

The Artistic Dividend Revisited

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Executive Summary

Artists continue to sort themselves out among American cities. In the 1990s, they reversed a trend of several decades and gravitated in larger numbers towards three premier centers of tourism, entertainment and creative work: Los Angeles, New York and San Francisco. They also favored a set of second tier metros — Washington DC, Seattle, Boston, Orange County, Minneapolis-St. Paul, San Diego and Miami — over nineteen other large metro areas. Neither sheer metropolitan workforce size nor recent growth rates explain these divergent patterns. A combination of amenities, regional support for the arts, informal networks among artists and synergy with particular industries appear to explain their presence and persistence.

In this update of our 2003 study, *The Artistic Dividend: The Hidden Contributions of the Arts to the Regional Economy*, we explore the results of the 2000 Census to update our depiction of artistic prowess city by city, expanding our analysis to the twenty-nine largest U.S. metros. We confirm the tendency for different metros to specialize in artistic suboccupations. Performing artists, visual artists and writers sort themselves out in distinctive spatial patterns rather than replicating each others' preferences. We add two arts-related occupations, architects and designers, to our analysis, showing how members of these groups, more prosperous and less likely to be self-employed, exhibit yet different urban patterns. We explore the relationship between occupation and industry in one case, advertising, to underscore the desirability of a dual analysis in understanding emerging urban economies.

We also probe the significance of self-employment among artists, which we find to be quite high. We find that many more individuals report artistic work as their occupation in the Census than do employer-based data sources. We show that in some metros, artists are more likely to be formally employed than in others. Furthermore, some, especially musicians, pursue their income-earning artistic activity as a second occupation. The number of artists in a region is greatly undercounted, in many subgroups by more than 100%, when non-Census sources are relied upon. We reassert our preference for using Census data for assessing the size of the artistic dividend.

This update should be read along with *The Artistic Dividend*, our initial work. In that study, we reject the view that the arts are a discretionary element in a regional economy, disconnected from the competitive forces shaping its growth and stature. We articulate the various ways in which self-employed and other undercounted artists contribute to the economy — through direct export of their work and services, through contractual work for area businesses, and by instigating innovation on the part of their suppliers. We explain the occupational approach to gauging the size of a metro's artistic dividend and make the case for artists' choice of a place to live and work independent of a particular employer or job offer. And we probe the policy implications for artists, private sector businesses, non-profits and state and local governments who wish to enhance the artistic sector of their economies, most of them modestly-priced initiatives that will augment artistic networks and learning, prompt greater artistic entrepreneurship, thicken the ties between non-artistic businesses and artists, and nurture diversified, decentralized artistic live and work spaces across metropolitan neighborhoods.

Introduction

For years, economists have struggled to evaluate the impact of the arts on a regional economy. They do so chiefly with arts impact assessments that total the receipts of arts organizations – theaters, symphonies, galleries – and related spending on meals, parking and tourism. This method yields a first approximation, but dramatically undercounts the economic value produced by artists in an economy. Many artists are self-employed. Some contribute to their economies by exporting their work directly out of the region and spending the resulting income locally. Others enable productivity and marketing gains by unrelated area businesses, through contracting their skills in writing, performing, and visual art. Yet others, through their demands for inputs, evoke innovation on the part of their suppliers that broadens their business.

One way to gauge the true size of the artistic dividend is to chart the presence of artists in a region and compare this across regions. In this update to our July 2003 report, *The Artistic Dividend: The Arts' Hidden Contributions to Regional Development*¹, we look at the distribution of creative artists – performing artists, visual artists, musicians and writers – across the twenty-nine largest American metropolitan areas in 2000 and how this has changed since 1980. We extend our analysis to two arts-related occupations – architects and designers

– to show how these groups' patterns resemble and diverge from those of creative artists. And we explore the relationship between employers and concentrations of certain types of artists in a region with an industry case study – advertising. We probe the degree of self-employment among artists, reveal how it varies across metros, and show the extent to which their numbers are undercounted in the employment databases that economic development practitioners frequently rely upon.

We find ample confirmation for our contention that artists are more important contributors to a regional economy than arts impact assessment, which restricts itself to the larger, established arts organizations, conveys. We also conclude that artists are relatively footloose; that is, they are not principally local-serving, and they are attracted to and held in certain cities and regions more than others. Two sets of metros stand out: the “Arts Super Cities” – Los Angeles, New York and San Francisco-Oakland, centers of large media and entertainment empires; and a selected set of medium-sized metros – Washington, DC, Seattle, Boston, Orange County, CA, Minneapolis-St. Paul, San Diego and Miami – that have cultivated larger than average shares of artists in their workforces. These artistic specializations do not map neatly onto metros by either size or recent growth rate, and we believe they are at least in part a response to strategic decisions made by private and public sector leaders in those regions to support the arts and artists and to invest in amenities. We close our study with recommendations for cities of various sizes and locations in pursuing an artistic dividend.

¹ Markusen, Ann and David King. 2003. *The Artistic Dividend: The Arts' Hidden Contributions to Regional Development*. Minneapolis: Project on Regional and Industrial Economics, Humphrey Institute of Public Affairs, University of Minnesota.

I. Patterns of Artistic Advantage at the Century's Beginning

During the 1990s, American artists gravitated in large numbers towards three preeminent centers of creative activity: Los Angeles, New York and San Francisco.² These gains were accompanied by notable artistic specializations in eight “second tier” metros: Washington DC, Seattle, Boston, Minneapolis-St. Paul, Orange County, Miami, Portland and San Diego. All hosted artistic agglomerations at rates between 10% and 36% above the national average by 2000. In contrast, a number of large metros remained 10% or more below the national average, including St. Louis, Houston, Pittsburgh, Riverside-San Bernardino, San Jose and Tampa. Confirming our previous study, artistic prowess does not appear to be closely associated with metro size or rate of growth.

It should be noted that these rankings of “artistic dividend” reflect the degree to which the character of a place is distinctively artistic. This does not mean that places with relatively low artistic concentrations, measured in terms of location quotients (LQ), do not have significant arts enclaves and high levels of arts employment. In cities like Chicago, the magnitude of these arts activities is muted by the overall size and diversity of the regional economy, including the presence of sizeable manufacturing sectors.

² Metropolitan area used in this analysis were Metropolitan Statistical Areas (MSA) or Primary Metropolitan Statistical Areas (PMSA) as of 2000, with the exceptions of New York and San Francisco. See the Appendix for further discussion of the definitions used.

A. Artistic Edge in the “Arts Super Cities”: Los Angeles, New York and San Francisco

Artistic advantage is highly skewed in the United States. Distinguishing themselves from the rest of the nation, the Los Angeles, New York and San Francisco metros attract and/or home-grow artists who form disproportionately large shares of their workforces. In 2000, each of these metros posted artistic specializations close to or in excess of twice the national norm (Table 1). Indeed, they are the only three metros whose concentrations consistently exceed the norm for the large metro group as a whole. Moreover, they wield their strengths across the board, ranking in the top three in all of the suboccupations – performing and visual artists, writers and musicians.

A number of factors have contributed to the prominence of the Arts Super Cities: a growth in arts funding, possibly tied to wealth appreciation especially at the highest end of the income distribution; the rise and cultivation of tourist activity by these cities; and more self-conscious pursuit of cultural capital by the core cities’ leadership and economic development organizations. The three super artistic centers are particularly outstanding in the performing arts, where their lead is quite dramatic. The relationship between the performing arts and large, diversified media empires in these cities, including television, motion pictures, and publishing enhances their draw. In the 1990s, American media products were extraordinarily successful in international trade, capitalizing on a world that is increasingly becoming an English-speaking community. As we shall see below, these factors enabled these three metros to reverse a trend towards artistic decentralization from previous decades.

Table 1. Artistic Concentrations for the 29 Largest U.S. Metro Areas by Employment, 2000

Metropolitan Area	Total	Performing Artists	Visual Artists	Authors	Musicians
Los Angeles, CA	2.99	5.44	2.34	2.71	1.95
New York, NY-NJ	2.52	3.71	2.01	2.99	1.85
San Francisco-Oakland, CA	1.82	1.85	1.83	2.51	1.12
Washington, DC-MD-VA-WV	1.36	1.51	1.01	2.27	1.08
29 LARGEST METROS	1.34	1.60	1.26	1.45	1.12
Seattle, WA	1.33	1.15	1.48	1.48	1.06
Boston, MA-NH	1.27	1.24	1.02	2.00	1.15
Orange County, CA	1.18	1.21	1.36	0.92	0.98
Minneapolis-St. Paul, MN-WI	1.16	1.12	1.10	1.33	1.16
San Diego, CA	1.15	0.90	1.27	1.10	1.25
Miami, FL	1.15	1.48	1.05	0.82	1.28
Portland, OR-WA	1.09	1.12	0.99	1.50	0.87
Atlanta, GA	1.08	1.05	1.11	0.97	1.15
Baltimore, MD	1.08	0.96	1.10	0.92	1.30
Chicago, IL	1.04	0.83	1.14	1.27	0.84
Newark, NJ	1.02	1.07	0.97	1.24	0.83
US AVERAGE	1.00	1.00	1.00	1.00	1.00
Dallas, TX	0.99	1.08	1.11	0.73	0.87
Philadelphia, PA-NJ	0.96	0.90	1.04	0.94	0.88
Phoenix, AZ	0.96	0.70	1.13	0.88	0.94
Nassau-Suffolk, NY	0.93	0.83	1.10	0.84	0.76
Kansas City, MO-KS	0.90	0.59	1.16	0.82	0.76
Denver, CO	0.90	1.08	0.82	0.98	0.79
Tampa-St. Petersburg, FL	0.89	0.83	0.89	0.76	1.08
San Jose, CA	0.84	0.75	0.95	0.95	0.61
Cleveland, OH	0.79	0.61	0.79	0.74	1.05
Riverside-San Bernardino, CA	0.77	0.79	0.84	0.61	0.76
Pittsburgh, PA	0.76	0.63	0.74	0.79	0.91
Houston, TX	0.74	0.65	0.75	0.66	0.91
Detroit, MI	0.74	0.61	0.82	0.73	0.74
St. Louis, MO-IL	0.71	0.52	0.79	0.67	0.80

