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Small Business Performance in Industries in LMI Neighborhoods After the Great Recession:

Atlanta, Baltimore, Chicago, Houston, and Los Angeles

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Introduction: *Background of the cities and summary of results*

In the United States, roughly 30 million small businesses employ nearly half of the nation's workforce. They are critical to employment in low- and moderate-income (LMI) neighborhoods where they tend to fill underserved niches in labor markets.[1] When the Great Recession hit, and the economy lost 7.3 million jobs between 2007 and 2009, these were the businesses that were disproportionately affected due to a variety of reasons.[2] In the economic recovery since then, we look to assess how small businesses in low-income markets are faring relative to their counterparts in higher-income areas. The goal of this study is to analyze how neighborhoods of differing incomes and ethnic/minority populations correlate with the presence, characteristics, and performance of small businesses.

Our findings suggest that there is room for greater integration of small businesses in LMI places into their region's economy and that policy interventions should focus on, as a baseline, steps to attract and maintain population, including investments in education, labor-force preparedness, and neighborhood amenities. Based on our analysis of a large proprietary data panel of more than 750,000 small businesses in five cities – Atlanta, Baltimore, Chicago, Houston, and Los Angeles – we provide evidence that LMI and high-minority neighborhoods engendered entrepreneurship and self-employment activity at rates similar to non-LMI areas during the post-recession expansion. Specifically, we find higher percentages of micro businesses (sole proprietorship/non-employers) and similar rates of business formation (and failure) in LMI vs. non-LMI neighborhoods. However, LMI-area small businesses had lower revenue than their counterparts in non-LMI neighborhoods, even conditioned on the number of employees and industry. Both LMI and non-LMI had neighborhood-based businesses that were competitive for their *communities*, but LMI trailed behind non-LMI places in terms of business representation in sectors that were competitive to their *region*.

The data on small businesses for the five cities was provided to the Association for Enterprise Opportunity (AEO) by Dun & Bradstreet (D&B), as part of an initiative between the two organizations to utilize big-data analytics to advance an understanding of small businesses in low-income communities. AEO further partnered with researchers at the Federal Reserve Bank of Chicago's Community Development and Policy Studies (CDPS) division to conduct the analysis presented in this article. CDPS authors geocoded the business addresses from D&B to map out the establishments across census tracts (neighborhoods) and paired this information with other data from the census as well as other proprietary sources to conduct the analysis. The five cities that we study offer a variety of settings to study the conditions of small businesses and observe their performance in LMI communities.[3] This research expands the findings of AEO's 2016 report titled, "The Tapestry of Black Business Ownership in America." (See Letter from AEO at end of article.)

Demographic overview

By population, Chicago, Los Angeles, and Houston are much larger cities than Atlanta and Baltimore, although population growth varies among the cities. The overall populations of Chicago and Baltimore have been falling since 2000, while the populations of Houston, Atlanta, and Los Angeles have been growing.

All five cities have relatively high shares of the population that identify as minority (table 1). Hispanics make up the largest single racial/ethnic group in both Los Angeles and Houston, at 49 percent and 44 percent respectively, compared to 17 percent for the US as a whole. In Baltimore and Atlanta, a majority of residents are black, at 63 percent and 52 percent. Chicago has a roughly even share of black,

Hispanic, and white (non-Hispanic) residents, with the black population of the city declining since the 1980s[4] and the Hispanic population growing since 2000 (as it has in all five cities). In Los Angeles, more than 10 percent of the population is Asian, and in Houston and Chicago, this group makes up 7 percent of the population.

Baltimore has the highest share of census tracts designated as LMI (about 80 percent); its median income is below that of the US (around $40,000 as of 2014) (table 1). In contrast, just under half the census tracts in Los Angeles are designated as LMI, with median household income ($50,000) being the highest across the five cities. In Chicago and Houston, about 60 percent of census tracts have median incomes that are designated as LMI, as are 57 percent of census tracts in Atlanta.

Table 1. Selected demographic characteristics

	Atlanta	Baltimore	Chicago	Houston	Los Angeles
Population					
1980	425,022	786,775	3,005,072	1,595,138	2,966,850
1990	394,017	736,014	2,783,726	1,630,553	3,485,398
2000	416,474	651,154	2,896,016	1,953,631	3,694,820
2010	420,003	620,961	2,695,598	2,099,451	3,792,621
2015	463,878	621,849	2,720,546	2,296,224	3,971,883
Race (percentage)					
White	37	30	32	26	28
Black	52	63	31	23	9
Hispanic	5	5	29	44	49
Asian	4	3	7	7	13
Census tract income (2014)					
Median income ($)	47,527	42,241	48,522	46,187	50,205
Percent of LMI census tracts	56.8	81	59.4	59.2	49.2
Percent of population in LMI tracts	48.4	80.5	57.3	61.1	49.7

Sources: ACS, FFIEC, US Census, 2015 Brookings Institution (https://www.brookings.edu/research/city-and-metropolitan-inequality-on-the-rise-driven-by-declining-incomes), and Federal Reserve Bank of Chicago Peer Cities Tool (https://www.chicagofed.org/region/community-development/data/pcit).

Characteristics of small businesses in the five cities

Size and representation in LMI neighborhoods

Based on the D&B database, more than 750,000 small businesses on average operated annually across the five cities between 2012 and 2016, employing approximately two million workers (table 2).

Houston had the largest number of small businesses with an (annual) average of more than 250,000, while the average annual count in Baltimore was closer to 60,000. Together, small businesses in these cities generated more than $130 billion per year (on average) in total revenue. Forty percent (close to 300,000) were located in LMI neighborhoods, generating more than $50 billion in revenue. At the median, yearly revenue per small business in LMI neighborhoods was around $120,000.

Table 2. Size of the small business sector in the five cities and representation of small businesses in LMI and minority neighborhoods

	Atlanta	Baltimore	Chicago	Houston	Los Angeles	Five cities
Average yearly count of small businesses (2012-2016)	111,753	60,610	141,391	259,798	182,884	756,418
Percent small businesses in LMI (2012-2016)	33	52	35	40	44	40
Number employed (2011-2014 yearly median)	295,812	168,868	413,647	662,686	456,898	1,994,627
Percentage employed in small businesses in LMI	34	34	28	31	38	33
Total revenue of small businesses	18,720,000,000	10,220,000,000	25,400,000,000	45,740,000,000	30,530,000,000	132,130,000,000
Total revenue of small businesses in LMI	5,908,000,000	5,080,000,000	8,188,000,000	17,790,000,000	13,240,000,000	50,206,000,000
Median revenue of small businesses in LMI	120,000	108,792	120,000	120,000	130,000	120,000

Sources: Dun & Bradstreet, 2012-2016; FFIEC; ACS, 2011-2015.

Despite the sizeable share of small businesses in LMI areas, the density of small business (number of businesses per capita) remained below the counts in non-LMI places in every city including or excluding the central business districts (table 3). The difference was most pronounced in Los Angeles, which had about 39 businesses per 1,000 people in LMI areas compared to 68 businesses per 1,000 people in non-LMI areas. In Houston, the difference was less stark, with 54 businesses per capita in LMI areas, versus 61 businesses in non-LMI places. In Baltimore, the count was relatively lower, compared to the other cities, and irrespective of the income class of the neighborhoods (table 3).

