Wealth Generation in Metropolitan America: F.I.R.E. As Savior?

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ABSTRACT

The current restructuring of the American economy from goods producing industry to service providing industry has been a focus of concern for many social scientists. While some argue in favor of the rapidly expanding service sector, pointing out that growth in services creates employment and generates income, others emphasize that many service sector jobs pay considerably less than comparable manufacturing sector jobs, which continue to be lost in many metropolitan areas. The Finance, Insurance and Real Estate (F.I.R.E.) industry in particular, is a branch of the service sector that is often associated with the generation of affluence and productivity. This paper examines the importance of the F.I.R.E. industry in 57 Primary Metropolitan Statistical Areas and 3 New England County Metropolitan Areas, and discusses how agglomeration in this industry may or may not be related to per capita income in these Metropolitan Areas.

KEY WORDS: finance industry, metropolitan areas, earnings, economic geography

INTRODUCTION

It is projected that between the years of 1992 and 2005, employment in the service sector of the economy will increase by over 24 million (Anonymous, 1993). The value added to the private service sector in 1992 was roughly 2.8 trillion dollars with the finance, insurance, and real estate sector alone reporting 748.9 billion dollars of value added (Quinn and Baily, 1994). Numerous studies have been conducted examining the relationships that exist between growth in the service sector and levels of productivity and affluence (i.e. per capita income).

There appears to be, however, somewhat of a divided opinion amongst scholars concerning the value of the rapidly expanding service sector to the U.S. economy as a whole (Goe and Shanahan, 1991). There are those who focus on the sector's ability to generate employment, earnings and affluence (Hansen, 1991), while there are others who point out that

many service sector jobs are relatively low wage and that the expansion of such low wage employment may actually do the economy more harm than good (Harrison and Bluestone, 1988).

The term "service sector" is often vaguely defined and frequently used interchangeably with other terms like producer services, service providing sector, tertiary sector, private and government services, and service producing sector. Several scholars have looked at particular components of the service sector, such as, the Finance, Insurance, and Real Estate, or F.I.R.E. sector. Although there is not as much literature on the F.I.R.E. sector in particular as there is on the service sector as a whole, the academic divide concerning the value of the expanding service sector to the economy is still apparent including the F.I.R.E. sector. The central question remains: "In what way is the F.I.R.E. sector related to varying levels of affluence in the modern U.S. urban system?".

This paper addresses this question by examining the dynamics of F.I.R.E. in the 57 Primary Metropolitan Statistical Areas (PMSAs) and in three New England County Metropolitan Areas (NECMAs). Three variables are explored for each geographic area: F.I.R.E. earnings per worker, F.I.R.E.'s percentage of total earnings, and per capita income.

LITERATURE REVIEW

In an overview of recent research concerning producer services, Harrington (1995) finds that geographers and regional scientists have established that the growth of service activity provides employment, increases the complexity and completeness of regional economic structure, brings income into the region, and provides resources for other local establishments. Goe (1994) takes a close look at producer services in two PMSAs, Cleveland and Akron, Ohio. Examining trade between various economic sectors, he finds that although service establishments engage in non-local trade, they are generally dependent on revenue generated by local trade, mainly with other service sector firms.

A number of scholars have published research examining producer services and their connections to per capita income or per capita earnings and/or productivity. Hansen (1991) explores producer service density, which he presents as the sum of a manufacturers' non-production payroll outlays and producer service receipts, divided by private non-farm employment. His study suggests that a strong, positive relationship exists between per capita income and producer service density; and an even stronger relationship between per capita earnings and producer service density. Examining these phenomena in 240 MSAs and PMSAs, Hansen (1991) argues that growth in producer services expands division of labor, and increases productivity, while pointing out that other factors, such as levels of education and metropolitan population size also contribute significantly to income, earnings and productivity.

