RECESSION AND PROFESSIONAL & BUSINESS SERVICES EMPLOYMENT IN THE US: NO SAFE HAVEN

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Abstract

This paper examines professional and business services (PBS) employment patterns among US metropolitan areas during the recent recession. The PBS sector did not dampen unemployment rates, contrary to past expectations about services sector behavior during the business cycle. The rate of PBS employment loss was greater than the overall job loss rate in most metropolitan areas from 2007-2009, but the behavior was not universal across locations. Further, the professional services component of the PBS sector experienced a lower rate of job loss compared to total job losses, and a diverse set of large metropolitan areas actually gained professional services jobs over this period. By contrast, the administrative services component of the PBS sector experienced a loss in employment that substantially exceeded the overall job loss rate, a pattern seen across all metropolitan areas. Region-specific characteristics, rather than industry or national factors, appear to play an important role in PBS employment trends, but the relative level of professional services versus administrative services employment also matters.

Sumário

Este estudo analisa os padrões de emprego no sector dos serviços de apoio a empresas (PBS) entre as áreas metropolitanas dos EUA, durante a recente recessão. Ao contrário do que seria expectável, o

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sector PBS não inflacionou as taxas de desemprego, no decurso do ciclo de negócios. Entre 2007 e 2009, a taxa de desemprego no sector PBS foi maior do que a taxa global de desemprego, na grande maioria das áreas metropolitanas, embora o seu comportamento não tenha sido uniforme, em todos os locais. Além disso, a componente de serviços profissionais do sector PBS registou uma menor taxa de desemprego, comparativamente ao número total de empregos perdidos, bem como, ao longo deste período, varias áreas metropolitanas, de grande dimensão, ganharam novos postos de trabalho. Em contrapartida, os serviços administrativos do sector PBS registaram uma diminuição de emprego que excedeu largamente a taxa de desemprego global, facto que se verificou em todas as áreas metropolitanas. As características específicas das regiões, ao contrário de factores sectoriais ou nacionais, parecem ter um papel importante na evolução do emprego PBS, embora o nível relativo de serviços profissionais, versus serviços administrativos, também seja importante.

Introduction

The professional and business services (PBS) sector[1] has been one of the most important components of US employment and output growth since the 1990s. Its contribution has been especially pronounced in metropolitan America, especially among large metropolitan areas. PBS and other services sectors have been considered counter-cyclical, less prone to major changes in employment throughout the business cycle compared to, say, the manufacturing sector. However, the strong increase in PBS employment during the last expansion and the drop in employment during the latest recession force the conventional wisdom to be questioned. In fact, recent research suggests that the PBS sector is actually "procyclical" – with employment growth or contraction rates

[1] The professional and business services sector includes three sub-sectors: Professional and Technical Services (including legal, accounting, architectural and engineering, computer systems design, management and technical consulting services), Management of Companies and Enterprises, and Administrative and Waste Services (including employment services, business support services, services to buildings and dwellings, and waste management services).

that exceed the rate of change for total net employment throughout the business cycle.

This paper will examine whether this finding holds true at the metropolitan level – the geography in which PBS activities are most concentrated. First, data on the distribution of PBS employment among US metropolitan areas will be updated and analyzed to understand if its pattern of concentration has changed during the recession. Second, PBS and total employment changes from 2007-2009 among metropolitan areas will be reviewed to determine if the sector is also procyclical at the metropolitan level and to identify variations among metropolitan areas.

Literature Review

Professional and business services are primarily producer services. These are services used by firms or public institutions, rather than households, and are typically inputs into another product or service. Within the producer services category, professional and business services are singled out for analysis because they represent some of the highest rates of growth among producer services and represent the knowledge-oriented services that generate innovation and greater productivity. At the same time, this set of services has been found to be concentrated in large metropolitan areas.

The potentially special role of professional and business services within the producer services segment has long been recognized. As early as 1966, exceptionally strong growth in the "miscellaneous business services" sector was noted by Greenfield. Tordoir (1995) studied professional services specifically, primarily their use in business organizations, but also their unique role in the economic structure, writing that, "this combination of judgment, complex information, trust, independency, and specificity to the user's situation and demands, render professional services a special category in economic terms" (6).

Recent research has also established that professional and business services, and especially knowledge-intensive business services, are a special category and are very important elements of regional economies (Rubalcaba & Kox, 2007). These services can be exported beyond the region to bring in new income from outside the area (Greenfield, 1966;

Daniels, 1985; Gillis, 1987; Marshall & Wood, 1995; Illeris, 1996). Business services help accelerate productivity growth in the overall economy via innovations, knowledge diffusion, and by making highly specialized skill sets available to broad markets (Kox & Rubalcaba, 2007, Bryson *et al.*, 2004). PBS firms play important roles in the innovation process both by innovating themselves and by catalyzing innovation in others (Marshall, 1988; Miles & Boden, 2000; Miles, 2007; Howells *et al.*, 2007). Research has also found a positive relationship between the growth of business services and manufacturing productivity (Hansen, 1994; Gatrell 2002) and between the use of business services or knowledge-intensive services and improved performance in a wider set of industries (Camacho & Rodriguez, 2007; Baker, 2007). Finally, and a critical point for US community leaders, professional and business services firms provide many good, well-paying jobs (Illeris, 2002; Harpel, 2006).