Source: Census 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

Though these three metros led the nation at the beginning of the 21st century, they are not the only ones to manifest an artistic dividend. A group of mid-sized metros exhibit artistic specializations (Table 1) as well. Seven of them enjoyed a lead of 10% or more over the national average by 2000: Washington, DC, Seattle, Boston, Orange County, the Twin Cities, San Diego, and Miami. Lagging the national average, and at less than 75% of the all metro average, are the

metros of Dallas, Philadelphia, Phoenix, Denver, San Jose, Cleveland, Pittsburgh, Detroit and Houston, among others. In all these metros, other occupations play the lead roles in their economies, and the arts appear to be more “local-serving.” Of course, this is an overall generalization – some performers will live in Pittsburgh and travel to gigs elsewhere; other artists will paint or write there and export their work. But the aggregate size of these artistic pools are small

relative to the rest of their economies and thus are not likely to be acting as magnets in the competition to attract and keep artistic talent.

B. Reconcentration in the Arts Super Cities in the 1990s

Reversing a trend towards decentralization between 1980 and 1990, Los Angeles, New York and San Francisco increased their artistic lead over other American metros in the 1990s. Using a modestly expanded definition of artistic occupations, necessitated by coding changes between 1990 and 2000³, we show that artistic concentrations in the top three cities declined in the 1980s but grew disproportionately in the last decade of the century (Table 2). This attractive power, attributable to the success of media and entertainment industries and tourism in these three cities, appears to have been at the expense of the rest of the country, including other mid-sized metros who had gained on the Arts Super Cities in the 1980s: Boston, Minneapolis-St. Paul, Portland, Chicago.

In a shakeup of the ranks of the Arts Super Cities, Los Angeles outpaced New York to post the highest concentration of artists vis-à-vis the nation in 2000. Washington, DC and Seattle maintained their fourth and fifth positions, but the artistic advantage in each declined quite a bit, creating a growing gap between the top three and the rest. Among gaining mid-sized metros, Orange County moved up ranks from twelfth to seventh, perhaps sharing in neighbor Los Angeles' draw, and the Twin Cities moved up from tenth to eighth, surpassing Miami, San Diego and Atlanta.

It is important to keep in mind that artistic specialization is a function of not just

the number of artists but of other groups in the labor force. If other occupations disappear from a region, the denominator of the location quotient will decline and the region will appear more artistically-oriented. This may be operating in the case of Los Angeles and Orange County, two metros hit hard by the defense industry implosion in the 1990s. As many aerospace jobs evaporated, the region came to rely more heavily on its artistic prowess for its livelihood. Similarly, the relative decline in artistic specializations in Washington, DC, Miami, San Diego and Atlanta may be associated with disproportional growth in other occupations. Heavy population immigration and job creation in other sectors, including

Table 2. Artistic Specializations, Selected Metros, 1980, 1990, 2000

Metropolitan Area	1980	1990	2000
Los Angeles, CA	2.39	2.31	2.99
New York, NY-NJ	2.60	2.42	2.52
San Francisco-Oakland, CA	1.79	1.60	1.82
Washington, DC-MD-VA-WV	1.76	1.63	1.36
Seattle, WA	1.59	1.40	1.33
Boston, MA-NH	1.51	1.49	1.27
Orange County, CA	1.15	1.26	1.18
Minneapolis-St. Paul, MN-WI	1.20	1.27	1.16
San Diego, CA	1.24	1.15	1.15
Miami, FL	1.35	1.09	1.15
Portland, OR-WA	1.18	1.24	1.09
Atlanta, GA	1.31	1.08	1.08
Chicago, IL	1.03	1.09	1.04
Cleveland, OH	0.82	0.83	0.79

Sources: Census 1980, 1990, 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

Artists are defined as the 2000 Census codes: Authors (285); Musicians and Composers (275); Actors (270); Producers & Directors (271); Dancers & Choreographers (274); Photographers (291), TV, Video, and Motion Picture Camera Operators (292, partial); and Artists & Related Workers (260).

Artists are defined as the 1980/1990 Census codes: Authors (183); Musicians and Composers (186); Painters, Sculptors, Craft-Artists, and Artist Printmakers (188); Artists, Performers & Related Workers (194); Actors & Directors (187); Dancers (193); and Photographers (189).

Refer to Appendix for information regarding the comparability of occupational codes between Census years.

³ See the Appendix, Part B ("Occupational Coding") for discussion of changes to occupational coding between 1990 and 2000, and comparability of data between those years.

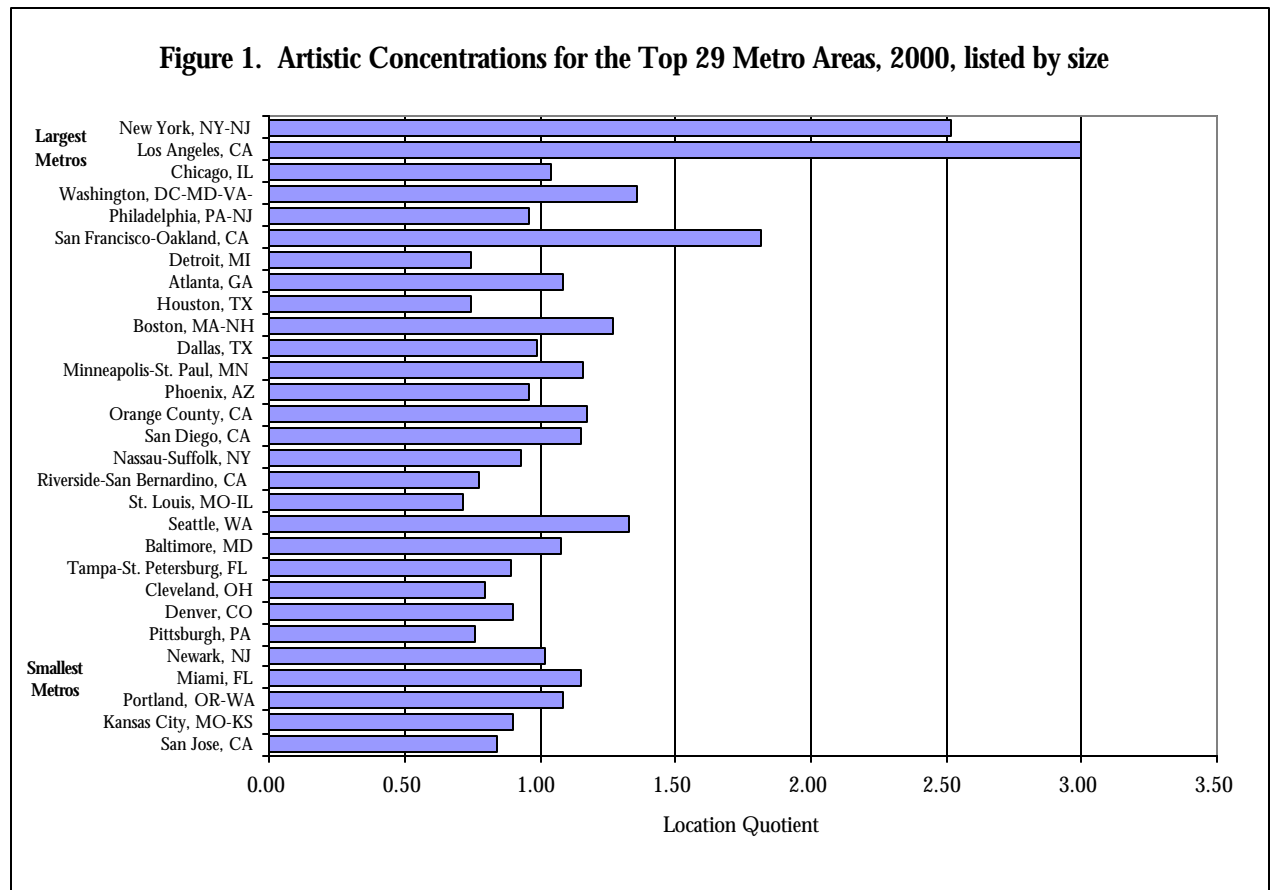
construction and elderly care, may be diminishing the significance of artists as a propulsive group in the economy.