Drennan (1992), examines the role of U.S. producer services in the international economy. He examines producer services in four nodal CMSA's: New York, Chicago, Los Angeles and San Francisco. He argues that the economies of these CMSA's (Consolidated Metropolitan Statistical Areas) have been stimulated by increased U.S. exports of producer services and producer service growth. He also recognizes agglomeration as a key factor, stating that the four CMSA's have high concentrations of producer service earnings and high rates of specialization in producer services. Interestingly, Drennan (1992) finds that the core counties of each CMSA have much higher rates of specialization of producer services at the aggregate level than do their suburbs. Large producer service firms are much more concentrated in New York, which is the largest of the four CMSA's, than in the other three areas. According to Drennan (1992), New York's producer services sector is positively and significantly related to U.S. exports of producer services. Drennan (1992) also points out that New York's producer services sector is weakly and insignificantly related to U.S. GNP.

Hansen (1991) and Drennan (1992) are

Primary Metropolitan Statistical Areas

Earnings Per Worker In F.I.R.E. 1990

WA Seattle, Tacoma, Vancouver, Portland

OR

CA Santa Rosa, San Francisco, Vallejo, Santa Cruz, Oakland, San Jose, Oxnard, Los Angeles, Riverside, Anaheim

60 0 60 120 180 Miles

Figure 1
Earnings Per Worker 1990

▲ < 13,997
■ 13,998 - 29,939
● > 29,940

Mean : 21,968
Standard Deviation : 7,971

Source: U.S. Department of Commerce
Note: Figures for Boston, Providence, & Hartford
are for NECMAs, not PMSAs.
Map Design: Travis Penland
UNCG Department of Geography

Boston, Providence, Niagara Falls, Buffalo, **NY**, Hartford, **MA**, **RI**, **CT**, Orange Co., Bridgeport, Bergen, Monmouth, Nassau, Newark, Trenton, New York, Jersey City, Middlesex, **WI** Milwaukee, Racine, Kenosha, Lake Co., **MI**, Ann Arbor, Detroit, **PA**, Aurora, Chicago, Cleveland, Joliet, Gary, Lorain, Akron, Beaver Co., Philadelphia, Pittsburgh, Wilmington, **NJ**, Vineland, **IL**, **IN**, **OH**, Hamilton, Cincinnati, **WV**, **VA**, Baltimore, Washington, **DE**, **MD**, **KY**

40 0 40 80 120 Miles

CO Boulder, Denver

NM

TX Fort Worth, Dallas, Houston, Brazoria, Galveston

80 0 80 160 240 Miles

FL Fort Lauderdale, Miami
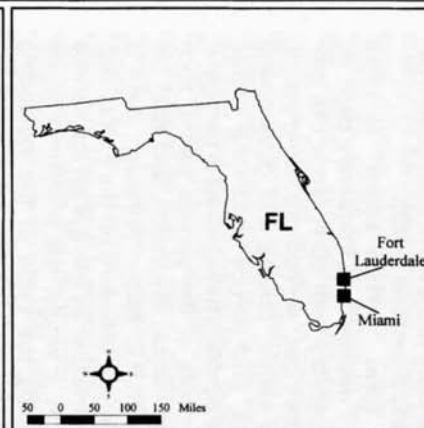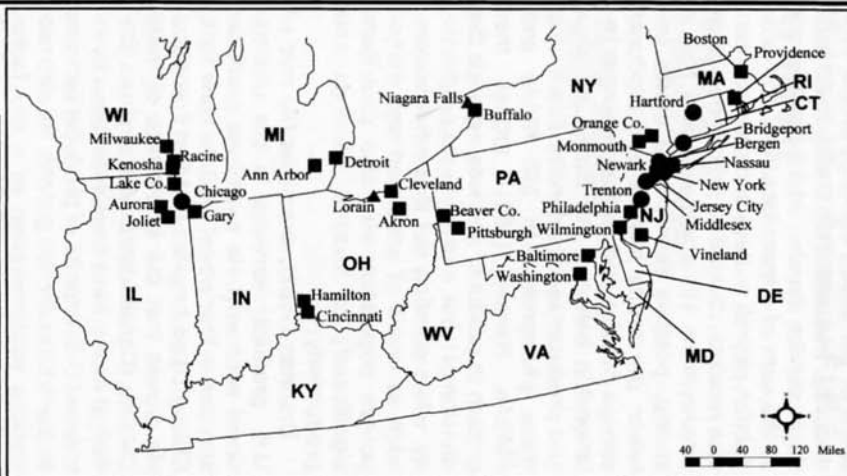
50 0 50 100 150 Miles

Figure 1. Earnings per worker in F.I.R.E. by PMSA, 1990.