Professional and Business Services in the US Economy

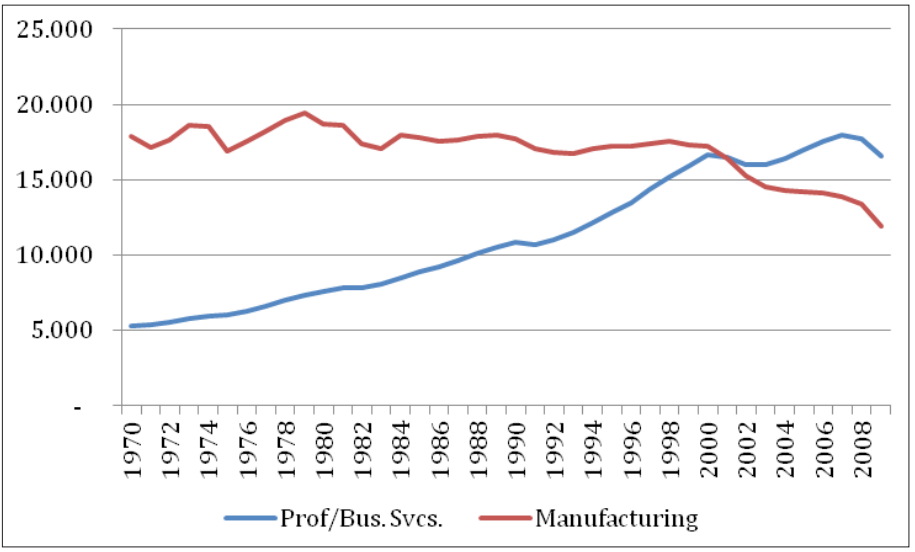
The professional and business services (PBS) sector is an important and growing segment of the US economy. PBS output has grown substantially over the past 40 years, rising from 5% of GDP in 1970 to 12.1% in 2009, with total value added of $1.7 trillion in that year. Over the same period, professional and business services employment expanded from 5.3 million to 16.6 million jobs (figure 1). PBS employment in the United States is now 13% of total non-farm employment (2009), not including the self-employed. By comparison, manufacturing employment declined from 24% to 9% of total non-farm employment over this period.

Since 1991, the PBS sector growth pattern has diverged from total services and total employment growth rates, with higher highs and lower lows throughout most of the last decade (figure 2). This suggests that the professional and business services sector experienced a structural change beginning in the 1990s and has become more important in influencing the overall economy while also becoming procyclical.

Professional and Business Services and Metropolitan Areas

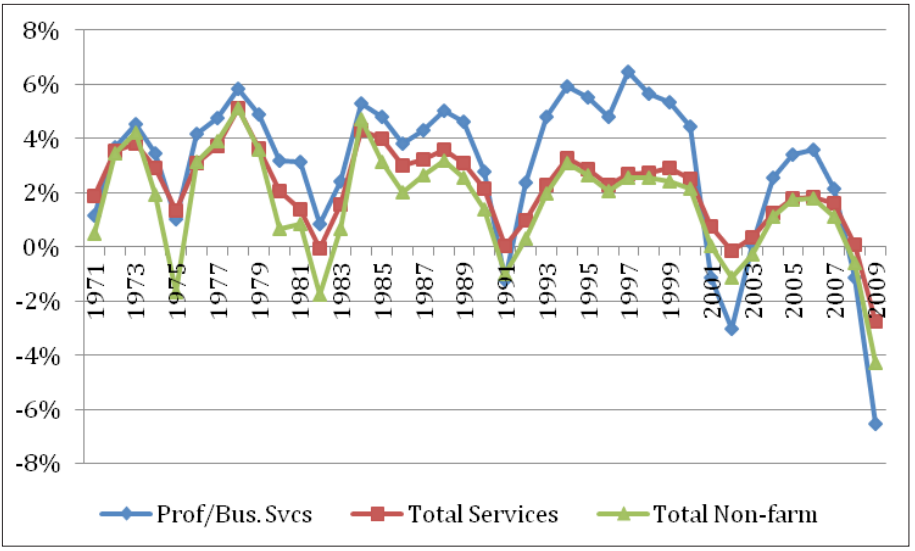
Many studies of PBS note that they tend to concentrate in metropolitan areas. For example, Stanback and Noyelle (1984) singled out corporate services, which included many business and professional services, in their

Figure 1 – Annual Employment by Select Sector (000), 1970-2009



Source: Bureau of Labor Statistics

Figure 2 – Employment Growth by Select Sector, 1970-2009



Source: Bureau of Labor Statistics

analysis of metropolitan economies. Other studies have focused on the location and growth of PBS services in US metropolitan areas, describing the centralization and then decentralization or dispersion trends among metropolitan areas (O'hUallachain and Reid, 1991; Gong, 2001).

PBS firms concentrate in large metropolitan areas for several reasons:

Availability of skilled labor. Access to highly qualified workers appears to be one of the most important reasons PBS firms locate and expand in certain metropolitan areas (O'hUallachain and Reid, 1991; Beyers and Lindahl, 1996; Gong, 1997; Gatrell, 2002; Aslesen and Isaksen, 2004). Gong writes, "Highly qualified labor, represented by higher education of the metropolitan population, is the most important location determinant of business and professional services. This characteristic distinguishes business and professional services from manufacturing explained by the industrial location theory and consumer services by central place theory" (1997).

Presence of corporate headquarters. Corporate headquarters, which have been predominantly located in major metropolitan areas, are considered important for the location of PBS firms because of their great demand for external services (Stanback and Noyelle, 1984; Coffey, 1995; Sassen, 2000; Hansen, 2001) although there is some disagreement on the exact role these headquarters play. For example, O'hUallachain (1992) found the presence of corporate headquarters was not critical to growth of PBS employment, while Bryson *et al*. (2004) suggest that headquarters are linked to PBS growth not through demand, but by supplying the entrepreneurs that spin-out of the corporate world to form their own businesses.

Agglomeration economies. Localization economies (especially networks and interindustry linkages) and urbanization economies (especially access to labor, communication and transportation networks, and availability of amenities) have also been studied (O'hUallachain, 1992; Gong, 1997; Sassen, 2000). Locating in metropolitan areas facilitates formal and informal access to information among institutions, networks, customers and suppliers, both through proximity and by being part of a greater volume of activity. The "transaction cost" associated with obtaining knowledge, information, and specialized inputs is therefore lower in metropolitan areas.

