

Size-Tiered Economic Geography: A New View of the US Real Estate Markets

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Real estate is inherently a local investment. Articulating a regional investment strategy poses special challenges for the real estate portfolio manager due to this basic tenet. The massive US real estate investment market – the private institutional investment universe is roughly \$5 trillion by our estimate – often leads fund managers to divide the nation into manageable segments, or clusters, with which to implement an appropriate investment strategy.

Using metropolitan markets as clusters isn't practical because there are simply too many of them. The federal government currently recognizes 361 metropolitan statistical areas (MSAs) and an additional 573 urban centers with the newly coined label "micropolitan statistical area." It's also not necessary. As we discuss below, most of the value and the overwhelming proportion of investor-owned, institutional-quality real estate lies in a small subset of the US – namely within the nation's largest metro markets. Moreover, though unique in some respects, the property markets in different cities can resemble each other in many ways, including their demographic and economic structures, growth patterns and location.

We offer a method of collapsing the numerous US metropolitan areas into eight clusters based on economic characteristics, geographic proximity and absolute size. The obvious benefit of the eight clusters is more effective guidance in diversifying a real estate portfolio. Properly constructed clusters also benefit market targeting to take advantage of business and property market cycles. A limited number of clusters are also useful in performance benchmarking. For example, performance benchmarking can be meaningful when applied to a few portfolio segments, be they asset classes or city clusters. Benchmarked strategies with too few segments or segments with similar performances provide little insight. Too many segments result in a small contribution from each segment, thus hindering the manager's ability to relate performance to strategy.

Size-Tiered Economic Geography

Exhibit 1 below shows the membership of the eight clusters. The last cluster is termed Opportunistic Markets because it has all the cities beyond the top 35 metropolitan areas. The top 35 metros are classified into one of the first seven clusters. Each of them has one or two anchor cities that are both dominant in and characteristic of the cluster.

Exhibit 1: Clusters Based on Size-Tiered Economic Geography (bold indicates anchor metros)

<u>Capital Metro</u>	<u>New York Corridor</u>	<u>Tech Centers</u>	<u>Southern Growth</u>	<u>Heartland Markets</u>	<u>Lifestyle Centers</u>	<u>Southern California</u>	<u>Opportunistic Markets</u>
Washington, DC	New York Philadelphia	SF Bay Area Boston Austin Portland Raleigh Seattle	Atlanta Dallas Charlotte Denver Houston	Chicago Cincinnati Cleveland Detroit Columbus Indianapolis Kansas City Memphis Minneapolis Nashville St. Louis Salt Lake City	SE Florida Sacramento San Antonio Las Vegas Orlando Phoenix Tampa	Los Angeles San Diego	All remaining domestic markets

Source: Prudential Real Estate Investors Note: SE Florida includes Miami, Fort Lauderdale and W. Palm Beach.

The guiding principles that led to this particular geographic arrangement include:

- **Size:** Clustering should incorporate only important property markets from an investment standpoint. Dominant investment markets should each belong to separate groups unless they exhibit extremely similar characteristics. And the investment universe should be roughly equally distributed among groups.
- **Economic structure:** Markets with fundamentally similar economic dynamics and socio-economic structures should belong to the same group.
- **Geographic location:** Adjacent and nearby metropolitan markets should belong to the same group in case of ambiguity from an economic perspective.

The above principles provided guidance and structure to the cluster construction process. In general, we applied them in the order listed. Size suggests the strategically important markets and helps create groups, followed by economic considerations, with geography lending guidance when the other two traits provided no obvious ideas. This analysis led to identifying seven specific groups covering 35 metro markets.

Capital Metro contains metropolitan Washington, DC, and surrounding markets, including Baltimore, the Maryland suburbs and the rapidly growing northern Virginia suburbs. The government and military-oriented economic base of this region is unique in the US.

New York Corridor includes the largely mature metro areas influenced by the massive, financially oriented New York economy and the strong transportation and commerce links that run along the Northeast Corridor. It encompasses urban areas from New Haven and Waterbury, Conn., to Wilmington, Del.

Tech Centers share the importance of advanced and emerging technology industries to their economies. The economic links outweigh geographic considerations. The six regions rank

among the top 10 US technology centers, host large universities and high-tech firms, and are geographically dispersed. The San Francisco and Boston metro markets anchor this sector.

Southern Growth includes the diverse Atlanta and Dallas economies, two markets that have very similar structures and growth patterns. It also includes Charlotte, Denver and Houston, relatively high-growth markets that serve as regional trade/financial centers for the South and Southwest.

Heartland, anchored by Chicago, includes the largest metro areas in the Midwest and its southern fringe. They have moderate to low growth and typically host a relatively high concentration of manufacturing.

