

CHAPTER 1 SMALL BUSINESS LENDING TRENDS IN APPALACHIA COMPARED TO THE UNITED STATES

1.1 SUMMARY

This chapter compares small business non-credit card and credit card lending in the nation to Appalachia and within Appalachia from 2007 through 2010. The chapter identifies disparities between Appalachia and the nation and within Appalachia. The chapter also examines the relationship between non-credit card and credit card lending, and between lending and branching.

Major findings concerning overall small business lending include:

- In 2003, 41 percent of the small businesses in both the nation and Appalachia received loans. By 2007, 61.6 percent and 50.3 percent of the small businesses in the nation and Appalachia, respectively, received loans. In 2010, the percentages plummeted to 19.5 percent and 16.2 percent for the nation and Appalachia, respectively. In both 2007 and 2010, lending in Appalachia was about 18 percent lower than lending nationally.
- The number of small business loans in Appalachia declined from 808,877 in 2007 to 255,231 in 2010. The dollar amount of small business lending decreased from \$23.9 billion in 2007 to \$13.3 billion in 2010.
- When comparing the nation to Central Appalachia, the subregion in Appalachia receiving the least lending, lending in Central Appalachia was 43 percent less than lending nationally by 2010.
- Considering subregions in Appalachia, small businesses in Northern Appalachia experienced the greatest access to credit while small businesses in Central Appalachia had the least access. For example, in 2007, about 55 percent of the small businesses in Northern Appalachia received loans while just 33.3 percent of the small businesses in Central Appalachia received loans. By 2010, the ratios were 19.4 percent and 11.1 percent in Northern and Central Appalachia, respectively.
- When examining lending by state, the Appalachia portions of Pennsylvania and Maryland had the greatest access to loans while Kentucky and Mississippi had the least access to loans. In addition, counties on the eastern boundaries of Appalachia had significantly greater access to credit than those on the western boundaries of Appalachia.
- The more urbanized a county, the better the access to credit within Appalachia. Likewise small businesses in counties with relatively favorable economic conditions had more access to credit than businesses in economically distressed counties. The disparities in access to credit narrowed slightly but remained significant from 2007 through 2010. For example, the percentage of businesses in attainment counties receiving loans was 2.25 times greater and 1.85 times greater than the percentage of businesses in economically distressed counties receiving loans in 2007 and 2010, respectively.

- Lending to the smallest businesses with revenues under \$1 million contracted to the greatest extent in both Appalachia and the United States. By 2010, only 8 percent of the smallest businesses in both Appalachia and the nation received loans.
- Lending to small businesses in low- and moderate-income census tracts exhibited significant disparities by subregion, degree of urbanization, and economic status of counties in 2007 and 2010. Just as with lending overall, the greatest disparity by subregion was between Northern and Central Appalachia. Also, in 2007 and 2010, the percentage of small businesses in low- and moderate-income tracts in attainment counties receiving loans was 1.9 and 2.2 times greater, respectively, than the percentage of small businesses receiving loans in low- and moderate-income tracts in economically distressed counties.
- Comparing credit card small business lending to non-credit card lending revealed that both types of lending tended to increase or decrease together on a county level. Credit card lending is not acting as a substitute where non-credit card lending is relatively scarce, but instead higher levels of credit card lending generally occur in counties where higher levels of non-credit card lending also occur.
- In some clusters of counties with limited access to non-credit card lending, borrowers utilize credit cards to a greater degree than national average to meet their borrowing needs. Index maps of credit card lending indicate that lending concentrations are the highest in the counties such as those in Kentucky and Tennessee with the least access to overall small business credit. Conversely, the credit card lending index is the lowest in Northern Appalachia where overall small business credit was most favorable compared to the nation. Overall, however, this study observes that credit card and non-credit card lending generally increase or decrease together on a county level.
- On a county level, a higher number of branches is statistically correlated to a higher number of loans. Previous studies including NCRC's 2007 study for ARC have also identified this relationship.
- Spatial autocorrelation analysis reveals that lending patterns described above are non-random. In other words, lending is clustered in Northern Appalachia, non-distressed counties, and metropolitan counties.

The Great Recession significantly lowered small business lending levels from 2007 through 2010 in the nation and Appalachia. Disparities between the nation and Appalachia and within Appalachia remained persistent from 2007 through 2010. The disturbing news is the massive reduction in lending for all communities. The possible silver lining in this economic crisis is that stakeholders have an opportunity to address disparities in a concerted manner as lending rebounds. The big question for policymakers and stakeholders is whether aggressive, concerted, and coordinated action can be taken to ensure that widening disparities do not occur as lending levels increase when economic conditions improve.

1.2 INTRODUCTION

This chapter describes trends in small business lending in Appalachia in 2007, a year immediately preceding the financial crisis, and 2010, a year following not only the worst impacts of the Great

Recession but also a year experiencing high unemployment levels. Choosing 2007 and 2010 enables the analysis to assess lending before and after the financial crisis and to assess the impacts of the financial crisis on access to credit in Appalachia. A few comparisons will be made to 2003, a year analyzed by NCRC’s previous report for the Appalachian Regional Commission (ARC).⁴

Lending increased to a larger extent in the nation, as a whole, than Appalachia from 2003 through 2007. The decline in lending in the nation and Appalachia was of similar magnitude from 2007 through 2010 (see Figure 1-1). From 2003 through 2007, lending surged 80.9 percent in the nation and 52.5 percent in Appalachia. In 2007 through 2010, lending decreased by about 69 percent in both the nation and Appalachia (see Table 1-1).

Because lending increased by a greater extent in the nation than Appalachia during the 2003 through 2007 time period, a greater percentage of small businesses in the nation than Appalachia received loans in both 2007 and 2010. In 2003, 41 percent of the small businesses in both the nation and Appalachia received loans. By 2007, 61.6 percent and 50.3 percent of the small businesses in the nation and Appalachia, respectively, received loans. In 2010, the percentages plummeted to 19.5 percent and 16.2 percent for the nation and Appalachia, respectively (see Table 1-2).

Figure 1-1: Percent of Small Businesses Receiving Loans in Appalachia and US

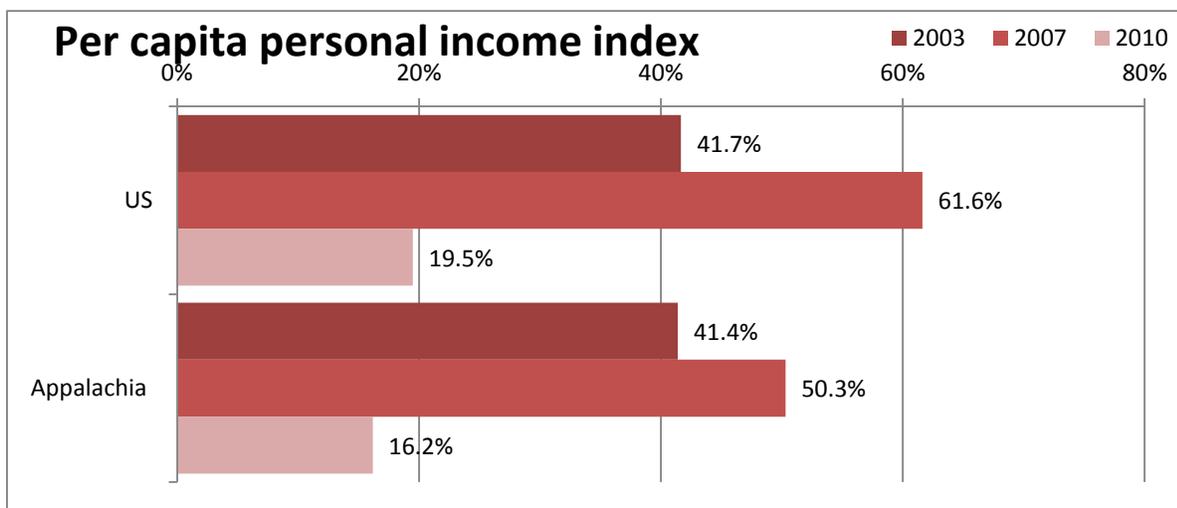


Table 1-1: Percent Change in Number of Small Businesses Receiving Loans in Appalachia and US

	Number of Small Businesses Loans			% Change		
	2003	2007	2010	2003-2007	2007-2010	2003-2010
US	7,428,630	13,437,779	4,197,610	80.9%	-68.8%	-43.5%
Appalachia	530,309	808,877	255,231	52.5%	-68.4%	-51.9%

⁴ The previous NCRC study for ARC can be accessed via http://www.arc.gov/research/researchreportdetails.asp?REPORT_ID=8

Table 1-2: Percent of Small Businesses Receiving Loans in Appalachia and US

	Number of Small Businesses Loans			Number of businesses			Percent of Businesses Receiving Loans		
	2003	2007	2010	2003	2007	2010	2003	2007	2010
US	7,428,630	13,437,779	4,197,610	17,828,895	21,808,201	21,530,378	41.7%	61.6%	19.5%
Appalachia	530,309	808,877	255,231	1,280,941	1,607,645	1,577,370	41.4%	50.3%	16.2%

1.3 TRENDS WITHIN APPALACHIA**1.3.1 ALL SMALL BUSINESS LOANS**

Considering subregions in Appalachia, small businesses in Northern Appalachia experienced the greatest access to credit while small businesses in Central Appalachia encountered the least access. About 55 percent of the small businesses in Northern Appalachia received loans while just 33.3 percent of the small businesses in Central Appalachia received loans in 2007. By 2010, this disparity remained, with 19.4 percent and 11.1 percent of the small businesses receiving loans, respectively, in Northern and Central Appalachia (see Figure 1-2).

The more urbanized a geographical area, the better the access to credit within Appalachia. Almost 59 percent of the small businesses in large metropolitan counties (more than 1 million people) received loans while 35.1 percent of the small businesses in rural counties received loans in 2007. This disparity occurs in 2010 as well but is narrowed with 17.8 percent and 12.7 percent of the small businesses in large metropolitan counties and rural counties, respectively, receiving loans (see Figure 1-3 and Table 1-4). In 2007, the percentage of small businesses in large metropolitan counties receiving loans was 1.7 times greater than the percentage of small businesses in rural counties receiving loans. By 2010, this disparity ratio shrank modestly to 1.4 (see Table 1-4).

Not surprisingly, more favorable economic conditions corresponded to increased access to loans on a county level. Banks issued loans to just 28.1 percent of the small businesses in economically distressed counties and to 63.3 percent of the small businesses in attainment counties in 2007. The disparities narrowed but remained in 2010 (see Figure 1-4 and Table 1-4).

Lending by dollar amount reinforces the finding of disparities by county categories. In Appalachia, as a whole, the amount of small business lending declined from \$23.9 billion in 2007 to \$13.3 billion in 2010. Central Appalachia received considerably lower dollar amounts compared to other subregions. For example, in 2010, Central Appalachia received less than half a billion dollars in lending compared to Northern Appalachia's \$5.1 billion (see Table 1-5).

It is important to keep in mind, however, that the disadvantaged counties in Appalachia are most likely to have the smallest businesses which typically receive lower dollar amounts of lending. To some extent, therefore, the disparities in dollar amounts reflect the stage of development of the small business sector at a county level. The disparities by average dollar amount increased from 2007 to 2010. For example, small businesses in Central Appalachia and Northern Appalachia received, on average, \$21,100 and \$27,500, respectively in 2007. This disparity increased to \$37,600 and \$54,700, respectively, in 2010 (see Table 1-5).

Considering lending by state, the Appalachian portions of Maryland and Pennsylvania experienced the most access to credit while Kentucky and Mississippi experienced the least access to credit during 2007 and 2010 (see Figure 1-5). The sharp decline in lending due to the financial crisis compressed disparities between the Appalachian and non-Appalachian parts of states. In nine states in 2007, a higher percentage of small businesses received loans in the non-Appalachian counties vis-à-vis the Appalachian counties. By 2010, this was the case in just six states and the differences in the percentages of businesses receiving loans were generally not that large. For example, banks made loans to 16.8 percent and 15.3 percent of the small businesses in non-Appalachia and Appalachian Virginia, respectively.

The maps display indexed values. In other words, the small business loan to small business ratio for a county is divided by the median ratio for the nation. The counties are then divided into even quintiles for the index values. The red shades are for the lower quintiles indicating that counties have less access to small business lending than their national counterparts. The blue shades are for the best quintiles showing that the counties have more access to credit than their national counterparts. The maps are reproduced for the ratios in this chapter.

The maps illustrate that Northern Appalachia is the region with the most access to credit. In particular, Pennsylvania has the most “dark blue” counties and the number of Pennsylvania counties in dark blue increases from 2007 to 2010. Another striking pattern is that counties on the eastern boundaries of Appalachia have more access to credit than their national counterparts whereas counties on the western boundaries of Appalachia have less access than their national counterparts. The least access (dark red) clusters around the Kentucky, Tennessee, Ohio, and Mississippi portions of Appalachia. The appendix has the ratio and index values for each county.