In the five cities, per capita business counts also tended to be lower in minority neighborhoods. We find that there were 66 businesses per 1,000 people in majority-white neighborhoods, 53 businesses per 1,000 people in majority-Asian neighborhoods, but fewer than 40 businesses per 1,000 people in black and Hispanic neighborhoods (not shown in table). Density varied by city and ethnicity of the neighborhood, however (table 3). In both Atlanta and Houston, per capita business counts were similar in black and Hispanic neighborhoods. In Chicago and Los Angeles, per capita business counts were higher in Asian neighborhoods relative to black and Hispanic neighborhoods.

Table 3. Business count per capita by neighborhood income and ethnic racial characteristics

	Atlanta	Baltimore	Chicago	Houston	Los Angeles
Count per 1,000 people (2014)					
LMI	52	39	26	56	44
Non-LMI	68	44	57	65	71
Count per 1,000 people, excludes downtown (2014)					
LMI	45	38	26	54	39
Non-LMI	67	39	44	61	68
Count per 1,000 people by neighborhood race/ethnic plurality (2014)					
Black	49	35	30	53	48
Hispanic	48	N/A	22	52	30
Asian	N/A	N/A	39	32	79
White	71	44	61	72	81

Sources: Dun & Bradstreet, 2012-2016; FFIEC; ACS, 2011-2015.

Most of the businesses operated as sole proprietorships with no employees (47 percent of the dataset) or businesses with 1 to 4 employees (41 percent of the dataset).[5] Only 11 percent of small businesses employed between 5 and 20 employees, and just 1 percent had more than 20 employees.

This distribution was generally consistent across LMI and non-LMI neighborhoods, and across different ethnic/racial neighborhoods in most of the cities. The exception was Baltimore and predominantly black neighborhoods, where sole proprietorships with no employees were more prominent (table 4).

Table 4. Small business distribution by employee size, city, income, and ethnic/racial plurality of the neighborhoods (percentage)

	No employees	1 to 4 employees	5 to 19 employees	20 or more employees
Five cities	47	41	11	1
Atlanta	48	40	11	1
Baltimore	52	36	11	1
Chicago	46	40	13	1
Houston	46	43	10	1
Los Angeles	47	42	11	1
LMI	47	40	11	1
Non-LMI	46	42	11	1
Black	50	37	11	1
Hispanic	46	42	11	1
Asian	44	43	12	1
White	46	42	11	1

Sources: Dun & Bradstreet, 2012-2016; FFIEC; ACS, 2011-2015.

Industries of small businesses in LMI neighborhoods

Insofar as industry sorting may shed light on business performance in lower- and higher-income neighborhoods, we analyze the distribution of industries in different neighborhoods and assess their representation in competitive sectors relative to their neighborhoods and their city. (See textbox 1 for a summary of the city industry clusters.)

Textbox 1.

The presence of industry clusters within metropolitan areas reveals additional areas of opportunity for small businesses in these places. Industry clusters, i.e., firms in the same sector that are located close to one another (in the same metro area), offer small businesses the opportunity to be part of readily identifiable supply or value chains whether or not these businesses operate in lower-income neighborhoods.

In Atlanta, the largest cluster is information technology. Atlanta also has strong clusters related to air transportation, communication infrastructure, and logistics. The city offers a strong set of support services for transportation and logistics firms, including specialized consulting, software and legal services, computer distribution, and real estate services. The city is also home to numerous institutions of higher learning that have attracted large pools of scientists and skilled technicians.

In Baltimore, education is the cluster with the highest share of employment in the metro (relative to the nation) also referred to as the location quotient for that sector. Universities such as Johns Hopkins, Loyola, and the University of Baltimore act as economic anchors for the city, attracting a variety of businesses, restaurants, bookstores, and services catered to students and employees. The financial services cluster also has a strong location quotient and includes employment at Baltimore-based T. Rowe Price. The city's port similarly contributes to a high LQ in water transportation.

Chicago has a strong cluster in advanced manufacturing, which includes biopharmaceuticals, electrical equipment, and downstream chemical products (for marketing and distributing products derived from oil and gas). The Chicago region is also one of the nation's largest hubs for metals manufacturing. Strong service clusters include marketing and design, and the city's economy has increasingly focused on professional services, and financial services and logistics.

In Houston, energy and related companies make up the largest industry cluster, employing 14 percent of the workforce. As oil prices have fallen, the Houston economy has diversified into manufacturing, chemicals and health industries. The shale oil boom has driven growth in companies involved in fossil fuel production, refining, and petrochemicals, as well as in companies that provide support to energy producers such as machinery manufacturers, construction and real estate firms, professional firms, and financial services enterprises. The transportation and logistics sectors have also been major employers.

The Los Angeles economy is highly diversified, with clusters ranging from entertainment, aerospace, fashion, consumer products, and tourism. After entertainment, the second largest industry cluster in Los Angeles is a combination of transportation/logistics/distribution and wholesaling. Los Angeles also has a sizeable business support cluster, as well as several major educational institutions.

| Cities	Atlanta	Baltimore	Chicago	Houston	Los Angeles
Accommodation	1.01	.96	.94	.96	1.10
Administration	1.27	1.14	1.24	1.12	1.09
Agriculture	0	.11	.11	2.45	.14
Arts and entertainment	1.01	.96	.94	.96	1.10
Construction	0	1.21	.78	1.60	.81
Education	.82	1.24	1.03	.80	1.06
Finance	1.10	.99	1.13	.91	1.02
Health	.82	1.24	1.03	.80	1.06
Information	1.71	.62	0	0	2.01
Manufacturing	.73	.47	1.06	.96	1.01
Mining	0	.11	.11	2.45	.14
Other services	.83	1.05	0	.93	1.07
Professional	1.27	1.14	1.24	1.12	1.09
Real estate	1.10	.99	1.13	.91	1.02
Retail	1.18	.94	1.06	1.007	.96
Services	1.09	1.05	1.07	.97	1.07
Transportation	1.18	.94	1.06	1.07	.96
Wholesale	1.18	.96	1.06	1.07	.96

Sources: BLS; QCEW survey, 2015.
Note: Location Quotients (LQ) are calculated as an area distribution of employment by industry, compared to a reference or base areas distribution. An LQ greater than 1 indicates an industry with a greater share of the employment in the city than the nation.

While differences exist by city, in general, we see that small businesses tended to be spread across major industry categories, including retail, construction, professional services, health services, and administrative services (figure 1).

Not surprisingly, small businesses were less concentrated in the manufacturing, education, and transportation/warehousing, as these sectors tend to have higher entry costs and scale of operations.