Lifestyle Centers differ from other metro economies with a unique economic and demographic profile – rapid growth and a high proportion of the elderly.

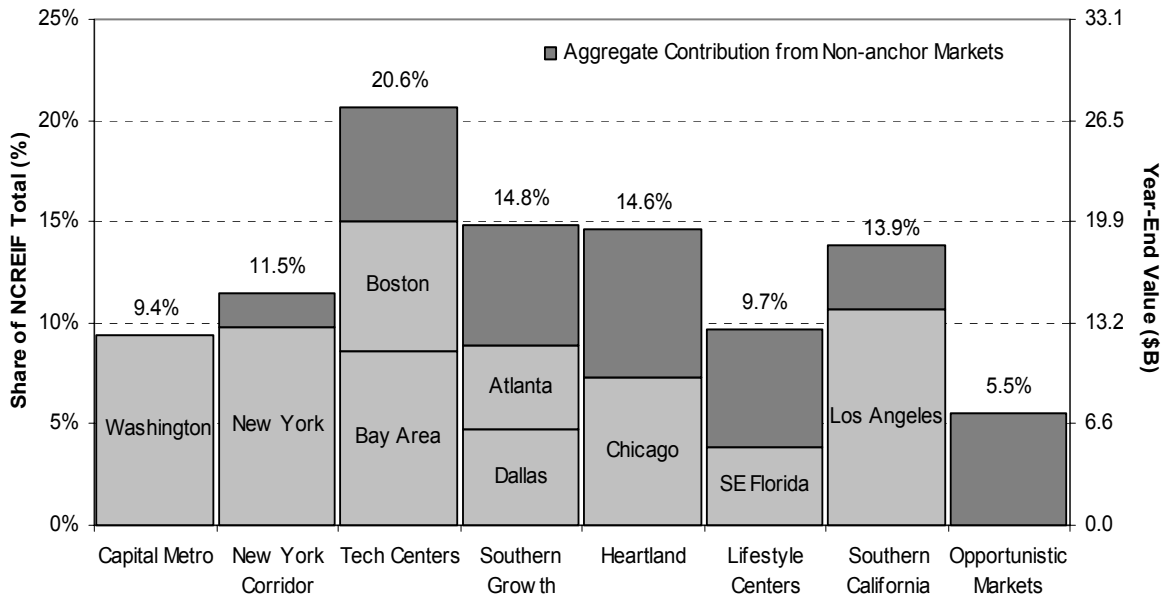
Southern California includes the tightly linked economies along the West Coast. They have relatively high growth and broad economic diversity, including financial services, trade and distribution, technology, and traditional industry.

Opportunistic Markets include all other domestic markets. They contain less than 6% of US institutional investments despite accounting for about half of the US population. Investments in these areas are less liquid because of limited institutional interest and can be riskier because of their smaller, less diverse economic bases.

Investment Distribution

Exhibit 2 shows the year-end 2003 distribution of NCREIF investments in these markets, highlighting the contributions from the anchor markets. Altogether, the 35 metro markets accounted for more than 94% of the total value of NCREIF investments at year-end 2003, leaving only 5.5% in the Opportunistic Markets.

Exhibit 2: Distribution of NCREIF Investments by Cluster (Year-End 2003)



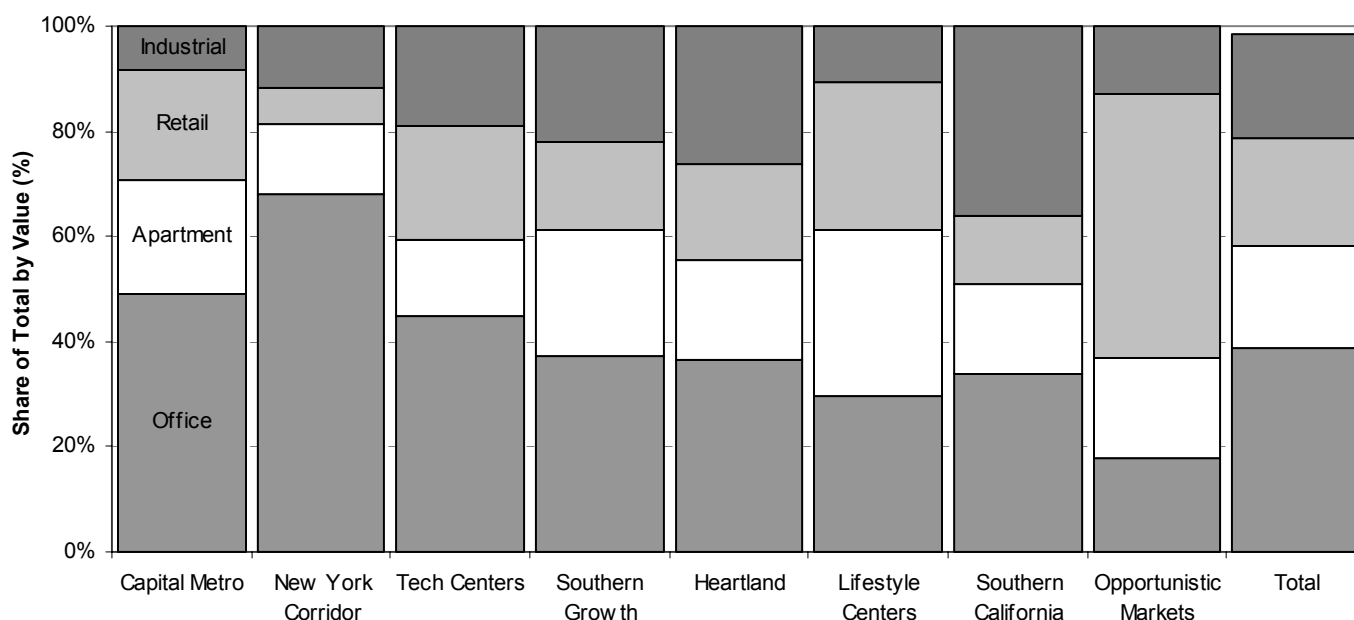
Sources: NCREIF; Prudential Real Estate Investors