Figure 1-2: Ratio of Small Business Loans to Small Businesses by Region

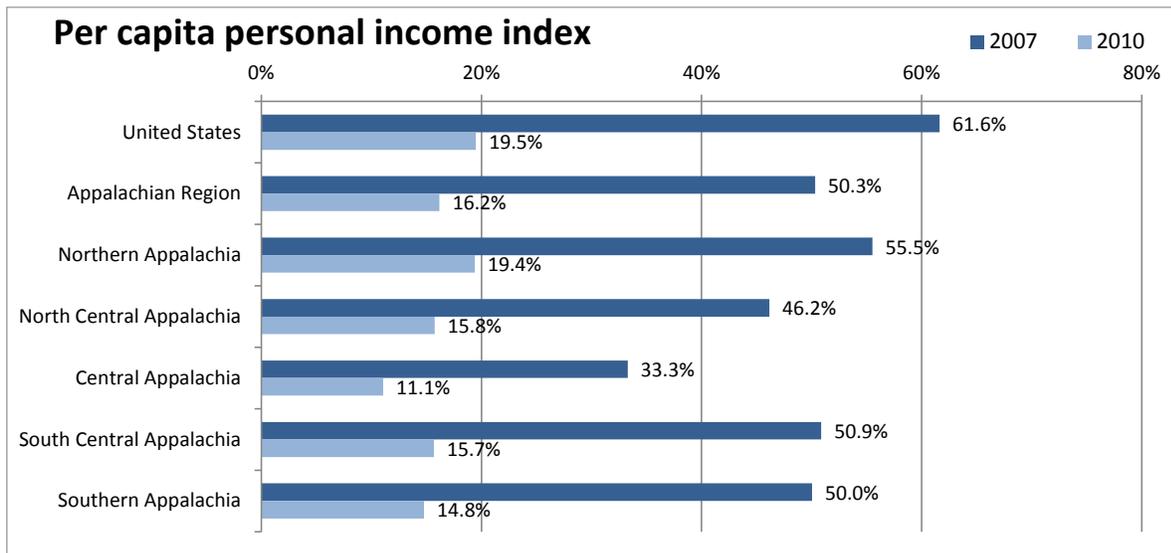


Figure 1-3: Ratio of Small Business Loans to Small Businesses by County Type

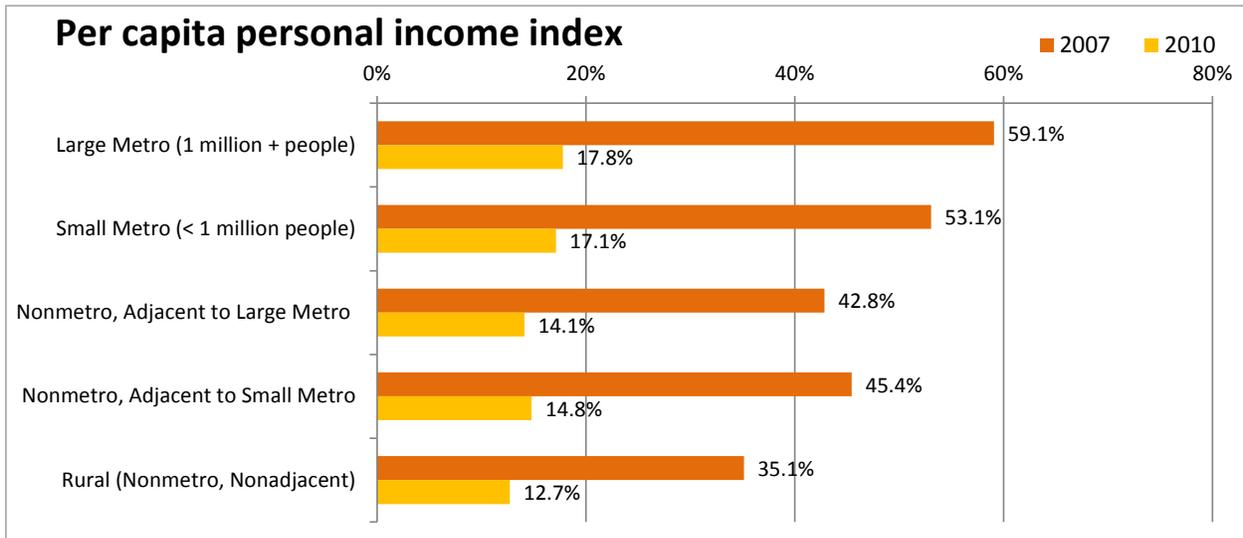
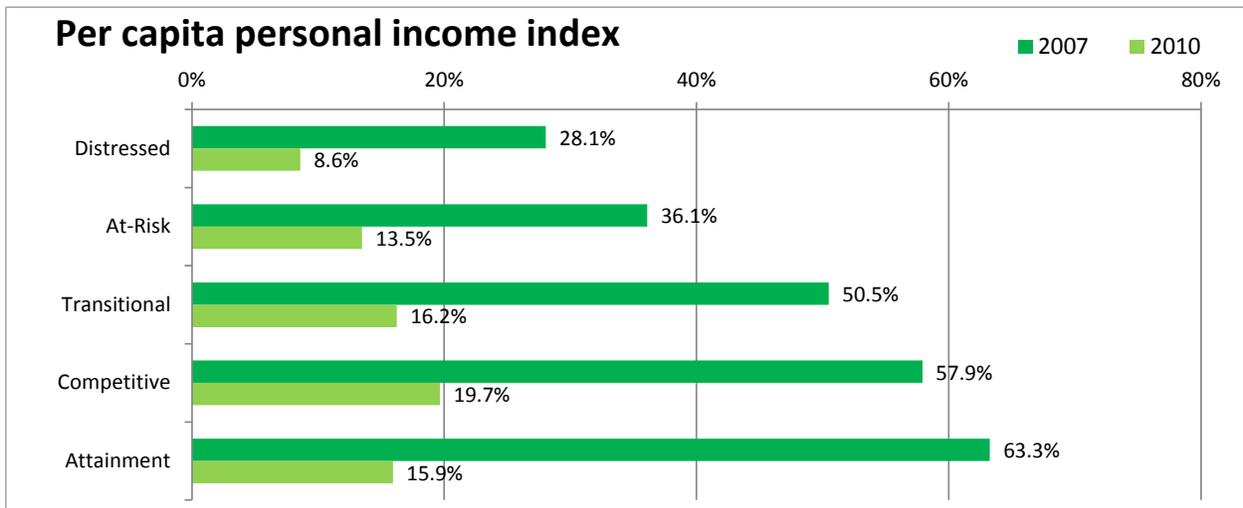
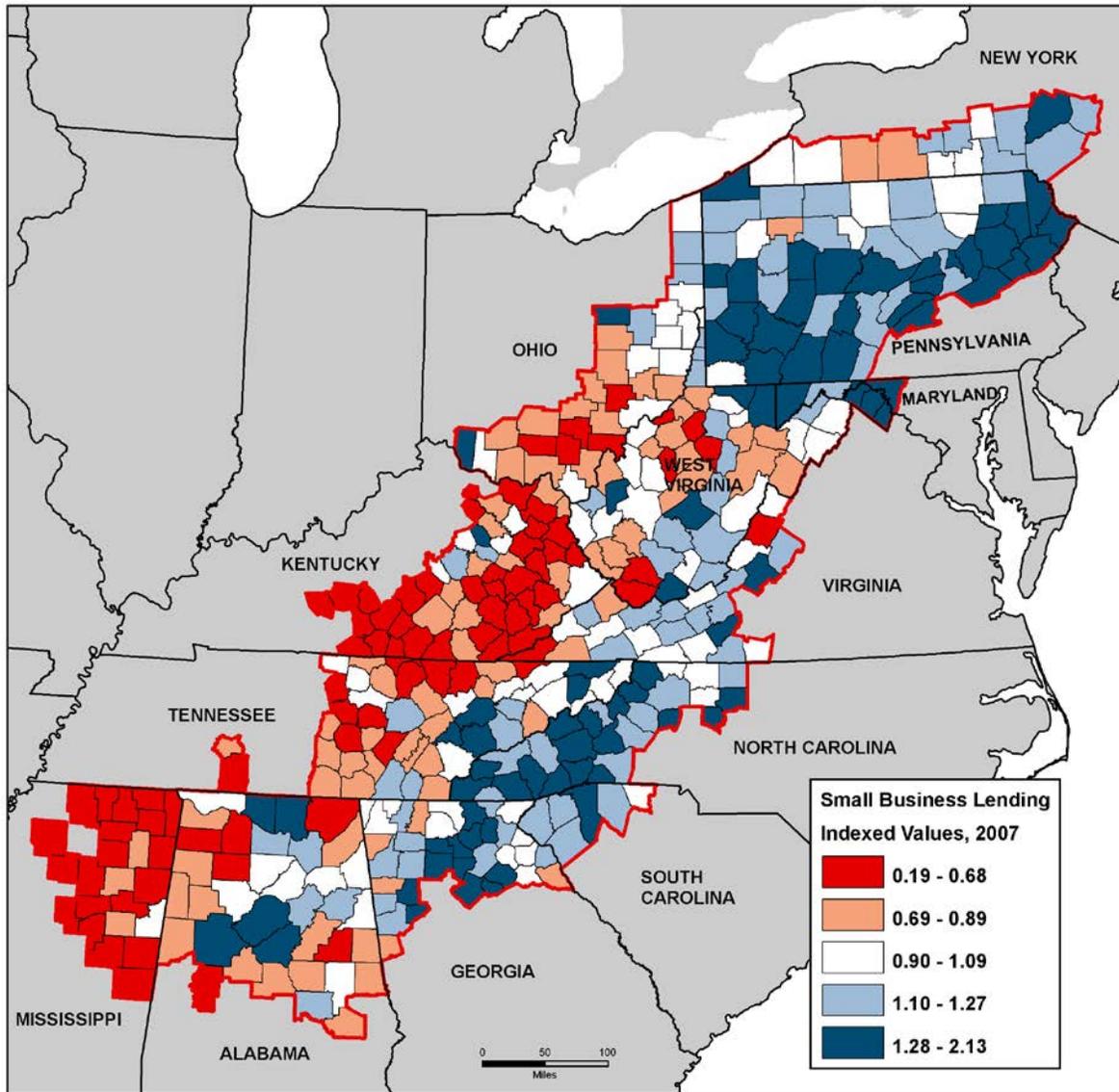


Figure 1-4: Ratio of Small Business Loans to Small Businesses by Economic Status



Map 1-1: Small Business Lending Index, 2007

Ratio of Number of Small Business Loans to Small Businesses, Indexed Values (U.S. =1)



Map Title: Small Business Lending Index, 2007

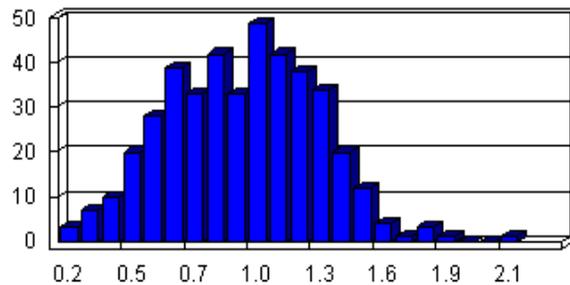
Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012

Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2007

Statistics of Indexed Values

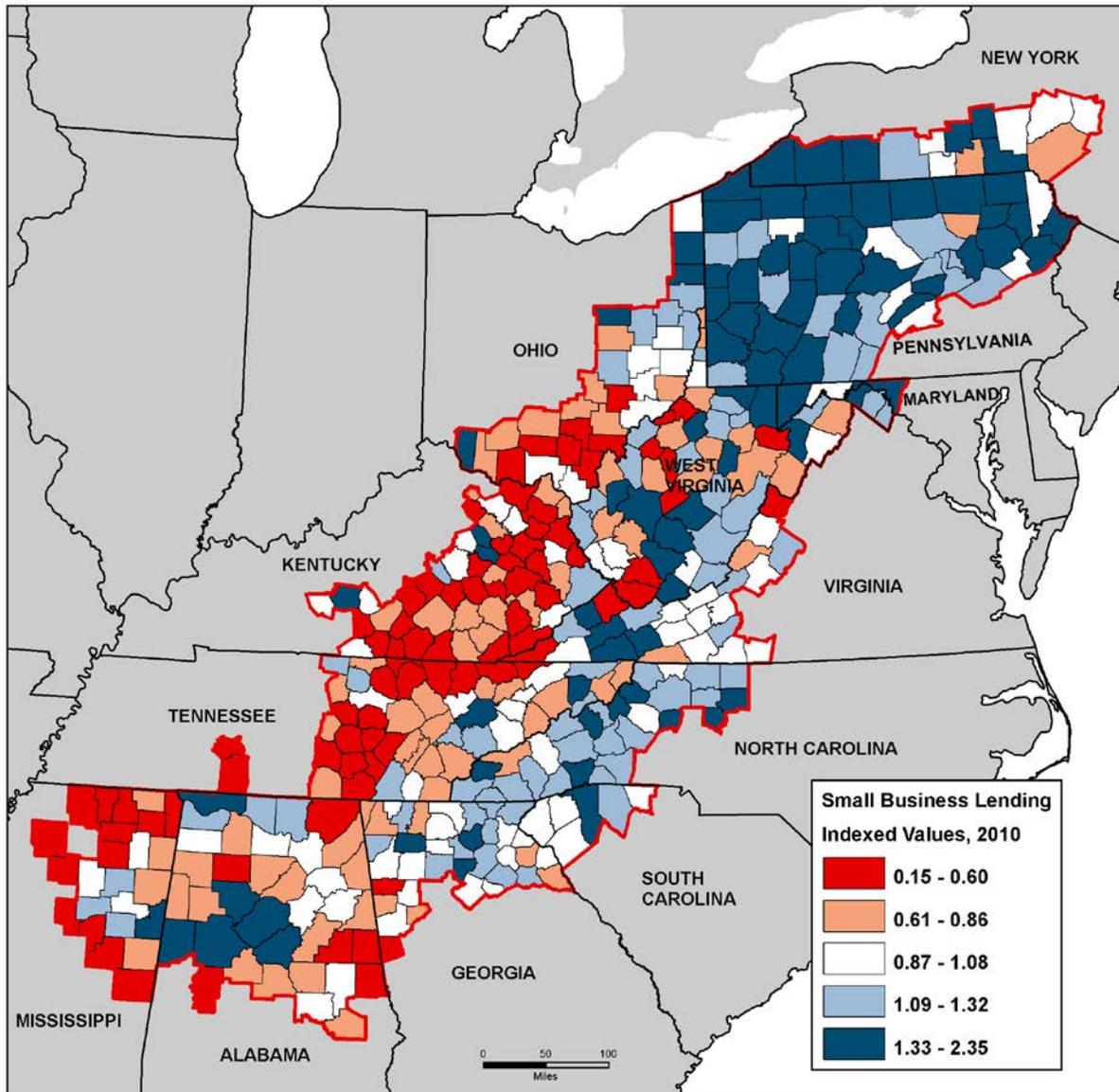
Count	420
Minimum	0.191
Maximum	2.133
Mean	0.988
Standard Deviation	0.321