Figure 1. Industry distribution of small businesses
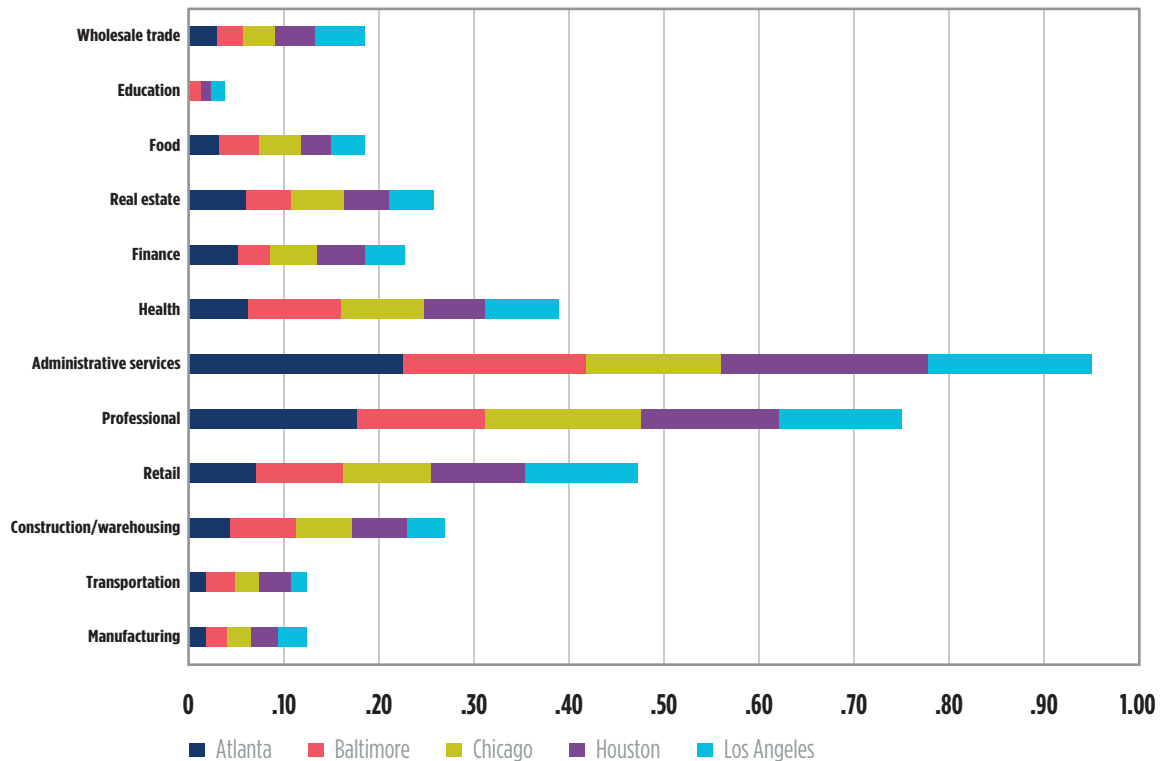
Source: NETS, 2011-2014.
Note: The administrative services sector covers a range of activities including travel assistance, insurance, repairs and generic descriptions like "business services." The professional services category covers legal, consulting, design, and other such services.

When we look at the industry distribution of businesses in ethnic/minority neighborhoods, we see high representation in service industries for all the demographic groups (figure 2). Administrative services were common in non-Asian neighborhoods while professional services were more highly represented in Asian and white neighborhoods. Retail trade had relatively high representation in minority neighborhoods as well.

Figure 2. Industry distribution of small businesses by ethnic/racial plurality of the neighborhoods

	Black	Hispanic	Asian	White
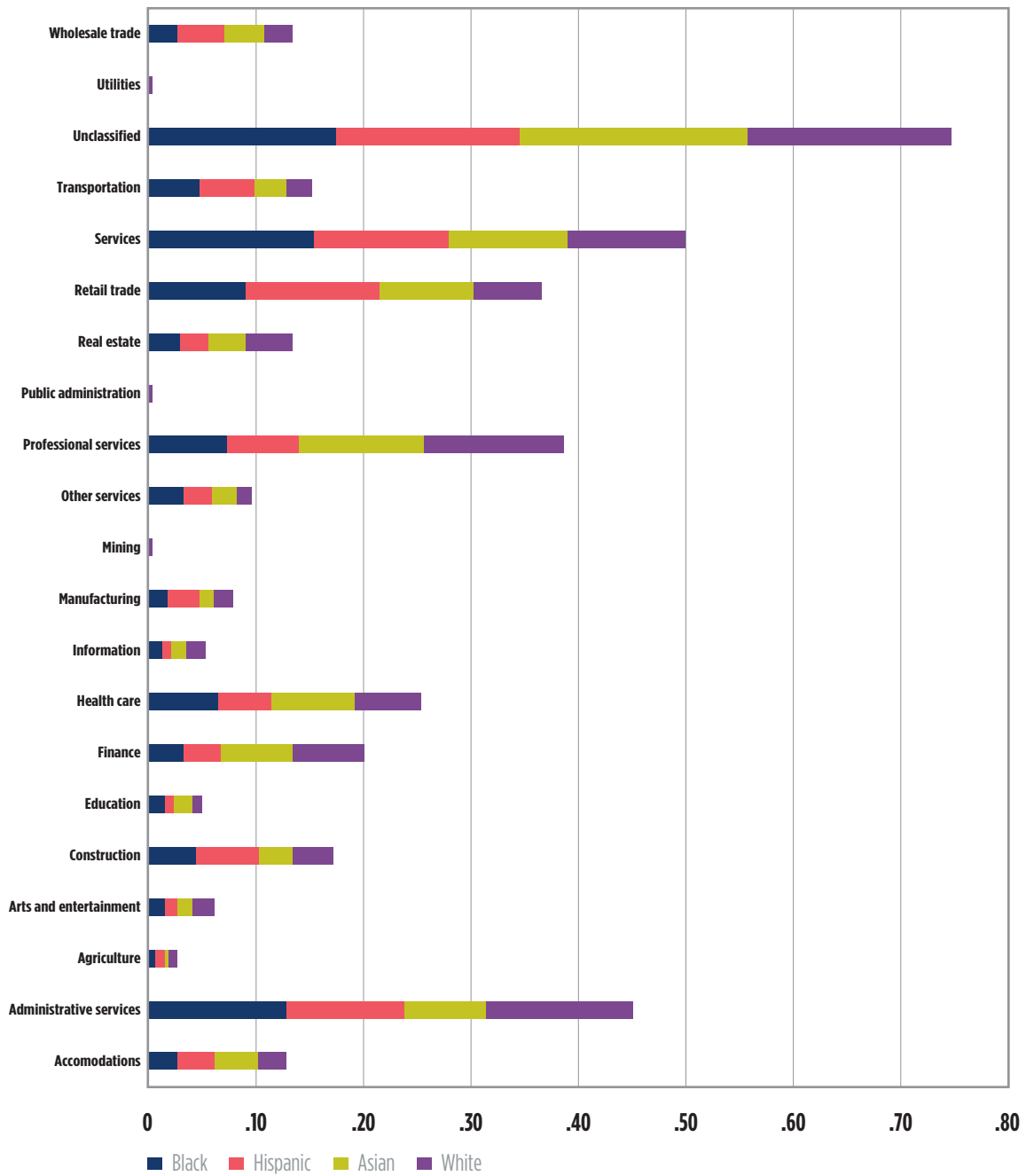
Source: NETS, 2014.

Figure 3. Share of small businesses by industry and by neighborhood income

Source: NETS, 2014.