Primary Metropolitan Statistical Areas
Percent Earnings In F.I.R.E. 1990

Figure 2
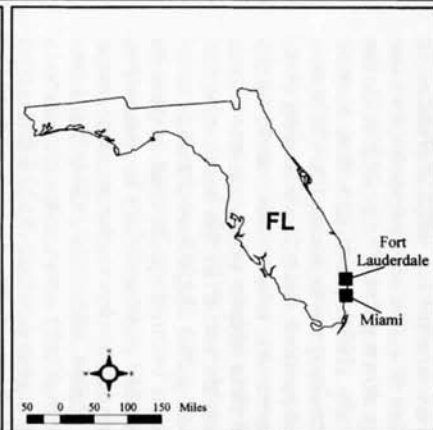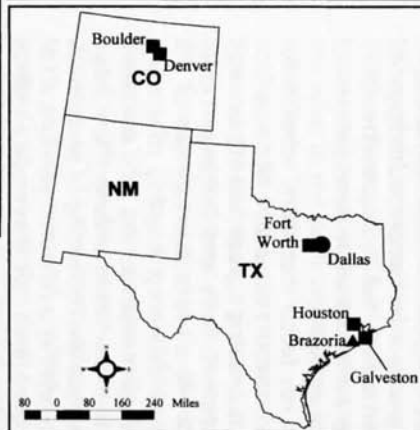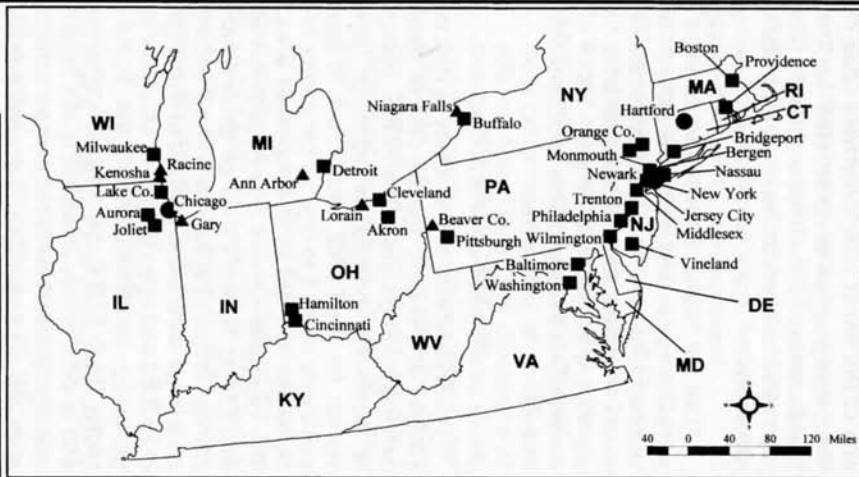**Percent Earnings 1990**

▲ < 3.12
■ 3.12 - 10.05   Mean : 6.585
● > 10.05   Standard Deviation : 3.464

Source: U.S. Department of Commerce
Note: Figures for Boston, Providence, & Hartford
are for NECMAs, not PMSAs.
Map Design: Travis Penland
UNCG Department of Geography

Figure 2. Percent earnings in F.I.R.E. by PMSA, 1990.

among those who argue in favor of the ideology that the service sector is positively related to affluence and productivity. There are others who are eager to point out that the service sector has numerous down sides. For example, Quinn and Baily (1994) point out that service productivity growth during the 1980s was only 0.7 percent, despite a doubling of investments in information technology. Their article speaks of an apparent "productivity paradox" in the service sector, illustrating that large investments in information technology do not appear to have a very positive effect on measures of productivity for many service sector firms. Quinn and Baily (1994) do, however, stress that often, improvements in service sector productivity are difficult to quantify in a reliable fashion and that in many cases, information technology investments have led to improvements in service *performance* without increasing profit margins.