Histogram of Indexed Values



Map 1-2: Small Business Lending Index, 2010

Ratio of Number of Small Business Loans to Small Businesses, Indexed Values (U.S. =1)



Map Title: Small Business Lending Index, 2010

Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012

Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2010

Statistics of Indexed Values

Count	420
Minimum	0.148
Maximum	2.35
Mean	0.978
Standard Deviation	0.393

Histogram of Indexed Values

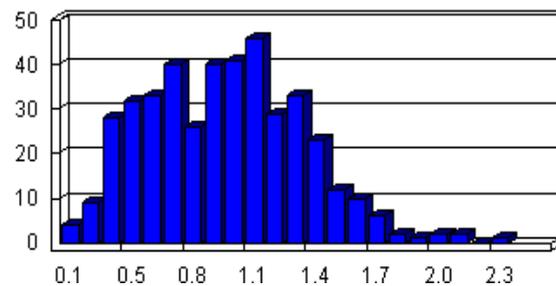


Figure 1-5: Ratio of Number of Small Business Loans to Small Businesses by State

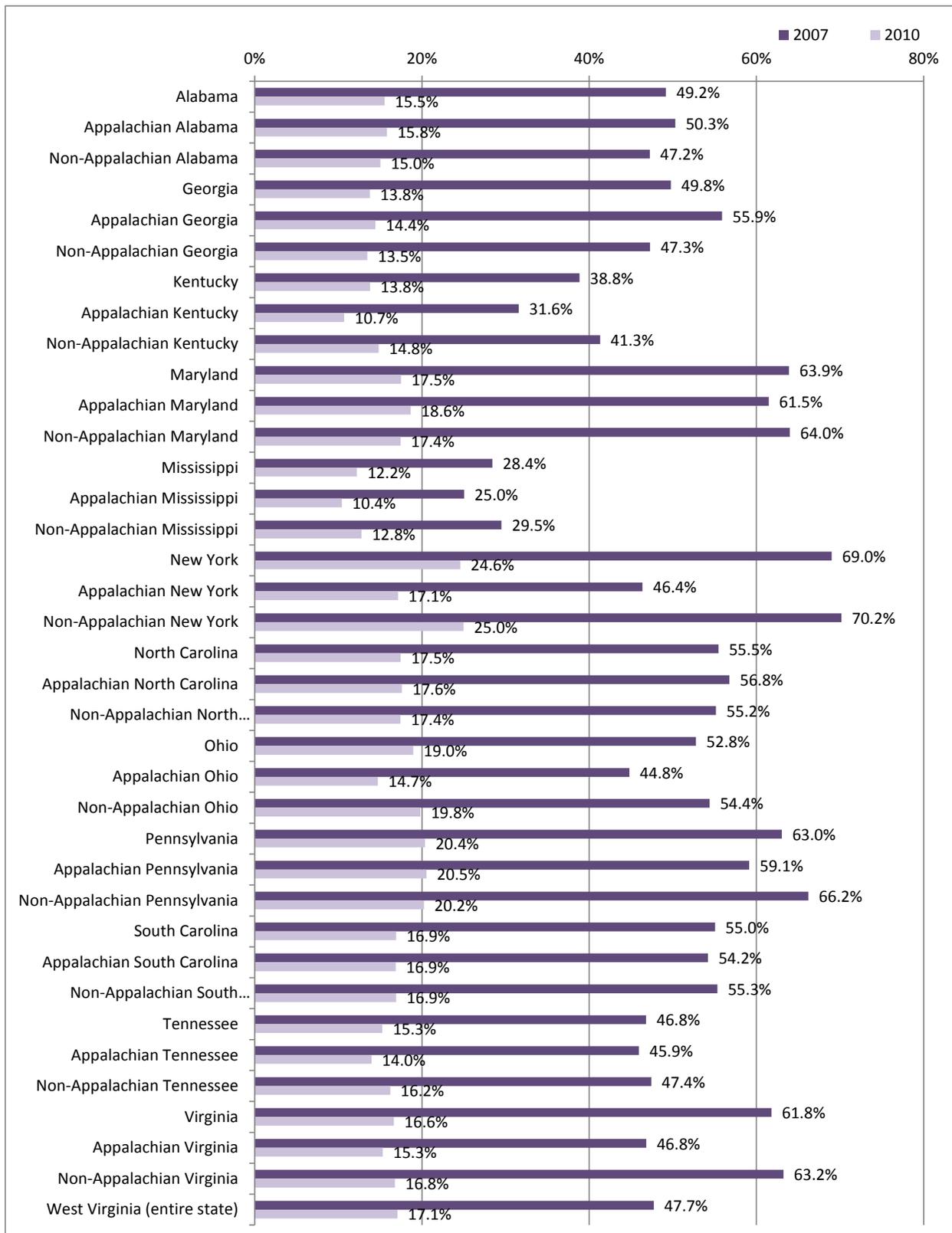


Table 1-3: Ratio of Small Business Loans to Small Businesses in Appalachia

	2007			2010		
	Number of Small Business Loans	Number of Small Businesses	Ratio of Small Business Loans to Small Businesses	Number of Small Business Loans	Number of Small Businesses	Ratio of Small Business Loans to Small Businesses
United States	13,437,779	21,808,201	61.6%	4,197,610	21,530,378	19.5%
Appalachian Region	808,877	1,607,645	50.3%	255,231	1,577,370	16.2%
Subregions						
Northern Appalachia	265,062	477,301	55.5%	93,452	482,014	19.4%
North Central Appalachia	59,519	128,944	46.2%	19,678	124,926	15.8%
Central Appalachia	38,372	115,266	33.3%	12,085	109,122	11.1%
South Central Appalachia	156,224	307,059	50.9%	47,760	304,728	15.7%
Southern Appalachia	289,700	579,075	50.0%	82,256	556,580	14.8%
County Types						
Large Metro (1 million + people)	233,652	395,470	59.1%	71,892	404,330	17.8%
Small Metro (< 1 million people)	325,376	613,330	53.1%	103,484	604,234	17.1%
Nonmetro, Adjacent to Large Metro	46,778	109,171	42.8%	14,654	103,911	14.1%
Nonmetro, Adjacent to Small Metro	136,848	301,104	45.4%	43,204	291,784	14.8%
Rural (Nonmetro, Nonadjacent)	66,223	188,570	35.1%	21,997	173,111	12.7%
Economic Status						
Distressed	25,190	89,777	28.1%	7,461	86,870	8.6%
At-Risk	52,515	145,503	36.1%	18,619	138,028	13.5%
Transitional	448,203	887,755	50.5%	147,088	905,985	16.2%
Competitive	176,965	305,587	57.9%	57,498	292,327	19.7%
Attainment	85,936	135,857	63.3%	24,565	154,160	15.9%
Alabama	154,821	314,870	49.2%	46,944	302,408	15.5%
Appalachian Alabama	100,348	199,561	50.3%	30,438	192,538	15.8%
Non-Appalachian Alabama	54,473	115,309	47.2%	16,506	109,870	15.0%
Georgia	412,517	828,977	49.8%	109,030	792,556	13.8%
Appalachian Georgia	133,604	239,021	172.3%	34,345	238,124	14.4%
Non-Appalachian Georgia	278,913	589,956	37.1%	74,685	554,432	13.5%
Kentucky	118,063	304,048	38.8%	41,075	297,724	13.8%
Appalachian Kentucky	24,487	77,542	31.6%	7,926	74,004	10.7%
Non-Appalachian Kentucky	93,576	226,506	41.3%	33,149	223,720	14.8%
Maryland	248,007	388,206	63.9%	68,107	389,579	17.5%
Appalachian Maryland	8,846	14,392	61.5%	2,796	14,993	18.6%
Non-Appalachian Maryland	239,161	373,814	64.0%	65,311	374,586	17.4%
Mississippi	82,053	288,779	28.4%	30,367	248,541	12.2%
Appalachian Mississippi	17,516	69,965	25.0%	6,079	58,339	10.4%
Non-Appalachian Mississippi	64,537	218,814	29.5%	24,288	190,202	12.8%
New York	969,471	1,404,794	69.0%	308,303	1,253,951	24.6%
Appalachian New York	31,216	67,312	46.4%	10,676	62,314	17.1%
Non-Appalachian New York	938,255	1,337,482	70.2%	297,627	1,191,637	25.0%
North Carolina	341,140	615,139	55.5%	108,924	624,133	17.5%
Appalachian North Carolina	64,128	112,966	56.8%	19,459	110,530	17.6%
Non-Appalachian North Carolina	277,012	502,173	55.2%	89,465	513,603	17.4%
Ohio	364,863	691,536	52.8%	126,530	667,427	19.0%
Appalachian Ohio	52,594	117,389	44.8%	16,697	113,316	14.7%
Non-Appalachian Ohio	312,269	574,147	54.4%	109,833	554,111	19.8%
Pennsylvania	448,313	711,343	63.0%	155,425	763,099	20.4%
Appalachian Pennsylvania	189,468	320,365	59.1%	68,219	332,120	20.5%
Non-Appalachian Pennsylvania	258,845	390,978	66.2%	87,206	430,979	20.2%
South Carolina	149,892	272,316	55.0%	45,139	266,975	16.9%
Appalachian South Carolina	38,232	70,528	54.2%	11,394	67,579	16.9%
Non-Appalachian South Carolina	111,660	201,788	55.3%	33,745	199,396	16.9%
Tennessee	199,969	427,304	46.8%	64,456	422,466	15.3%
Appalachian Tennessee	83,223	181,133	45.9%	24,897	178,251	14.0%
Non-Appalachian Tennessee	116,746	246,171	47.4%	39,559	244,215	16.2%
Virginia	298,547	483,178	61.8%	91,083	547,124	16.6%
Appalachian Virginia	19,900	42,503	46.8%	6,740	44,052	15.3%
Non-Appalachian Virginia	278,647	440,675	63.2%	84,343	503,072	16.8%
West Virginia (entire state)	45,315	94,968	47.7%	15,565	91,210	17.1%

For 2007, 10 of the 420 counties do not have economic status indicated as they were not part of the ARC in 2007. This is the case for all the tables and figures in the report.

