among a number in a metropolitan area without a predominant place in the metropolitan hierarchy. Some argue that the reliance of the suburbs on center cities is lessening and the suburbs are becoming more independent.⁽²⁸⁾ Others demonstrate that downtowns have a unique role in key activities^(6,28) and a special function in the metropolitan economy.

The rise of edge cities has made the monocentric city and the exponential density function increasingly irrelevant for explaining urban patterns.⁽²⁰⁾ There are two explanations for suburbanization and the growth of polycentric cities: one is a natural evolution theory which states that decentralization has been driven largely by transportation advances; the second emphasizes the role of social and fiscal problems of central cities. It is not always clear empirically which explanation dominates, and it has been concluded that both are important.⁽²⁰⁾

Firms may move to the suburbs instead of concentrating in the CBD for cost savings in land, labor and transportation; if those costs dominate then a nonmonocentric city will result.⁽²⁷⁾ CBDs cease to grow when agglomeration benefits fail to dominate congestion costs and greater advantage can be obtained in other centers.⁽¹³⁾ The extent of polycentric development in a metropolitan area is therefore dependent on trade-offs among commuting costs, congestion benefits of agglomeration and labor costs,⁽¹⁸⁾ with these trade-offs benefiting outlying areas at present. Siting preferences in current markets are targeted to relatively undeveloped or well-off fringe communities with good highway access

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and sites suitable for campus environments, rather than to poorer inner city communities.⁽⁹⁾ Those trends will continue due to a clustering of activities and favorable property tax and public service balances. Traditional location theories talk more about inter city location than about distribution of growth between rich and poor communities in a metropolitan area.⁽⁹⁾

The appropriate role of governments in addressing urban problems varies with which theory is followed. If natural evolution dominates, then governments should accommodate the needs of that evolution. For example, transport planning should not be oriented to the CBD, and it is inefficient for economic development efforts to retain downtown jobs and promote downtown revival.^(14,26) If social and fiscal factors dominate, and fiscal factors are causing distortions, then policy should target those issues. For example, open housing laws in the suburbs would stimulate center city housing by ending downtown concentrations.⁽²¹⁾

Another line of work examines the gentrification or reurbanization of cities. While some argue that the trend is toward the expansion of metropolitan settlement through an outward movement of population,⁽²²⁾ others debate the importance of a movement back to the city. Focusing on housing, some conclude that the extent and impact of gentrification have been exaggerated,^(3,4) while others argue that reurbanization is an important phenomenon.⁽²⁾ World cities may have a special role in which the core will be a key node of activity in the information and financial flows of the evolving economy.⁽¹⁹⁾ Advances in telecommunications will have a centralizing influence in certain nodes because of opportunities to interact with other sources of information.

Therefore, two general views are advanced: one advancing the continued growth of polycentric cities, the other for a rebirth of downtowns. The rebirth may only occur in world class cities; however, what of the cities that are not so identified? Have the forces leading to suburbanization, exurbanization and polycentric cities overwhelmed the traditional urban core so it no longer has a unique function? Or does the downtown continue to have a special role in the economy? Suburbanization of employment has left central cities dependent on offices as a source of tax revenue and employment.⁽¹⁵⁾ The role of downtowns in the office market has important implications for the design of strategies to attract economic activity, mitigate the problems of inner-city residents and address such other metropolitan problems as transportation and land use patterns.

Thesis: The Role Of Downtown In The Office Based Economy

New office buildings in downtown Los Angeles may be a visual symbol, but they are not an indicator of downtown revival.⁽¹⁴⁾ The past two decades have seen the suburbs with more office space than downtowns, although downtowns also have experienced expansions in space particularly in the early to mid-1980s. Decentralization of manufacturing, office parks and retail and wholesale activity was more pronounced than the expansion of downtown office buildings during the 1980s.⁽²²⁾ Because of the poor amenity packages in CBDs, many new firms which provide job sources have looked to the suburbs for location and growth. New entertainment and shopping complexes may enhance the attractiveness of CBDs as an office location.⁽¹⁵⁾

Examination of downtown versus suburban office space has tended to focus on firms renting office space.^(7,8,11,15,16,17,30) The results of a Toronto study indicate that downtowns are centers for higher order functions where face-to-face contact is important. Based on a study of the New York metropolitan area, suburban firms have a subservient role and a need for activities found in the downtown.⁽²⁸⁾