One key factor that many scholars focus on is that the expansion of the service sector is creating a great deal of low wage employment. Rees and Debbage (1992) discuss the current restructuring of the American economy, arguing that while high wage manufacturing jobs are being lost due to deindustrialization, low wage service jobs are increasing in sectors like F.I.R.E., retail and personal services, all of which generated below average earnings per worker in 1990. Greengard (1995) also discusses the shifting of the economy from manufacturing to services, and states that many service jobs pay significantly less than comparable jobs in the manufacturing sector. According to Nelson (1994), not only are service workers more likely to have lower incomes than manufacturing workers, they also have fewer opportunities for full time employment, experience greater inequalities in earnings, and face the possibility of receiving fewer benefits.

Fitch (1994) addresses the F.I.R.E. sector in particular. He argues that rapid growth in New York's F.I.R.E. industry is partly responsible for the poor job market situation in New York. He points out that New York is the only major U.S. city with more jobs in F.I.R.E. than in manufacturing, and that though New York's F.I.R.E. sector continues to thrive, the city still has one of the worst unemployment rates in the country. Income generated by the F.I.R.E. sector, Fitch (1994) argues, is failing to trickle down to the rest of the city's economy;

"Call it a 'higher information services' economy, a post-industrial economy or a F.I.R.E. sector, it's not working. It's not working even in comparison to other U.S. central cities or in terms of New York's own history." (Fitch, 1994, p.24).

RESEARCH DESIGN

The hypothesis of this study is that in PMSAs of the U.S., the percent of total earnings that occurs in the F.I.R.E. sector is positively related to earnings per worker for the F.I.R.E. sector, but, is less positively related to overall per capita income for the entire metropolitan area. The rationale behind this hypothesis is that F.I.R.E. typically only generates substantial levels of affluence when it occurs on a large scale (high percent of earnings in F.I.R.E.) and even then, that affluence is generally contained within the F.I.R.E. sector (high F.I.R.E. earnings per worker) and is only mildly reflected in the larger community (somewhat higher per capita income). The metropolitan areas with high percentages of earnings in F.I.R.E. suggest high levels of agglomeration and the achievement of certain scale economies within the F.I.R.E. sector of a metropolitan area. The earnings per worker variable exposes how earnings generated by the F.I.R.E. sector are distributed among its employees and serves as a measure of affluence of F.I.R.E. workers. The per capita income variable is used as a benchmark of the level of affluence of the entire metropolitan area. Unfortunately, F.I.R.E. earnings per worker and percent of earnings in F.I.R.E. do not reveal details about income inequalities among employees and the distribution of different types of F.I.R.E. establishments, be they corporate headquarters in downtown skyscrapers, where highly paid ex-

ecutives work, or small storefront estab-
lishments along commercial strips where
many low wage clerical workers are
found.

The PMSA is used as the geographic
unit of study because it is representative
of the polynucleated urban form that now
predominates the modern American so-
cial and economic environment.

".. . the PMSA's are better units for
studying processes of change such as
suburbanization because they are
more likely to contain only a single
central city and its suburbs. Also, since
local governments play an important
role in determining the directions of
change of an area, two nearby cities,
which logically fit within a single con-
solidated area, may experience differ-
ent patterns of growth or decline."
(Frey and Speare in Dept. of Com-
merce, 1995, p.145).

To include the New England region in
this study, figures are presented for the
three NECMA's that also have CMSA des-
ignation. They are Boston, MA, Provi-
dence, RI, and Hartford, CT.