Table 1-4: Disparity Ratios of Ratio of Small Business Loans to Small Businesses

	Year	Numerator	Denominator	Disparity Ratio
US vs. Appalachia	2007	61.6%	50.3%	1.22
	2010	19.5%	16.2%	1.21
Northern vs. Central	2007	55.5%	33.3%	1.67
	2010	19.4%	11.1%	1.75
Large Metro vs. Rural	2007	59.1%	35.1%	1.68
	2010	17.8%	12.7%	1.4
Attainment vs. Distressed	2007	63.3%	28.1%	2.25
	2010	15.9%	8.6%	1.85

Table 1-5: Average Small Business Loan Amount in Appalachia*

	2007			2010		
	\$, Amount of Small Business Loans	Number of Small Business Loans	\$, Average Loan Amount	\$, Amount of Small Business Loans	Number of Small Business Loans	\$, Average Loan Amount
United States	\$324,325,913	13,437,779	\$24.1	\$173,436,472	4,197,610	\$41.3
Appalachian Region	\$23,965,813	808,877	\$29.6	\$13,342,550	255,231	\$52.3
Subregions						
Northern Appalachia	\$7,282,956	265,062	\$27.5	\$5,110,722	93,452	\$54.7
North Central Appalachia	\$1,606,299	59,519	\$27.0	\$1,101,456	19,678	\$56.0
Central Appalachia	\$811,477	38,372	\$21.1	\$454,146	12,085	\$37.6
South Central Appalachia	\$5,050,897	156,224	\$32.3	\$2,615,336	47,760	\$54.8
Southern Appalachia	\$9,214,184	289,700	\$31.8	\$4,060,890	82,256	\$49.4
County Types						
Large Metro (1 million + people)	\$6,619,126	233,652	\$28.3	\$3,699,442	71,892	\$51.5
Small Metro (< 1 million people)	\$10,848,636	325,376	\$33.3	\$6,067,377	103,484	\$58.6
Nonmetro, Adjacent to Large Metro	\$1,152,371	46,778	\$24.6	\$656,345	14,654	\$44.8
Nonmetro, Adjacent to Small Metro	\$3,638,568	136,848	\$26.6	\$1,955,243	43,204	\$45.3
Rural (Nonmetro, Nonadjacent)	\$1,707,112	66,223	\$25.8	\$964,143	21,997	\$43.8
Economic Status						
Distressed	\$492,229	25,190	\$19.5	\$233,528	7,461	\$31.3
At-Risk	\$1,284,550	52,515	\$24.5	\$814,478	18,619	\$43.7
Transitional	\$13,722,200	448,203	\$30.6	\$7,728,094	147,088	\$52.5
Competitive	\$5,838,093	176,965	\$33.0	\$3,445,967	57,498	\$59.9
Attainment	\$2,170,027	85,936	\$25.3	\$1,120,483	24,565	\$45.6
Alabama	\$5,827,455	154,821	\$37.6	\$2,633,016	46,944	\$56.1
Appalachian Alabama	\$3,791,119	100,348	\$37.8	\$1,665,817	30,438	\$54.7
Non-Appalachian Alabama	\$2,036,336	54,473	\$37.4	\$967,199	16,506	\$58.6
Georgia	\$11,224,500	412,517	\$27.2	\$4,977,683	109,030	\$45.7
Appalachian Georgia	\$3,630,619	133,604	\$27.2	\$1,532,318	34,345	\$44.6
Non-Appalachian Georgia	\$7,593,881	278,913	\$27.2	\$3,445,365	74,685	\$46.1
Kentucky	\$3,185,311	118,063	\$27.0	\$2,133,357	41,075	\$51.9
Appalachian Kentucky	\$499,233	24,487	\$20.4	\$280,712	7,926	\$35.4
Non-Appalachian Kentucky	\$2,686,078	93,576	\$28.7	\$1,852,645	33,149	\$55.9
Maryland	\$6,040,036	248,007	\$24.4	\$2,841,401	68,107	\$41.7
Appalachian Maryland	\$271,031	8,846	\$30.6	\$175,767	2,796	\$62.9
Non-Appalachian Maryland	\$5,769,005	239,161	\$24.1	\$2,665,634	65,311	\$40.8
Mississippi	\$2,529,250	82,053	\$30.8	\$1,515,669	30,367	\$49.9
Appalachian Mississippi	\$551,393	17,516	\$31.5	\$272,295	6,079	\$44.8
Non-Appalachian Mississippi	\$1,977,857	64,537	\$30.6	\$1,243,374	24,288	\$51.2
New York	\$19,914,993	969,471	\$20.5	\$9,643,636	308,303	\$31.3
Appalachian New York	\$721,522	31,216	\$23.1	\$383,744	10,676	\$35.9
Non-Appalachian New York	\$19,193,471	938,255	\$20.5	\$9,259,892	297,627	\$31.1
North Carolina	\$11,537,683	341,140	\$33.8	\$5,633,301	108,924	\$51.7
Appalachian North Carolina	\$2,045,398	64,128	\$31.9	\$947,159	19,459	\$48.7
Non-Appalachian North Carolina	\$9,492,285	277,012	\$34.3	\$4,686,142	89,465	\$52.4
Ohio	\$10,142,341	364,863	\$27.8	\$7,875,456	126,530	\$62.2
Appalachian Ohio	\$1,160,385	52,594	\$22.1	\$863,491	16,697	\$51.7
Non-Appalachian Ohio	\$8,981,956	312,269	\$28.8	\$7,011,965	109,833	\$63.8
Pennsylvania	\$13,184,892	448,313	\$29.4	\$8,033,802	155,425	\$51.7
Appalachian Pennsylvania	\$5,519,598	189,468	\$29.1	\$3,915,651	68,219	\$57.4
Non-Appalachian Pennsylvania	\$7,665,294	258,845	\$29.6	\$4,118,151	87,206	\$47.2
South Carolina	\$4,776,873	149,892	\$31.9	\$2,294,399	45,139	\$50.8
Appalachian South Carolina	\$1,241,053	38,232	\$32.5	\$590,460	11,394	\$51.8
Non-Appalachian South Carolina	\$3,535,820	111,660	\$31.7	\$1,703,939	33,745	\$50.5
Tennessee	\$6,511,859	199,969	\$32.6	\$3,836,647	64,456	\$59.5
Appalachian Tennessee	\$2,749,951	83,223	\$33.0	\$1,500,176	24,897	\$60.3
Non-Appalachian Tennessee	\$3,761,908	116,746	\$32.2	\$2,336,471	39,559	\$59.1
Virginia	\$7,961,982	298,547	\$26.7	\$4,116,094	91,083	\$45.2
Appalachian Virginia	\$509,108	19,900	\$25.6	\$309,375	6,740	\$45.9
Non-Appalachian Virginia	\$7,452,874	278,647	\$26.7	\$3,806,719	84,343	\$45.1
West Virginia (entire state)	\$1,275,403	45,315	\$28.1	\$905,585	15,565	\$58.2

*Loan amounts are in 1,000s

1.3.2 LENDING TRENDS FOR THE SMALLEST BUSINESSES

The Community Reinvestment Act (CRA) small business loan data can report separately the lending for small businesses with revenues less than \$1 million.⁵ In addition, the demographic data provided by Dun and Bradstreet provides information on the number of small businesses on a county level that have revenues less than \$1 million. Thus, ratios assessing access to the smallest businesses can be computed by dividing the number of loans to small businesses with revenues under \$1 million by the number of small businesses with revenues under \$1 million.

One noteworthy caveat is that the CRA small business loan data contain records for which the revenue size of the small business is unknown. Thus, the data are not precise regarding the number of loans to the smallest businesses with revenues less than \$1 million.

The disparities between the nation and Appalachia are narrower for the smallest businesses. When considering all small businesses, about 61 percent and 50.3 percent of the small businesses in the nation and in Appalachia, respectively, received loans during 2007 (see Table 1-3). In contrast, almost the same portion of the smallest businesses received loans when comparing Appalachia and the nation in 2007 – about 36.5 percent in the nation and 32.8 percent in Appalachia (see Figure 1-6). The sharp contraction in lending from 2007 through 2010 resulted in reducing this disparity, even though a much lower percentage of the smallest businesses received loans in 2010 (about 8 percent of the smallest businesses in both the nation and in Appalachia).

Just as with small businesses overall, the smallest businesses with revenues under \$1 million experienced the most access to credit in Northern Appalachia and the least access in Central Appalachia during 2007 and 2010 (see Figure 1-6). Urbanized areas had moderately more access to credit in 2007. By 2010, however, the dramatic decrease in lending almost eliminated disparities resulting in 7 to 8 percent of the smallest businesses receiving loans in urban and rural counties (see Figure 1-7 and Table 1-7). For counties by economic status, disparities are significant in 2007 and narrowed by 2010 (see Figure 1-8 and Table 1-7).

In 2007, the smallest businesses in Appalachia Georgia had the best access to loans (36.8 percent received loans) followed closely by their counterparts in North Carolina, Mississippi, and Pennsylvania (see Figure 1-9). The smallest businesses in Appalachian Kentucky had the least access to loans (24.5 percent). By 2010, differences narrowed considerably with 6 to 9 percent of the smallest businesses receiving loans with the exception of Pennsylvania where 12 percent received loans.

The maps of the smallest business loan index (see Maps 1-3 and 1-4) reveal a pattern that is similar to the overall small business loan index. Just as with overall small business lending, access is most favorable compared to the nation for the Northern Appalachian subregion and for the counties along the eastern boundary of Appalachia. Kentucky and Tennessee counties again appear to have the least favorable

⁵ While more detailed data for lending to businesses with smaller revenue categories are desirable and will become available in future years, the current data allow for a comparison between credit access for the “larger” and “smaller” of the small businesses. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandates improvements to the publicly available small business loan data including information on the race and gender of the small business owner and more detail on revenue size of the small business.

access compared to the nation. The other striking trend is that there is a growth in the “darkest blue” counties in Pennsylvania and West Virginia in 2010. Although lending to the smallest businesses plummeted in 2010, more counties in the Appalachian portions of Pennsylvania and West Virginia experienced favorable access compared to the nation in 2010.

Figure 1-6: Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million by Region

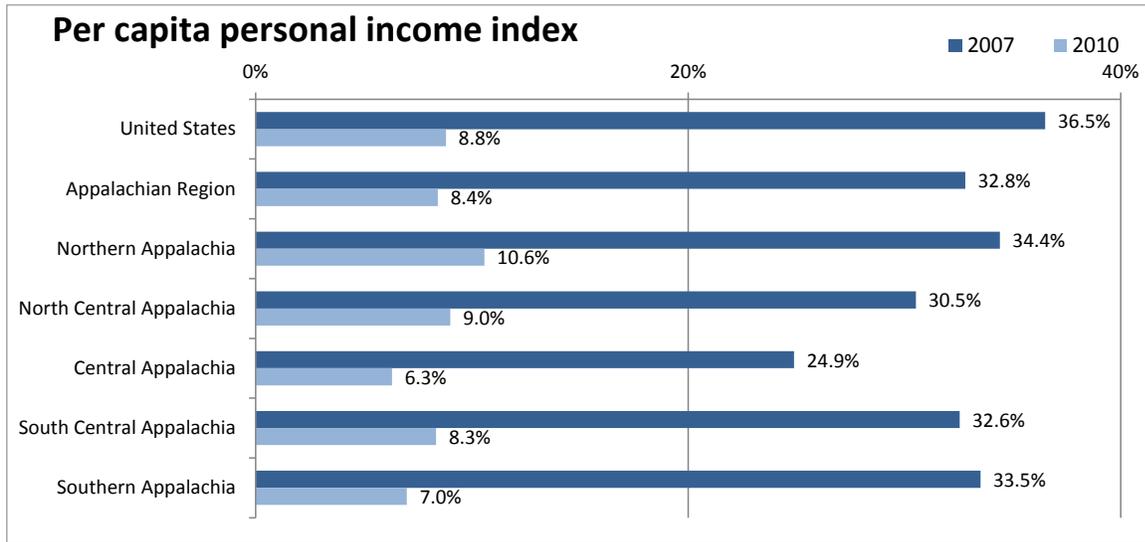


Figure 1-7: Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million by County Type