Some differences existed in the representation of small businesses by the income of the neighborhoods (figure 3). In Chicago, small businesses operating in LMI areas were underrepresented in all major industries, except transportation/warehousing where more than 50 percent of those small businesses were in LMI areas. Likewise, in Baltimore, we note only in the transportation/warehousing service industry were small businesses in LMI neighborhoods over-represented relative to those in non-LMI places. We note somewhat more diversification in Houston, where small businesses in LMI areas had overrepresentation in retail and other services in addition to the transportation/warehousing sector. Atlanta and Los Angeles were the two cities (among the five) in which we see the most industry diversification in LMI neighborhoods. In Atlanta, for example, small businesses in LMI areas were relatively overrepresented in the retail, construction, health services, manufacturing, and wholesale sectors. In Los Angeles, small businesses in LMI areas were relatively overrepresented in food services, retail, manufacturing, wholesale, and other services.[6]

The success of small businesses in any neighborhood is linked, in large measure, to the extent to which businesses are connected to their regional economies and are integrated into industrial sectors with large employment capacity (i.e., the industrial sectors in which the region has a comparative advantage). To have a better understanding of the representation of small businesses in different industries in terms of the employment strength of the sector, we calculate for each business an LQ for its industry in its neighborhood and its city.[7] To illustrate, a small business can be in an industry in a census tract that has high LQ for the industry in its neighborhood and its city. In such instances, the share of employment for that industry in the neighborhood is higher than the share of employment for that industry in the metropolitan area; and the share of employment for that industry in the city is higher than the share of employment for that industry in the nation. This would suggest that the business is in a sector that is competitive for its neighborhood and its city. Conversely, a business can be in a sector that has low LQ for the census tract and low LQ for the city. A small business can also be in a sector with high LQ for the census tract and low LQ for the city. In such an instance, the business is likely providing very specialized services or products. For example, the business may be providing an ethnic product that may not necessarily be part of a big industry in terms of employment capacity for the city, but still represents a specialized/ethnic enclave economy for the neighborhood. Conversely, a business can be in a sector with low LQ for its neighborhood and high LQ for the city. This would be the case, for example, of a large health care facility or a manufacturing firm in an industry that is a strong employment source for the city, but is not necessarily a neighborhood based-employer.

Figure 4A shows the percentage of small businesses with high LQ for the neighborhood and the city, by income status of the neighborhoods for each of the five cities. Figure 4B shows the percentage of small businesses in the four possible scenarios as described, by income status of the neighborhoods, but for all of the cities combined. We find that consistent across the five cities, the majority of small businesses are in industries that are competitive for their neighborhood or their city (i.e., that have high LQ for their neighborhood and their city), although we also note that LMI places trail somewhat behind in this measure, especially in Atlanta and in Chicago (figure 4A). In these two cities, approximatively 63 percent of small businesses located in LMI neighborhoods are in industries with high LQ for their neighborhood and the city, compared to 68 percent of small businesses in non-LMI neighborhoods. For all five cities (figure 4B), small businesses in LMI neighborhoods are relatively more likely to be in sectors that are specialized for their neighborhoods, while small businesses in non-LMI neighborhoods are more likely to be in sectors that are more competitive for their city, suggesting a relatively smaller level of regional integration of businesses in LMI communities.

Figure 4A. Percent of small businesses in industries with high LQ for neigborhoods and high LQ for city
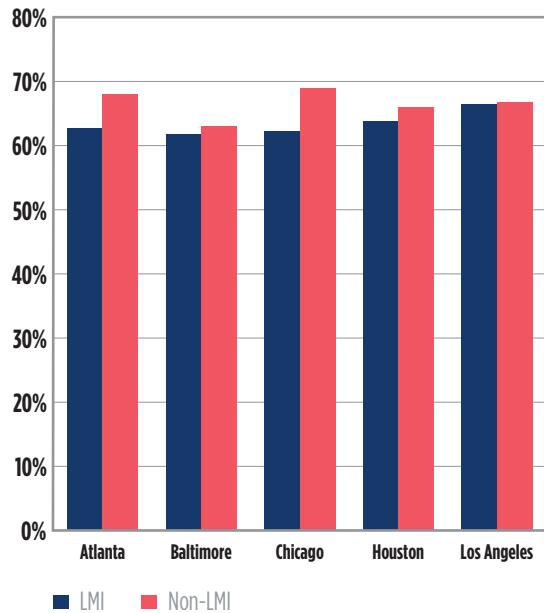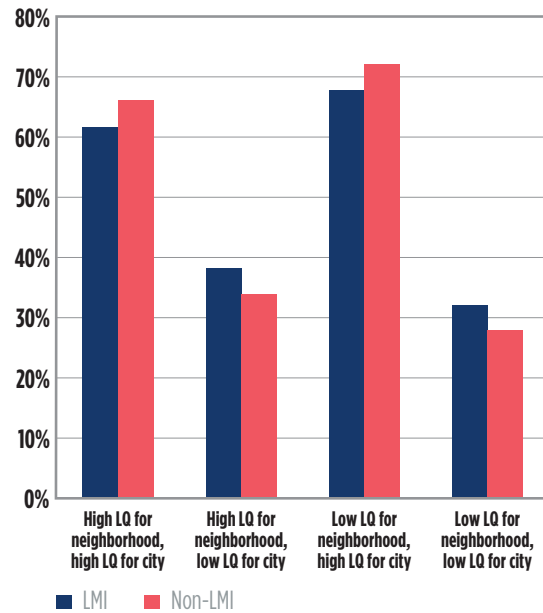

Atlanta, Baltimore, Chicago, Houston, Los Angeles

■ LMI   ■ Non-LMI

Figure 4B. Percent of small businesses in industries with high/low LQ for the neighborhoods/city

High LQ for neighborhood, high LQ for city | High LQ for neighborhood, low LQ for city | Low LQ for neighborhood, high LQ for city | Low LQ for neighborhood, low LQ for city

■ LMI   ■ Non-LMI

Sources: NETS, 2014; FFIEC; BLS; QCEW survey, 2015.

Figure 5. Small businesses annualized growth rate (2012-2014)