The dual-anchored Tech Centers category garners the greatest investment share, with more than 20% of the total at year-end 2003. Three other categories – Southern Growth, Heartland and Southern California – stand at about a 15% share each. The remaining three major categories – Capital Metro, New York Corridor and Lifestyle Centers – capture about a 10% share each.

The 5.5% share of NCREIF investments assigned to the “Opportunistic” group is distributed among more than 25 additional markets. None of these markets contributes more than a 0.4% share of total NCREIF investments. In fact, about one-third of these investments are in undisclosed places because the properties are in markets that fail to meet the four property/two manager rule for the disclosure of detailed NCREIF performance data. Moreover, many of these markets seem to offer focused investment opportunities for only one property type. For example, the two markets in the Opportunistic group with the largest NCREIF investment shares are Reno, half of which are industrial investments, and Honolulu, of which about 85% of the value is in CBD office properties.

Investments in these market clusters reveal some property-type preferences depending on the group, as shown in **Exhibit 3**. For example, the New York Corridor hosts far more office investments by value share – over two-thirds of total investment at year-end 2003 – than do the other markets. Office investing is also relatively more important than other property types in the Capital Metro region and the Tech Centers. Perhaps not surprisingly, NCREIF investors in the Lifestyle markets prefer apartments and retail centers, which reflect their consumer orientations. In Southern California, industrial and office investments dominate, reflecting the commercial and trade orientation of this major gateway to the Pacific Rim. Finally, NCREIF investors currently own far more retail investments and far fewer office and industrial investments proportionally in the Opportunistic Markets than elsewhere.

Exhibit 3: Investment Distribution by Property Type (Year-End 2003)



Sources: NCREIF; Prudential Real Estate Investors

Dominance of Large Metro Areas

Institutional investors prefer to concentrate their investments in the largest metro areas. This preference is clearly demonstrated in **Exhibit 4**.

Exhibit 4: Institutional Investment in Large Markets Ranked by Total Population (Year-End 2003)