Despite these caveats, our review of the evidence suggests that artists remain relatively footloose – able to practice their craft in any number of places and responsive to different offerings in each. Our work confirms two somewhat contradictory tendencies. First, the concentration of top fine art venues and associated media and entertainment industries in the artistic super cities continues to generate and draw artists to these poles. In the 1990s, this pace quickened. Second, other artists are drawn to a selective set of mid-sized metros at the expense of other metros and of small towns and rural areas as a whole. The rise of these second tier artistic cities seems secure, even if artistic concentrations between the Arts Super Cities and the second tier group fluctuate somewhat decade by decade.

C. Artists' Clusters: Not Simply a Function of Size or Growth

Are these trends simply associated with size and growth rates? Are the largest metros those that pull in artistic talent, and does the size of one's artists' colonies simply reflect overall metro size? Does rate of growth have anything to do with it – do artistic endeavors lag behind in faster growing cities, where new construction and finance and manufacturing dominates the near term agenda? The answer to both of these questions is, as we reported for previous decades, no.

Take the nation's largest metros by size. Los Angeles and New York do rank first and second by size, but artistically blessed San Francisco ranks sixth in size of the 29 metro set. On the other hand, Chicago and Philadelphia, the nation's third and fifth largest metros, remain just above or below the



national norm, while at least ten smaller metros posted more impressive artistic specializations. The absence of a clear relationship between size and artistic specialization is evident in Figure 1, which arrays the top 29 metros from largest at the top to smallest at the bottom.

Nor does recent growth experience track closely to artistic excellence. Fast growing, “newcomer” cities like Atlanta, San Diego, Portland and Miami experienced an erosion in artistic shares of their workforce in the 1990s, as did older, slow growth metros like Boston and Cleveland. Other faster-growing metros such as Dallas, Phoenix and Denver failed to reach the national average.

D. Diversity in Specialization: How Artists Sort Themselves Out by Place

Lumping all types of artists together provides a nice metric for simple comparison, but it does not do justice to the complexity of artistic advantage. No metro’s lead is preeminent across all groups of artists. The rich panoply of artists’ residential specialization depicted in Table 1 shows that particular types of artists congregate in particular locales. Even among the top three metros, variations in artistic specialties are striking. Los Angeles’ artistic workforce is more heavily oriented towards performing artists and musicians than the other two. New York posts the highest share of authors. Perhaps characterizing these cities’ artistic strengths with labels like

Table 3. Artistic Sub-Specializations, Selected Metros, 2000

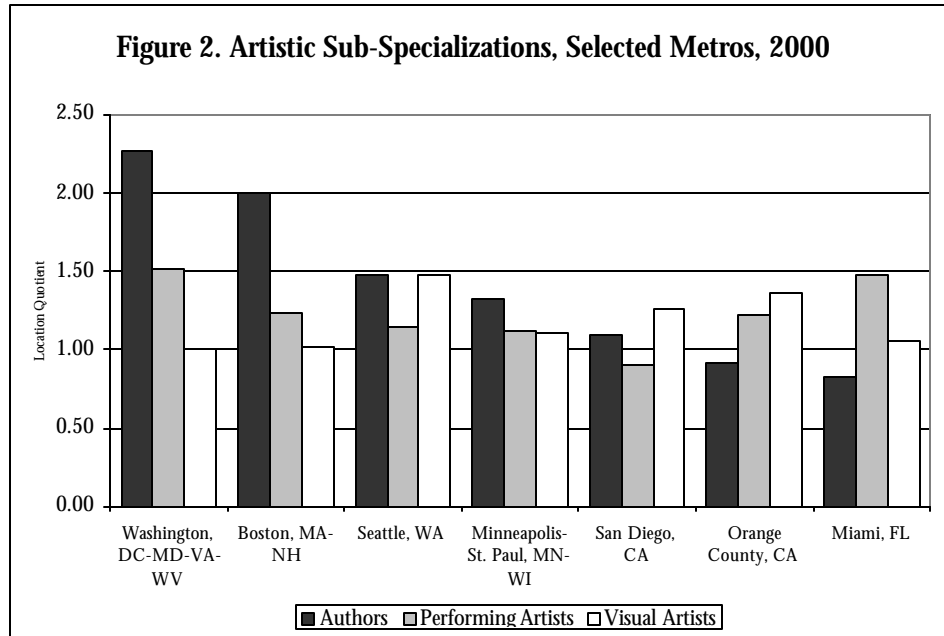
Metropolitan Area	Authors	Performing Artists	Visual Artists
Washington, DC-MD-VA-WV	2.27	1.51	1.01
Boston, MA-NH	2.00	1.24	1.02
Seattle, WA	1.48	1.15	1.48
Minneapolis-St. Paul, MN-WI	1.33	1.12	1.10
San Diego, CA	1.10	0.90	1.27
Orange County, CA	0.92	1.21	1.36
Miami, FL	0.82	1.48	1.05

Source: Census 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

“Hollywood” and “Greenwich Village” is not a bad first approximation.

A look at the “second tier” artistic cities – those eight that exceed the national norm by 10% in the aggregate but fall behind the super three – shows how variegated artistic strong suits can be (Table 3, Figure 2). Writers are Boston’s strongest suit, as they are for the Twin Cities and Washington DC. Visual artists are more prominent among artists in Orange County and San Diego – a striking West Coast alignment, and they are less visible in Washington DC, Boston and Miami. Seattle excels both among writers and visual artists with more modest shares of

Figure 2. Artistic Sub-Specializations, Selected Metros, 2000



performing artists. Miami shows a surprising strength in performing arts. Orange County and Miami show a deficit of writers, and San Diego lags among performing artists. Thus second tier artistic metros appear to develop niches around certain arts sectors, with

relatively few excelling across the board. Among these seven second tier arts cities, only Washington DC, Seattle, Boston and Minneapolis-St Paul outpaced the U.S. average in each of the four artistic subgroups.

II. Metropolitan Concentrations of Related Artistic Occupations: Designers and Architects

Urban pools of creative artists often coexist alongside other occupations with considerable artistic content. In responding to our earlier study, many people inquired why we did not include occupations such as architects and designers. We did not do so before because we wanted to focus closely on those whom people traditionally think of as artists. Both architects and designers as occupational groups are more likely to have full time, professional jobs than are the artists we have focused on so far, and thus to have higher average incomes. In revisiting our initial efforts, we look at these two related occupations and compare their regional distributional patterns with those of artists. In the case of designers, we look at the intersection between their ranks and an industry that represents a major employer: advertising. Distributions of these two occupations confirm the preeminence of New York, Los Angeles and San Francisco and support our findings that some second tier cities outshine their larger competitors and peers. It also reveals the diversity that lies below the surface – a city like Detroit that does not rank highly among other artistic groups turns out to host a large concentration of a particular type of designer.

A. Architects

Architects design buildings and work with engineers, city planners, lawyers and other professionals to make them become reality. They are diverse, in that many work for large firms – some focus on commercial buildings, others on large residential complexes and yet others on public monumental buildings like theaters and museums – with an elaborate internal division of labor. Other architects hang out a shingle and work out of home offices, designing houses for those who can afford them or redesigning kitchens, porches and housing rehabs for middle class owners or apartment complexes. Landscape architects plan and design new commercial and residential projects and maintain gardens around existing homes and offices. While many architects serve primarily regional markets, there are a growing number of firms with national and global reach, and these are not all concentrated in the largest U.S. cities. Renowned architect Cesar Pelli, for instance, works from New Haven, CT, and Minneapolis-St. Paul architects Vincent James and Jennifer Yoos compete for and win projects across the country.

Architects, perhaps because their creative work requires the cooperation of many other parties to come to fruition, are more concentrated in metropolitan areas as a whole than other artists (Table 4). They reveal, in other words, a tendency to cluster in what regional scientists call “central places” and serve, from these, a regional hinterland. We find some support for this tendency, which presumes that the larger a city is, the larger its share of such an occupation. However, we also find considerable specialization that cannot be predicted from sheer metro size. In general, the metro distribution of architects is not far

different from that of artists, although metro rankings do differ in some respects.

The economies of the San Francisco-Oakland, Seattle, and Boston metros support more architects as a share of their workforce than does New York. The Bay Area's strong showing may be related to the explosion of earthquake-related redesign and building in the last decade. It may also, as with Seattle and Boston, be a talisman of a stronger local market for architecturally-intensive design, with many architects working on rehab and upgrading projects. Strikingly missing from the list of the top clusters of architects is Los Angeles, barely above the national norm and well below that of the metro group as a whole. Not surprisingly, rapidly growing metros like Atlanta and Dallas outpace many slow growing metros, where we would not expect much new construction. Yet fast growing Tampa and Riverside-San Bernardino fall well below average.

B. Designers

In 2000, more than 350,000 people in the largest 29 U.S. metros designated their principal occupation as "designer." This diverse occupation consists of several suboccupations, including commercial and industrial designers (10% of U.S. total), fashion designers (3%), floral designers (21%), graphic designers (39%), interior designers (9%), merchandise displayers (15%), and set and exhibit designers (2%). Pay varies dramatically across these subgroups, with fashion (\$27.04/hour) and commercial and industrial designers (\$24.55/hour) among the highest paid, graphic designers in the middle (\$18.25) and floral designers (\$9.29) the lowest (Bureau of Labor Statistics, Occupational Employment Statistics, 2002).