Five cities, Atlanta, Baltimore, Chicago, Houston, Los Angeles

■ LMI   ■ Non-LMI
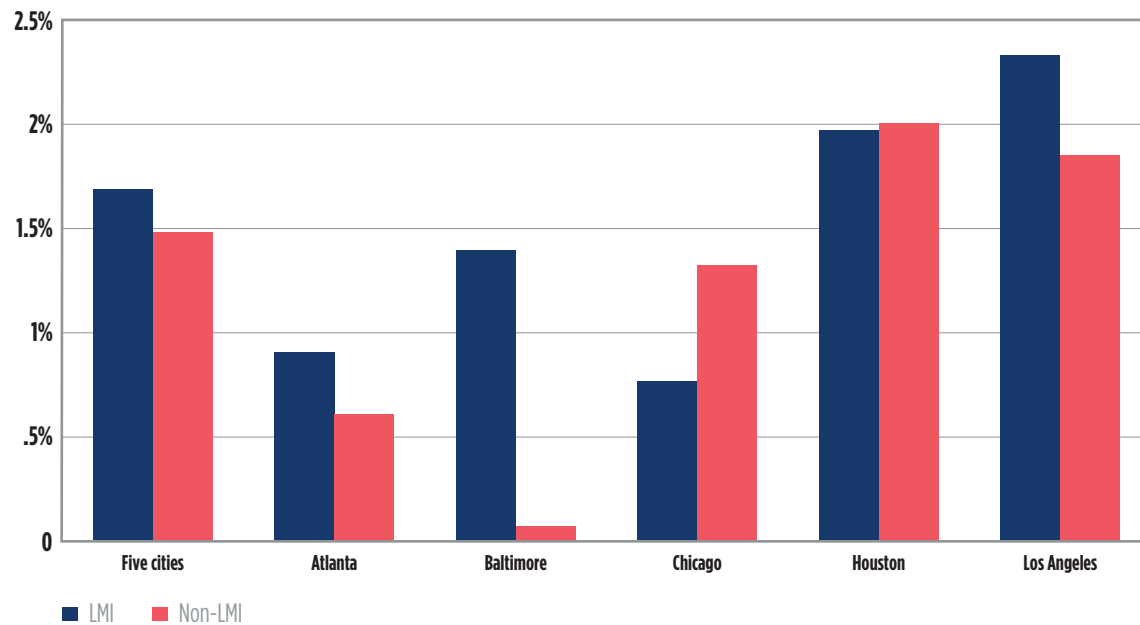
Sources: NETS; FFIEC.

Business dynamics and performance post the Great Recession

In this section, we look at performance in terms of establishment growth and entry and exit dynamics, as well as revenue levels and revenue growth of existing businesses in LMI and non-LMI areas.[8] In the post-recession years of 2012-2014, those for which NETS data is available to us, the count of small businesses in the five cities grew very modestly at an average annual rate of about 1.5 percent in both LMI and non-LMI areas, a trend that is also consistent with data from the census for the nation (figure 5).[9] Los Angeles and Houston saw the highest small business growth (of about 2 percent) while the slowest rate of growth took place in the middle- and upper-income

neighborhoods of Baltimore. In most cities, with the exception of Chicago, businesses tended to grow at slightly higher rates in LMI than in non-LMI areas, potentially reflecting the fact that places with fewer numbers of businesses grow faster.

Modest business growth took place in predominantly minority census tracts as well. The largest gains were in the Asian-majority tracts of Atlanta, Baltimore, and Chicago (which had lower bases); in black majority/plurality tracts of Houston; and in Hispanic-plurality tracts of Los Angeles (table 5).[10] The exceptions to this trend, where the number of businesses declined in predominantly minority neighborhoods, were in the majority-Hispanic tracts of Atlanta, and in the majority/plurality black tracts of Chicago.

Table 5. Annualized growth rate of small businesses, by minority/majority plurality of the neighborhoods

	Five cities	Atlanta	Baltimore	Chicago	Houston	Los Angeles
Asian-majority census tracts	1.9	6.6	3.3	2.6	N/A	1.7
Black-majority census tracts	1.5	2.1	1.5	-.1	2.5	1.9
Hispanic or Latino-majority census tracts	1.8	3.2		1.5	1.9	2.1
Non-Hispanic white-majority census tracts	1.2	.2	.2	1.4	1.7	1.7
Asian-plurality census tracts	2.4			.2	1.8	2.6
Black-plurality census tracts	1.6	.4	-.4	-.4	2.5	2.0
Hispanic or Latino-plurality census tracts	2.2	.3	1.2	1.2	2.1	3.0
Non-Hispanic white-plurality census tracts	2.0	.9	1.4	4.6	2.3	2.3

Sources: NETS, 2012-2014; ACS, 2011-2015.

The small business climate remained fragile in terms of business failures. In those five cities, during this period after the Great Recession, small businesses failed at a higher rate than new businesses started in both LMI and non-LMI neighborhoods, a result which is consistent for the nation (figure 6).[11] Failure rates varied by type or size of businesses. Microbusinesses were the most affected by failure.

The failure rate of sole proprietorships with no employees was about 10.3 per 100 existing businesses in LMI communities, and 9.8 per 100 existing businesses in non-LMI communities. By comparison, large businesses with more than 20 employees had a rate of 3.5 failures per 100 businesses in LMI places, and 3.1 failures per 100 existing businesses in non-LMI neighborhoods.[12]

Figure 6. Formation and failure rates by employee size of small businesses (2012–2014)

■ Business formation rate (per 100 existing businesses)   ■ Business failure rate (per 100 existing businesses)

Source: NETS, 2012-2014.

Concerning revenue generation, small businesses in LMI areas faced greater challenges. Median revenues for small businesses, as well as the average growth rate of revenues, were lower in LMI tracts compared to middle- and upper-income tracts. Likewise, small businesses in black and Hispanic neighborhoods tended to report lower revenues across different employee sizes of businesses (table 6).

Table 6. Small business revenue by LMI and ethnic/minority plurality of the neighborhoods

	No employees	1 to 4 employees	5 to 19 employees	20 or more employees
LMI median revenue	59,000	130,000	320,000	690,000
Non-LMI median revenue	61,000	130,000	340,000	717,809
LMI average growth rate (percent) (2012-2014)	.08	.56	.13	.66
Non-LMI average growth rate (percent) (2012-2014)	.29	1.3	2.9	9.3
Asian	64,000	140,000	290,000	673,867
Black	57,057	120,000	290,000	676,035
Hispanic	59,000	130,000	331,510	680,000
White	62,000	130,000	345,716	730,000

Source: Dun & Bradstreet, 2012-2016.

Based on tests of differences of mean statistics, controlling for population, and industry, we confirm lower revenue and revenue growth over the period for small businesses in LMI neighborhoods compared to non-LMI neighborhoods, and in black and Hispanic neighborhoods, compared to white neighborhoods. There are some nuances in these results when we consider the size of businesses. Generally, we see no statistical difference in revenue growth for sole proprietorships (with revenue being so low, zero at the median, irrespective of the location) (table 7). In the case of businesses with between 1 and 4 employees, these businesses grew their revenues at higher rates in LMI places compared to counterparts in non-LMI places. The overall difference in revenue growth thus relates to businesses with more than five employees. In LMI neighborhoods (and in black neighborhoods), these medium and larger size businesses lagged in revenue growth behind their counterparts that were located in non-LMI communities.