	Population		Cumulative Shares	
	Rank	NCREIF	REITs	Population
New York CMSA	1	9.8%	11.8%	7.4%
Los Angeles CMSA	2	20.4%	18.6%	13.4%
Chicago CMSA	3	27.8%	22.5%	16.6%
Washington, DC CMSA	4	37.2%	31.7%	19.4%
SF Bay Area CMSA	5	45.8%	37.5%	21.8%
Philadelphia CMSA	6	47.5%	40.7%	24.0%
Boston CMSA	7	54.0%	44.4%	26.1%
Dallas-Fort Worth CMSA	8	58.7%	47.9%	28.0%
Detroit-Ann Arbor CMSA	9	59.2%	48.7%	29.9%
Southeastern Florida	10	63.1%	51.0%	31.8%
Houston-Galveston CMSA	11	65.9%	53.9%	33.5%
Atlanta	12	70.1%	57.9%	35.0%
Seattle-Tacoma CMSA	13	72.8%	59.8%	36.3%
Phoenix	14	75.3%	61.8%	37.6%
Minneapolis	15	77.1%	62.8%	38.6%
San Diego	16	80.3%	64.4%	39.6%
Cleveland-Akron CMSA	17	80.7%	64.9%	40.7%
Denver-Boulder CMSA	18	83.0%	66.8%	41.6%
St. Louis	19	83.5%	67.3%	42.5%
Tampa	20	84.3%	68.5%	43.4%
Portland-Salem CMSA	21	85.3%	69.4%	44.2%
Pittsburgh	22	85.7%	69.8%	45.0%
Cincinnati CMSA	23	86.3%	70.4%	45.7%
Sacramento CMSA	24	86.8%	70.8%	46.4%
Kansas City	25	87.5%	71.2%	47.0%
Las Vegas	26	88.0%	72.1%	47.6%
Orlando	27	89.1%	73.6%	48.3%
Milwaukee CMSA	28	89.2%	73.8%	48.8%
San Antonio	29	89.5%	74.0%	49.4%
Indianapolis	30	90.7%	74.8%	50.0%
Norfolk	31	90.7%	75.2%	50.6%
Charlotte	32	91.5%	76.0%	51.1%
Columbus	33	92.1%	76.6%	51.7%
Salt Lake City	34	92.4%	77.0%	52.1%
Austin	35	93.7%	77.9%	52.6%
New Orleans	36	93.7%	78.0%	53.1%
Raleigh-Durham	37	94.2%	78.8%	53.5%
Greensboro	38	94.3%	79.1%	54.0%
Nashville	39	94.5%	79.7%	54.4%
Jacksonville	40	94.7%	80.3%	54.8%
Hartford	41	94.9%	80.4%	55.2%
Memphis	42	95.4%	80.8%	55.6%
Buffalo	43	95.4%	80.9%	56.0%
Grand Rapids	44	95.5%	81.0%	56.4%
Oklahoma City	45	95.6%	81.1%	56.8%
Rochester	46	95.6%	81.2%	57.2%
Louisville	47	95.7%	81.5%	57.5%
Richmond	48	95.9%	81.9%	57.9%
Greenville	49	96.0%	82.1%	58.2%
Fresno	50	96.0%	82.2%	58.6%

Sources: Economy.com; NCREIF; SNL Securities; Prudential Real Estate Investors

More than 60% of NCREIF properties (representing private institutional investors) and over half of public REIT property investments lie in the 10 largest US metro areas¹ by population, although less than one-third of the population lives in these areas. The top 30 metro areas represent about half of the US population, host more than 90% of NCREIF investments and almost 75% of REIT investments. In fact, of the 300-plus metro areas defined by the US government, NCREIF investors hold properties in only about 80 of them. REIT equity holdings are more spread out across the US. Nevertheless, about 84% of the estimated value of REIT asset holdings are in these same NCREIF-preferred metro areas.

These investment preferences stem from several considerations affected by market size beyond simply more expensive real estate in large cities: a bigger selection of acquisition opportunities, more liquidity for disposition, and a greater selection of potential partners for development ventures and property management. Larger markets also tend to be deeper markets, exhibiting smaller fluctuations in supply or demand stemming from new construction, from the downsizing or failure of any single employer, or from other isolated events. Most large metro areas are also more diverse in their industry and consumer mixes than smaller ones, reducing their relative exposure to economic fluctuations affecting entire industries.

Exhibit 5 provides more detail on the portion of NCREIF value in each metro market. More than 45% of all NCREIF investment value lies in the top five markets. They also are the largest five markets by population and represent four of the top five REIT investment markets, with Atlanta edging out Chicago for the fifth-ranked investment market among REITs. These five metro markets are widely spread geographically. Two lie on the East Coast, two on the West Coast and one in the Midwest. Moreover, they represent diverse economic bases, including government, finance, traditional manufacturing, the high-tech industry and trade. We thus identify these five as “strategic” markets, each of which anchors one cluster.

Boston, the sixth-ranked NCREIF market, does not display characteristics that clearly distinguish it from the first five markets. Geographically, it lies relatively near New York. Its economy links to New York’s and that of the Northeast in general. It hosts a substantial finance sector, ranks very high as a center for new technology and education, and serves as a trade center for much of New England. But statistical analysis based on economic structure and high-tech concentration clearly links Boston with San Francisco. Although Boston has similarities to New York, Los Angeles and even Philadelphia, its closest and true sister is San Francisco. The San Francisco Bay Area and Boston thus become co-anchors of a cluster known for its technology-oriented economies.

¹ In this report, we use the Consolidated Metropolitan Statistical Area (CMSA) definitions as published and updated by the US federal government through June 1999. For the largest US metro areas, these areas combine a number of adjacent “primary” metro areas into larger conglomerates. In addition, we modify the government definition of the Miami CMSA to include all three Southeastern Florida MSAs. Appendix A summarizes the metropolitan area constituents of the CMSAs used in this report.

In June 2003, the federal government issued a comprehensive revision of its metro area definitions and refined these definitions with an update in February 2004. Under the new definitions, the largest collections of metro areas are termed “Combined Statistical Areas.” These are similar but not identical to the previously defined CMSAs. However, few providers of statistical information use the new definitions yet, so we have used the older ones.