Among U.S. metros, New York, Los Angeles and San Francisco-Oakland host the largest shares of designers (Table 5). New York exceeds the national workforce share by

Table 4. Concentrations of Architects by Metropolitan Area, 2000

Metropolitan Area	LQ/ US Average	LQ/ Metro Average
San Francisco-Oakland, CA	2.83	1.93
Seattle, WA	2.53	1.72
Boston, MA-NH	2.49	1.70
Portland, OR-WA	1.84	1.25
Washington, DC-MD-VA-WV	1.82	1.24
Denver, CO	1.80	1.23
New York, NY-NJ	1.80	1.22
Atlanta, GA	1.56	1.06
Minneapolis-St. Paul, MN-WI	1.54	1.05
Chicago, IL	1.49	1.02
Dallas, TX	1.49	1.01
Kansas City, MO-KS	1.49	1.01
29 LARGEST METROS	1.47	1.00
Orange County, CA	1.43	0.97
Miami, FL	1.42	0.96
San Diego, CA	1.21	0.82
Nassau-Suffolk, NY	1.20	0.82
Philadelphia, PA-NJ	1.19	0.81
Newark, NJ	1.18	0.80
Los Angeles, CA	1.18	0.80
Baltimore, MD	1.16	0.79
St. Louis, MO-IL	1.14	0.78
Houston, TX	1.13	0.77
Cleveland, OH	1.13	0.77
Phoenix, AZ	1.10	0.75
Pittsburgh, PA	1.05	0.71
San Jose, CA	1.05	0.71
Detroit, MI	0.83	0.57
Tampa-St. Petersburg, FL	0.75	0.51
Riverside-San Bernardino, CA	0.46	0.31

Source: Census 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

Architects are defined here as 2000 Census occupational code 130.

over 80%. These rankings mirror the strong artistic showing of these metros, though they sort in New York's rather than Los Angeles' favor.

But the gap between these three and other large cities is not that marked as it is for artists. Detroit is also included in the high performance group, ranking fourth, with a concentration of designers 64% above the

national norm. This reveals the diversity among designers in terms of industries that use their skills. Designers are in high demand in Detroit's automobile industry and in the auto-promotional advertising activities housed nearby. Detroit supports more than nine times the national average of commercial and industrial designers (Table 6) – one out of every six to seven jobs in the nation in this category are located in Detroit. Designers are also prominent in the labor force in Seattle, Boston, Portland, San Jose, Orange County and Minneapolis-St. Paul, where they outpace larger metros such as Chicago, Washington DC, Philadelphia, Atlanta and Houston.

Although we often think about architects and designers as a cluster of their own – with interior designers working hand-in-hand with architects, our analysis shows this to be a misconception. Designers are a much larger and more diverse group than popular notions capture. Many industrial and consumer products firms require specialized groups of designers to fashion them into attractive and useful items that will sell well on the market, from automobiles to software and health care services to the advertising that promotes them.

Different metros may be heavily specialized in one subgroup of designers and not in other, while some will be relatively diversified. Take just the two largest designer subgroups: commercial/industrial and graphic designers (Table 6). Four metros – Detroit, Seattle, San Jose, and Portland – possess concentrations of commercial and industrial designers twice the national average. Detroit and San Jose are notable in also posting below average concentrations of graphic designers. This skewed pattern is tied to very high concentrations of manufacturing activities in each, autos in the former, and aerospace, computers and electronics in the latter. A second group of metros host impressive pools of graphic designers but fall below the national average for commercial and industrial designers: San Francisco, New York, Denver, Orange County, Baltimore, and Washington

Table 5. Concentrations of Designers by Metropolitan Area, 2000

Metropolitan Area	LQ/ US Average	LQ/ Metro Average
New York, NY-NJ	1.83	1.39
San Francisco-Oakland, CA	1.75	1.33
Los Angeles, CA	1.72	1.31
Detroit, MI	1.64	1.25
Seattle, WA	1.63	1.24
Boston, MA-NH	1.60	1.22
Portland, OR-WA	1.57	1.20
San Jose, CA	1.52	1.16
Orange County, CA	1.43	1.08
Minneapolis-St. Paul, MN-WI	1.36	1.04
29 LARGEST METROS	1.32	1.00
San Diego, CA	1.27	0.97
Dallas, TX	1.24	0.94
Chicago, IL	1.17	0.89
Denver, CO	1.16	0.88
Miami, FL	1.12	0.85
Houston, TX	1.12	0.85
Atlanta, GA	1.09	0.83
Kansas City, MO-KS	1.09	0.83
Nassau-Suffolk, NY	1.09	0.83
Newark, NJ	1.08	0.82
Washington, DC-MD-VA-WV	1.07	0.81
Philadelphia, PA-NJ	1.07	0.81
Baltimore, MD	1.05	0.80
Phoenix, AZ	0.98	0.75
Cleveland, OH	0.98	0.74
St. Louis, MO-IL	0.98	0.74
Tampa-St. Petersburg, FL	0.93	0.70
Pittsburgh, PA	0.91	0.69
Riverside-San Bernardino, CA	0.70	0.53

Source: Census 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

Designers are defined here as Census 2000 occupational code 263.

DC. In addition to Seattle and Portland, four other metros show prominence (40% above the U.S. average) in one and at least a better than average showing in the other – Boston, Kansas City, Minneapolis-St. Paul, and Phoenix.

Designers comprise an occupation with relatively rapid growth over the past few

decades. An understanding of their emerging and distinctive geography requires knowledge of the interface between designers and the industries they tend to work in, a point we explore next in a single case.

Table 6. Concentration of Commercial/Industrial and Graphic Designers by Metropolitan Area, 2000

Metropolitan Area	Commercial/ Industrial Designers	Graphic Designers
Detroit, MI	9.34	0.85
Seattle, WA	2.22	2.11
San Jose, CA	2.11	0.93
Portland, OR-WA	2.00	1.16
Boston, MA-NH	1.94	1.45
Kansas City, MO	1.43	1.58
Phoenix, AZ	1.41	1.19
Houston, TX	1.31	1.03
St. Louis, MO-IL	1.20	1.29
Dallas, TX	1.13	1.15
Newark, NJ	1.11	1.15
Philadelphia, PA-NJ	1.08	1.31
Minneapolis-St. Paul, MN-WI	1.06	1.42
Cleveland, OH	1.00	0.98
Chicago, IL	0.81	1.01
Atlanta, GA	0.75	1.01
San Francisco-Oakland, CA	0.68	1.72
Denver, CO	0.67	1.48
New York, NY-NJ	0.67	1.62
Nassau-Suffolk, NY	0.67	0.84
Orange County, CA	0.66	1.46
Baltimore, MD	0.62	1.44
Pittsburgh, PA	0.56	0.58
Washington, DC-MD-VA-WV	0.55	1.42
San Diego, CA	0.44	1.20
Los Angeles, CA	0.43	1.26
Riverside-San Bernardino, CA	0.19	0.57

Source: BLS, Occupational Employment Statistics, 2000.

III. Artists by Industry: the Case of Advertising

Economic developers typically think first in terms of industry and only then in terms of occupation. We are making the case for treating occupations as a coequal force in regional development. This is because location decisions on the part of skilled workers may be as important as those of firms, and because firms' success may have much to do with existing agglomerations of talent and the ability to retain and attract more talented workers. And in a broader sense, a region's success around certain industries may be predicated on its strength in key occupations driving those industries.

We can use the intersection between one industry, advertising, and artists (including designers), as an opportunity to explore this interrelationship. Nationally, about 10% of employees in the advertising industry, as reported by employers, belong to arts occupations (Table 7). Large numbers of graphic designers, art directors, writers and multimedia artists (a subgroup of visual artists) work in this industry. Painters, commercial and industrial designers and actors are also employed in this sector, but make up miniscule proportions of its workforce.

Do metro specializations in advertising industry employment dovetail with prominent pools of designers, writers and other artistic groups? The answer is yes, with some caveats. New York, San Francisco and Chicago dominate the list of metros with high concentrations of jobs in advertising (Table 8). And for their size, San Jose, Minneapolis-St. Paul, and Detroit have developed vibrant specializations in advertising. This may help to explain the relatively strong showing of designers in each, whose concentrations are

higher than for other artistic occupations. Although the two are related, it is not possible to determine whether industry or occupation drives the presence of the other in any one region. One can speculate that Detroit's preeminence in auto manufacturing bred an auto-centric advertising sector that in turn attracted designers. In the Twin Cities, the presence of large, consumer-oriented companies like General Mills and Pillsbury may have interacted with the independent emergence of an artistic community to breed a successful advertising industry. This brief exploration of the interconnection between industry and occupation suggests that an adequate understanding of a metro's artistic dividend will be based on a joint exploration of occupational and industrial structure in the region.

Table 7. Artistic Workers in the Advertising Industry, United States, 2002

Occupational Title	Employment	% of total
Graphic Designers	18,340	4.17
Art Directors	8,150	1.85
Writers and Authors	5,850	1.33
Multi-Media Artists and Animators	4,940	1.12
Merchandise Displayers and Window Trimmers	3,200	0.73
Producers and Directors	2,540	0.58
Fine Artists, incl. Painters, Sculptors, Illustrators	570	0.13
Commercial and Industrial Designers	560	0.13
Set and Exhibit Designers	180	0.04
Interior Designers	30	0.01
Actors	50	0.01
Total, Artistic Occupations in Advertising	44,110	10.1
Total Employment, All Occupations	439,700	100

Source: BLS, Occupational Employment Statistics, 2002
Advertising is defined as NAICS Code 5418.