Table 7. Means test differences of performance of small businesses in different locations

	LMI		Black		Hispanic		Asian		White	
Revenue	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
All businesses	-1177	-4.9	-18857.8	-58	1647	5.5	5800	5.4	6548	27.3
Sole proprietorship	-6193	-26.6	-10511.7	-39.7	-4295	-15.7	6872	4.9	7901	32.4
1 to 4 employees	-168	-.9	-12517.7	-48.9	1411	6.2	7978	9.7	3417	18.8
5 to 19 employees	-11148	-13	-39134.9	-33.7	9299	8.7	-35004	-9.3	19746	23
20 or more employees	-20452	-5	-27917.4	-4.9	-12695	-2.5	-37295	-1.9	37758	9.5
Log revenue										
All businesses	-.02	-18.4	-.135	-85.5	.014	10.3	.072	14.9	.042	38.9
Sole proprietorship	-.059	-34.6	-.112	-50.8	-.022	-10.9	.059	6	.071	41.4
1 to 4 employees	-.01	-9.9	-.093	-62.1	.012	10.3	.061	13.8	.025	24.9
5 to 19 employees	-.031	-11.8	-.13	-33.9	.04	12.6	-.016	-9	.064	24.4
20 or more employees	-.041	-3.5	-.078	-4.5	-.01	-.7	-.063	-1.2	.085	7.1
Annual revenue growth										
All businesses	.008	1.1	-.016	-3.9	.018	1.2	.081	1.7	-.008	-1.4
Sole proprietorship	.004	11.5	.003	6.6	.005	11.2	-.002	-1.2	-.004	-11.2
1 to 4 employees	.003	7.7	.002	3.5	.006	11.3	-.006	-3.5	-.006	-16.1
5 to 19 employees	-.025	-8.6	-.029	-7.6	-.022	-6.4	-.009	-.7	.023	7.6
20 or more employees	.783	.9	-1.332	-3	2.018	1.1	8.61	1.7	-.665	-1.1
Log revenue growth										
All businesses	-.001	-3.18	.003	7.86	-.002	-.629	-.002	-1.56	.0012	4.6
Sole proprietorship										
1 to 4 employees	.001	3.02	.002	7.9	-.0004	-1.6	.001	1.44	.0001	.72
5 to 19 employees	-.006	-4.98	.009	5.13	-.009	-5.82	-.019	-3.11	.0063	4.77
20 or more employees	-.026	-2.47	-.063	-5.11	-.011	-.82	.099	1.51	.0101	.96

Sources: Authors' calculations based on Dun & Bradstreet, 2012-2016; FFIEC; ACS.
Note: Each cell is the coefficient estimate (and corresponding T-statistics) of a separate Univariate OLS estimate regression. This is equivalent to means differences tests. The differences are estimated for revenue of businesses (with revenue measured in different ways, as specified), by type/size of businesses in LMI census tracts, compared to non-LMI census tracts, and in ethnic census tracts (black, Hispanic, Asian) compared to white census tracts, and vice versa. A T-stat of +-2 or more indicates that the coefficient is statistically significantly different.

Figure 7. Revenue growth of top and bottom performing small businesses in LMI and non–LMI

■ 75th (top performers) ■ 25th (bottom performers)
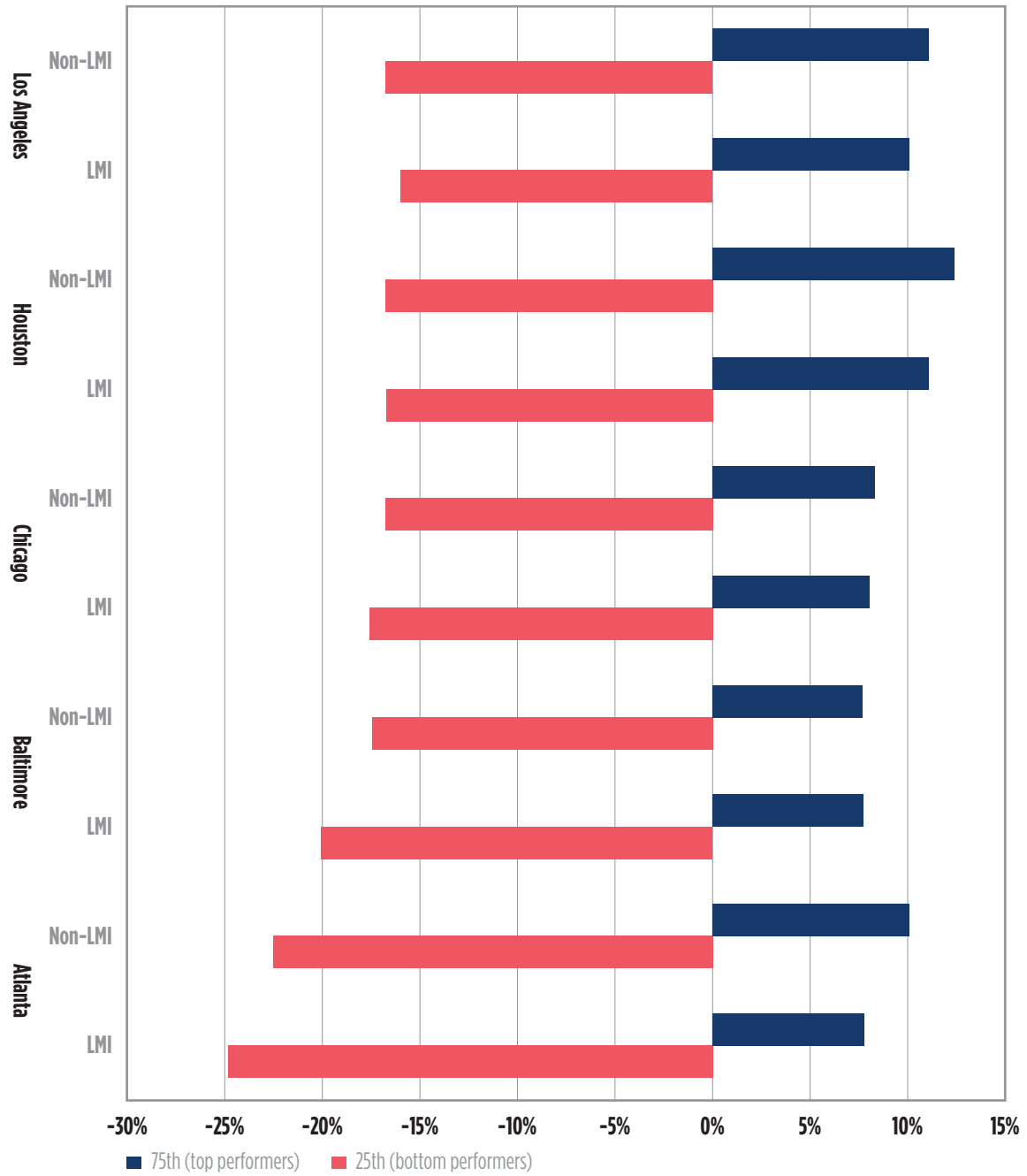
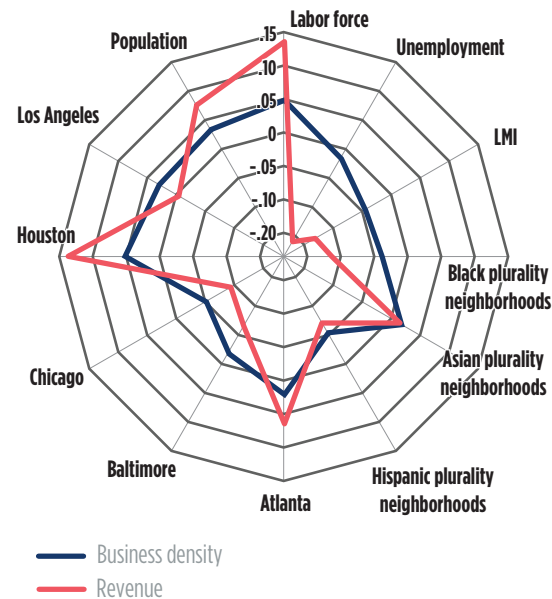Sources: Dun & Bradstreet, 2012-2014; FFIEC.