Recent research found that professional and business services sector jobs in the US remain concentrated in large (population greater than 1 million) metropolitan areas. In 2004, these metropolitan areas had 53% of the population, 55% of total employment, and 66% of all PBS jobs. When grouped, metropolitan areas with a population over 1 million had PBS location quotients (LQ)[2] greater than 1, while those with less than 1 million people had LQs below 1. Large metropolitan areas also accounted for 68% of total PBS employment expansion between 1990 and 2004 (HARPEL, 2006).

Professional and Business Services During the Recession

Recent employment trends have shown that services are not immune to business cycles. Beyers explained that the inability to store services, a focus on consumer services relative to producer services, and the relative lack of industrial investment as a sectoral driver had previously led some to conclude that the services economy would "dampen business cycle tendencies." However, it has been found that business services are cyclical, though the employment effects may be less severe than in other sectors (Beyers 2009).

Other research suggests that PBS in the US has actually become "procyclical;" that is, a sector in which more jobs are created during expansions but more jobs are lost during contractions relative to the economy as a whole. Kirkegaard also found that within the PBS sector, the "administrative services" components are procyclical, while the "professional services" components are still experiencing structural gains. Structural gain sectors have faster employment growth during expansions and either faster growth or slower declines during contractions relative to the economy as a whole (KIRKEGAARD, 2009). These studies evaluated national and state-level data. However, given the importance of the PBS sector at the metropolitan area level, it is valuable to understand if these findings hold true across metropolitan areas.

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[2] LQ=(employment in industry in region/total employment in region)/(employment in industry in nation/total employment in nation). LQs greater than 1 indicate the region has a greater share of employment in that industry than does the nation as a whole.

Methodology and Data

This paper will strive to answer two questions:

- Was PBS employment procyclical among US metropolitan statistical areas (MSAs) during the 2007-2009 recession?
- Are findings consistent across metropolitan areas grouped by population size and across individual metropolitan areas?

As a category, metropolitan areas with populations exceeding one million have had location quotients exceeding 1, suggesting they have more export-oriented professional and business services relative to the other parts of the country. These other regions, would, in turn, have more locally-oriented consumer services. The hypothesis is that the larger MSAs would be "procyclical" while the smaller MSAs and the combined rest of the country would see less employment variation relative to overall employment change. Therefore, the larger MSAs should lose more PBS employment relative to their total employment change than the smaller MSAs and rest of the country.

Further, the components of the PBS sector should behave differently at the MSA level, as they did at the national level. Professional services employment should not be procyclical, while administrative employment services should be procyclical, with employment loss greater than the overall regional loss. Again, we would expect to see differences among the MSAs based on population category.

PBS and total nonfarm employment data were obtained from the Current Employment Statistics (CES) Survey's State and Area Estimates (SAE) through the Bureau of Labor Statistics. The CES Survey "is a monthly survey of business establishments which provides estimates of employment, hours, and earnings data by industry for the nation as a whole, all States, and most major metropolitan areas." 2009 population estimates were obtained from the US Census. MSA PBS employment figures for 1990, 2004 and 2009 were then grouped by MSA population category. Past research on this topic was updated to account for industry and MSA definition changes and to add data for 2009. Total nonfarm, PBS, professional services, and administrative services employment figures for 2007-2009 were also obtained. National and MSA job change between those years in each of the categories was then compared to the change in total nonfarm employment to determine whether the service sector is

procyclical or not by MSA population category and across individual MSAs. This analysis covers 317 MSAs for which PBS data were available. Professional services and administrative services employment figures were not available for many MSAs. Accordingly, this portion of the analysis focuses on MSAs with a population greater than one million for which data was largely available. The professional services analysis includes 48 MSAs and the administrative services analysis includes 51 MSAs.

Findings

Professional & Business Service Employment by Metropolitan Area Population Hierarchy

Table 1 demonstrates that large MSAs continue to account for the majority of PBS employment in the US. MSAs with a population over 1 million have 68% of PBS jobs despite having only 56% of total employment. This basic pattern has changed little over the past two decades. By comparison, in 1990 this category of MSAs had 54% of employment and

TABLE 1 – Population and Employment by Metropolitan Area Hierarchy, 2009 (percentage of US Total)

MSA Population Hierarchy	Number of MSAs	% Population	% Total Employment	% PBS Employment
10 million +	2	10%	10%	**12%**
2.5 million – 9,999,999	19	28%	29%	**37%**
1 million – 2,499,999	31	16%	17%	**19%**
250,000-999,000	124	20%	19%	**17%**
100,000-249,999	127	7%	7%	**4%**
Less than 100,000	14	0.7%	0.8%	**0.5%**
Other		18.3%	17%	**11.5%**
US TOTAL		**100%**	**100%**	**100%**

SOURCE: Calculation from Bureau of Labor Statistics and US Census Bureau

66% of PBS employment.[3] There has been some dispersion from the two largest MSAs – New York and Los Angeles – over time, but primarily to the second tier of cities (Table 2). Location quotients confirm the dominance of the large MSAs over time (Table 3). The recession has had little effect on overall PBS employment distribution among US metropolitan areas by population hierarchy.

Table 2 – Comparison of PBS Employment by Metropolitan Area Hierarchy, 1990, 2004, 2009 (percentage of US Total)

MSA Population Hierarchy	1990	2004	2009
10 million +	16%	12%	12%
2.5 million – 9,999,999	31%	34%	37%
1 million – 2,499,999	19%	20%	19%
250,000-999,000	19%	18%	17%
100,000-249,999	5%	5%	4%
Less than 100,000	1%	0.5%	0.5%
Rest of US	9%	10.5%	11.5%
US TOTAL	**100%**	**100%**	**100%**

Source: Calculation from Bureau of Labor Statistics and US Census Bureau

Table 3 – Comparison of PBS Location Quotients Metropolitan Area Hierarchy, 1990, 2004, 2009

MSA Population Hierarchy	1990	2004	2009
10 million +	1.31	1.19	1.18
2.5 million – 9,999,999	1.28	1.24	1.26
1 million – 2,499,999	1.08	1.12	1.08
250,000-999,000	0.92	0.94	0.90
100,000-249,999	0.66	0.68	0.67
Less than 100,000	0.64	0.61	0.57
Rest of US	0.57	0.60	0.65
US TOTAL	1.00	1.00	1.00

Source: Calculation from Bureau of Labor Statistics

[3] As the US population has increased, more MSAs reached the one million population threshold – 52 in 2009 compared to 43 in 1990. The top tier stayed at 2 MSAs, the second increased from 14 to 19 MSAs, and the third tier increased from 27 to 31 MSAs.