Table 8. Advertising Industry Employment, By Metropolitan Area, 2000

Metropolitan Area	Employment	LQ
New York, NY-NJ	67,676	3.69
Chicago, IL	35,139	2.15
San Jose, CA	7,307	1.77
Minneapolis-St. Paul, MN-WI	11,664	1.73
San Francisco-Oakland, CA	14,292	1.72
Nassau-Suffolk, NY	7,513	1.67
Detroit, MI	13,153	1.59
Los Angeles, CA	25,266	1.58
Seattle, WA	7,939	1.54
Tampa-St. Petersburg, FL	6,130	1.43
Philadelphia, PA-NJ	12,771	1.39
Dallas, TX	10,491	1.36
Washington, DC-MD-VA-WV	12,170	1.32
Newark, NJ	4,858	1.27
Orange County, CA	7,145	1.25
St. Louis, MO-IL	6,063	1.21
Kansas City, MO-KS	4,337	1.17
Boston, MA-NH*	14,705	1.17
Miami, FL	4,013	1.13
San Diego, CA	4,734	1.09
Atlanta, GA	9,052	1.04
Portland, OR-WA	3,711	1.03
Denver, CO	4,194	0.96
Baltimore, MD	4,164	0.96
Pittsburgh, PA	4,067	0.94
Houston, TX	6,386	0.84
Cleveland, OH	3,699	0.82
Phoenix, AZ	4,311	0.75
Riverside-San Bernardino, CA	1,333	0.38
29 Largest Metros	318,281	1.56
United States, total	472,312	1.00

Source: US Census Bureau, Metro Business Patterns.

* Data are for Boston-Worcester-Lawrence-Lowell-Brockton NECMA

IV. Metropolitan Patterns of Artists' Self-Employment

Artists demonstrate a strong commitment to self-employment, sometimes by choice, often from desperation. Writers and fine artists, in particular, are more apt to be self-employed than earning a salary, while performing artists and architects are more apt to be on a payroll. For many artists, such self-employment adds to their income as an avocation or second job – this is most true in the case of musicians. Do metros differentially offer regularized employment for artists? Yes. Using the case of writers, a group with very high rates of self-employment,. We chart dramatic differentials in writers' self-employment across metro areas. Our findings on self-employment suggest that analysts and policymakers should use Census rather than establishment-based data in evaluating the presence of artists in their region.

Nationally, artists are highly likely to be self-employed, ranging from 68% for writers and authors to 24% for performing artists (Table 9). By comparison, only 8% of workers overall were self-employed as of 2002. These data are drawn from careful work by the Bureau of Labor Statistics that take into account both establishment and self-reported employment sources.

That more than two out of every three writers are not tied to an employer underscores the relatively footloose character of this occupation – writers can be drawn to New York, the heart of the international publishing industry, where lots of craft know-how is in the air but where rents are astronomical and networks highly competitive. Or they can gravitate to a second tier city like Minneapolis-St. Paul with a

vibrant writing community and superior amenities. Yet others may prefer an affordable small town in a stunning natural environment, where the Internet is one's access to an artistic community. Among performing artists, musicians are the most likely to be self-employed, at 39%, while actors and choreographers are the least likely at 17%. Designers (32%) and architects (22%) are less apt to be self-employed than artists as a whole, yet the share is not negligible and far exceeds the national norm of 8%.

Many self-employed artists who earn artistic income do so as their second “job.” Musicians are most prominent among them – almost one in three self-employed musicians engage in their musical activity as an avocation. This insight, from estimates by the Bureau of Labor Statistics drawn from the Current Population Survey, shows that even the Census, which asks individuals only for their primary occupation, undercounts the number of artists earning some income from their creative work.

Artists within each of these occupations may vary markedly from each other. Some writers have full-time jobs with magazines, newspapers or educational institutions, while others work purely from commissions or sales of finished work. Some musicians are unionized employees of orchestras or members of successful combos with a corporate identity, while many others play local clubs, entertain at weddings and make occasional recordings, much of it “off the books.”

Using writers as a case study, we probe the degree to which writers, reporting in the Census as their primary occupation, are self-employed. We find dramatically different rates, from 57% of Los Angeles' writers self-employed to only 22% in Kansas City (Table 10). Other high self-employment metros

include Houston, Portland, Riverside-San Bernardino, San Francisco and New York. Low self-employment shares are found among writers in Baltimore, Cleveland, Washington, DC, Minneapolis-St. Paul and Dallas. This may be because of the character of writing-intensive activities in these regions. Payroll employment for writers may be high due to

Hallmark cards in Kansas City and legal and political work in Washington, DC. In other locales – Los Angeles, San Francisco and New York, for instance, short-term media-related work (and lots of it) may attract self-employed writers. An additional force is the high costs of living in some cities, driving self-employed artists to lower cost, amenity rich

Table 9. Self employment trends, arts-related occupations, United States, 2002

Occupational Title	Total Employment	Self-employed	% Self-employed	Primary job	Secondary job
Visual artists	307,254	155,159	50%	129,109	26,050
Artists and related workers	148,682	80,022	54%	70,731	9,291
Arts directors	50,664	27,139	54%	23,988	3,151
Fine artists: painters, sculptors, illustrators	23,192	12,866	55%	11,372	1,494
Multi-media artists & animators	74,826	40,017	53%	35,371	4,646
Photographers	130,442	68,432	52%	54,024	14,408
Camera operators, TV/video/motion picture	28,130	6,705	24%	4,354	2,351
Performing artists	176,463	42,724	24%	38,174	4,550
Actors	63,033	10,992	17%	9,754	1,238
Producers and directors	76,125	24,995	33%	21,683	3,312
Dancers & choreographers	37,305	6,737	18%	6,737	0
Dancers	19,992	3,854	19%	3,854	0
Choreographers	17,313	2,883	17%	2,883	0
Musicians, singers and related	215,425	83,121	39%	56,770	26,351
Music directors & composers	54,271	21,354	39%	14,584	6,770
Musicians & singers	161,154	61,767	38%	42,186	19,581
Writers & authors	138,980	94,377	68%	80,509	13,868
Total, arts occupations	838,122	375,381	45%	304,562	70,819
Designers	531,921	168,806	32%	132,827	35,979
Commercial & industrial designers	51,823	16,088	31%	12,659	3,429
Fashion designers	14,844	4,353	29%	3,425	928
Floral designers	103,993	33,832	33%	26,621	7,211
Graphic designers	211,871	67,422	32%	53,052	14,370
Interior designers	60,050	19,325	32%	15,206	4,119
Merchandise displayers, window trimmers	77,221	23,881	31%	18,791	5,090
Set and exhibit designers	12,119	3,905	32%	3,073	832
Architects	136,378	29,678	22%	23,809	5,869
Architects, ex. landscape and naval	113,243	24,253	21%	19,457	4,796
Landscape architects	23,135	5,425	23%	4,352	1,073
Total, all arts-related occupations	1,506,421	573,865	38%	461,198	112,667
Total, all occupations	144,013,600	11,451,600	8%	9,926,000	1,525,600

Source: Bureau of Labor Statistics, National Industry-Occupation Employment Matrix
<http://www.bls.gov/emp/empoids.htm>

environments. Interestingly, there is no clear Sunbelt/Frostbelt distinction here, although there does seem to be a Western bias among metros that attract self-employed writers.

The presence of self-employed artists in a region means that analysts and policymakers should not rely solely on arts organization impact studies or establishment data on artists' employment in understanding the size of their artistic dividend. All the metros studied show dramatically higher numbers of

writers in their workforces when the Census figures are used to chart their presence rather than employer-based OES data (Table 10). The smallest differential is found in Baltimore, which reports 68% more writers, and Portland possesses the largest gap, where the Census finds seven times as many writers. If we used employer-based employment statistics to rank metros as writers' enclaves, Washington DC, New York and Minneapolis-St. Paul would top the list in that order. But using Census figures, New

Table 10. Writers' employment, population (Census) vs. establishment (OES) source, 2000