FINDINGS

A) F.I.R.E. Earnings Per Worker by PMSA

The mean for F.I.R.E. earnings per
worker for the 57 PMSAs and 3 NECMAs
is $21,968, with a standard deviation of
$7,971. Univariate statistical analysis re-
veals that the data for earnings per
worker in F.I.R.E. is positively skewed and
substantially leptokurtic. Abnormality of
the data can be partially attributed to the
"Manhattan Effect." The New York PMSA
appears to be somewhat of an anomaly,
with its earnings per worker in F.I.R.E. be-
ing so much higher than any of the other
areas studied. This can probably be at-
tributed to the fact that New York is the
home of the New York stock exchange
and a significant agglomeration of in-
vestment brokers and large financial
firms.

The New York CMSA stands out as an
area with high earnings per worker in the
F.I.R.E. sector. Of the nine PMSAs and one

NECMA for which F.I.R.E. earnings per
worker is greater than one standard de-
viation above the mean, six are part of the
New York CMSA, with the core metro
area, the New York PMSA by far the high-
est with $55,882. This figure is greater
than four standard deviations above the
mean. F.I.R.E. earnings per worker in the
other nine of the top ten metropolitan ar-
eas all lie between one and two standard
deviations above the mean, with figures
ranging from $30,714 for Middlesex,
ranking tenth, to $37,864 for Jersey City,
ranking second (Table 1).

Outside of the New York CMSA, high
earnings per worker occur in only four ar-
eas: the Trenton, NJ PMSA, which is just
outside of the New York CMSA, the Hart-
ford, CT NECMA, representing the New
England region, the Chicago, IL PMSA,
home of the commodities exchange, and
the San Francisco, CA PMSA, which has
been recognized as the financial capital of
the west in the post World War Two era
(Hartshorn, 1992).

Areas with F.I.R.E. earnings per worker
that are greater than one standard devi-
ation below the mean are dispersed from
the Great Lakes region to the West Coast
(Figure 1). There are six PMSAs in this
category. They are: Niagara Falls, NY and
Lorain, OH in the Great Lakes region,
Boulder, CO in the Rocky Mountains re-
gion, and Tacoma, WA, Vallejo, CA, and
Santa Cruz, CA on the West Coast. The
surprises here are Vallejo and Santa Cruz,
both of which lie within the San Francisco
CMSA. These are the only two areas with
significantly low earnings per worker in
F.I.R.E. that are part of a CMSA that has a
core with significantly high F.I.R.E. earn-
ings per worker. The San Francisco PMSA
ranks third in F.I.R.E. earnings per worker
with $37,563.

B) Percent of Earnings in F.I.R.E. by PMSA

The mean for percent of earnings in
F.I.R.E. is 6.585 with a standard deviation
of 3.464. Univariate statistical analysis re-
veals that the data for percent of earnings
in F.I.R.E. are also positively skewed and
substantially leptokurtic. Metropolitan ar-
eas with high percentages of earnings in

TABLE 1.

PMSAs Ranked By Percent Earnings in F.I.R.E. with FIRE Earnings Per Worker and Per Capita Income, 1990