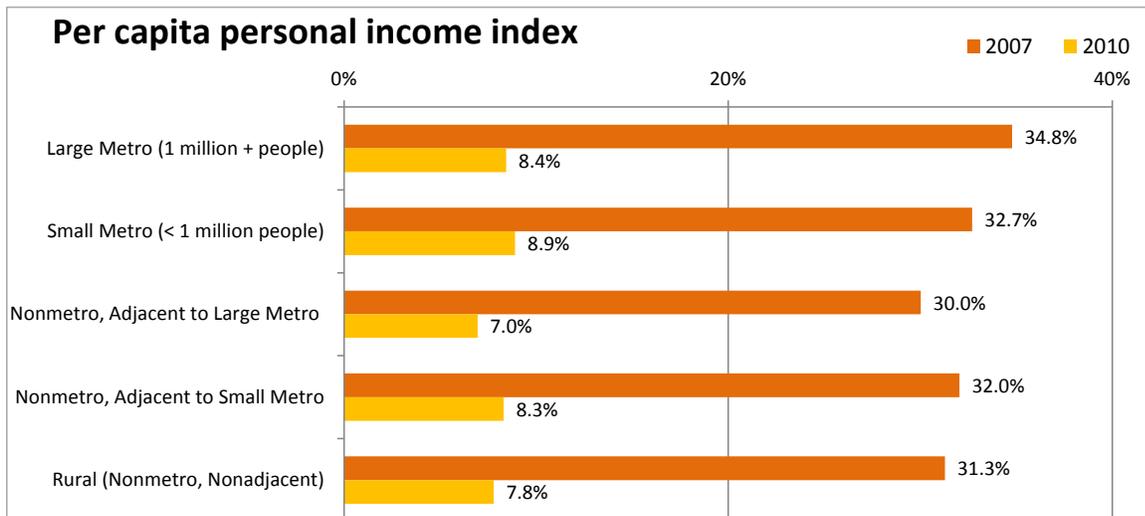
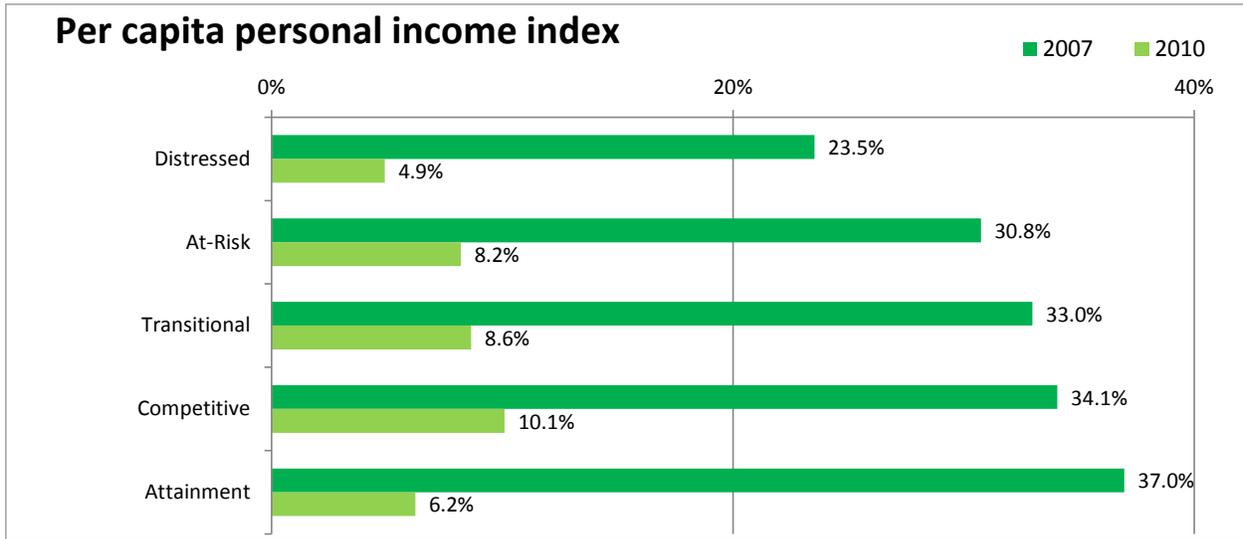
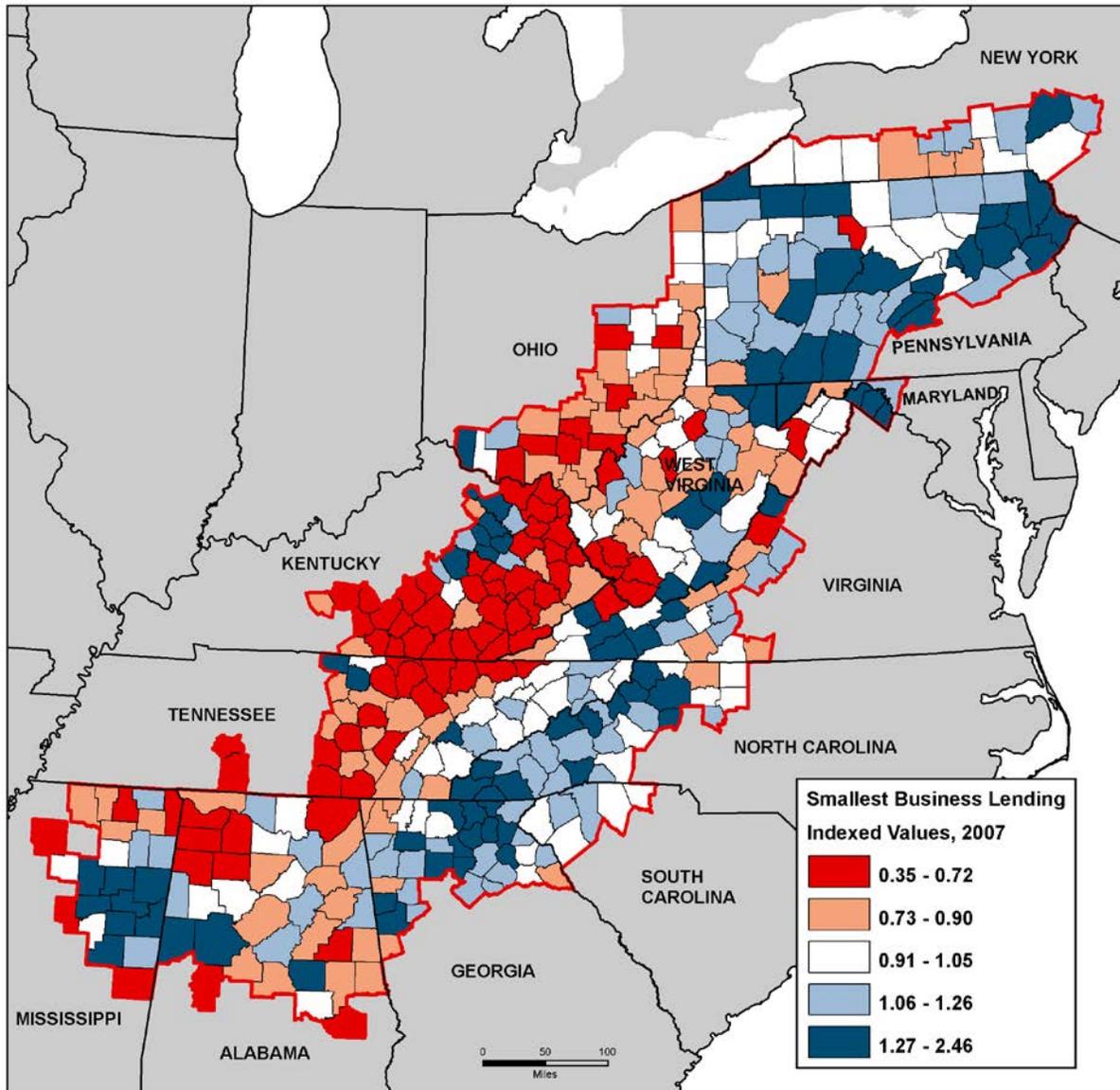


Figure 1-8: Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million by Economic Status



Map 1-3: Smallest Business Lending Index, 2007

Ratio of Loans to Smallest Business to Number of Smallest Businesses, Indexed Values (U.S. =1)
 Smallest businesses are defined as businesses with revenue less than \$1 million

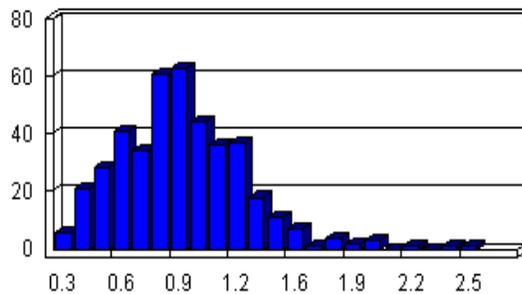


Map Title: Smallest Business Lending Index, 2007
 Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012
 Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2007

Statistics of Indexed Values

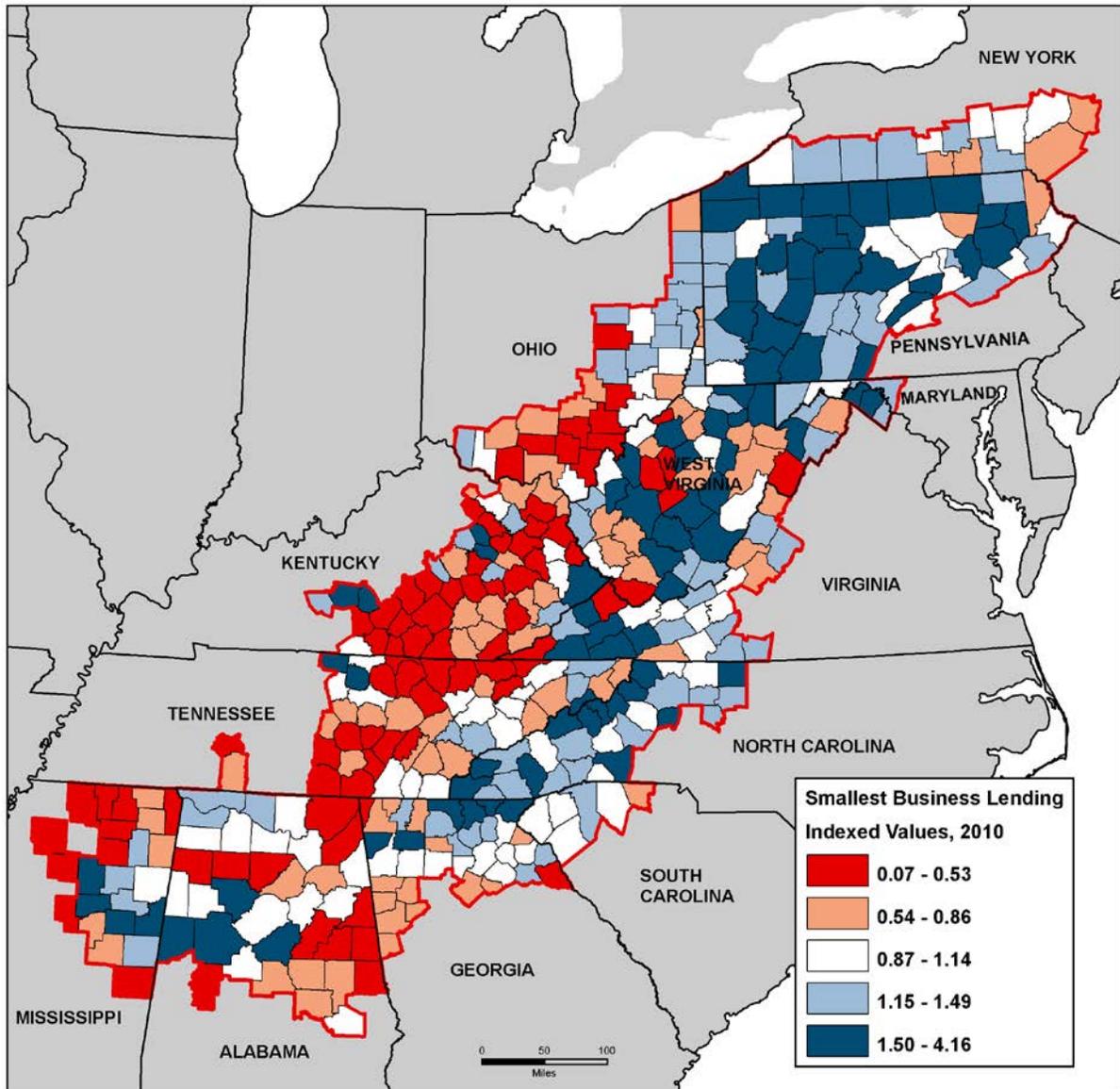
Count	420
Minimum	0.346
Maximum	2.46
Mean	1.00
Standard Deviation	0.325

Histogram of Indexed Values



Map 1-4: Smallest Business Lending Index, 2010

Ratio of Loans to Smallest Business to Number of Smallest Businesses, Indexed Values (U.S. =1)
 Smallest businesses are defined as businesses with revenue less than \$1 million



Map Title: Smallest Business Lending Index, 2010
 Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012
 Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2010

Statistics of Indexed Values

Count	420
Minimum	0.07
Maximum	4.16
Mean	1.07
Standard Deviation	0.582

Histogram of Indexed Values

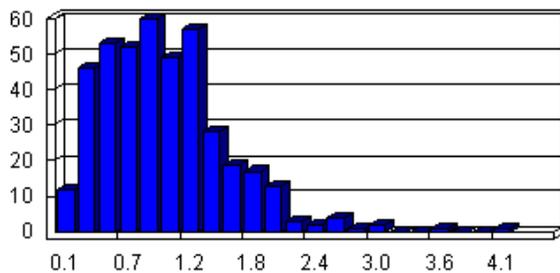


Figure 1-9: Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million by State

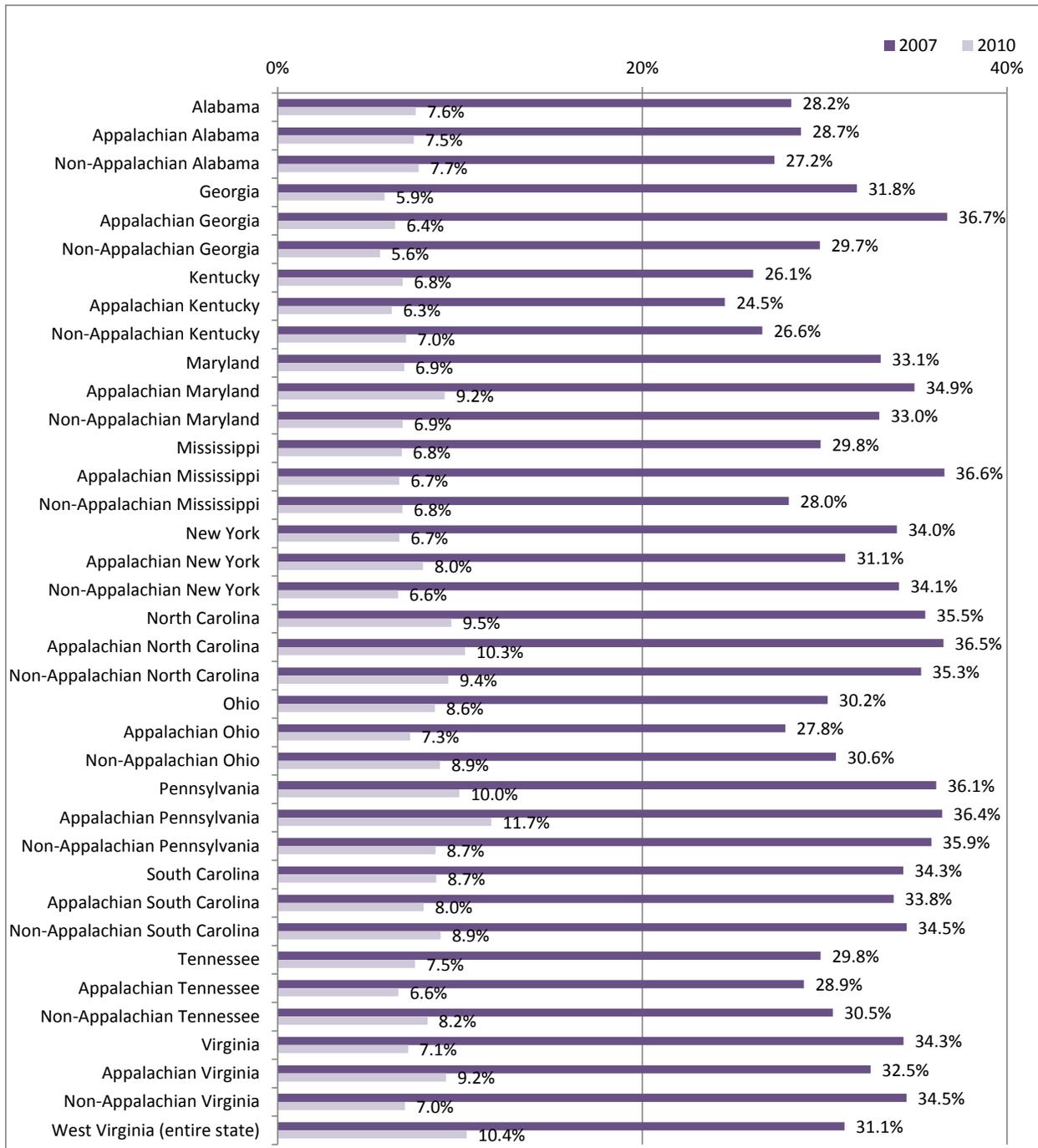


Table 1-6: Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million in Appalachia

