

# SUBURBAN OFFICE DEVELOPMENT AND WORK-RESIDENCE RELATIONSHIPS

*The relationship of office employment and office labor force is important to the successful ongoing development of suburban office space.*

by **Forrest E. Huffman** and **Marc T. Smith**

**E**mployment has grown considerably in recent years in office-based sectors such as finance, insurance and real estate and in professional, personal and business services. Much expansion of employment in these sectors has occurred in suburban areas for several reasons.<sup>1</sup> Technological and transportation advances have decreased the need for central city linkages for many firms.<sup>2</sup> In the suburbs, firms find lower rents, more attractive sites, and less crime and congestion.<sup>3</sup> Also, employers have access to a more skilled suburban labor force to meet the demands created by advances in information processing technology.<sup>4</sup> While the expansion of suburban office space is obvious, less apparent are the components of suburban office employment—the characteristics of the workers employed in these jobs and their commuting patterns.

A 1980 U.S. Bureau of the Census journey-to-work sample is used to examine spatial distributions of office employment, commuting patterns and labor force characteristics in the city of Philadelphia and its suburbs.<sup>5</sup> The sample identifies a population by place of residence and place of work. The sample aggregates data at a sub-county level, which is suitable for the analysis of relatively small suburban areas. The sample therefore provides information to examine sociodemographic and commuting patterns for a significant portion (5 percent) of the office location-employment-worker spectrum within relatively small geographic loci and, as a result, determine the potential success and impact of suburban office development on its immediate environment. Sub-county

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*Forrest E. Huffman is an assistant professor of real estate and director of the Real Estate Center at Temple University. His research is concentrated in the areas of urban analysis and real estate markets and investment. His articles have been published in leading academic and professional journals.*

*Marc Smith is an assistant professor in the department of finance, insurance and real estate at the University of Florida. His research interests include office market analysis, housing policy and government regulation of real estate.*



is defined as a grouping of communities within counties to determine distance of commuting to work sites. Because substantial suburban office development is occurring nationally, issues similar to those identified in our study area can be expected to evolve in other suburban areas. Therefore, although the sample was collected in 1980, our findings and conclusions have relevance for current office development/employment markets.<sup>6</sup>

For the study area, 17 sub-county locations within the suburban counties of Bucks, Chester, Delaware, and Montgomery were specified. We identified office-based service employment using an aggregate of specified industries as denoted by the Bureau of the Census. We

examined the nature of the jobs in this office-based group by focusing on specific occupations (see Exhibit I).

### EXHIBIT I

#### Office-Based Service Employment Industries

Banking  
Savings and loan associations  
Credit agencies  
Security, commodity, brokerage, investment companies  
Insurance  
Real estate, including real estate insurance  
Advertising  
Personnel supply services  
Business management and consulting services  
Computer and data processing services  
Detective and protective services  
Job training and rehabilitation services  
Legal services  
Membership organizations  
Engineering, architectural, and surveying services  
Accounting, auditing, and bookkeeping services  
Noncommercial educational and scientific research services  
Miscellaneous professional and related services  
Public administration

Source: U.S. Bureau of the Census

TABLE 1

#### Office Employment By Type And Location

Occupation	Percent Of Total Office Employment	Percent Of Total Office Employment In Philadelphia
Executive, administrative, and management services	19	55
Professional specialties	8	57
Technical (except health) services	3	53
Sales, financial, business services	8	36
Supervisory, administrative support services*	3	65
Computer operation, secretarial, etc., services*	21	57
Adjustors, investigators*	2	57
Miscellaneous administrative support services*	9	56
Cleaning, building services	2	59
Mechanics, repair trades	5	67
All other	17	67

\*Potential "back office" occupations

### Employment Distributions In City And Suburbs

About 17 percent (5,996) of all employees surveyed in the five-county area worked in office categories. Of these 5,996 office employees, approximately 57 percent worked in Philadelphia City/County. (Table 1 shows the major occupational groups in office categories by location and percentage of total office employment.)<sup>7</sup> Most occupational groups, taken individually, had city-suburban distributions comparable to office employment distribution as a whole. Groups that represented a relatively small percentage of the total had the widest variation. Sales, finance and business services (8 percent of total office employment) were over-represented in the suburbs near the population they serve; only 36 percent were employed in Philadelphia. Mechanics and repair trades (5 percent of total office employment) were over-represented downtown (67 percent were employed in Philadelphia). If back office employment is defined as supervisors and administrative support, computer operators and secretaries, adjustors and investigators, and miscellaneous administrative support, then the distribution of back office employment is also comparable to that of office employment as a whole, e.g., 57 percent of computer operators, secretaries, etc., and of adjustors/investigators were employed in the city.