Examining the locational choices of office firms at a point in time can fail to capture the dynamic element of change in the evolution of the urban environment. If the current direction of change is ongoing, it may be only a matter of time for the demise of downtown. Advances in communication have enabled more firms in the non-world city to move out as they overcome the inertia which holds them in the downtown. Alternatively, downtowns may stabilize and even grow as office centers. An approach to more dynamic elements of change is to determine the investment potential of downtown as indicated by the investment value of downtown versus suburban office buildings.^(31,5,24,29) The behavior of participants in the office market, as indicated by rental levels, is an indicator of their views regarding the market's viability. If the future is decline and the recent spurt of downtown office construction was more tax and financing driven than economically motivated, then this should be reflected in rent trends. Likewise, if downtowns have a unique role in the metropolitan office market, then rent levels should reflect that assessment by participants.

This article first identifies the market factors, as supported by research, for general purpose office buildings which have the potential to affect long-term rental rate growth. Secondly, we test the experience of the market in Jacksonville, Florida, a medium-size office market and non-world class city, to determine the relative rental growth rates in

different locations. By doing this, tentative conclusions are drawn which can be tested in other markets concerning the viability of downtown investment and the implications for the future of downtowns. The hypothesis to be tested is that downtowns have a function and a fixed location that will make downtown office buildings outperform suburban buildings.

Factors Affecting Long-Term Growth

Location, Location and Location

It is axiomatic to consider location as a factor in relative growth potential. The body of research in geography and in land economics attests to the significance of access to transportation nodes and economic centers as potential factors. Further, office research specifically emphasizes access to face-to-face contact; this may be the most intense form of location sensitivity.^(7,15)

In addition to communication and transportation as factors determining office location, there appears to be an image or visual presence factor. Previous analysis indicates that downtown high-rise office buildings function as a marketing device which accords a valuable visual presence for the primary occupant.⁽¹⁾

Beyond Location

In addition to the location factors, office buildings may be distinguishable by their potential to offer demand economies of scale. That is, there are market-generated services and amenities that can be elicited only by the presence of numerous offices clustered in close proximity. The benefit of these advantages is enjoyed primarily by offices within the cluster. Second, there appears to be a potential marketing value from being in the "right" suburban cluster. For complex business and professional services (because the product itself is very difficult to evaluate by a prospective client), the image of a firm can be important as a first step to generate business. Selecting a favorable business environment or neighborhood appears to be an important element in establishing a favorable image. Finally, employee retention may be enhanced by cluster benefits.

Vulnerability to Change

Office markets have at least two special risks. First is technological change. A cursory review of office building history in the 20th century reveals that office buildings have gone through several phases of dramatic technical change. Certainly, during the last 50 years the office building has experienced the same change in materials and systems as residential properties plus important others, such as elevator improvements; new lighting methods (fluorescent); the communication evolution (e.g., fiber optics); new uses of glass, steel and synthetic materials in basic design; and the resultant changes

in size and shape. Furthermore, for office buildings which are less restrained by tradition and convention than residential properties, the effect of such innovations has been more extensive. As a result, the technical vintage could be a major factor in the competitiveness of an office building.

A second risk, especially to the suburbs, is the changing characteristics of a given location. The completion of new bridges, circumferential freeways, tollways, etc., inevitably must have an impact on the relative accessibility of suburban locations and downtown as well. Variation in this risk must cause variation in the growth potential of rental rates as the "right" address changes. Similarly, changes may occur in surrounding land use which impacts the environment, image and the growth potential of an office building.

Conclusion about Influences on Rental Rate Growth

The downtown high-rise appears to be the most enduring type of building in rent and value growth. With its location the most constant in character and its image less directly dependent upon technical vintage (e.g. the Chrysler Building or the Empire State Building), the downtown high-rise preserves relative durability in market position. Further, the size of many high-rises provides the potential to create a cluster effect both in terms of demand economies of scale and in terms of neighborhood or environment.

Also, regarding market durability, demand economies of scale and image benefits of a quality cluster may enable the larger cluster to resist erosive effects of changing location and technology. Least durable are the isolated buildings. Without the stabilizing benefits of neighborhood image and demand economies of scale, isolated buildings are the most vulnerable to change.

Empirical Tests Of Rental Growth

The following information is the result of examining data from Jacksonville which tested the growth of rental rates. The approach is to compute the growth rate in the quoted rental rate for individual office buildings (or appropriate groups of buildings) over the time period available, and then use multivariate statistical regression to explain variation in the growth rate.