Professional & Business Service Employment Trends, 2007-2009

The US lost 1,362,000 PBS jobs between 2007 and 2009. Employment in the PBS sector fell 8% over this period while total nonfarm employment fell 5%, confirming that the PBS sector behaved in a procyclical manner at the national level during the recession. However, this behavior was not universal across metropolitan areas. In fact, there were 92 MSAs (out of 317 for which data were available) in which the rate of PBS employment loss was less than the decline in total nonfarm employment, or in which there was actually employment gain over this period. (Full data not shown.) 36 mostly small MSAs fell into the latter category with gains in PBS employment between 2007-2009.[4]

For most MSAs, however, the rate of PBS job loss was greater than the overall loss in nonfarm employment. Large MSAs with substantial PBS employment to begin with naturally lost the most jobs. The MSAs with the greatest total number of lost PBS jobs were Los Angeles, CA (alone lost 111,500 PBS jobs); Chicago, IL; New York, NY; Detroit, MI; and Phoenix, AZ.

Professional & Business Service Employment Trends, 2007-2009, by Population Hierarchy

Given the major job losses in several of the largest MSAs in the country, it is interesting to note that as a group, MSAs with a population over one million actually accounted for slightly lower percentages of total PBS job losses than did the smaller MSAs and "other" category relative to their overall percentage of PBS employment. MSAs with populations over one million accounted for 66% of PBS job losses while having 68% of total PBS employment (Table 4).

Table 5 shows that all the MSA population categories have a greater rate of PBS job loss than total job loss, again confirming the procyclicality of the sector overall. Table 6 also demonstrates that the largest and smallest population categories exhibit greater procyclicality than the US as a whole. In fact, PBS employment in non-metro areas and MSAs with a population less than 100,000 ("other" in Table 5) saw the biggest gap

[4] The largest of these MSAs were Huntsville, AL and Knoxville, TN, with 48,000 and 42,000 total PBS jobs in 2009 respectively.

Table 4 – PBS Employment and Employment Change by Metropolitan Area Hierarchy, 2007-2009

MSA Population Hierarchy	Number of MSAs	% US PBS Employment 2009	% US PBS Job Loss, 07-09
10 million +	2	12%	13%
2.5 million – 9,999,999	19	37%	36%
1 million – 2,499,999	31	19%	17%
250,000-999,000	124	17%	16%
100,000-249,999	127	4%	4%
Rest of US		12%	14%
US Total		100%	100%

Source: Calculation from Bureau of Labor Statistics and US Census Bureau

Table 5 – Comparison of Percentage Change in PBS and Total Nonfarm Employment by Metropolitan Area Hierarchy, 2007-2009

MSA Population Hierarchy	% Loss in PBS Jobs, 07-09	% Loss in Total Jobs, 07-09	Ratio PBS/Total
10 million +	–7.9%	–5%	**1.60**
2.5 million – 9,999,999	–7.5%	–5.3%	1.42
1 million – 2,499,999	–7%	–4.7%	1.48
250,000-999,000	–7.2%	–4.8%	1.50
100,000-249,999	–6.5%	–4.1%	**1.59**
Other	–9.6%	–4.5%	**2.13**
US	–7.6%	–4.9%	1.56

Source: Calculation from Bureau of Labor Statistics and US Census Bureau

between PBS and total job loss rates. This is contrary to the hypothesis that MSAs with population over one million would experience greater relative job losses given the export nature of their PBS sectors.

Looking at individual MSAs with a population over one million, most, but not all, are also procyclical (Table 6). Among this group, only Buffalo-Niagara, NY and Austin-Round Rock, TX saw an increase in PBS jobs from 2007-2009. Several others, including Washington, DC; San Francisco, CA; Pittsburgh, PA; Columbus, OH; Virginia Beach, VA; and Louisville, KY had lower PBS job loss rates compared to their total job losses. For these communities the PBS sector is still showing structural gains. The factors that

Table 6 – Comparison of Percentage Change in PBS and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009