### Commuting Patterns

Table 2 shows city-suburban commuting patterns and summarizes patterns in sub-county areas within each county for all office jobs. Only in one county did residents commute to the central city in significant numbers, that is, only in one sub-county area in Delaware County did 50 percent of the office employees commute to Philadelphia. City residents did not commute to suburban locations; 91 percent of all Philadelphia office workers lived in the city.

TABLE 2

#### Total Office Commuting Patterns By Place Of Residence

Place Of Residence	Philadelphia (%)	Place Of Work		Elsewhere (%)
		Same Sub-County (%)	Other Sub-County (%)	
Philadelphia	91	NA	7	2
Bucks County				
Highest sub-county	29	35	48	43
Lowest sub-county	6	26	21	13
Chester County				
Highest sub-county	28	39	56	29
Lowest sub-county	3	27	29	7
Delaware County				
Highest sub-county	50	34	41	6
Lowest sub-county	24	12	24	2
Montgomery County				
Highest sub-county	42	47	48	13
Lowest sub-county	6	26	21	2

To further explore commuting patterns and labor force accessibility, we determined commuting time for office workers by sub-county place of work (Table 3). Overall, fewer city residents commuting to city jobs had short (30 minutes or less) commutes than did suburban residents. According to data not shown, 5 percent of all Philadelphia residents commuted more than 60 minutes to office jobs, but less than one percent (0.82 percent) of all suburban office workers across all sub-county groups commuted more than 60 minutes to work. Within office occupations, more back office workers had short commutes. Only one suburban sub-county had more front office workers than back office workers making short commutes.

**TABLE 3**

Commuting Time By Place Of Work

Place Of Residence	Percentage Of Employees Traveling Less Than 30 Minutes		
	All	Front Office	Back Office
Philadelphia	55	57	49
Bucks County			
Highest sub-county	91	89	94
Lowest sub-county	87	84	89
Chester County			
Highest sub-county	89	91	87
Lowest sub-county	82	81	85
Delaware County			
Highest sub-county	94	92	100
Lowest sub-county	83	91	73
Montgomery County			
Highest sub-county	90	89	93
Lowest sub-county	79	78	80

Percentage of all suburban office employees commuting 30 minutes or less is 88 percent.

**Labor Force Characteristics**

Table 4 presents socioeconomic data on employees in Philadelphia and suburban office occupations. The rate of employment of females was slightly higher in the suburbs: Females comprised 48 percent of the city office work force and 50 percent of the suburban office work force. There were more part-time employees in all office occupations in the suburbs than in the city. Suburban locations also had a slightly higher percentage of young office workers (under age 26) than did city locations.

The rate of employment of females in back office occupations was greater than the rate of employment of females in front office occupations in both areas: females in back office jobs comprised about 30 percent of the total work force in the city and 32 percent in the suburbs, but females in front office jobs comprised only 18 percent of the total work force in the city and suburbs.

**TABLE 4**

Selected Demographic Characteristics Of Office Employment

Characteristic	Total		Front Office		Back Office	
	City (%)	Suburban (%)	City (%)	Suburban (%)	City (%)	Suburban (%)
Female	48	50	18	18	30	32
Part-time employment	17	23	9	11	8	12
25 years of age or less	21	22	8	9	13	13
High school diploma or less	53	47	28	24	25	23
College or postgraduate degree	47	54	36	42	11	13
\$10,000 a year or less in income	36	47	17	23	19	24
\$10,000 a year or more in income	63	54	46	41	16	12

There was a greater percentage of college-educated office workers in the suburbs than in the city: fifty-four percent of all suburban workers had college experience. Within this 54 percent, 42 percent worked in front office occupations and only 13 percent worked in back office jobs. Of the 47 percent of all city office workers who had college experience, 36 percent were employed in front office jobs. Therefore, front office workers were more highly educated in both the suburbs and in Philadelphia.

Overall, back office employees in both areas were more often female, and less educated. As a result, one would expect incomes to be lower for back office employees across geographic areas. The 1980 data shows that more back office employees earned less than \$10,000 a year, comparable to \$17,000 today; 19 percent of city back office workers and 24 percent of suburban back office workers earned less than \$10,000 per year. In contrast, only 16 percent of city back office workers and 12 percent of suburban back office workers earned more than \$10,000 per year.

More front office workers earned over \$10,000 per year. Of the 63 percent of all city office employees earning \$10,000 or more per year, 46 percent of the total were front office workers. Similarly, of the 54 percent of suburban office employees earning \$10,000 per year or more, 41 percent were in front office jobs.