	2007			2010		
	Number of Loans to Small Businesses	Number of Small Businesses	Ratio of Small Business Loans to the Number of Small Businesses	Number of Loans to Small Businesses	Number of Small Businesses	Ratio of Small Business Loans to the Number of Small Businesses
United States	5,142,053	14,082,734	36.5%	1,478,317	16,795,089	8.8%
Appalachian Region	319,347	973,071	32.8%	102,596	1,218,466	8.4%
Subregions						
Northern Appalachia	107,112	311,233	34.4%	38,038	359,519	10.6%
North Central Appalachia	23,437	76,774	30.5%	8,152	90,545	9.0%
Central Appalachia	15,720	63,130	24.9%	5,223	82,854	6.3%
South Central Appalachia	62,905	193,221	32.6%	20,026	240,039	8.3%
Southern Appalachia	110,173	328,713	33.5%	31,157	445,509	7.0%
County Types						
Large Metro (1 million + people)	88,497	254,432	34.8%	26,766	317,198	8.4%
Small Metro (< 1 million people)	126,037	385,401	32.7%	41,068	461,194	8.9%
Nonmetro, Adjacent to Large Metro	18,791	62,582	30.0%	5,647	81,227	7.0%
Nonmetro, Adjacent to Small Metro	57,161	178,405	32.0%	18,751	225,813	8.3%
Rural (Nonmetro, Nonadjacent)	28,861	92,251	31.3%	10,364	133,034	7.8%
Economic Status						
Distressed	10,183	43,272	23.5%	3,267	66,620	4.9%
At-Risk	22,782	74,086	30.8%	8,690	105,956	8.2%
Transitional	178,893	542,406	33.0%	60,459	698,994	8.6%
Competitive	67,648	198,577	34.1%	22,370	221,525	10.1%
Attainment	32,416	87,692	37.0%	7,810	125,371	6.2%
Alabama	50,408	178,914	28.2%	17,740	234,551	7.6%
Appalachian Alabama	32,847	114,451	28.7%	11,281	151,024	7.5%
Non-Appalachian Alabama	17,561	64,463	27.2%	6,459	83,527	7.7%
Georgia	160,190	504,275	31.8%	37,094	632,155	5.9%
Appalachian Georgia	53,926	146,864	36.7%	12,589	195,563	6.4%
Non-Appalachian Georgia	106,264	357,411	29.7%	24,505	436,592	5.6%
Kentucky	44,861	172,029	26.1%	15,867	231,720	6.8%
Appalachian Kentucky	10,329	42,113	24.5%	3,550	56,770	6.3%
Non-Appalachian Kentucky	34,532	129,916	26.6%	12,317	174,950	7.0%
Maryland	88,463	267,506	33.1%	21,254	306,480	6.9%
Appalachian Maryland	3,348	9,585	34.9%	1,014	11,065	9.2%
Non-Appalachian Maryland	85,115	257,921	33.0%	20,240	295,415	6.9%
Mississippi	33,042	110,970	29.8%	13,526	199,011	6.8%
Appalachian Mississippi	8,299	22,696	36.6%	3,135	47,041	6.7%
Non-Appalachian Mississippi	24,743	88,274	28.0%	10,391	151,970	6.8%
New York	319,773	941,768	34.0%	64,059	960,637	6.7%
Appalachian New York	12,302	39,522	31.1%	3,731	46,797	8.0%
Non-Appalachian New York	307,471	902,246	34.1%	60,328	913,840	6.6%
North Carolina	143,591	404,308	35.5%	46,834	491,798	9.5%
Appalachian North Carolina	27,713	75,894	36.5%	9,054	88,119	10.3%
Non-Appalachian North Carolina	115,878	328,414	35.3%	37,780	403,679	9.4%
Ohio	133,031	441,066	30.2%	43,439	504,178	8.6%
Appalachian Ohio	20,051	72,027	27.8%	6,356	87,471	7.3%
Non-Appalachian Ohio	112,980	369,039	30.6%	37,083	416,707	8.9%
Pennsylvania	172,515	477,667	36.1%	57,407	576,195	10.0%
Appalachian Pennsylvania	78,284	214,837	36.4%	28,896	246,758	11.7%
Non-Appalachian Pennsylvania	94,231	262,830	35.9%	28,511	329,437	8.7%
South Carolina	60,073	175,055	34.3%	17,938	206,280	8.7%
Appalachian South Carolina	15,101	44,702	33.8%	4,152	51,881	8.0%
Non-Appalachian South Carolina	44,972	130,353	34.5%	13,786	154,399	8.9%
Tennessee	75,617	253,961	29.8%	24,798	329,096	7.5%
Appalachian Tennessee	31,201	108,112	28.9%	9,272	140,043	6.6%
Non-Appalachian Tennessee	44,416	145,849	30.5%	15,526	189,053	8.2%
Virginia	109,072	317,783	34.3%	30,539	427,157	7.1%
Appalachian Virginia	8,356	25,697	32.5%	3,083	33,379	9.2%
Non-Appalachian Virginia	100,716	292,086	34.5%	27,456	393,778	7.0%
West Virginia (entire state)	17,590	56,571	31.1%	6,483	62,555	10.4%

Note: Small businesses here are defined as businesses with revenue less than \$1 million.

Table 1-7: Disparity Ratios of Ratio of Loans to Small Business with Revenue Less than \$1 Million to Small Businesses with Revenue Less than \$1 Million

	Year	Numerator	Denominator	Disparity Ratio
US vs. Appalachia	2007	36.51%	32.82%	1.11
	2010	8.80%	8.42%	1.05
Northern vs. Central	2007	34.42%	24.90%	1.38
	2010	10.58%	6.30%	1.68
Large Metro vs. Rural	2007	34.78%	31.29%	1.11
	2010	8.44%	7.79%	1.08
Attainment vs. Distressed	2007	36.97%	23.53%	1.57
	2010	6.23%	4.90%	1.27

1.3.3 SMALL BUSINESS LENDING IN LOW- AND MODERATE-INCOME TRACTS

The contraction in credit for all small businesses during the recession was so sharp that disparities between small businesses in low- and moderate-income (LMI) tracts and their counterparts narrowed by 2010.⁶ In 2007, the gap between the percentage of loans received by small businesses overall and in low- and moderate-income tracts was about nine percentage points. By 2010, this gap was reduced to less than two percentage points. About 16.2 percent of all small businesses in Appalachia received loans in 2010 while 13.9 percent of small businesses in low- and moderate-income tracts received loans (see Figure 1-1 and Figure 1-10).

In 2007 and 2010, small businesses in low- and moderate-income tracts in Northern Appalachia experienced the most access to credit while those in Central Appalachia experienced the least access. The disparity remained significant in 2010; 17 percent of small businesses in low- and moderate-income tracts in Northern Appalachia received loans while 8.3 percent of their counterparts in Central Appalachia received loans during 2010 (see Figure 1-10).

Disparities also remained in 2010 when considering lending in low- and moderate-income tracts by degree of urbanization and economic status of county (see Figure 1-11 and 1-12). Small businesses in low- and moderate-income tracts in rural counties and distressed counties experienced considerably less access to loans in both years compared to other categories of counties, even those counties such as at-risk counties with similar economic conditions or degree of urbanization.

In 2007, small businesses in low- and moderate-income tracts in Appalachian Maryland received the most loans (55 percent) followed by their counterparts in North Carolina, Pennsylvania, and Georgia. Small businesses in Appalachia Mississippi experienced the least access to loans. By 2010, the disparities had narrowed somewhat with lending in low- and moderate-income tracts plummeting (see Figure 1-13). The index maps for small business lending in LMI tracts display patterns consistent with the index maps for small business lending overall and for the smallest business lending. Northern Appalachia is the sub region with the most access compared to the nation and counties on the eastern boundary also tend to have the most access.

⁶ LMI tracts are defined per the CRA regulation as census tracts whose median income are less than or equal to 80 percent of area median income.

Figure 1-10: Ratio of Small Business Loans to Total Businesses in LMI Tracts by Region

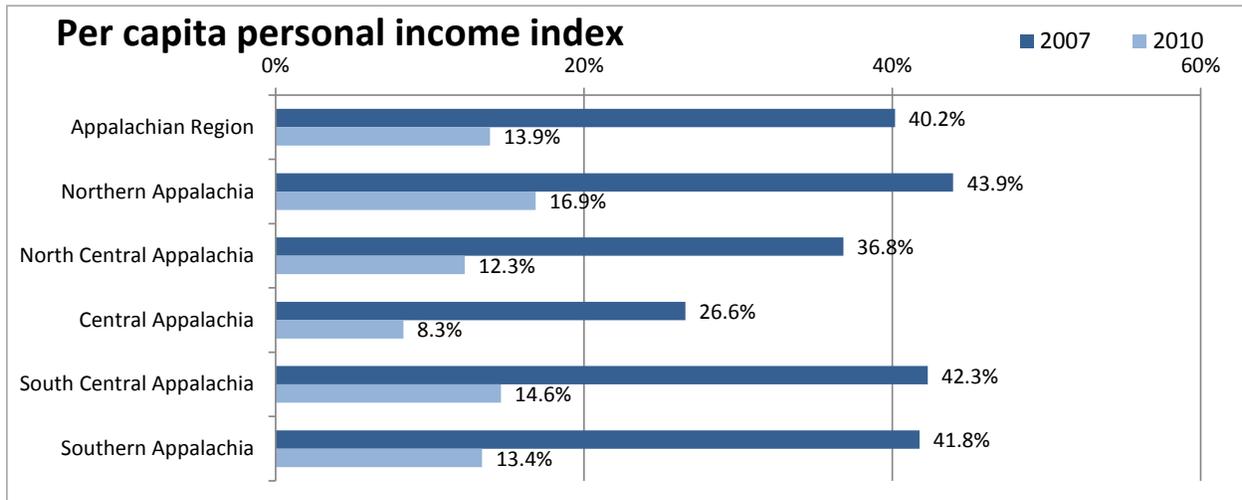


Figure 1-11: Ratio of Small Business Loans to Total Businesses in LMI Tracts by County Type