Geographic area	PBS LQ	PBS Job Loss Rate	Total Nonfarm Job Loss	PBS Job Loss Rate/Total Nonfarm Job Loss Rate
US	1.00	–7.6%	–4.9%	1.56
New York-Northern New Jersey-Long Island, NY-NJ-PA	1.19	–4.7%	–3.1%	1.51
Los Angeles-Long Beach-Santa Ana, CA	1.16	–12.7%	–7.7%	1.64
Chicago-Naperville-Joliet, IL-IN-WI	1.23	–9.9%	–5.8%	1.70
Dallas-Fort Worth-Arlington, TX	1.15	–5.7%	–2.6%	2.19
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	1.19	–5.3%	–3.5%	1.52
Houston-Sugar Land-Baytown, TX	1.11	–5.0%	–0.5%	9.90
Miami-Fort Lauderdale-Pompano Beach, FL	1.17	–12.3%	–8.9%	1.39
Washington-Arlington-Alexandria, DC-VA-MD-WV	1.80	–0.2%	–1.3%	0.17
Atlanta-Sandy Springs-Marietta, GA	1.29	–9.3%	–6.6%	1.40
Boston-Cambridge-Quincy, MA-NH	1.29	–4.3%	–3.1%	1.39
Detroit-Warren-Livonia, MI	1.36	–14.9%	–11.4%	1.30
Phoenix-Mesa-Scottsdale, AZ	1.27	–15.2%	–10.2%	1.50
San Francisco-Oakland-Fremont, CA	1.43	–4.4%	–6.3%	0.70
Riverside-San Bernardino-Ontario, CA	0.89	–12.2%	–10.9%	1.12
Seattle-Tacoma-Bellevue, WA	1.05	–7.2%	–4.1%	1.76
Minneapolis-St. Paul-Bloomington, MN-WI	1.14	–7.3%	–5.2%	1.40
San Diego-Carlsbad-San Marcos, CA	1.27	–9.0%	–6.1%	1.49
St. Louis, MO-IL	1.10	–6.4%	–4.3%	1.49
Tampa-St. Petersburg-Clearwater, FL	1.35	–12.5%	–8.9%	1.40
Baltimore-Towson, MD	1.14	–4.5%	–3.5%	1.29
Denver-Aurora-Broomfield, CO /1	1.33	–4.4%	–3.4%	1.28
Pittsburgh, PA	1.08	–1.5%	–2.3%	0.66
Portland-Vancouver-Beaverton, OR-WA	1.01	–8.8%	–6.0%	1.46
Cincinnati-Middletown, OH-KY-IN	1.18	–5.4%	–5.0%	1.09
Sacramento--Arden-Arcade--Roseville, CA	0.95	–10.2%	–7.7%	1.32
Cleveland-Elyria-Mentor, OH	1.03	–9.6%	–6.6%	1.46
Orlando-Kissimmee, FL	1.32	–9.6%	–7.8%	1.23
San Antonio, TX	0.94	–5.8%	0.0%	–241.68
Kansas City, MO-KS	1.14	–4.6%	–3.1%	1.47
Las Vegas-Paradise, NV	0.95	–14.0%	–11.0%	1.28

Table 6 – Comparison of Percentage Change in PBS and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009 (cont.)

Geographic area	PBS LQ	PBS Job Loss Rate	Total Nonfarm Job Loss	PBS Job Loss Rate/Total Nonfarm Job Loss Rate
Las Vegas-Paradise, NV	0.95	–14.0%	–11.0%	1.28
San Jose-Sunnyvale-Santa Clara, CA	1.49	–9.2%	–6.1%	1.51
Columbus, OH	1.28	–2.1%	–3.7%	0.56
Charlotte-Gastonia-Concord, NC-SC	1.22	–6.5%	–5.8%	1.13
Indianapolis-Carmel, IN	1.08	–8.5%	–4.8%	1.79
Austin-Round Rock, TX	1.11	0.5%	0.1%	5.10
Virginia Beach-Norfolk-Newport News, VA-NC	1.06	–3.8%	–4.6%	0.82
Providence-New Bedford-Fall River, RI-MA	0.85	–7.4%	–4.1%	1.79
Nashville-Davidson--Murfreesboro--Franklin, TN	1.01	–9.5%	–5.1%	1.87
Milwaukee-Waukesha-West Allis, WI	1.00	–10.6%	–5.5%	1.93
Jacksonville, FL	1.11	–12.8%	–7.6%	1.69
Memphis, TN-MS-AR	0.99	–9.6%	–6.2%	1.54
Louisville/Jefferson County, KY-IN	0.93	–4.3%	–4.7%	0.93
Richmond, VA	1.21	–6.4%	–4.6%	1.38
Oklahoma City, OK	0.98	–6.8%	–1.5%	4.41
Hartford-West Hartford-East Hartford, CT	0.85	–4.3%	–2.9%	1.49
New Orleans-Metairie-Kenner, LA	1.01	–3.5%	0.9%	-3.83
Birmingham-Hoover, AL	0.95	–12.0%	–6.7%	1.80
Salt Lake City, UT	1.22	–6.9%	–4.2%	1.65
Raleigh-Cary, NC	1.30	–8.0%	–3.2%	2.54
Buffalo-Niagara Falls, NY	1.04	1.1%	–1.8%	-0.65
Rochester, NY	0.93	–2.6%	–2.3%	1.16
Tucson, AZ	1.03	–10.1%	–6.1%	1.66

Source: Calculation from Bureau of Labor Statistics

may unite these communities are not obvious from the list, but as the next section will show, each has had a stronger than average professional services sector during the recession. Washington, DC and Virginia Beach, VA are beneficiaries of significant government spending, which includes payments to private sector contractors who are largely in professional services industries. Several of these communities also have a strong uni-

versity presence. The reasons behind their superior performance merit further research.

By contrast, several MSAs experienced PBS job losses at rates much higher than their overall job loss rate. These include Dallas-Fort Worth, TX; Houston, TX; San Antonio, TX; Austin, TX; Oklahoma City, OK; New Orleans, LA; and Raleigh-Cary, NC. In many of these communities, their PBS job loss rate is not high relative to national PBS job losses, but instead their overall rate of nonfarm job loss is quite low.

Professional Services and Administrative Services

This section divides the PBS sector into two of its component parts – professional services and administrative services – to determine if changes in location patterns across metropolitan areas have occurred and whether there have been differences in the cyclical nature of employment during the recession.

Professional services is even more concentrated in large metropolitan areas than PBS employment overall. In 2009 MSAs with a population over one million accounted for 63% of US professional services employment (Table 7). This number actually understates the true percentage since professional services data were not available for four of the MSAs in this category.[5] Location quotients confirm this finding, but it is interesting to note that this concentration has declined since 1990, while the rest of the US has made relative gains by this measure (Table 8).

TABLE 7 – Professional Services (PS) Population and Employment by Metropolitan Area Hierarchy, 2009 (percentage of US Total)

MSA Population Hierarchy	Number of MSAs	% US Population	% US Total Employment	% US PBS Employment	% US PS Employment
10 million +	2	10%	10%	12%	**13%**
2.5 million – 9,999,999	16	22%	23%	29%	**33%**
1 million – 2,499,999	30	16%	17%	18%	**17%**
OTHER		52%	50%	41%	**37%**

SOURCE: Calculation from Bureau of Labor Statistics and US Census Bureau

[5] Chicago, IL; Miami, FL; Seattle, WA; and Providence, RI.