Statistical clustering techniques using socio-economic characteristics place Atlanta and Dallas together. They form the trade and growth centers for most of the Southeast, a region not represented by the five “strategic” markets. However, unlike Boston, they do not cluster particularly close to other anchor cities. We have grouped them together to form the dual anchors of the Southern Growth cluster.

Exhibit 5: NCREIF Investment Distribution by MSA at Year-End 2003

	NCREIF Rank	Number of Properties	Value (\$M)	Market Share	Cumulative Share
Los Angeles CMSA	1	406	14,141	10.7%	10.7%
New York CMSA	2	169	12,917	9.8%	20.4%
Washington, DC CMSA	3	289	12,469	9.4%	29.9%
SF Bay Area CMSA	4	269	11,370	8.6%	38.4%
Chicago CMSA	5	281	9,728	7.3%	45.8%
Boston CMSA	6	160	8,544	6.5%	52.2%
Dallas-Fort Worth CMSA	7	291	6,226	4.7%	56.9%
Atlanta	8	212	5,557	4.2%	61.1%
Southeastern Florida	9	153	5,160	3.9%	65.0%
San Diego	10	102	4,221	3.2%	68.2%
Houston-Galveston CMSA	11	109	3,769	2.8%	71.1%
Seattle-Tacoma CMSA	12	125	3,576	2.7%	73.8%
Phoenix	13	129	3,347	2.5%	76.3%
Denver-Boulder CMSA	14	106	3,008	2.3%	78.6%
Minneapolis	15	107	2,381	1.8%	80.4%
Philadelphia CMSA	16	78	2,290	1.7%	82.1%
Austin	17	82	1,694	1.3%	83.4%
Indianapolis	18	46	1,473	1.1%	84.5%
Orlando	19	55	1,455	1.1%	85.6%
Portland-Salem CMSA	20	63	1,361	1.0%	86.6%
Charlotte	21	46	1,051	0.8%	87.4%
Tampa	22	47	1,032	0.8%	88.2%
Kansas City	23	39	943	0.7%	88.9%
Cincinnati CMSA	24	42	824	0.6%	89.5%
Columbus	25	37	818	0.6%	90.2%
St. Louis	26	41	756	0.6%	90.7%
Raleigh-Durham	27	34	745	0.6%	91.3%
Sacramento CMSA	28	24	733	0.6%	91.8%
Detroit-Ann Arbor CMSA	29	27	661	0.5%	92.3%
Memphis	30	37	657	0.5%	92.8%
Las Vegas	31	17	566	0.4%	93.3%
Reno	32	14	518	0.4%	93.7%
San Antonio	33	30	510	0.4%	94.0%
Cleveland-Akron CMSA	34	12	477	0.4%	94.4%
Honolulu	35	7	410	0.3%	94.7%
Pittsburgh	36	22	407	0.3%	95.0%
Salt Lake City	37	23	343	0.3%	95.3%
Birmingham	38	11	329	0.2%	95.5%
Nashville	39	16	325	0.2%	95.8%
Tulsa	40	8	286	0.2%	96.0%
Hartford	41	9	239	0.2%	96.2%
Richmond	42	18	226	0.2%	96.3%
Jacksonville	43	14	202	0.2%	96.5%
Louisville	44	14	201	0.2%	96.6%
Grand Rapids	45	4	201	0.2%	96.8%
Albuquerque	46	8	200	0.2%	96.9%
Colorado Springs	47	10	167	0.1%	97.1%
Santa Barbara	48	5	162	0.1%	97.2%
Allentown	49	6	158	0.1%	97.3%
Naples	50	4	142	0.1%	97.4%

Sources: NCREIF; Prudential Real Estate Investors

Finally, we identify the Southeastern Florida markets as the anchor for the Lifestyle group. Cluster analysis revealed that several metro areas share an unusual combination of high growth and a relatively older population. The south Florida metro areas, including Miami, Fort Lauderdale and West Palm Beach, compose the anchors for this group.

Establishing Cluster Membership

Roughly one-third of NCREIF investments and about half of REIT investments fall outside the size-based anchor markets. However, the investment total in each of the remaining metro areas is small, precluding for practical purposes strategies based solely on allocations by metro area. Clearly, investment strategies must include a mechanism for investing outside of the anchor cities without establishing very small allocation targets for many small markets. However, including too many additional markets leads to ambiguity in the strategy and arbitrary allocation rules. This is a large price to pay for addressing markets that contribute few, if any, investments to a portfolio.

We used a combination of socio-economic similarities and geographic proximity to place the 26 additional markets in the seven categories, bringing the total number of specified investment markets to 35 and accounting for nearly 95% of NCREIF investments. For the most part, each of these 26 additional markets ranks as a top 20 NCREIF market for at least one property type.