Metropolitan Area	% Self-Employed	Employment			Ratio Census/OES	LQ	
		Census	OES	Difference		Census	OES
Los Angeles, CA	57%	12,970	2,110	10,860	615%	2.71	1.62
Houston, TX	57%	1,524	210	1,314	726%	0.66	0.32
Portland, OR-WA	57%	1,647	220	1,427	749%	1.50	0.71
Riverside-San Bernardino, CA	56%	951	130	821	732%	0.61	0.40
San Francisco-Oakland, CA	55%	6,260	1,075	5,185	582%	2.51	1.57
New York, NY-NJ	54%	16,443	4,350	12,093	378%	2.99	2.85
Miami, FL	52%	906	350	556	259%	0.82	1.13
Denver, CO	51%	1,235	400	835	309%	0.98	1.05
Orange County, CA	51%	1,498	260	1,238	576%	0.92	0.59
Phoenix, AZ	51%	1,520	270	1,250	563%	0.88	0.53
Philadelphia, PA-NJ	51%	2,687	540	2,147	498%	0.94	0.71
Seattle, WA	50%	2,208	530	1,678	417%	1.48	1.19
Chicago, IL	49%	5,893	1,410	4,483	418%	1.27	1.06
Nassau-Suffolk, NY	47%	1,341	230	1,111	583%	0.84	0.60
St. Louis, MO-IL	47%	1,022	300	722	341%	0.67	0.72
Atlanta, GA	47%	2,389	1,180	1,209	202%	0.97	1.72
San Diego, CA	47%	1,763	280	1,483	630%	1.10	0.72
Tampa-St. Petersburg, FL	46%	996	260	736	383%	0.76	0.67
Detroit, MI	43%	1,792	690	1,102	260%	0.73	1.03
Pittsburgh, PA	42%	988	230	758	430%	0.79	0.66
Boston, MA-NH	42%	4,207	1,120	3,087	376%	2.00	1.73
San Jose, CA	40%	972	370	602	263%	0.95	1.06
Newark, NJ	39%	1,425	360	1,065	396%	1.24	1.17
Minneapolis-St. Paul, MN	36%	2,494	1,360	1,134	183%	1.33	2.46
Dallas, TX	35%	1,489	480	1,009	310%	0.73	0.74
Washington, DC-MD-VA-WV	35%	6,877	3,000	3,877	229%	2.27	3.48
Cleveland, OH	34%	948	460	488	206%	0.74	1.25
Baltimore, MD	30%	1,361	810	551	168%	0.92	2.07
Kansas City, MO-KS	22%	847	310	537	273%	0.82	1.01
United States	47%	158,116	41,410	116,706	382%		

Sources: Census 2000 5% PUMS dataset, Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota; US Bureau of Labor Statistics, Occupational Employment Statistics, 2000.

York, San Francisco and Los Angeles dominate, with Washington ranked fourth and the Twin Cities as eighth. Self-employment is clearly driving these discrepancies, as evidenced by a strong

statistical correlation (0.72) between the metropolitan rate of self-employment among authors, and the ratio of Census to OES employment.

V. Conclusion

Artists make important contributions to regional economies beyond those associated with arts organizations and events, and these contributions are unevenly spread among cities. Los Angeles, New York and San Francisco increased their lead over other regions in the 1990s, reversing a modest trend of several decades towards decentralization. Our perusal of 2000 shows that a number of “second tier” cities have emerged and maintained distinction as artist-rich centers: Washington, DC, Seattle, Boston, Orange County, Minneapolis-St. Paul, San Diego and Miami. Portland, Atlanta, Baltimore, Chicago and Newark are also above the national norm. Other regions are below it, though even here there is some shifting over time.

The Arts Super Cities excel in all subgroups of artists, while the midsized cities with artistic strength tend to specialize in one or two – some attract writers, others performing artists or visual artists. The range of occupational discrepancy between these twenty-nine regions ranges from an indexed share of 5.44 for Los Angeles in performing artists to 0.52 for St. Louis, also for performing artists. This means that Los Angeles hosts more than five times the national workforce artists’ share norm, while St. Louis falls almost 50% below it.

We found no clear relationship between artistic strength and either overall regional employment size or recent growth rates. Some large regions, like Chicago and Philadelphia, do not share the other mega-regions’ artistic prowess, while many midsized metros, such as Seattle, outpace the national norm.

The distribution of architects is even more concentrated in large cities nationally than creative artists and generally mirrors their location patterns. Among designers, however, a diverse group that encompasses industrial and commercial designers and graphic artists, we find that metros like Detroit, Seattle, Portland and San Jose do not trail far behind the Arts Super Cities. Detroit and San Jose host prominent concentrations of industrial designers, while Seattle tops the list among graphic designers.

Our model of artistic specialization does not assume that firms and arts organizations come first and artists follow. We believe that decisions of artists to live in certain regions may be a stimulant to new firm formation, which we have documented in our earlier study, and may attract other arts-using firms to the region as well. Decisions by both employers and artists interact to build artistic enclaves. We explore this by looking at the interrelationship between one industry, advertising, and artists to see whether there appears to be a synergy. We do find this, and speculate that in some places, such as Minneapolis-St. Paul, the presence of an artistic pool may be important in generating, attracting and enhancing the productivity of advertising firms, while in Detroit, the presence of the auto industry appears to be more important in the strong advertising sector in that economy.

Self-employment is an important feature of artistic activity in the United States and in most regions we studied. Writers and visual artists are more likely to be self-employed than employed by others, and musicians are quite likely to earn money from their music as a second (and self-employed) activity. Examining writers and authors, we find that some metros – Los Angeles, Houston, Portland – have much higher shares of self-employed authors than do others; only about

one in three is self-employed in Kansas City, Baltimore, Cleveland and Washington, DC. It is therefore perilous to use employer-based data sources to estimate the numbers of artists who are engaged in their artwork as their major source of income.

Will these trends persist into the future? Several forces appear to be at work. The catapulting of American media into international markets in the 1990s, as people everywhere accepted English as a major form of communication and as the Internet created almost unlimited opportunities for dissemination, favored the super artistic cities, who were able to counter a prior tendency towards dispersion. Our 2000 Census data does not capture the dot.com and telecommunications bust of the last few years that could have eroded the new media edge of these cities and their ability to retain artists. Continued large cost-of-living and congestion differentials between these cities and artist-rich mid-sized American cities suggest decentralization may again assert itself. To the extent that the Internet renders proximity less important, this will feed the dispersal trend. Yet the complex assembling of media and entertainment products in the super arts cities, reinforced by robust tourism to these cities, should enable them to hold their lead indefinitely.

What can city leaders do to improve their artistic dividend? Here we counsel “different strokes for different folks.” In the Arts Super Cities, the significance and uniqueness of their artistic pools should be acknowledged and cultivated. Studying what draws artists to their cities, whether it be particular employers, the rich cultural milieu or the region’s natural amenities, should help to craft policies aimed at distinctive artists’ occupational organizations, training institutions and networks. Each may benefit, too, from a deeper understanding of how they compare with the other two and with the more outstanding mid-sized cities. For the artist-rich second tier cities, surveying their artistic

pools and identifying their niche would be similarly helpful in constructing a strategy that promotes artists’ organizations and education and nurtures the amenities that attract and keep artists in the region. As we have shown with qualitative work in our previous study, a lower cost of living, less congestion, recreational opportunities, alternative health care, and a diverse artistic culture are among the features that draw artists away from the super arts cities.

What about large cities that currently show a relative deficit of artists? And smaller towns that cannot expect to mount even a single arts center? Because artists are relatively footloose – many choose to live in a particular place to practice their art and travel or use the Internet and mail to “export” their work out of the region, building an artistic component to the local economy is a reasonable project for many cities and small towns. Artists make less money than most other skilled workers, and an affordable community is important to them. Affordable loft space in historic buildings in an older city’s bar, comedy club and gallery-rich neighborhoods can anchor them there, while a beautiful natural environment beckons to others. Every city and town has some modicum of artistic talent among its residents. Artists can be engaged in thinking through a strategy to market the place to other artists and to figure out how modest amounts of public money and energy can be spent to attract other artists and art-loving tourists. Localities can also help artists to market their work through the Internet and art fairs.

Cities of all sizes can amplify their artistic dividends by working on three fronts. First, diversifying away from strictly “bricks and mortar” subsidies to arts facilities, cities can nurture artistic occupations in several ways. One is through support for artists’ clubhouses – places where artists come together to share their craft and to learn ways of making a living from their art. Publicly supported artists’ live-and-work spaces have become important

anchors for many urban neighborhoods, often revitalizing historic buildings and reversing a process of decline. Public education for the arts and support for arts events helps to raise the visibility of art in a community and generate sales and gigs for individual artists. Cities can also help artists hone their entrepreneurial skills and build businesses, as we show in *The Artistic Dividend*.

Second, cities can pioneer ways of tightening the connections between an existing corporate community and resident artists. Traditionally, this relationship has been conceived of as philanthropic in nature and has indeed played an important role in artistic development. But artists can also be viewed as talent available to help companies design a better product (designers), write better manuals for workers and consumers (writers), solve management problems through simulation techniques (actors), and prepare better marketing materials (painters, photographers, writers). Few organized

channels exist to match one up with the other, and such a “market” might contribute to both firm productivity and profits and artists’ livelihoods.

Third, state and local governments should improve their decision criteria for allocating public dollars to the arts. Currently, large new performing arts facilities tend to receive disproportionate shares of the public dollar, because they are supported by well-organized and energetic elites who lobby effectively. Smaller, more diverse cultural organizations, artists’ live-work space and artists’ clubhouses receive paltry amounts of money in contrast, though they are breeding grounds and experimental stages for future artists and make important contributions to their neighborhoods and the overall diverse character of a city. A broader appreciation for the size and dimensions of artistic dividend will lead to a more holistic approach to arts funding.