TABLE 8 – Comparison of Professional Services Location Quotients Metropolitan Area Hierarchy, 1990, 2004, 2009

MSA Population Hierarchy	1990	2004	2009
10 million +	1.47	1.31	1.30
2.5 million – 9,999,999	1.47	1.38	1.42
1 million – 2,499,999	1.11	1.03	1.02
OTHER	0.62	0.71	0.74

SOURCE: Calculation from Bureau of Labor Statistics and US Census Bureau

At the national level, professional services employment is not procyclical but remains a structural-gains sector as the job loss rate of 2% was lower than the job loss rate for total nonfarm employment from 2007-2009. Professional services also showed structural gains among large MSAs as a group. The MSAs in the 2.5 million to 10 million population category performed better than the rest of the large MSAs, with only 1.6% professional services job loss compared to 5% total job loss. The rest of the US actually experienced a gain in professional services employment during this period (Table 9). In this case, the hypothesis that job loss would be greater in the export-oriented large MSAs holds true, though it did not for the overall PBS sector.

TABLE 9 – Comparison of Percentage Change in PS and Total Nonfarm Employment by Metropolitan Area Hierarchy, 2007-2009

MSA Population Hierarchy	% Loss in PS Jobs, 07-09	% Loss in PBS Jobs, 07-09	% Loss in Total Jobs, 07-09	Ratio PS/Total
10 million +	–4.8%	–7.9%	–5.0%	0.97
2.5 million – 9,999,999	–1.6%	–6.8%	–5.0%	0.32
1 million – 2,499,999	–2.5%	–7%	–4.7%	0.52
Other	+1.7%	–8.3%	–4.8%	–0.34
US	–2.0%	–7.6%	–4.9%	0.41

SOURCE: Calculation from Bureau of Labor Statistics and US Census Bureau

Table 10 considers professional services employment in the individual MSAs that comprise the large metropolitan category. In the majority of MSAs, professional services remains a structural gains sector. 13 of the MSAs in Table 10 experienced PS employment *gains* during the recession. These include Washington, DC; Boston. MA; San Francisco, CA;

and Denver, CO; as well as Buffalo-Niagara, NY; Salt Lake City, UT; and New Orleans, LA. Again, no obvious factor unites the cities on this list. An additional 20 MSAs also fall into the structural gains category, though by dint of lower rates of PS employment loss rather than employment gain. The remaining 15 MSAs were actually procyclical although the category was not. These MSAs range from New York, NY; Houston, TX; and Boston, MA; to Tucson, AZ; Rochester, NY; and Birmingham, AL. There is not a clear pattern, but many of the 15 MSAs had relatively low total job loss rates, exaggerating the effect of the PS job losses. The diversity of experience suggests that region-specific factors, rather than national or sector-specific factors, drive professional services growth and change in metropolitan areas.

Table 10 – Comparison of Percentage Change in Professional Services and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009

Geographic area	PS LQ	PS Job Loss Rate	Total Nonfarm Job Loss Rate	Procyclical PS Job Loss Rate/ Total Nonfarm Job Loss Rate
US	1.00	–2.0%	–4.9%	0.41
New York-Northern New Jersey-Long Island, NY-NJ-PA	1.35	–3.30%	–3.1%	1.05
Los Angeles-Long Beach-Santa Ana, CA	1.20	–7.46%	–7.7%	0.96
Dallas-Fort Worth-Arlington, TX	1.12	–0.54%	–2.6%	0.21
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	1.32	–2.97%	–3.5%	0.85
Houston-Sugar Land-Baytown, TX	1.21	–1.29%	–0.5%	2.58
Washington-Arlington-Alexandria, DC-VA-MD-WV	2.72	3.26%	–1.3%	(2.43)
Atlanta-Sandy Springs-Marietta, GA	1.28	–2.38%	–6.6%	0.36
Boston-Cambridge-Quincy, MA-NH	1.61	1%	–3.1%	0.48
Detroit-Warren-Livonia, MI	1.44	–12.42%	–11.4%	1.09
Phoenix-Mesa-Scottsdale, AZ	0.96	–6.77%	–10.2%	0.66
San Francisco-Oakland-Fremont, CA	1.83	1.01%	–6.3%	(0.16)
Riverside-San Bernardino-Ontario, CA	0.59	–5.68%	–10.9%	0.52
Minneapolis-St. Paul-Bloomington, MN-WI	1.01	–6.80%	–5.2%	1.31
San Diego-Carlsbad-San Marcos, CA	1.53	–3.74%	–6.1%	0.62
St. Louis, MO-IL	0.97	–4.35%	–4.3%	1.01
Tampa-St. Petersburg-Clearwater, FL	1.24	–3.70%	–8.9%	0.41
Baltimore-Towson, MD	1.42	–0.38%	–3.5%	0.11

TABLE 10 – Comparison of Percentage Change in Professional Services and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009 (cont.)