Using socio-economic similarities stems from knowing that the economic structure of a city affects the performance of its real estate. Some cities have similar structural bases despite being very far apart. Conversely, some cities that lie very close together have quite different economies. That is, geographic proximity does not necessarily mean social and economic similarity.

Through cluster analysis we can use the relative similarities of metro areas to assign them to groups. Our approach consisted of three steps: 1) identifying many socio-economic indexes for each market; 2) concentrating the information in the indexes into a few blended indexes by using a statistical technique called principal component analysis; and 3) generating clusters based on correspondence to the reduced set of indexes.

We defined the economic and demographic characteristics of metro areas using five categories – population age structure, growth characteristics, industrial employment structure, commercial real estate inventory per capita and high-tech concentration (see **Exhibit 6**).

We started with 34 variables for each metro area: six age structure indexes and eight industrial structure variables for 2004 and 2014; 12 growth characteristics representing growth from 1994 to 2004 and from 2004 to 2014; seven inventory variables representing estimates for 2004; and one technology exposure variable.

The variables measure the economic and demographic structure of the metro areas. For each of the four multivariable categories, we computed their principal components. This is a statistical procedure that simplifies large data sets by creating blended indexes that capture the greatest possible variation among observations (in this case metro markets) while reducing the number

of variables. These blended indexes more efficiently use the structural differences between the metro areas and simplify the interpretation of category choices.

Exhibit 6: Economic and Demographic Variables Used in Clustering

Age Proportions Relative to US

Ages 20-24

Ages 25-44

Ages 65+

Growth Characteristics (10-year intervals)

Absolute population change

Population growth rate

Absolute employment change

Employment growth rate

Employment total growth volatility (standard deviation)

Employment systematic growth volatility (beta vs. US growth)

Industry Proportions Relative to US

Mining and manufacturing jobs

Trade jobs

Services and finance jobs

Government jobs

Real Estate Inventory Per Capita

Single-family residential units

Multifamily residential units

Industrial square feet

Warehouse square feet

Office square feet

Retail square feet

Hotel rooms

Technology Exposure

Proportion of total jobs in high-tech industries

Sources: US Census Bureau; US Labor Department; Economy.com; PPR

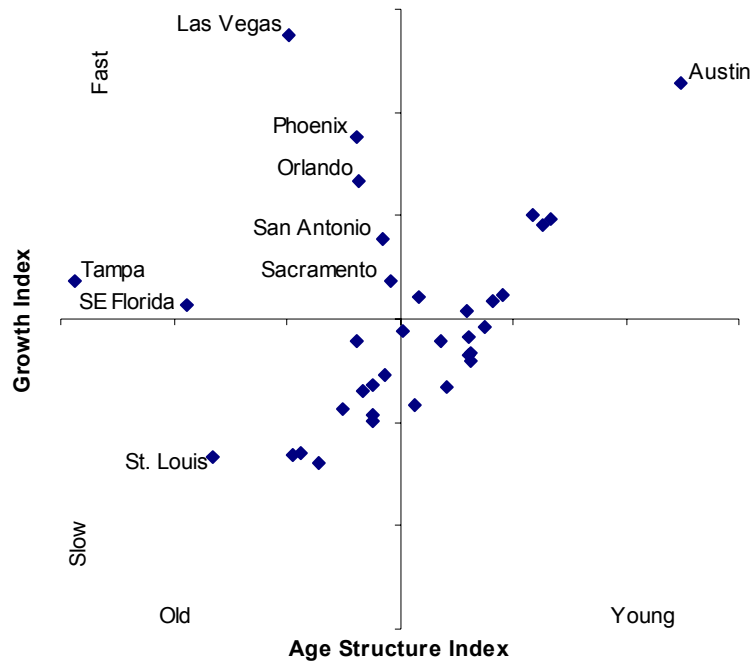
For example, two principal components explain about 82% of the variation in the 12 growth measures across the metro areas. The remaining 10 principal components capture only 18% of the variation. The first component accounts for just over two-thirds of the total. The principal component analysis revealed that in blending the 12 growth variables, the blended index includes roughly equal portions of the four historical and four forecast variables measuring employment and population change. It includes about half this magnitude of the four volatility and systematic growth variables. As a result, low growth and small, shrinking markets receive low values of the first growth principal component, and high growth and large, expanding markets get high values. Las Vegas has the largest value of this component, while Detroit has the smallest. The value for Denver is most near the average of the values for all of the markets. A similar process created blended indexes for the other socio-economic categories.