	PMSA	FIRE Earnings Per Worker ($)	% of Earnings in FIRE	Per Capita Income ($)
1	NEW YORK	55882	21.2	23744
2	*HARTFORD	30800	15.9	24444
3	SAN FRANCISCO	37563	15.0	29942
4	CHICAGO	34785	11.0	22385
5	DALLAS	27183	10.7	20522
6	BRIDGEPORT	34385	9.9	32342
7	ANAHEIM	24316	9.8	24400
8	*BOSTON	27800	9.3	24315
9	MIAMI	21196	9.3	17823
10	FT. LAUDERDALE	17887	9.2	22355
11	NEWARK	31163	8.9	26600
12	DENVER	20897	8.6	20885
13	LOS ANGELES	28139	8.6	20786
14	PHILADELPHIA	27357	8.3	21347
15	WILMINGTON	22650	7.9	21347
16	BALTIMORE	22500	7.9	21461
17	MILWAUKEE	22772	7.7	19817
18	HOUSTON	25113	7.6	19175
19	MIDDLESEX	30714	7.5	27418
20	SEATTLE	22608	7.4	22540
21	NASSAU	23908	7.3	27919
22	BERGEN	31163	7.2	28593
23	*PROVIDENCE	23400	7.2	16885
24	PORTLAND	20235	7.2	19352
25	JERSEY CITY	37864	7.1	18463
26	OAKLAND	20844	6.9	23452
27	BUFFALO	21196	6.7	18305
28	CLEVELAND	23820	6.4	20758
29	PITTSBURGH	23766	6.4	19159
30	SANTA ROSA	15485	6.4	22055
31	CINCINNATI	20677	6.3	19010
32	AURORA	18963	6.0	21516
33	VINELAND	20000	6.0	16819
34	WASHINGTON	21000	5.8	25363
35	TRENTON	31170	5.6	26026
36	FT. WORTH	18257	5.5	18478
37	GALVESTON	19039	5.5	17744
38	DETROIT	23006	5.4	20453
39	VANCOUVER	16258	5.4	16790
40	MONMOUTH	16634	5.3	24567
41	OXNARD	17307	5.3	21420
42	HAMILTON	15351	4.6	16750
43	TACOMA	13170	4.5	16194
44	RIVERSIDE	14586	4.3	16155
45	SANTA CRUZ	11591	4.3	22025
46	LAKE CO.	23698	4.0	27378
47	AKRON	17074	3.9	18029

TABLE 1. (Continued)
PMSAs Ranked By Percent Earnings in F.I.R.E. with FIRE Earnings Per Worker
and Per Capita Income, 1990

	PMSA	FIRE Earnings Per Worker ($)	% of Earnings in FIRE	Per Capita Income ($)
48	ORANGE CO.	17366	3.9	19788
49	SAN JOSE	19480	3.9	25193
50	BOULDER	10962	3.5	21421
51	JOLIET	14953	3.5	18854
52	VALLEJO	12960	3.2	18587
53	GARY	14466	2.8	16592
54	BEAVER CO.	15828	2.7	15162
55	ANN ARBOR	17286	2.6	22782
56	LORAIN	12388	2.4	16006
57	BRAZORIA	14363	2.3	17951
58	RACINE	14908	2.3	18426
59	NIAGARA	13832	2.0	16647
60	KENOSHA	14176	1.8	17338

*An asterisk indicates a New England County Metropolitan Area (NECMA)
Source: U.S. Department of Commerce, Regional Economic Information System, 1991, State and Metro Area Data Book, 1991

F.I.R.E. seem to be much more spatially concentrated (Fig. 2), with only five MA's showing greater than one standard deviation above the mean in percent of earnings in F.I.R.E. These five nodes of high percent F.I.R.E. closely coincide with areas of high earnings per worker. Again, the New York PMSA ranks first with 21.2 percent of earnings occurring in the F.I.R.E. sector. This figure is also greater than four standard deviations above the mean. The other four nodes are the Hartford, CT NECMA, again representing New England, the Chicago, IL PMSA representing the Great Lakes and Midwest regions, the San Francisco, CA PMSA on the West Coast, and the Dallas, TX PMSA in the south.

Hartford, which ranks second in percent of earnings in F.I.R.E. at 15.9 percent, is somewhat of an anomaly, being so close to New York, whereas the other nodes are more spread out across the country. The most significant concentrations of F.I.R.E. earnings appear to occur in clearly discernible regional growth poles (i.e. New York, Chicago, San Francisco, and Dallas) that serve distinct regional markets. Dallas also stands out mainly because it does not fall within the top ten in F.I.R.E. earnings per worker, as did the other four nodes. A look at the data table shows that Dallas is not far behind, ranking 14th in F.I.R.E. earnings per worker with $27,183.