We compare revenue growth in terms of the best and worst performers in non-LMI areas and LMI areas. This allows us to see how poorly low-growth businesses in LMI areas are doing compared to low-growth businesses in non-LMI places, and conversely how well high-growth businesses in LMI areas are doing compared to high-growth businesses in non-LMI areas. In each city, businesses in the 75th percentile (which we consider high-growth businesses) had growth rates that were similar in LMI areas and non-LMI areas, at an average annualized rate of 9 percent or more in revenue growth between 2012 and 2014 (figure 7). Among businesses at the 25th percentile (the low-growth businesses), revenues had significantly declined between 2012 and 2014, with drops ranging from 15 percent to 25 percent across each city. Hence, low-growth revenue businesses in LMI neighborhoods were the main sources of slack for this performance measure for the sector.[13]

Correlation analysis of business characteristics and location characteristics

Finally, we calculate some simple correlation coefficient estimates to test some additional ideas about the relationships between small businesses and their locations. The correlation coefficient is a measure of the degree of linear association between two variables, with -1 indicating a perfect negative association, +1 indicating a perfect positive association, and 0 indicating no association. Figure 8 shows the association between business density, business performance, and selected characteristics of neighborhoods and city location. The results indicate that neighborhoods with higher population growth, higher labor force participation, and lower unemployment correspond with higher small business density. Similar relationships hold for the same neighborhood characteristics and higher business revenue (figure 8). (These associations are consistent with other indicators of business sector performance, such as business formation rate and larger size businesses, not shown in a table.)

The analysis further shows that the cities of Chicago and Baltimore correspond with lower small business density and lower revenue (figure 8). Given that Chicago as a city has experienced population decline,

Figure 8. Correlation estimates of the relationship between selected characteristics with business density and business revenue
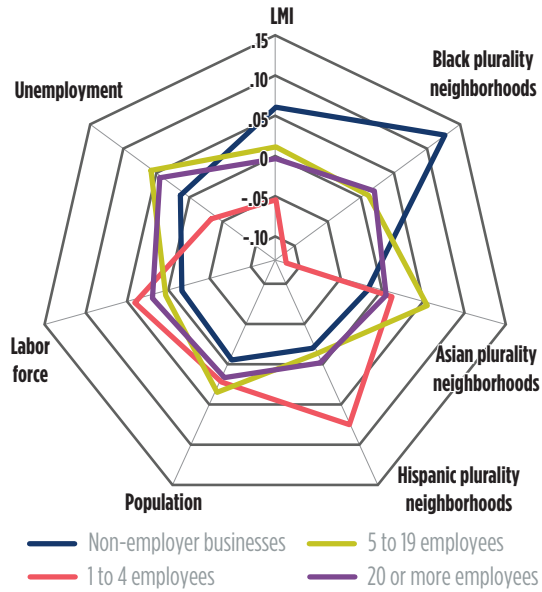

Source: Dun & Bradstreet, 2012-2016; ACS, 2011-2015; FFIEC.
Note: the correlation estimates for Asian plurality neighborhoods and business density is not statistically significant due to small sample size.

and particularly population decline among black residents in LMI neighborhoods, the broader dynamic of population outflows may create a challenge to small business presence in some neighborhoods for that city. A negative correlation holds for Baltimore as well, a city that correlates strongly with various factors of economic vulnerability (i.e., high unemployment), which limit opportunities for small business presence in its neighborhoods.

The analysis additionally confirms the challenges for many small businesses in generating revenue. We note a negative correlation between revenue and LMI, black and Hispanic neighborhoods. Even so, consistent with the proclivity of high-minority and LMI neighborhoods in those cities to spawn entrepreneurship, the results show a positive correlation between small business type and LMI, and different ethnic/racial plurality neighborhoods (figure 9). That is, looking further into these relationships by the size of businesses, we see both sole proprietorships with no employees, and businesses with between 5 and 20 employees positively correlated with these neighborhoods (figure 9).

Figure 9. Correlation estimates of the relationship between selected characteristics with business staff size
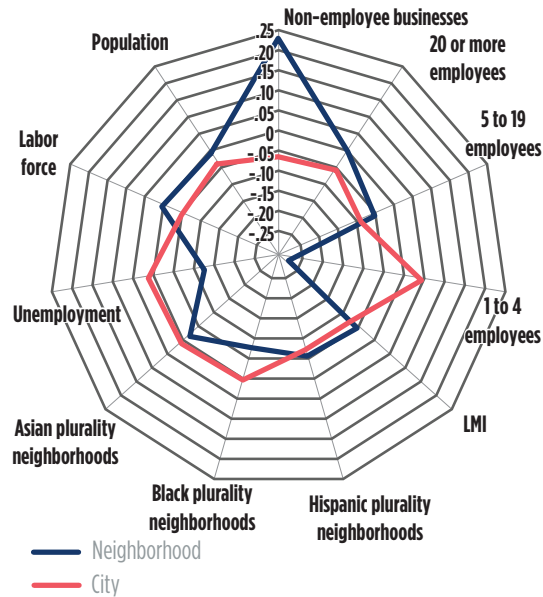

Sources: Dun & Bradstreet, 2012-2016; ACS, 2011-2015; FFIEC.

We also conduct a correlation analysis to get a better understanding of the business characteristics as well as location characteristics that are associated with high LQ industries in a city and a neighborhood (figure 10). The results show that sole proprietorships tend to be in sectors that have high LQ for their neighborhoods. That is, new entrepreneurs may seek or avail themselves of opportunities in industries where high numbers of employees already work in those neighborhoods even if those industries are not (as proportionately) large employers in the metropolitan area. On the other hand, large businesses with more than 20 employees are also positively correlated with both high LQ for their neighborhoods as well as their city. These businesses are thus able to provide a source of employment and possibly services not only for their neighborhoods but for their city as well.

The neighborhoods themselves that correlate with high LQ sectors are those with higher labor force participation rates, lower unemployment rates, and higher rates of population growth (figure 10).

Perhaps not surprisingly then, we find a significantly negative correlation between LMI neighborhoods and businesses whose industries show a high LQ for a neighborhood. We also find a negative correlation between predominantly black and Hispanic neighborhoods and businesses whose industries show a high LQ for a neighborhood and the city. As for other ethnic/minority neighborhoods, small businesses in Asian and white neighborhoods are positively correlated with high LQ sectors, both at the neighborhood- and city-wide level. Small businesses in Hispanic neighborhoods are neither positively correlated with competitive industries in the neighborhood or city level, possibly suggesting high specialization of goods and services in Hispanic neighborhoods.

Figure 10. Correlation estimates of the relationship between selected characteristics and having businesses in high LQ industries for the neighborhoods and the city

Sources: Dun & Bradstreet, 2012-2016; ACS, 2011-2015; FFIEC.

Policy implications and conclusion

This report offers several findings and points to some directions for helping small businesses expand and grow in LMI and ethnic/minority neighborhoods. Small businesses with revenues of $1 million or less are an essential piece of the economic infrastructure of both lower-income and higher-income neighborhoods.