The clustering process takes into consideration all information extracted from the indexes simultaneously. The drawback of this process, of course, is that it looks like a black box. In the

following, we explain the characteristics of each cluster and the process of assigning membership in an intuitive, illustrative manner, considering only one or two factors at one time.

A scatter diagram (**Exhibit 7**) showing the markets relative to each other for two of the principal components – the first growth component and the first age structure component – provides insight into the selection of the Lifestyle group.

Exhibit 7: Growth and Demographics Determine Lifestyle Group



Source: Prudential Real Estate Investors

Note that most of the markets lie along a line that extends from Austin on the upper right to a point somewhat below St. Louis on the lower left. This suggests that a relationship exists between age structure and growth for many markets. Slow-growth markets tend to have an older age structure, while many rapidly growing ones have a younger population.

Certain markets lie far from this line, breaking the typical relationship between the two measures. These markets – Tampa, Southeastern Florida, Sacramento, San Antonio, Orlando, Phoenix and Las Vegas – lie in the upper-left quadrant of **Exhibit 7**. They share high growth and a much older population than most metro markets. We chose to combine them into a single diversification category. In fact, a simple rule identifies this group: markets with a greater than average growth component and a smaller than average age structure component belong to the Lifestyle cluster.

Many of the markets at the lower left segment of **Exhibit 7** are in the Midwest or the East: Detroit, St. Louis, Cleveland, Philadelphia, Cincinnati. Many of the markets in the upper right are in the

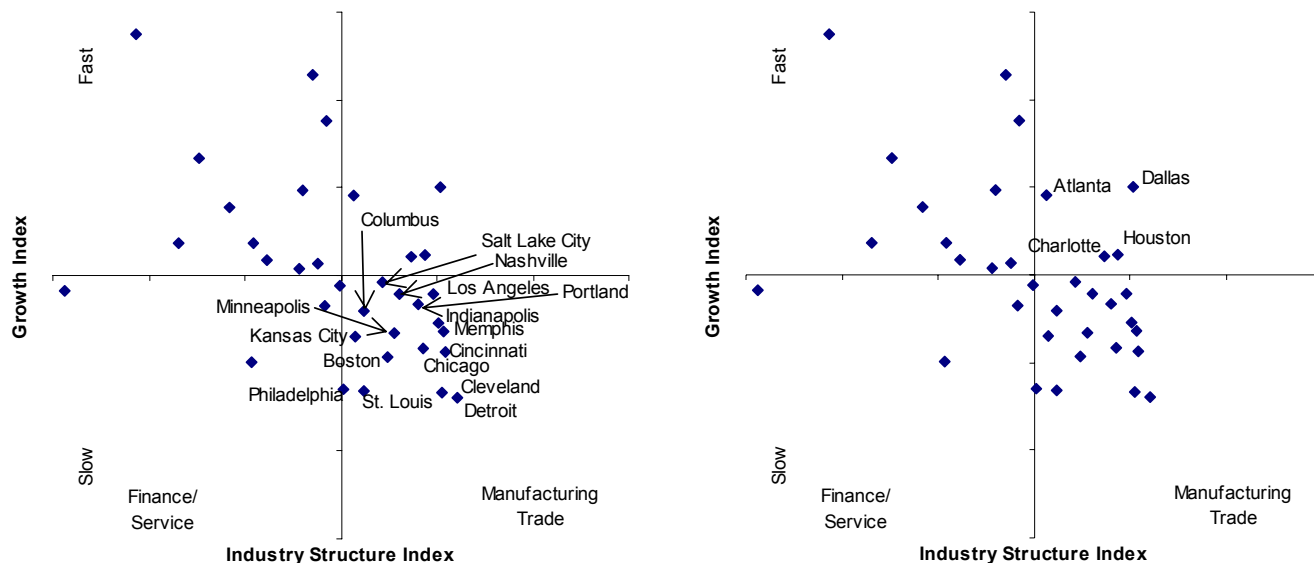
South: Austin, Raleigh-Durham, Dallas, Atlanta. That is, grouping by geography can, in some circumstances, approximate clustering by these two socio-economic factors.

Likewise, the Heartland cluster includes markets characterized by slow growth and an industry structure overweighted in manufacturing and trade jobs. **Exhibit 8** plots the first growth component against the first industry structure component.

Exhibit 8: Growth and Industry Structure Define the Heartland and the Southern Growth Groups

a. Lower Right Quadrant Membership

b. Upper Right Quadrant Membership



Source: Prudential Real Estate Investors

In **Panel a**, we have labeled all of the metro markets in the lower right quadrant of the graph – those markets with a smaller than average growth index and those with a larger than average industry structure index. All of the members of the Heartland cluster appear in this quadrant. In this case, similar socio-economic indicators coincide with geographic proximity. However, a few additional markets also lie in this quadrant, including Philadelphia, Boston, Portland and Los Angeles. In the cases of Boston and Los Angeles, we have already assigned them to clusters based on other criteria. Philadelphia lies at the outer margin of the group, exhibiting a more balanced industry structure than most of the Heartland markets. We chose to use the geographic criterion, clustering Philadelphia with New York. We cluster Portland and Boston with high-tech markets, which distinguish some metro areas with a manufacturing concentration from the Heartland.