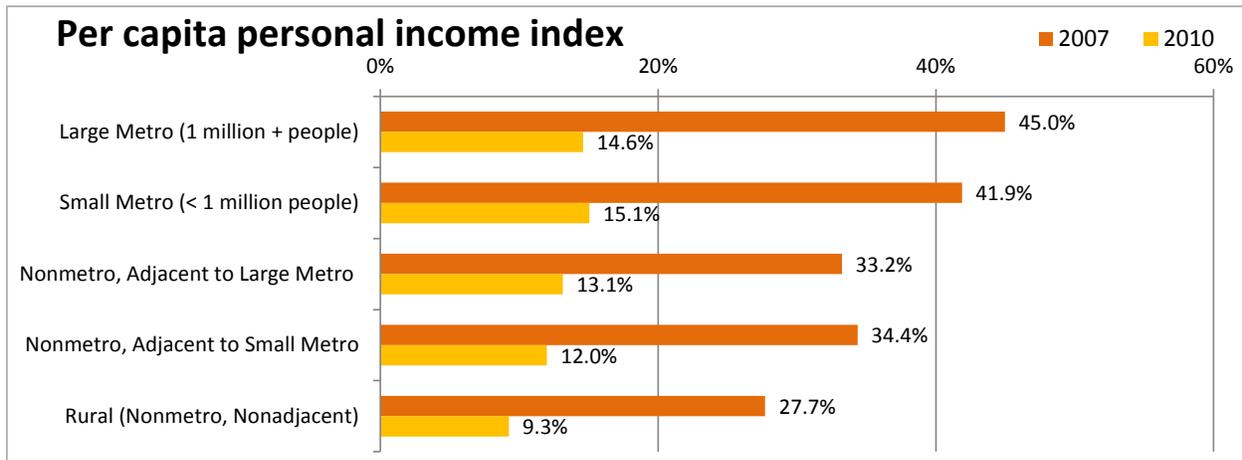
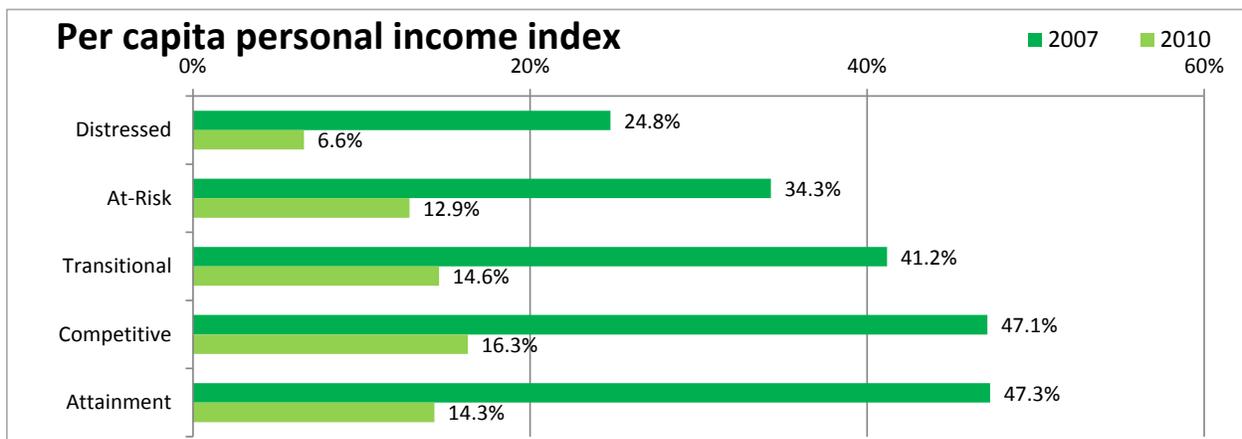
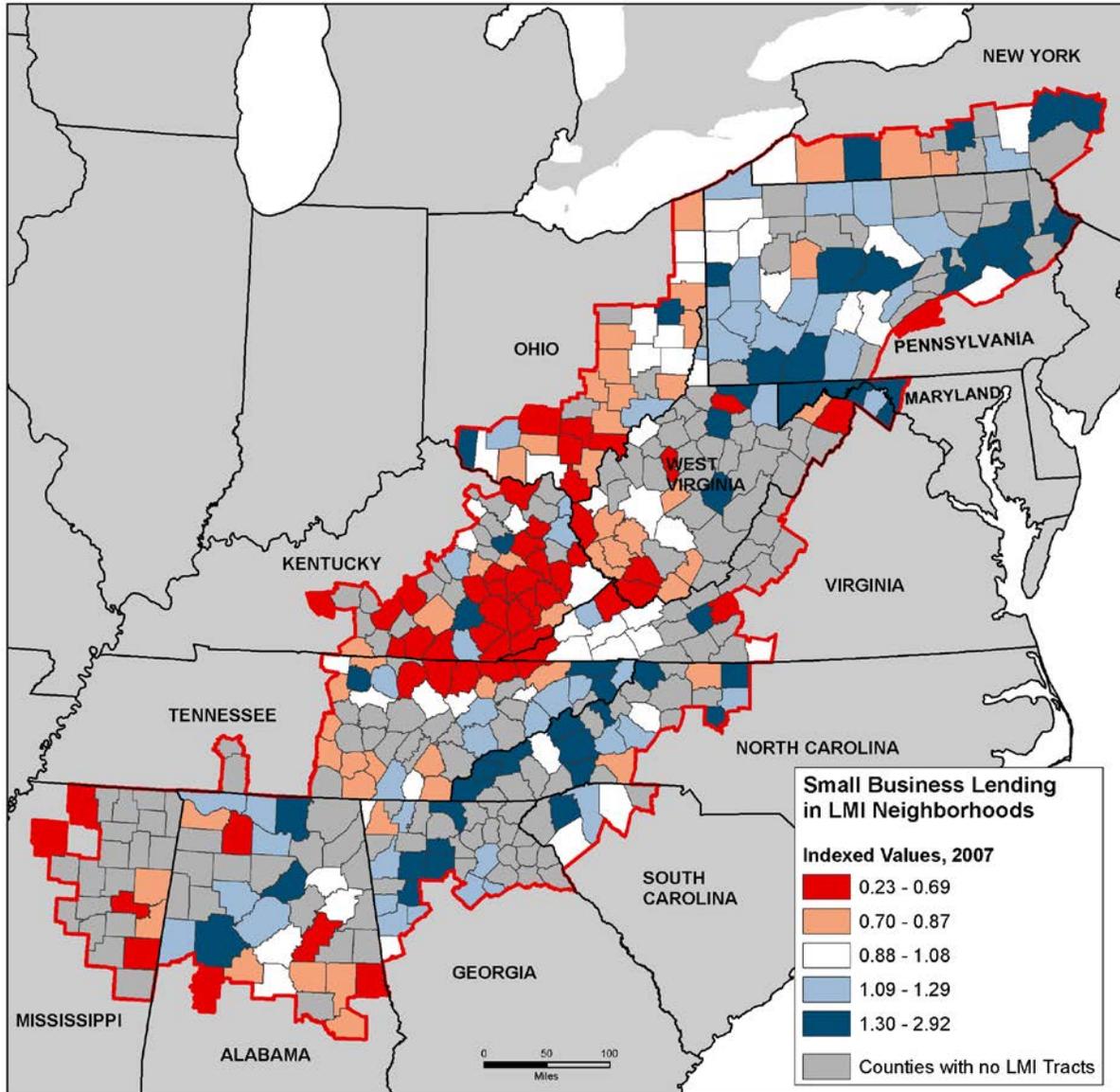


Figure 1-12: Ratio of Small Business Loans to Total Businesses in LMI Tracts by Economic Status



Map 1-5: Small Business Lending in LMI Tracts Index, 2007*

Ratio of Small Business Loans to Small Business in LMI Tracts, Indexed Values (Appalachia = 1)



Map Title: Small Business Lending in LMI Neighborhoods, 2007

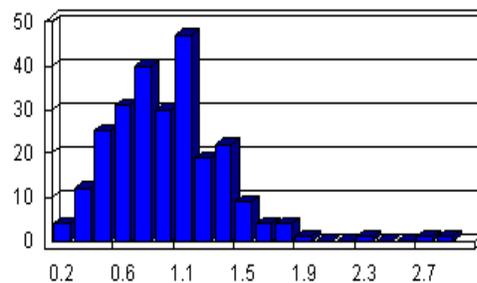
Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012

Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2007

Statistics of Indexed Values

Count	251
Minimum	0.226
Maximum	2.92
Mean	1.01
Standard Deviation	0.382

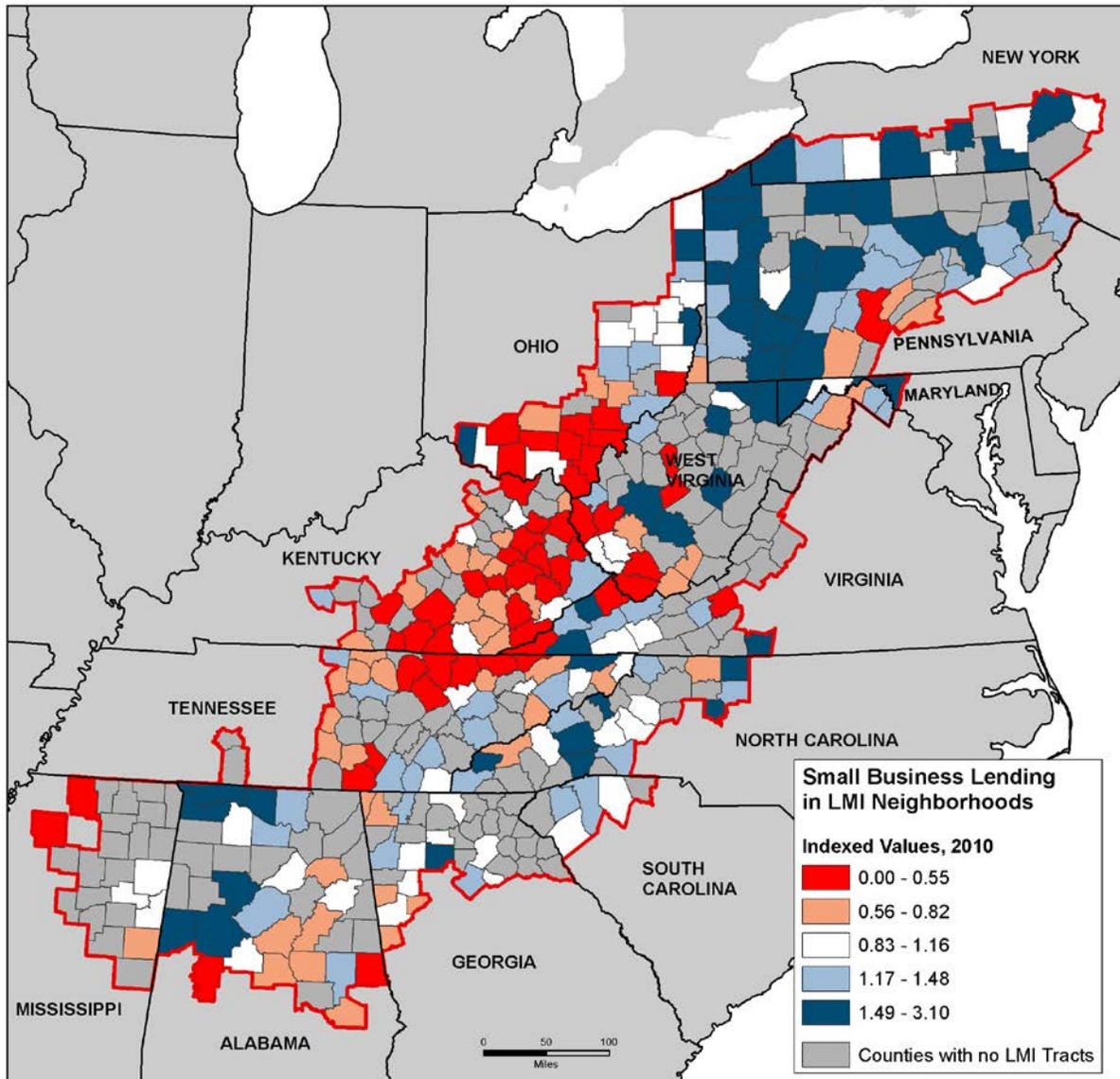
Histogram of Indexed Values



*Counties grayed out in the map have no LMI census tracts based on CRA definition.

Map 1-6: Small Business Lending in LMI Tracts Index, 2010*

Ratio of Small Business Loans to Small Business in LMI Tracts, Indexed Values (Appalachia = 1)

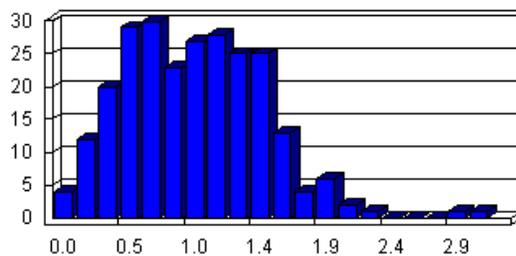


Map Title: Small Business Lending in LMI Neighborhoods, 2010
 Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012
 Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2010

Statistics of Indexed Values

Count	251
Minimum	0
Maximum	3.1
Mean	1.026
Standard Deviation	0.502

Histogram of Indexed Values



*Counties grayed out in the map have no LMI census tracts based on CRA definition.