We see positive associations between sole proprietorships (as well as large businesses) with LMI and black neighborhoods. These suggest that LMI neighborhoods are attractive places to start businesses, as well as for operating larger scale businesses. But we also find greater challenges for businesses operating in LMI areas. We see fewer small businesses as a share of the population in LMI areas. This speaks to the need for a better understanding of what factors contribute to business stability and growth, including access to resources and credit/funding. Also, we find that small businesses in LMI neighborhoods and black-majority neighborhoods have significantly less revenue than their counterparts in non-LMI neighborhoods, regardless of the employment size of (small) business and industry. Growth in revenue at small businesses with five or more employees in LMI places likewise tended to lag counterparts in non-LMI areas, as did the revenue growth of businesses in predominantly black neighborhoods.

As our analysis suggests, different citywide and neighborhood characteristics affect the business landscape. Whether the measure is small business revenue, small business density, or businesses that operate in competitive (high LQ) sectors at the neighborhood or city level, we find that places in which there is more labor force participation and lower unemployment are places where more small businesses tend to do better and be more integrated in their overall regional economy. On the other hand, population decline and lower rates of labor force attachment are associated with weaker small business performance.

The correlation between business performance and the factors that make places more economically vibrant, including population growth and labor force participation, speaks to the need to address the small business climate of neighborhoods holistically. Initiatives and policies may be needed to help business owners in LMI and some ethnic/minority neighborhoods identify competitive sectors of industries in which to operate. Neighborhood assets and human capital may also be important areas for investment, insofar as education, labor-force preparedness, and amenities of place that attract residents may be part of a comprehensive strategy to promote small business development.

Letter from AEO

In partnership with Dun & Bradstreet, AEO collaborated on this study with researchers at the Federal Reserve Bank of Chicago to assess the performance of small businesses in LMI neighborhoods in the wake of the Great Recession. The aim of the project was to identify the impact of small businesses in LMI neighborhoods, and provide a comparative assessment of their performance against small businesses in non-LMI neighborhoods across five cities. This research utilized data from Dun & Bradstreet.

This research expands the findings of AEO's 2016 report titled, "The Tapestry of Black Business Ownership in America." That report highlighted the diversity of black businesses in America, explored their potential, and addressed ways to provide the right mix of support to overcome the wealth, credit, and trust gaps.

This current report reveals that different citywide and neighborhood characteristics affect the business landscape and speaks to the need to address the small business climate of neighborhoods holistically. These findings, in combination with those of the Tapestry Report, provide a rationale for programs and initiatives designed to drive and sustain business growth in minority and LMI neighborhoods.

AEO extends its gratitude to both our partners, The Federal Reserve Bank of Chicago, and Dun & Bradstreet.

Connie E. Evans
President/CEO
Association for Enterprise Opportunity

Notes

1. Federal Deposit Insurance Corporation, 2011, "Microenterprise development: A primer," FDIC Quarterly, Vol. 5, No. 1, available at https://www.fdic.gov/bank/analytical/quarterly/2011-vol5-1/fdic-vol5no1-article-1.pdf.

2. See Şahin, Ayşegül, Sagiri Kitao, Anna Cororaton, and Sergiu Laiu, "Why Small Businesses Were Hit Harder by the Recent Recession," Current Issues in Economics and Finance, Vol. 17, Number 4, Federal Reserve Bank of New York, available at https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci17-4.pdf. According to this study, although both large and small businesses felt the sting of job losses during the 2007-09 downturn, small firms experienced disproportionate declines. Poor sales and economic uncertainty were the main reasons for their weak performance and sluggish recovery—problems that too affected large firms, but to a lesser degree. Also, a tightened credit supply also constrained some small firms.

3. Low-income census tracts are those where the median income is less than 50 percent of the median for the metropolitan area. Moderate-income census tracts have median income from 50 percent to below 80 percent of the area median. Middle-income census tracts have median income from 80 percent to below 120 percent of the area median. Upper-income census tracts have median income from 120 percent and higher of area median income.

4. See "African American Population Peaks in Chicago," available at http://robparal.blogspot.com/2016/05/african-american-population-peaks-in.html#!/2016/05/african-american-population-peaks-in.html.

5. Census data also shows that sole proprietorship makes up the largest share of small businesses, but at a higher percentage than the D&B data, suggesting that the D&B data may be undercounting some types of businesses.

6. A detailed industry analysis shows that some of the top sub-industries for small businesses in LMI neighborhoods for the five cities are business services (non-classifiable), eating and drinking establishments, religious organizations, medical offices and clinics, beauty shops, business consulting, legal services, and grocery stores.

7. Location Quotients (LQ) are ratios that allow an area distribution of employment by industry to be compared to a reference or base area distribution. Our area of interest is the census tract/or neighborhood, and we use the metropolitan area as our reference area. An LQ greater than 1 indicates an industry with a greater share of the employment in that census tract than for the metropolitan area. For example, a low-income census tract in the city of Atlanta has an LQ greater than 1 in arts relative to the MSA because this industry makes up a larger share of the census tract employment total than it does in the Atlanta MSA as a whole. We use the 2-digit industry employment classification for this calculation, as this is the level of industry classification in the LODES data set available for this calculation. The source for LQ is LODES. We also compute the LQ for the city. The data for LQ for the cities comes from the BLS, QCEW survey, and the reference area is the nation.

8. The data does not contain other key performance indicators such as profitability or balance sheet metrics.

9. The D&B dataset contains businesses with revenues of $1 million or less every year. A business may fall out of the sample if its revenue surpasses this threshold between 2012 and 2016. We therefore use other proprietary data, the National Establishment Time Series Database (NETS), to observe business growth and entry/exit dynamics since this data provides us with the full population of small businesses, starting at a given year.

10. Racial or ethnic plurality in a census tract means the group in question has the largest proportion in the neighborhood (which may not be a majority).

11. Means tests statistics confirm that business formation and failure rates are not significantly different in LMI areas compared to non-LMI areas; nor do we see significant differences the formation and failure rates across communities of different races and ethnicities. At least for the brief period of analysis, during this period of economic growth, small businesses in LMI neighborhoods were no more likely to fail than those in the middle- and upper-income neighborhoods. We note that the slow business formation and higher failure rate pattern is an observed nationwide pattern based on data from the Census Business Dynamic Statistics (SBS). The data show that the entry rate of US (employer) firms has been on a decline over the few last decades. It fell from 12 percent in 1987 to the 10 percent range by the early 2000s, and dropped to below 8 percent after the Great Recession. The exit or failure rate exceeded the entry rate for the first time for several years after the Great Recession began. Starting in 2012, the entry rate is again larger, although the gap between the entry rate and the exit rate has become smaller.

12. If we look at the formation rate for the small business sector at a detailed industry level, we find that the sub-industries with the highest rates of business entry for that period in LMI neighborhoods are transportation services, (non-air) courier services, retail trade services (custom computer programming services, automotive dealers, women's clothing stores and footwear), and communication services (motion picture and tape distribution).

13. We also compute the rate of revenue growth of top and bottom performers by the detailed sub-industries. We find that top performers include small businesses in retail trade (automotive dealers, wine and distilled beverage, floor covering stores, and footwear); manufacturing (petroleum products, durable goods, and metal service); finance, insurance, and real estate (personal credit institutions); other non-classifiable establishments (centers and offices); and in transportation and public utility (refuse systems).

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