Most of the members of the Southern Growth cluster show greater than average growth while resembling the Heartland cities from an industry structure standpoint. As shown in **Panel b**, most of the Southern Growth members fall in the upper right quadrant. Denver lies somewhat to the left of this group. In fact, it lies near the mean of three indexes – demographic, industry structure and growth – producing only weak associations with most of the clusters but not suggesting a new cluster group. We have assigned Denver to the Southern Growth group.

The Tech Centers group stems from another clustering factor based on the recent importance of high-tech industries to certain local economies and its importance in the recent office cycle. **Exhibit 9** lists the eight metro areas with the highest relative concentrations of tech-related industries. Two of these metro areas, Raleigh-Durham and Austin, have strongly positive values for the growth and age structure indexes. The list also includes three anchor markets – Washington, DC, Boston and the San Francisco Bay Area.

Exhibit 9: Top Tech Employment Markets

1. Raleigh-Durham
2. San Francisco Bay Area
3. Washington, DC
4. Austin
5. Boston
6. San Diego
7. Portland
8. Seattle

Sources: Economy.com; Prudential Real Estate Investors

We cluster two anchors in this list – Boston and the San Francisco Bay Area – with the top of the non-anchor metro areas – Raleigh-Durham, Austin, Portland and Seattle – in a single category. We exclude the third anchor market, Washington, DC, choosing instead to categorize it separately. We also exclude San Diego, which links strongly with Los Angeles through other socio-economic characteristics and geographic proximity.

Summary

The real estate markets in the United States can be viewed as seven clusters plus one. The seven clusters are Capital Metro anchored by Washington, DC, New York Corridor anchored by New York City, Tech Centers co-anchored by the San Francisco Bay Area and Boston, Southern Growth co-anchored by Atlanta and Dallas, Heartland anchored by Chicago, Lifestyle Centers anchored by Florida and the self-evident Southern California. The one extra cluster, Opportunistic Markets, includes all metro areas beyond the top 35 included in the seven clusters.

We call this clustering system sized-tiered economic geography as it takes into consideration the dominance of a few large metro areas, economic location, and in case of ambiguity, geographic proximity. The end results are simple, intuitive, and most importantly, effective in diversification, market targeting and benchmark exercises.

Appendix A: Consolidated Metropolitan Statistical Area Definitions

The table below identifies metro centers in accordance with Consolidated Metropolitan Statistical Areas (CMSA), Metropolitan Statistical Areas (MSA), Primary Metropolitan Statistical Areas (PMSA) or New England County Metropolitan Areas (NECMA), defined by the US federal government as of June 1999, which compose the consolidated metro areas in this report. The only variance is our definition of three MSA areas as Southeastern Florida. This group has no official counterpart.

<u>New York</u>	<u>Boston</u>	<u>Chicago</u>	<u>Cincinnati</u>	<u>Cleveland</u>
Bergen-Passaic	Boston	Chicago	Cincinnati	Akron
Bridgeport	Brockton	Gary	Hamilton	Cleveland
Danbury	Fitchburg	Kankakee		
Duchess County	Lawrence	Kenosha		
Jersey City	Lowell			
Middlesex	Manchester			
Monmouth-Ocean	Nashua			
Nassau-Suffolk	New Bedford			
New Haven	Portsmouth			
New York	Worcester			
Newark				
Newburgh				
Stamford				
Trenton				
Waterbury				
<u>Dallas</u>	<u>Detroit</u>	<u>Denver</u>	<u>Houston</u>	<u>Los Angeles</u>
Dallas	Ann Arbor	Boulder	Brazoria	Los Angeles
Fort Worth	Detroit	Denver	Galveston	Orange County
	Flint	Greeley	Houston	Riverside
				Ventura
<u>Philadelphia</u>	<u>Portland</u>	<u>Sacramento</u>	<u>SF Bay Area</u>	<u>Seattle</u>
Atlantic City	Portland	Sacramento	Oakland	Bremerton
Philadelphia	Salem	Yolo County	San Francisco	Olympia
Vineland-Milville			San Jose	Seattle
Wilmington			Santa Cruz	Tacoma
			Santa Rosa	
			Vallejo-Fairfield	
<u>Southeastern Florida</u>	<u>Washington, DC</u>			
Fort Lauderdale	Baltimore			
Miami	Hagerstown			
West Palm Beach	Washington, DC			

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