Technical Appendix

A. Data sources used

Arts employment data presented in this report are derived primarily from the U.S. Census Bureau's decennial Population Census, most recently conducted in 2000. The data come from the "long form" component of the Census, which is administered to roughly one in six households. Unlike many other sources of employment information, the Population Census collects information from households, where the primary units of analysis are *workers*, rather than business establishments, where the primary units are *jobs*. This allows for industrial and occupational information to be linked with person- and household-level demographic information such as gender, race/ethnicity, age, and educational attainment. It also allows for broader coverage of individuals located outside of traditional business establishments, including self-employed and unemployed workers. The primary drawback to Population Census data is timing; detailed data for 2000 were only released in 2003, and will become quickly dated relative to other, more timely data sources. However, in addition to offering the most comprehensive point-in-time view of the U.S. population and the economy, the Population Census is the preferred tool for longitudinal analysis, despite ongoing changes in data classification systems that hinder comparisons over time.

We produced the data in this report from the Census Bureau's Public Use Microdata Sample (PUMS) release, accessible through the Integrated Public Use Microdata Series (IPUMS) at the Minnesota Population Center, University of Minnesota. PUMS files allow researchers to create customized tabulations based on an anonymous sample of long form respondents equivalent to approximately one in 20 households (5%). The IPUMS interface brings together PUMS files from Census years dating back to the 19th century into a convenient, user-friendly Internet portal.

This report analyzes arts employment in the 29 largest metropolitan areas in terms of overall employment as of 2000, based on official Census 2000 (SF3) totals. The largest metropolitan area included was Los Angeles with employment of 3.96 million; the smallest was San Jose with 845,000. Metropolitan areas are defined here in terms of primary metropolitan statistical areas (PMSA), which correspond roughly to labor market areas, as opposed to consolidated metropolitan statistical areas (CMSA), which represent multi-nodal economic regions such as Los Angeles-Orange County-Riverside. Use of PMSAs is more common within regional analysis than CMSAs, especially when considering labor market characteristics, due to the wide disparities common among constituent parts of CMSAs. There are two exceptions to the exclusive use of PMSAs: New York, where Bergen-Passaic, NJ PMSA has been included; and San Francisco, which has been combined with Oakland. In each of these cases, consolidation was necessary to facilitate comparison between 1980, 1990, and 2000 Census data.

Advertising industry employment (Table 8) for 2000 was suppressed for confidentiality reasons for certain metropolitan areas by the Census Bureau, Metro Business Patterns. For these metros, employment was estimated using a modified midpoint technique using information parent and sibling industries and establishment counts by employment range. For discussion of these techniques, see Shelby Gurking, et al., "Anti-Suppressants and the Creation and Use of Non-Survey Regional Input-Output Models," pp. 379-405 in *Regional Science Perspectives in Regional Analysis*, Michael L. Lahr and Ronald E. Miller (eds.) (New York: Elsevier, 2001).

Data on self-employment within arts occupations presented in Table 9 are from the Bureau of Labor Statistics (BLS), Occupational Employment Projections program. These projections are derived primarily on the establishment-based Occupational Employment Statistics (OES) survey, supplemented with data from the household-based Current Population Survey (CPS), which is administered monthly by BLS and the Census Bureau. The CPS, unlike the decennial Population Census, collects data on secondary employment patterns, including individuals who are self-employed as a second job.

B. Occupational coding

In this report we have defined “artists” as encompassing eight occupational titles in four categories used in reporting 2000 Census data:

- **Visual artists** (Artists and related workers [260], Photographers [291], and TV/Video/Motion Picture Camera Operators [292, partial])
- **Performing artists** (Actors [270], Producers and Directors [271], and Dancers and Choreographers [274])
- **Musicians and Composers** (275)
- **Writers and Authors** (285)

Coding systems used in the Decennial Census and other data sources have undergone considerable change in recent years⁴. In 1999 the Census Bureau adopted a revised version of the Standard Occupational Classification (SOC) system for use in the 2000 Census. The new SOC system represents a significant departure from the previous SOC revision, which was last revised in the late 1970s for use in the 1980 Census. As a result, the availability of comparable employment data between the 1990 and 2000 Census years varies substantially from detailed occupation to occupation.

A correspondence table for arts occupations was developed based on crosswalk tables published by the National Crosswalk Service Center (www.xwalkcenter.org). Approximately seven arts occupational titles used in the 1980/1990 Census –

- Authors (census code 183);
- Musicians and Composers (186);
- Actors and Directors (187);
- Painters, Sculptors, Craft-Artists, and Artist Printmakers (188);
- Photographers (189);
- Dancers (193); and
- Artists, Performers, and Related Workers, not elsewhere classified (194)

– correspond to the eight arts occupational titles for Census 2000 listed above.

As a group, they represent a *reasonably*, but not necessarily *directly*, comparable set of occupations. For this reason, direct change measures such as employment change percentages have been avoided in favor of indirect change measures such as location quotients, which better control for underlying changes in occupational coding at the national level. Because the correspondence between these occupational titles was often interlocking in nature – i.e., one 1990 title would be split among multiple 2000 titles, and vice versa – it is practically impossible to compare detailed occupational titles from 1990 to 2000.

In one case, employment from a 2000 Census occupational code (292 – TV, Video, and Motion Picture Camera Operators and Editors) has been prorated to match its correspondence with the 1990 Census code for photographers (189). The 2000 Census code is comprised of two detailed SOC codes – TV, Video and Motion Picture Camera Operators (27-4031), and Film and Video Editors (27-4032) – only the former of which relates to the 1990 photographers title. Employment for 2000 Census code 292 has been prorated for all metros based on the national distribution between the two detailed SOC codes in 2000, according to the BLS Occupational Employment Projections series.

⁴ For a good discussion of historical changes in industrial and occupational coding, see Daniel Hecker, Jerome Pikulinski, and Norman Saunders, “Economic Change and Structures of Classification,” Ch. 3 in *Report on the American Workforce, 2001*. Washington, DC: Bureau of Labor Statistics.

C. Metropolitan area definitions

The task of analyzing urban growth and change over time is complicated by changes to metropolitan area definitions. Metropolitan areas grow in physical scope as they expand into adjacent areas, whether previously rural communities or adjoining urban centers. In most of the country, metropolitan areas are defined on the basis of counties. As metropolitan areas grow, suburban counties are regularly added based on their degree of urbanization. This means that for many metropolitan areas – other than ones such as Los Angeles PMSA that are bounded by other metropolitan areas – their definitions are not strictly comparable over time.

More problematic are fundamental shifts in how the government defines and demarcates urban areas. The most recent shift occurred in the 1980s, when the federal government moved from the standard metropolitan statistical area (SMSA) system to the PMSA/CMSA system discussed in Section A above. The SMSA concept was similar to the present CMSA concept, combining multiple, related urban sub centers together into single units (e.g., San Francisco-Oakland, New York-NE New Jersey). Consequently, attempts to compare metropolitan data for 2000 and 1990 with data from 1980 must generally be done on the basis of 1980 SMSA boundaries, since more disaggregated geographic detail is not readily available. Table A1 lists the counties listed in each of the 29 metropolitan areas analyzed for 1980, 1990, and 2000.

Table A1. Counties Included in Metropolitan Area Definitions, 1980, 1990, and 2000

Metropolitan Area	1980	1990	2000
Atlanta, GA	Butts, Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, Walton	Barrow, Butts, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, Spaulding, Walton	Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Pickens, Rockdale, Spaulding, Walton
Baltimore, MD			Anne Arundel, Baltimore, Baltimore City, Carroll, Harford, Howard, Queen Anne's
Boston, MA-NH	Essex (pt), Middlesex (pt), Norfolk (pt), Plymouth (pt), Suffolk	Boston PMSA: Bristol (pt), Essex (pt), Middlesex (pt), Norfolk (pt), Plymouth (pt), Suffolk, Worcester (pt); Salem-Gloucester PMSA: Essex (pt)	Bristol (pt), Essex (pt), Middlesex (pt), Norfolk (pt), Plymouth (pt), Rockingham NH (pt), Suffolk, Worcester (pt)
Chicago, IL	Cook, Dupage, McHenry, Kane, Will, Lake IL	Chicago PMSA: Cook, DuPage, McHenry; Aurora-Elgin PMSA: Kane; Joliet PMSA: Grundy, Will; Lake IL PMSA: Lake IL.	Cook, DeKalb, DuPage, Grundy, Kane, Kendall, Lake IL, McHenry, Will
Cleveland, OH	Cleveland SMSA: Cuyahoga, Geauga, Lake, Medina; Lorain SMSA: Lorain	Cleveland PMSA: Cuyahoga, Geauga, Lake, Medina; Lorain PMSA: Lorain	Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina
Dallas, TX			Collin, Dallas, Denton, Ellis, Henderson, Hunt, Kaufman, Rockwall
Denver, CO			Adams, Arapahoe, Denver, Douglas, Jefferson
Detroit, MI			Lapeer, Macomb, Monroe, Oakland, St. Clair, Wayne
Houston, TX			Chambers, Fort Bend, Harris, Liberty, Montgomery, Waller
Kansas City, MO-KS			Cass, Clay, Clinton, Jackson, Johnson KS, Lafayette, Leavenworth KS, Miami KS, Platte, Ray, Wyandotte KS
Los Angeles, CA	Los Angeles	Los Angeles	Los Angeles
Miami, FL	Dade	Dade	Miami-Dade