Geographic area	PS LQ	PS Job Loss Rate	Total Nonfarm Job Loss Rate	Procyclical PS Job Loss Rate/ Total Nonfarm Job Loss Rate
Denver-Aurora-Broomfield, CO /1	1.46	1.42%	-3.4%	(0.41)
Pittsburgh, PA	1.07	0.15%	-2.3%	(0.06)
Portland-Vancouver-Beaverton, OR-WA	0.93	-2.08%	-6.0%	0.34
Cincinnati-Middletown, OH-KY-IN	0.93	-2.56%	-5.0%	0.52
Sacramento--Arden-Arcade--Roseville, CA	1.09	-5.79%	-7.7%	0.75
Cleveland-Elyria-Mentor, OH	0.92	-7.49%	-6.6%	1.13
Orlando-Kissimmee, FL	1.07	-5.49%	-7.8%	0.70
San Antonio, TX	0.81	3.47%	0.0%	144.63
Kansas City, MO-KS	1.20	-0.44%	-3.1%	0.14
Las Vegas-Paradise, NV	0.71	-12.44%	-11.0%	1.13
San Jose-Sunnyvale-Santa Clara, CA	2.14	-6.74%	-6.1%	1.10
Columbus, OH	1.20	1.95%	-3.7%	(0.53)
Charlotte-Gastonia-Concord, NC-SC	0.94	-4.19%	-5.8%	0.72
Indianapolis-Carmel, IN	0.89	-0.67%	-4.8%	0.14
Austin-Round Rock, TX	1.31	3.82%	0.1%	41.32
Virginia Beach-Norfolk-Newport News, VA-NC	1.11	1.74%	-4.6%	(0.37)
Nashville-Davidson--Murfreesboro--Franklin, TN	0.91	0.80%	-5.1%	(0.16)
Milwaukee-Waukesha-West Allis, WI	0.80	-6.30%	-5.5%	1.14
Jacksonville, FL	1.01	-5.01%	-7.6%	0.66
Memphis, TN-MS-AR	0.53	-5.64%	-6.2%	0.90
Louisville/Jefferson County, KY-IN	0.85	9.06%	-4.7%	(1.94)
Richmond, VA	1.01	0.87%	-4.6%	(0.19)
Oklahoma City, OK	0.85	-0.73%	-1.5%	0.47
Hartford-West Hartford-East Hartford, CT	0.89	-6.10%	-2.9%	2.13
New Orleans-Metairie-Kenner, LA	0.96	2.89%	0.9%	3.16
Birmingham-Hoover, AL	0.92	-10.58%	-6.7%	1.58
Salt Lake City, UT	1.11	0.52%	-4.2%	(0.12)
Raleigh-Cary, NC	1.32	-2.58%	-3.2%	0.82
Buffalo-Niagara Falls, NY	0.87	2.28%	-1.8%	(1.29)
Rochester, NY	0.79	-3.38%	-2.3%	1.49
Tucson, AZ	0.91	-9.13%	-6.1%	1.50

SOURCE: Calculation from Bureau of Labor Statistics

Administrative services (AS) are not quite as concentrated as professional services in the large MSAs. Among the large MSAs for which AS data were available,[6] 64% of PBS employment but only 60% of AS employment is in MSAs with a population over one million (Table 11). The greater dispersal of administrative services employment is also apparent in the location quotients (Table 12), which are substantially lower than the professional services location quotients in the top two population categories, but not in the lower two.

TABLE 11 – Administrative Services Population and Employment by Metropolitan Area Hierarchy, 2009 (percentage of US Total)

MSA Population Hierarchy	Number of MSAs	% US Population	% US Total Employment	% US PBS Employment	% US AS Employment
10 million +	2	10%	10%	12%	**11%**
2.5 million – 9,999,999	18	25%	26%	33%	**30%**
1 million – 2,499,999	31	16%	17%	19%	**19%**
Other		49%	47%	36%	**40%**

SOURCE: Calculation from Bureau of Labor Statistics and US Census Bureau

TABLE 12 – Comparison of Administrative Services Location Quotients Metropolitan Area Hierarchy, 1990, 2004, 2009

MSA Population Hierarchy	1990	2004	2009
10 million +	1.23	1.05	1.05
2.5 million – 9,999,999	1.16	1.11	1.14
1 million – 2,499,999	1.16	1.17	1.10
Other	0.80	0.85	0.87

SOURCE: Calculation from Bureau of Labor Statistics

At the national level, administrative services employment is procyclical with a job loss rate of 14.3% compared to 4.9% for total nonfarm employment from 2007-2009. This pattern held true for large MSAs as a group and for the rest of the US as well. In contrast to the trend in the professional services sector, the smaller population categories lost relatively more jobs, with the rest of the US losing 15% of its administrative services jobs over this period (Table 13).

[6] Data were not available for Chicago.

Table 13 – Comparison of Percentage Change in AS and Total Nonfarm Employment by Metropolitan Area Hierarchy, 2007-2009

MSA Population Hierarchy	% Loss in AS Jobs, 07-09	% Loss in PBS Jobs, 07-09	% Loss in Total Jobs, 07-09	Ratio AS/Total
10 million +	–13%	–7.9%	–4.9%	2.61
2.5 million – 9,999,999	–14.3%	–7.2%	–5.2%	2.73
1 million – 2,499,999	–13.5%	–7%	–4.7%	2.86
Other	–15.0%	–8.2%	–4.7%	3.21
US	–14.3%	–7.6%	–4.9%	2.94

Source: Calculation from Bureau of Labor Statistics

Administrative Services are also procyclical across the large MSAs examined here (Table 14). Even those without severe job losses overall experienced large declines in AS employment. As in the country as a whole, most MSAs saw double-digit administrative services job losses over this period.

Table 14 – Comparison of Percentage Change in Administrative Services and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009

Geographic area	2009 AS LQ	AS Job Loss Rate	Total Nonfarm Job Loss Rate	Procyclical AS Job Loss Rate/ Total Nonfarm Job Loss Rate
US	1	-14.3%	-4.9%	2.94
New York-Northern New Jersey-Long Island, NY-NJ-PA	0.98	-8.9%	-3.1%	2.83
Los Angeles-Long Beach-Santa Ana, CA	1.16	-18.0%	-7.7%	2.32
Dallas-Fort Worth-Arlington, TX	1.27	-11.5%	-2.6%	4.45
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	0.99	-10.4%	-3.5%	2.96
Houston-Sugar Land-Baytown, TX	1.17	-10.5%	-0.5%	20.99
Miami-Fort Lauderdale-Pompano Beach, FL	1.27	-19.3%	-8.9%	2.18
Washington-Arlington-Alexandria, DC-VA-MD-WV	1.07	-8.1%	-1.3%	6.07
Atlanta-Sandy Springs-Marietta, GA	1.31	-15.9%	-6.6%	2.40
Boston-Cambridge-Quincy, MA-NH	0.90	-14.4%	-3.1%	4.71
Detroit-Warren-Livonia, MI	1.25	-18.9%	-11.4%	1.66
Phoenix-Mesa-Scottsdale, AZ	1.67	-21.1%	-10.2%	2.07
San Francisco-Oakland-Fremont, CA	0.95	-13.7%	-6.3%	2.18
Riverside-San Bernardino-Ontario, CA	1.29	-15.2%	-10.9%	1.39
Seattle-Tacoma-Bellevue, WA	0.92	-14.9%	-4.1%	3.62

Table 14 – Comparison of Percentage Change in Administrative Services and Total Nonfarm Employment among Metro Areas with Population > 1 Million, 2007-2009 (cont.)