Areas with low percentages of earnings in F.I.R.E. are almost exclusively clustered in the Great Lakes region. Of the eight PMSAs that are more than one standard deviation below the mean in percent of earnings in F.I.R.E., only one, Brazoria, TX, lies outside of the old rust belt. The Great Lakes region has traditionally been a manufacturing center, where labor intensive goods producing industry has historically been an important part of the local economy.

C) Per Capita Income by PMSA

The mean per capita income by PMSA was $21,144.22 with a standard deviation of $3,853. Univariate statistical analysis reveals that the data for per capita income

are somewhat positively skewed and only slightly leptokurtic.

The per capita income distribution shows a similar "Manhattan Effect" on the basis of F.I.R.E. earnings per worker. Five out of ten MAs with per capita income figures greater than one standard deviation above the mean are in the New York CMSA. The other five are: Trenton, NJ, right next door to New York, Washington, DC, the home of congress, the president, and countless other high wage federal government jobs, Lake County IL, in the Chicago CMSA, San Jose, CA in the San Francisco CMSA, and finally, the San Francisco PMSA, which is the only core area that has significantly high F.I.R.E. earnings per worker, a high percent of earnings in F.I.R.E., and a high per capita income.

D) Relationship Between F.I.R.E. Earnings Per Worker and Percent of Earnings in F.I.R.E.

A regression analysis of the causal relationship between the total percent of earnings in F.I.R.E. and F.I.R.E. earnings per worker yields the following equation:

F.I.R.E. EPW = \$1,926.20

(Percent Earnings in F.I.R.E.) + \$9,284.20

This regression equation is found to be statistically significant well beyond the 1 percent level, with an F value of 135.8 and an R^2 of 0.70.

The coefficient of determination indicates that about 70 percent of the variation in F.I.R.E. earnings per worker is explained by the percent of total earnings occurring in the F.I.R.E. sector. The high R^2 value suggests that PMSAs with highly agglomerated F.I.R.E. sectors tend to generate high F.I.R.E. earnings per worker due to the high skill levels available in a large, diversified labor pool; for example, the "Manhattan Effect." Although the equation is significant, it is important to stress that there is substantial skewness and kurtosis in the distributions of both variables. Therefore, the results should be interpreted with caution.

CONCLUSION

The data are generally consistent with the hypothesis that F.I.R.E. only creates affluence when it achieves significant agglomeration and scale economies, and that the affluence is generally contained within the F.I.R.E. sector and does not necessarily trickle out into the rest of the community. Illustrating this point is the fact that the only CMSA system in which high F.I.R.E. earnings per worker occur in more than one PMSA is New York, where the core PMSA has the highest percent of earnings in F.I.R.E. as well as the highest F.I.R.E. earnings per worker in the country. Not only does the New York PMSA have the highest percent of earnings in F.I.R.E., it has a *much* higher percentage than anywhere else. The gap between New York's percent F.I.R.E. and second ranked Hartford is greater than one standard deviation from the mean. This is even more so the case with F.I.R.E. earnings per worker, where the jump from first ranked New York to second ranked Jersey City is greater than two standard deviations from the mean. In all other CMSA's with an area within high percent of earnings in F.I.R.E., high earnings per worker remain concentrated in the core.

Future avenues of study should take a more detailed look at the New York and San Francisco CMSA systems. New York has much more F.I.R.E. wealth generation than any other metropolitan area in the U.S. and San Francisco has the only highly affluent core area. Surprisingly, the San Francisco CMSA contains two PMSA's that are significantly low in F.I.R.E. earnings per worker, despite the presence of a core with a high percent of earnings in F.I.R.E. and high F.I.R.E. earnings per worker.

Other variables that play into measures of affluence are levels of education and the presence of institutions of higher learning, and overall population size and population density, as a measure of agglomeration for the entire community. An examination of other types of industry that are important to each metropolitan area economy at the local level and levels of employment for these industries would definitely shed some light on where afflu-

ence and wealth are being generated. Percent of population employed in F.I.R.E. may also reveal important details about levels of agglomeration in the F.I.R.E. sector.

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