Over a long period, the growth in quoted rental rates should be a good indicator of how the market perceives a building.¹ The growth rate is influenced little over time by differences in initial costs or in operating expenses, since the market will control the rental rate through the vacancy level. Therefore, by analyzing rental growth rates, the influence of market perceptions upon investment returns and value is isolated.

For Jacksonville, appropriate data were available for 27 office buildings or groups of buildings. Rental rates were available for 1978 and 1988. Although the number of buildings in the sample represents only about 10% of the general business office buildings in the Jacksonville market, they represent over one-third of all the general business office space, an even larger percentage of rental office space and a much larger percentage of the buildings that existed in 1978.

The 27 buildings excluded any known cases of major rehabilitation or renovation, and did not include any with unusually high vacancy in 1988. With a relatively small sample, it is important they include the various types of buildings already identified in this article, e.g., downtown high-rise, isolated suburban, small cluster suburban and large cluster suburban. The suburban buildings included buildings from the first major office park in Jacksonville, as well as buildings from more established major office parks. They are distributed locationally as follows: downtown, 7; major suburban cluster, 6; small suburban cluster, 5; suburban non-cluster, 9. They range in size from 10,000 square feet to over 750,000 square feet and in floors from 1 to 34.

To explain variation in rental rate growth over the test period, characteristics of the individual buildings are used to proxy for the influences already discussed. These include:

Located in the CBD. The CBD is, at once, the largest office cluster in most cities, and it may also be the most stable point in the transportation matrix. Frequently its location was originally selected due to special topographical features that may have made it attractive for urban development relative to surrounding areas. In addition, it is surrounded by other development usually of a different order of magnitude than with other office clusters. For these reasons, we allow for a unique CBD influence through a binary (dummy) variable; 1 - in the CBD and 0 not in the CBD.

Building Space and Floors. Rental growth rates could vary positively with building scale for two reasons. First, larger buildings could permit demand economies of scale internally by having the volume of activity to support food services, delivery and transportation services, etc. Second, larger and especially taller buildings have greater potential image value.

Because scale is related to both space and height, both are used as explanatory variables. But one would expect increased scale to have a diminishing incremental effect on demand for the structure as scale increases. Therefore, log forms of the scale variables seem appropriate.

The log of gross square footage of building area and the log of the number of floors were used.

Year Built. If technological change is a prominent aspect of office buildings, then building vintage could affect the competitive strength of the building over time. Newer buildings would enjoy a stronger market position and a greater capacity to raise rental rates.

Cluster Size. An office building's attractiveness to tenants may depend upon the size of the cluster in which it is located. Through direct inspection, buildings in the study areas were aggregated into clusters. The size of each cluster was determined, and the cluster size was associated with each building as a characteristic. As with scale variables, it is probable that the effect of cluster size diminishes as cluster size is larger. Therefore, we use the log of cluster size.

Beginning Rental Rate. If variation in rental rates depends strictly on the investment in the space offered, then there is no clear reason to expect initial rental rates to affect rental growth rates. However, this may not be the complete story. Either temporary windfall rents or mispricing may be present.

It is not an uncommon assertion that real estate markets are less than competitive. This might be due to unique locational advantage that provides some measure of monopolistic advantage, or it might be due to the cost (scarcity and complexity) of information in real estate markets that increases the likelihood of mispricing. Since one would not expect either monopolistic advantage or mispricing to be enduring, the presence of either phenomenon at any point would be temporary. The implication of either phenomenon is that the initial rental rate would tend to be inversely related to the long period rental growth rate. As a control for this possibility, the initial rental rate was used.

Jacksonville Statistical Tests

The growth in rental rates was computed for individual buildings over a minimum of ten years followed by use regression analysis to explain variation in the growth rate. In the tests, we controlled locational characteristics indicated for major building characteristics and basic lease terms. The small sample of usable buildings however, limited the number of controls we could impose. The variables were cast in binary (category) form which facilitates interpretation of the results.

The explanatory locational characteristics include:

- Downtown vs. suburban
- Large suburban cluster
- Small suburban cluster
- Suburban, non-cluster

Comparing to the last category of building (suburban, non-cluster), all of the other categories should have superior rental rate growth. Thus, in a regression using suburban, non-cluster as the default category, all other categories should exhibit a positive influence upon rental rate growth. The clusters were designated after extensive field examination of the Jacksonville office market.