Geographic area	2009 AS LQ	AS Job Loss Rate	Total Nonfarm Job Loss Rate	Procyclical AS Job Loss Rate/ Total Nonfarm Job Loss Rate
Minneapolis-St. Paul-Bloomington, MN-WI	0.91	–13.3%	–5.2%	2.55
San Diego-Carlsbad-San Marcos, CA	1.09	–16.3%	–6.1%	2.69
St. Louis, MO-IL	0.99	–4.7%	–4.3%	1.09
Tampa-St. Petersburg-Clearwater, FL	1.52	–20.5%	–8.9%	2.29
Baltimore-Towson, MD	1.02	–10.9%	–3.5%	3.10
Denver-Aurora-Broomfield, CO /1	1.19	–12.5%	–3.4%	3.65
Pittsburgh, PA	0.84	–9.7%	–2.3%	4.33
Portland-Vancouver-Beaverton, OR-WA	0.92	–19.6%	–6.0%	3.25
Cincinnati-Middletown, OH-KY-IN	1.03	–15.9%	–5.0%	3.20
Sacramento--Arden-Arcade – Roseville, CA	0.86	–18.4%	–7.7%	2.38
Cleveland-Elyria-Mentor, OH	1.00	–13.3%	–6.6%	2.01
Orlando-Kissimmee, FL	1.69	–13.9%	–7.8%	1.78
San Antonio, TX	1.12	–14.0%	0.0%	(584.08)
Kansas City, MO-KS	1.07	–10.8%	–3.1%	3.43
Las Vegas-Paradise, NV	1.16	–18.6%	–11.0%	1.70
San Jose-Sunnyvale-Santa Clara, CA	0.99	–17.1%	–6.1%	2.81
Columbus, OH	1.26	–6.5%	–3.7%	1.77
Charlotte-Gastonia-Concord, NC-SC	1.24	–11.2%	–5.8%	1.94
Indianapolis-Carmel, IN	1.31	–13.7%	–4.8%	2.87
Austin-Round Rock, TX	1.05	–7.6%	0.1%	(82.36)
Virginia Beach-Norfolk-Newport News, VA-NC	1.06	–9.0%	–4.6%	1.95
Providence-New Bedford-Fall River, RI-MA	0.84	–12.6%	–4.1%	3.06
Nashville-Davidson – Murfreesboro – Franklin, TN	1.12	–19.0%	–5.1%	3.74
Milwaukee-Waukesha-West Allis, WI	0.97	–20.0%	–5.5%	3.62
Jacksonville, FL	1.30	–18.0%	–7.6%	2.37
Memphis, TN-MS-AR	1.55	–12.0%	–6.2%	1.92
Louisville/Jefferson County, KY-IN	1.04	–14.8%	–4.7%	3.17
Richmond, VA	1.01	–14.3%	–4.6%	3.10
Oklahoma City, OK	1.19	–11.8%	–1.5%	7.61
Hartford-West Hartford-East Hartford, CT	0.78	–6.5%	–2.9%	2.26
New Orleans-Metairie-Kenner, LA	1.02	–12.6%	0.9%	(13.75)
Birmingham-Hoover, AL	0.89	-20.5%	-6.7%	3.07
Salt Lake City, UT	1.18	-14.4%	-4.2%	3.45
Raleigh-Cary, NC	1.27	-13.5%	-3.2%	4.29
Buffalo-Niagara Falls, NY	1.09	-2.7%	-1.8%	1.53
Rochester, NY	0.88	-4.3%	-2.3%	1.90
Tucson, AZ	1.28	-8.6%	-6.1%	1.41

Source: Calculation from Bureau of Labor Statistics

Conclusion

The professional and business services sector remains concentrated in the largest US metropolitan areas, but it continues to disperse slowly. The recession appears to have had little effect on the overall distribution of PBS sector employment across US metropolitan areas by population hierarchy.

This paper also found that the PBS sector overall is procyclical, but not consistently so at the metropolitan level. The sector's employment pattern during the recession did not behave as expected when considering MSAs by population category. The two largest MSAs combined had the expected procyclicality pattern, but the other large MSAs did not, while the combined smaller communities had a higher rate of PBS job loss than expected. Individual MSAs with a population over one million also did not show a consistent pattern of procyclicality. Reasons specific to each MSA, rather than industry or national factors, appear to play an important role in PBS employment trends, but the split between professional services and administrative services employment within the MSA also matters.

Professional services and administrative services are fundamentally different activities. Professional services establishments perform professional, scientific, and technical activities that require a high degree of expertise and training. Administrative services establishments perform routine activities that support the day-to-day operations of other organizations. Professional services are more likely to be export-oriented while administrative services are more likely to be provided locally. At the national level, professional services remain a structural gains sector, while administrative services are procyclical. However, the export nature of professional services within large MSAs mean that they are more likely to be procyclical in these leading metropolitan areas, as this paper has demonstrated. By contrast, administrative services were consistently procyclical across MSAs, with the intensity of job loss increasing as population category decreased.

The question remains as to why professional services remain robust in a set of communities and not in others of similar size. Population and education levels alone (Harpel 2006) do not provide sufficient explanation. Additional region-specific characteristics, including industry mix and connectivity to other regions, likely play critical roles and merit further research at the US metropolitan level.

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