Metropolitan Area	1980	1990	2000
Minneapolis-St Paul, MN-WI	Anoka, Carver, Chisago, Dakota, Hennepin, Ramsey, St Croix WI, Scott, Washington, Wright	Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, St Croix WI, Scott, Sherburne, Washington, Wright	Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Pierce WI, Ramsey, St Croix WI, Scott, Sherburne, Washington, Wright
Nassau-Suffolk, NY			Nassau, Suffolk
New York, NY-NJ	New York SMSA: Bergen NJ, Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland, Westchester; Passaic SMSA: Passaic NJ	New York PMSA: Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland, Westchester; Bergen-Passaic PMSA: Bergen NJ, Passaic NJ	New York PMSA: Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland, Westchester; Bergen-Passaic PMSA: Bergen NJ, Passaic NJ
Newark, NJ			Essex, Morris, Sussex, Union, Warren
Orange County, CA	Orange (Anaheim-Santa Ana SMSA)	Orange (Anaheim-Santa Ana PMSA)	Orange (Orange County PMSA)
Philadelphia, PA-NJ			Bucks, Burlington NJ, Camden NJ, Chester, Delaware, Gloucester NJ, Montgomery, Philadelphia, Salem NJ
Phoenix, AZ			Maricopa, Pinal
Pittsburgh, PA			Allegheny, Beaver, Butler, Fayette, Washington, Westmoreland
Portland, OR-WA	Clark WA, Clackamas, Multnomah, Washington	Portland PMSA: Clackamas, Multnomah, Washington, Yamhill; Vancouver PMSA: Clark WA	Clark WA, Clackamas, Columbia, Multnomah, Washington, Yamhill
Riverside-San Bernardino, CA			Riverside, San Bernardino
St. Louis, MO-IL			Clinton IL, Crawford (pt), Franklin, Jefferson, Jersey IL, Lincoln, Madison IL, Monroe IL, St. Charles, St. Clair IL, St. Louis, St. Louis city, Warren
San Diego, CA	San Diego	San Diego	San Diego
San Francisco-Oakland, CA	San Francisco-Oakland SMSA: Alameda, Contra Costa, Marin, San Francisco, San Mateo	San Francisco PMSA: Marin, San Francisco, San Mateo; Oakland PMSA: Alameda, Contra Costa	San Francisco PMSA: Marin, San Francisco, San Mateo; Oakland PMSA: Alameda, Contra Costa
San Jose, CA			Santa Clara
Seattle, WA	King, Snohomish	King, Snohomish	King, Island, Snohomish
Tampa, St. Petersburg, FL			Hernando, Hillsborough, Pasco, Pinellas
Washington, DC-MD-VA-WV	Alexandria City VA, Arlington VA, Charles MD, Fairfax VA, Loudon VA, Montgomery MD, Prince George's MD, Prince William VA, Washington DC	Alexandria City VA, Arlington VA, Charles MD, Fairfax VA, Loudon VA, Montgomery MD, Prince George's MD, Prince William VA, Washington DC	Alexandria City VA, Arlington VA, Berkeley WV, Calvert MD, Charles MD, Clarke VA, Culpeper VA, Fairfax City VA, Fairfax VA, Falls Church City VA, Fauquier VA, Frederick MD, Fredericksburg City VA, Jefferson WV, King George VA, Loudon VA, Manassas City VA, Montgomery MD, Prince George's MD, Prince William VA, Spotsylvania VA, Stafford VA, Warren VA, Washington DC

Source: Census Bureau, <http://www.census.gov/population/www/estimates/pastmetro.html>

(pt) denotes partial county included in metropolitan area.

Counties for 1980 and 1990 only listed for metropolitan areas listed in Table 2.

D. Data reliability

Like any survey-based data, estimates derived from IPUMS data are subject to sampling errors based on the number of sample observations relative to the survey population. The more observations, the lower the sampling error, and thus the more reliable the estimates can be considered.

The most widely used measure of reliability for survey-based statistics is the *relative standard error (RSE)*. RSE depicts the standard error of a given survey statistic (e.g., the share of employed persons in a given area who are artists) as a proportion of the overall statistic. For example, if a survey determines that 5% of all employed persons are artists, and the standard error of this figure is 1%, then the RSE is equal to 1%/5% = 20%.

Standard error is calculated from the following equation⁵:

$$S_p = \sqrt{\frac{P(1-P)}{n}} \sqrt{\frac{N-n}{N-1}}$$

Where P is the survey parameter (e.g., artist share of employed persons), n is the number of unweighted survey observations in the population (e.g., number of employed persons), and N is the estimated population from which n is taken. RSE is then obtained by dividing S_p by the survey parameter P .

There is no “right” level of RSE. However, RSE levels of 10% or less can be considered fairly reliable, while levels of 10-15% are still acceptable but somewhat problematic⁶. Detailed occupational employment estimates with RSE levels over 15% should be interpreted with some caution. One method for dealing with detailed occupational titles with unacceptable RSE levels is to pool them with similar occupations. This increases the number of observations, thereby reducing the RSE and enhancing the reliability of the estimate. A general rule of thumb for determining whether a population parameter (in this case, an occupational employment estimate) can be considered reliable is whether there are at least 100 unweighted observations underlying the statistic, translating to a weighted level of approximately 2,000 (employed) individuals in the 5% PUMS/IPUMS. This threshold equates to an RSE of approximately 10%.

RSE calculations for 2000 arts employment estimates provided in this report are listed in Table A2 below.

⁵ This equation is drawn from page 48, equation 3.4 in Paul S. Levy and Stanley Lemeshow (1991), *Sampling of Populations: Methods and Applications* Second Edition. New York: John Wiley & Sons. The equation is for determining standard errors under simple random sampling procedures, whereas the PUMS/IPUMS samples are clustered and stratified based on a wide variety of factors. However, for occupational variables the effects of clustering and stratification tend to cancel each other out, meaning that standard error estimates based on simple random sampling should be roughly equal to those factoring in stratification and clustering effects. For more information, see Chapter 3, “Sampling Errors” in Steven Ruggles and Matthew Sobek et al, *Integrated Public Use Microdata Series Version 3.0*. Minneapolis: Historical Census Projects, University of Minnesota, 2003. This documentation is found online at: <http://www.ipums.umn.edu/usa/chapter3/chapter3.html>

⁶ 1990 Census occupational employment estimates based on the 5% PUMS/IPUMS file and those based on the full long-form dataset, which can be considered more reliable than PUMS-based estimates due to the larger sample size, were compared for 7 detailed arts occupations in 11 metropolitan areas. This analysis found that discrepancies between the two sources began to increase moderately at approximately 10% RSE and fairly rapidly at approximately 15% RSE. Most IPUMS occupational employment estimates with RSE levels under 10% were within 10% above or below the long-form estimate.

Table A2. Relative Standard Error (RSE), Metropolitan Arts Employment Estimates

Metropolitan Area	Artists (total)	Performing Artists	Visual Artists	Authors	Musicians	Designers	Architects
Atlanta, GA	4%	9%	6%	10%	8%	4%	7%
Baltimore, MD	5%	11%	7%	12%	10%	5%	10%
Boston, MA-NH	4%	8%	6%	7%	9%	4%	6%
Chicago, IL	3%	7%	4%	6%	7%	3%	5%
Cleveland, OH	6%	15%	9%	14%	12%	6%	10%
Dallas, TX	4%	9%	6%	12%	10%	4%	7%
Denver, CO	6%	12%	10%	13%	14%	6%	9%
Detroit, MI	5%	12%	7%	12%	11%	4%	10%
Houston, TX	5%	11%	8%	12%	10%	4%	8%
Kansas City, MO-KS	7%	18%	9%	17%	16%	7%	11%
Los Angeles, CA	2%	3%	3%	4%	4%	2%	5%
Miami, FL	5%	10%	9%	15%	12%	6%	10%
Minneapolis-St. Paul, MN-WI	5%	10%	8%	10%	11%	5%	9%
Nassau-Suffolk, NY	5%	11%	7%	12%	12%	5%	9%
New York, NY-NJ	2%	3%	3%	4%	5%	2%	4%
Newark, NJ	5%	11%	9%	12%	14%	6%	11%
Orange County, CA	4%	9%	6%	11%	10%	4%	8%
Philadelphia, PA-NJ	4%	9%	6%	9%	9%	4%	7%
Phoenix, AZ	5%	12%	7%	12%	11%	5%	9%
Pittsburgh, PA	6%	15%	10%	15%	13%	6%	11%
Portland, OR-WA	6%	12%	9%	11%	14%	5%	9%
Riverside-San Bernardino, CA	6%	12%	8%	15%	13%	6%	15%
San Diego, CA	4%	11%	7%	11%	10%	5%	9%
San Francisco-Oakland, CA	3%	6%	4%	6%	8%	3%	5%
San Jose, CA	6%	15%	9%	14%	17%	5%	12%
Seattle, WA	4%	10%	7%	10%	11%	4%	7%
St. Louis, MO-IL	6%	16%	9%	15%	13%	6%	10%
Tampa-St. Petersburg, FL	6%	12%	9%	14%	11%	6%	13%
Washington, DC-MD-VA-WV	3%	6%	5%	5%	7%	4%	5%

Source: Authors' estimates based on data from Integrated Public Use Microdata Series, Minnesota Population Center, University of Minnesota.

Note: Relative standard error (RSE) is a measure of statistical reliability equivalent to the standard error of a survey statistic as a proportion of the statistic. The lower the RSE, the more reliable the estimate. For more information, see Section D, "Data Reliability," in the Appendix to this document.