Basic leasing terms in 1989 (gross vs. net) could affect rental rate growth in several ways. First, gross lease rates should exceed net lease rates, all else equal. Thus, if buildings with gross lease terms in 1989 were net in 1978, the feature should show a (false) positive effect on growth rates. If lease terms were the same in both years, there should not be any significant effect on growth rates over a ten year period. Since there appears to be no combination of leasing data characteristics which would imply a negative effect on rental rate growth associated with a building having gross lease terms in 1989, such a finding would indicate that having gross lease terms is a proxy for some unidentified, non-leasing characteristics.

Table 1 shows the results of our regression analysis. The base (default) case is a non-cluster suburban building of 1 or 2 floors, under 50,000 square feet in size with net lease terms in 1989. For this case the growth rate in rental rates was the constant of .0510. For downtown buildings this was increased by .0410 to a total of .0920. The downtown effect on the growth rate is not only extremely significant statistically, it was extremely significant economically. For the sample, the downtown effect raised the growth rate by 80%.

The effect of being in a major suburban cluster also is statistically significant (5% level), although the effect, at .0100, is distinctly smaller than the effect of being downtown.

The effect of being in a minor suburban cluster appears to be insignificant. The difference between small vs. major suburban clusters favors buildings in major suburban clusters.

Building effects are somewhat different than expected. In building floors, only a height exceeding 6 floors had a mildly statistically significant effect (10% level), but the effect in Jacksonville was negative, $-.0137$. Possible reasons for this are not obvious. On the other hand, the effect of being larger than 50,000 square feet was very significantly positive (2.5% level) and mildly significant economically at .0127.

Lease terms have a highly significant effect statistically (1% level) but in the negative direction. This result does not appear to be interpretable as a problem with leasing information in the data. Rather it appears to result from leasing terms serving as a proxy for economic differences not accounted for in the data.

Conclusion

The Jacksonville results indicate that downtown high rise buildings have a greater potential for rental growth than other buildings in the metropolitan area. These results should be viewed as suggestive and need to be verified in other cities. However, the Jacksonville results imply greater appreciation for downtown buildings than for suburban buildings. This superior growth in investment

TABLE 1

Regression Results for Jacksonville

Dependent Variable: Compound Growth in Rental Rate, 1978 to 1991

Regression Output:

Adjusted R Squared: .832
 Number of Observations: 27
 Mean of Dependent Variable: .0477

Variable	Estimated Coefficient	t Statistic	*Level of Significance
CBD	.01099	2.205	95.0%
Floors (log form)	.00574	2.732	98.0%
Floor Space (log form)	.00183	0.911	—
Cluster Size (log form)	.00413	3.374	99.0%
Year Built	.00045	2.879	99.0%
Rental Rate in 1973	-.01408	-6.326	99.9%
Constant	-.80101	-2.697	98.0%

*one-tail test

value signals that downtown continues to be a viable location for office space, and the demise of downtown is not imminent.

To the extent that the Jacksonville results are representative—and the review here of the relevant economic factors suggests that they should be—there are significant implications for valuing office buildings. Specifically, one should expect the rates of capitalization appropriate to the various classes of office buildings to differ significantly; large downtown buildings would have the lowest rates, and isolated suburban offices would have the highest.

The results have more general implications for downtown development efforts of cities. Some office-based firms need or desire a downtown presence because of either face-to-face contact needs or as an image to the local market. Efforts to attract those firms should be a focus of economic development programs. To expand the number of firms choosing downtown locations, cities expand the amenities available to firms and their employees located downtown.^(15,7) Given the social and fiscal problems confronting cities, it is difficult to address major needs such as improving infrastructure. But efforts to attract health clubs, child care, restaurants, entertainment and shopping services (Ihlanfeldt and Raper use the example of Underground Atlanta), some of which are available in suburban office parks, may make the downtown more attractive as an office location. While further research is required to determine the potential size of the downtown office market, it appears that downtowns continue to have a unique role. Despite the continuing evolution of urban form, the decisions made by real estate investors and office tenants indicate the importance of a center to the metropolitan area for office activity.

NOTE

1. Any difference between quoted and effective rental rates should be dominated by growth in the overall level of rental rates. Note that only variation in the ratio of effective to quoted rental rates is of concern here. As the time interval examined increases, this variation is increasingly bounded relative to the overall magnitude of change.

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