**Summary**

Our analysis found that there were two almost completely distinct labor force groups among the individuals who worked and lived predominantly in the city or in the suburbs. The vast majority (91 percent) of all Philadelphia County residents worked in Philadelphia County. An overwhelming majority of suburban residents worked in the suburbs. Only one sub-county had significant

proportions of office employees commuting to Philadelphia County.

There was no evidence that back office employment was more common in suburban areas than other office employment. Rather, all types of office jobs were found in the suburbs. Back office and front office workers commuted to work areas that were close to their place of residence. Employment differentiation was not according to job type but according to geographic location.

Back office employment in our sample, although not segmented geographically, was distinguished by greater percentages of part-time employees, higher female participation rates, less educational attainment among workers and lower salaries.

### Conclusions

Until a similar sample is taken in 1990, it cannot be determined if the commuting patterns disclosed in this analysis have persisted following the rapid expansion of office space in the 1980s. Also, it is not known whether the surge in suburban office space development in the 1980s has exhausted the available suburban labor force. However, one conclusion is obvious from the analysis. Based upon findings concerning short commuting times, it seems likely that suburban employers do not draw employees from the suburbs as a whole but from suburban areas that are relatively close to the employment source. Moreover, suburban employers do not draw employees from the city. Therefore, there is not a suburban market, but there are employment centers that act as small magnets for their immediate areas.

The existence of two distinct labor force areas, as demonstrated in this analysis, suggests that there are complications associated with suburban office development. The findings regarding minimal commuting times suggest that office developers and tenant/employers should consider suburban locations very carefully given a potentially limited supply of labor. The findings may indicate that suburban office employers will be unable to attract workers from the city in the future unless public and/or private transportation programs are created. The low income, poorly educated inner city resident labor pool left behind in the movement to the suburbs will be at a particular disadvantage in competing for suburban jobs. Extensive recruitment programs thus may be necessary. Complications, such as transportation and recruitment programs, increase costs to employers and, if known in advance, may make suburban office developments much more difficult to market. The need for lower rent levels and increased amenities may be required to offset these

added costs. However, increased costs due to higher salaries, employee training and transportation programs may result in additional taxes on office space development in the city. For instance, developers and employer/tenants may be forced to bear the imposition of development exaction fees if indirect suburban development costs make an escape to the suburbs less appealing.

Given the predominance of part-time employment, higher female participation rates, less educational background and lower salaries in back office occupations, maintaining an adequate labor force may be difficult for employers to the extent that office space developers and firms locate back office activities in low density suburban areas. Back office activities may not be the ideal type of suburban office development given the characteristics of suburban office labor force. Therefore, as was predicted, office space developers, employer/tenants and planning officials have been forced to create an urbanized suburban environment in order for that development to succeed.

### NOTES

1. Indicative of this trend are the Office Network's findings that 57 percent of all office space in major metropolitan areas was in downtown areas in 1981, but only 43 percent of the office space was in central business districts five years later, as cited in Fulton, William, "Office in the dell," *Planning* (July 1986): 13-17. A recent report found that in our study area between 1960 and 1980, suburb-to-suburb commuting accounted for 58 percent of the increase in residence-to-work trips, cited by Pagano, P., "Study: Suburb-to-suburb commuting now the norm," *The Philadelphia Inquirer* (June 27, 1987) p. 10 C.
2. See Archer, Wayne R., "Determinants of location for general purpose office firms within medium size cities," *AREUEA Journal* 19 (Fall 1981): 283-297; Chinitz, Benjamin, "The influence of communications and data processing technology on urban form," *Research in Urban Economics* 4(1984): 67-77; Kutay, Aydan, "Effects of telecommunications technology on office location," *Urban Geography* 7,3(1986): 243-257; and Mills, Edwin S., "Service sector suburbanization," unpublished paper Princeton University (1987).
3. Muller, Peter O., *Contemporary Suburban America*. Englewood Cliffs, NJ: Prentice Hall, Inc., 1981.
4. Kutay, Aydan, "Optimum office location and the comparative statics of information economies," *Regional Studies* 20,6(1986): 551-564; Smith, Randy W., and Selwood, David, "Office location and the density distance relationship," *Urban Geography* (October-December 1983): 302-316.
5. U.S. Department of Commerce, Bureau of the Census, *Census of Population and Housing*, 1980. United States: Public Use Micro Data Sample (5 percent sample). Machine-readable data file.
6. For instance, the findings are currently under discussion in the study area. See Knox, Andrea, "To lure workers, suburban firms turn to busing," *The Philadelphia Inquirer* (March 15, 1989) pp. 1 A and 4 A; Warner, Susan, "Slower growth predicted in region's office market," *The Philadelphia Inquirer* (March 12, 1989) p. 11.
7. Data configurations prevent the identification of specific office employment associated with other industries such as manufacturing. Therefore, the cross-reference procedure underestimates total office employment.