Figure 1-13: Ratio of Small Business Loans to Total Businesses in LMI Tracts by State

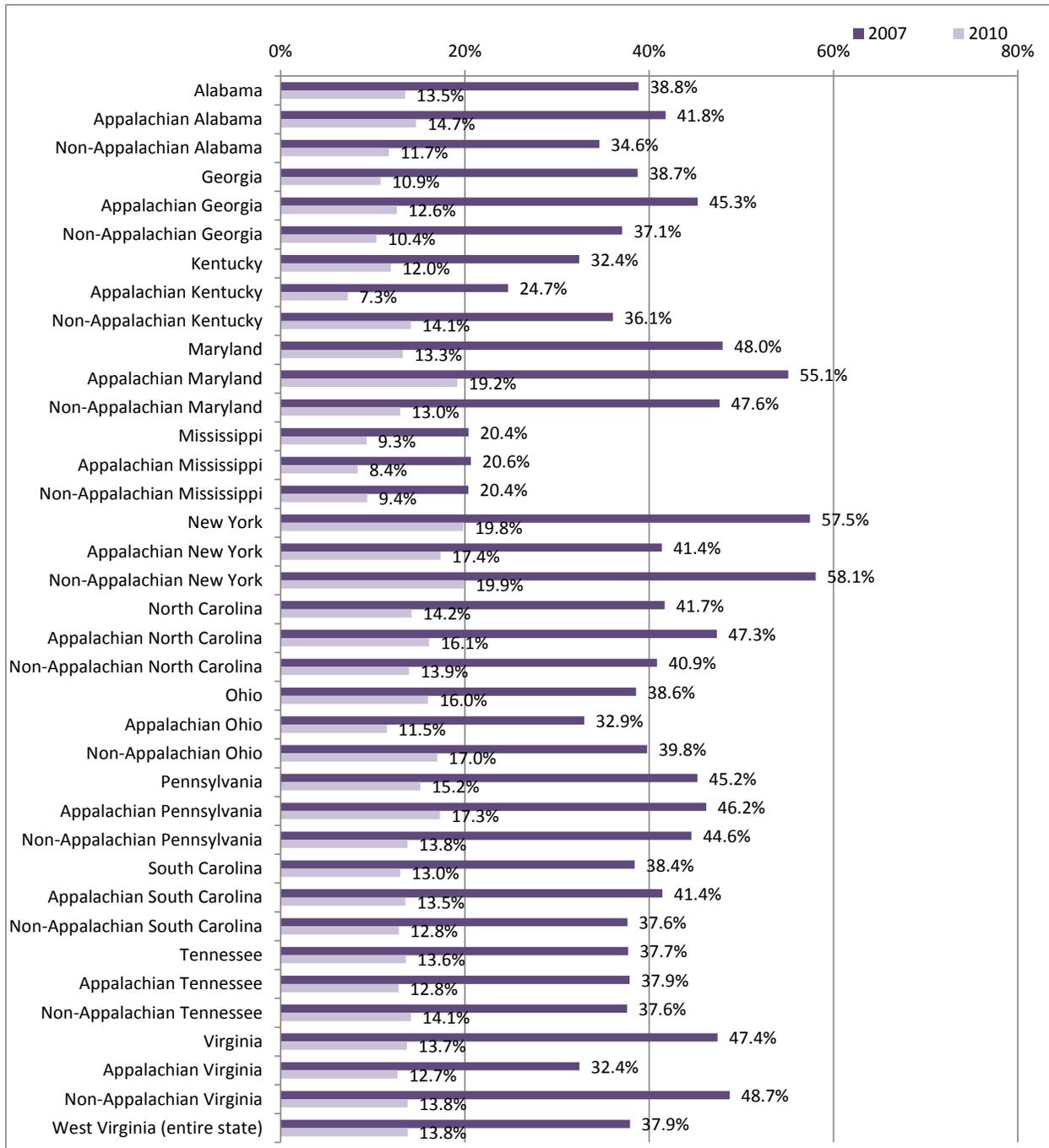


Table 1-8: Ratio of Small Business Loans to Total Businesses in Low-Moderate Income (LMI) Tracts in Appalachia

	2007			2010		
	Number of Small Business Loans in LMI Tracts	Number of Small Businesses in LMI Tracts	Ratio of Small Business Loans to Small Businesses in LMI Tracts	Number of Small Business Loans in LMI Tracts	Number of Small Businesses in LMI Tracts	Ratio of Small Business Loans to Small Businesses in LMI Tracts
Appalachian Region	122,030	303,787	40.2%	38,947	280,212	13.9%
Subregions						
Northern Appalachia	39,921	90,846	43.9%	14,315	84,887	16.9%
North Central Appalachia	10,435	28,342	36.8%	3,259	26,594	12.3%
Central Appalachia	9,889	37,224	26.6%	2,820	34,038	8.3%
South Central Appalachia	19,259	45,540	42.3%	6,163	42,171	14.6%
Southern Appalachia	42,526	101,835	41.8%	12,390	92,522	13.4%
County Types						
Large Metro (1 million + people)	42,116	93,654	45.0%	12,865	88,093	14.6%
Small Metro (< 1 million people)	55,429	132,355	41.9%	18,174	120,656	15.1%
Nonmetro, Adjacent to Large Metro	3,824	11,504	33.2%	1,354	10,310	13.1%
Nonmetro, Adjacent to Small Metro	11,863	34,524	34.4%	3,910	32,611	12.0%
Rural (Nonmetro, Nonadjacent)	8,798	31,750	27.7%	2,644	28,542	9.3%
Economic Status						
Distressed	7,908	31,925	24.8%	2,000	30,339	6.6%
At-Risk	10,808	31,518	34.3%	3,746	29,142	12.9%
Transitional	62,629	152,098	41.2%	20,941	143,360	14.6%
Competitive	31,672	67,185	47.1%	9,686	59,410	16.3%
Attainment	6,641	14,040	47.3%	2,574	17,961	14.3%
Alabama						
Appalachian Alabama	18,419	44,098	41.8%	5,880	40,027	14.7%
Non-Appalachian Alabama	10,528	30,435	34.6%	3,192	27,188	11.7%
Georgia						
Appalachian Georgia	17,448	38,545	45.3%	4,518	35,876	12.6%
Non-Appalachian Georgia	55,780	150,447	37.1%	14,017	134,929	10.4%
Kentucky						
Appalachian Kentucky	5,288	21,433	24.7%	1,412	19,404	7.3%
Non-Appalachian Kentucky	16,339	45,317	36.1%	5,886	41,644	14.1%
Maryland						
Appalachian Maryland	2,195	3,984	55.1%	755	3,938	19.2%
Non-Appalachian Maryland	40,847	85,734	47.6%	10,417	80,321	13.0%
Mississippi						
Appalachian Mississippi	1,283	6,216	20.6%	420	5,017	8.4%
Non-Appalachian Mississippi	12,378	60,765	20.4%	4,699	49,954	9.4%
New York						
Appalachian New York	4,800	11,604	41.4%	1,723	9,925	17.4%
Non-Appalachian New York	177,381	305,499	58.1%	53,229	267,226	19.9%
North Carolina						
Appalachian North Carolina	7,172	15,151	47.3%	2,264	14,047	16.1%
Non-Appalachian North Carolina	41,716	102,118	40.9%	13,210	94,783	13.9%
Ohio						
Appalachian Ohio	8,834	26,811	32.9%	2,818	24,474	11.5%
Non-Appalachian Ohio	49,662	124,833	39.8%	18,782	110,554	17.0%
Pennsylvania						
Appalachian Pennsylvania	27,758	60,107	46.2%	9,921	57,412	17.3%
Non-Appalachian Pennsylvania	38,389	86,103	44.6%	12,115	87,994	13.8%
South Carolina						
Appalachian South Carolina	5,376	12,976	41.4%	1,572	11,602	13.5%
Non-Appalachian South Carolina	18,508	49,173	37.6%	5,737	44,758	12.8%
Tennessee						
Appalachian Tennessee	13,574	35,847	37.9%	4,269	33,345	12.8%
Non-Appalachian Tennessee	20,325	54,056	37.6%	6,958	49,270	14.1%
Virginia						
Appalachian Virginia	2,131	6,571	32.4%	791	6,234	12.7%
Non-Appalachian Virginia	20,325	54,056	37.6%	10,950	79,481	13.8%
West Virginia (entire state)	7,752	20,444	37.9%	2,604	18,911	13.8%

Table 1-9: Disparity Ratios of Ratio of Small Business Loans to Total Businesses in Low-Moderate Income (LMI) Tracts

	Year	Numerator	Denominator	Disparity Ratio
Northern vs. Central	2007	43.94%	26.57%	1.65
	2010	16.86%	8.28%	2.04
Large Metro vs. Rural	2007	44.97%	27.71%	1.62
	2010	14.60%	9.26%	1.58
Attainment vs. Distressed	2007	47.30%	24.77%	1.91
	2010	14.33%	6.59%	2.17

1.3.4 CREDIT CARD LENDING

Small business credit card loans usually have higher interest rates and are of shorter term than non-credit card loans. In addition to having less desirable loan terms and conditions, credit card loans are usually easier for borrowers to qualify and receive. An initial impression, therefore, would be that credit card small business lending would be utilized more in regions with less access to loans overall and in regions with fewer creditworthy small businesses. Thus, the expectation would be that banks that specialize in credit card small business lending would have a higher market share in distressed counties and rural counties in Appalachia.

In both 2007 and 2010, about 55 percent and 62 percent of the small business loans in Appalachia and the nation, respectively, were credit card loans.

Within Appalachia, businesses in large metropolitan counties experienced the greatest access to small business loans overall (see Figure 1-3 above) and experienced the most credit card lending in 2007, as shown in Figure 1-15. In addition, businesses in large metropolitan counties experienced levels of credit card lending (as measured by credit card market share) comparable to the other categories of counties in 2010, except for rural counties which had the smallest market share of credit card loans in both years. Likewise, distressed counties had a lower market share of credit card loans than attainment counties (see Figure 1-16) although attainment counties had the greatest access to overall small business loans (see Figure 1-4 above).

Not surprisingly, credit card market share by dollar amount is considerably smaller than market share by number of loans. Whereas credit card loans constituted about 54 percent of all small business loans in Appalachia during 2010 when considering the number of loans, credit card loans were just 6.6 percent of small business loans in Appalachia when considering dollar amounts (see Table 1-12 for credit card market share by dollar amounts). This difference in market share arises because the average dollar amount is considerably smaller for credit card loans than for small business loans. The disparities in market share when examining credit card market share by dollar amount is similar to the disparities in market share when examining market share by loan count. For example, market share by dollar amount and loan count shows that credit card market share is the highest in distressed and attainment counties.

Although the market share for credit card lending is considerably smaller when considering dollar amounts, it is nevertheless important to consider that a substantial portion of the need for small business loans is being met by credit card lending. A little more than half the loans when considering number of

loans in Appalachia are credit card loans. This means that either the small businesses in Appalachia cannot qualify for non-credit card loans or find it much easier to obtain credit card loans. And it is not clear that the lower average dollar amounts of credit card lending fully meets the credit needs of a broad swath of small businesses in Appalachia.

The descriptive analysis suggests that if any correlation occurs, it might be that counties with greater access to small business loans overall are also counties with greater market share of credit card loans. In these counties, credit card lending is not acting as a substitute where non-credit card lending is relatively scarce. Instead, credit card and non-credit card lending tend to increase together. The results of statistical correlation tests, shown in Table 1-10, appear to confirm that higher levels of credit card lending generally occurs in counties where higher levels of non-credit card lending also occur.

Table 1-10: Correlation among Credit Card Lending and Non-Credit Card Lending

	Correlation Coefficients	
	2007	2010
Normalized (Count)	0.5497*	0.3910*
Not normalized (Count)	0.9546*	0.8944*
Not normalized (Amount)	0.9061*	0.8881*

*Statistically significant at the 0.001 level. Normalized here means loans divided by small businesses, count refers to number of loans and amount refers to dollar amount of loans.

The index maps (see Maps 1-7 and 1-8) indicate that credit card lending index is the highest in western counties such as those in Kentucky and Tennessee with the least access to overall small business credit. Conversely, the credit card lending index is the lowest in Northern Appalachia where overall small business credit was most favorable compared to the nation. In some categories of counties with limited access to non-credit card lending, borrowers utilize credit cards to a degree greater than national average to meet their borrowing needs. However, overall in Appalachia, credit card and non-credit card lending increased or decreased together on a county level instead of exhibiting an inverse relationship.

Figure 1-14: Credit Card Market Share by Region

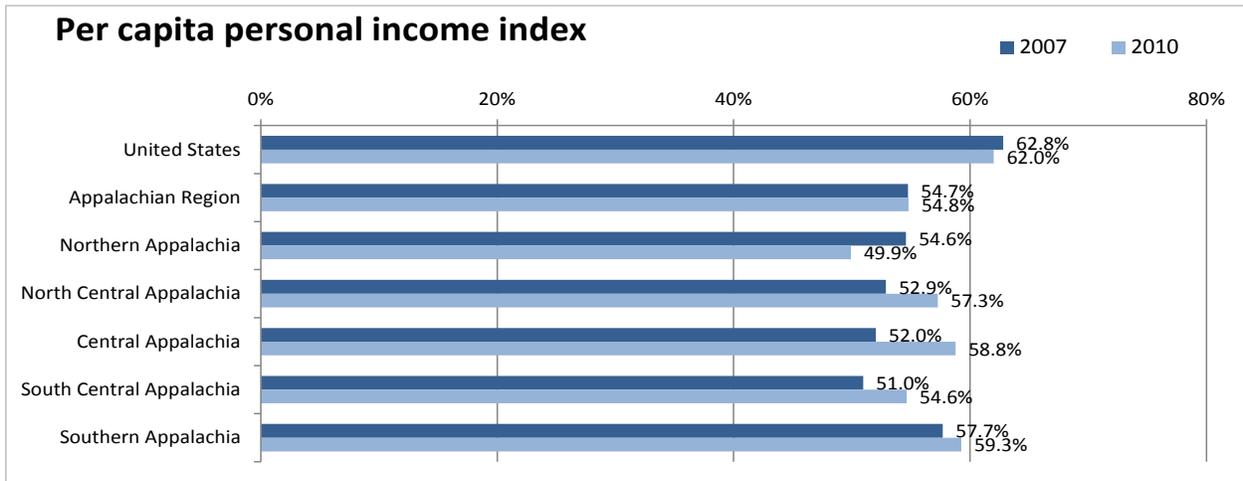


Figure 1-15: Credit Card Market Share by County Type

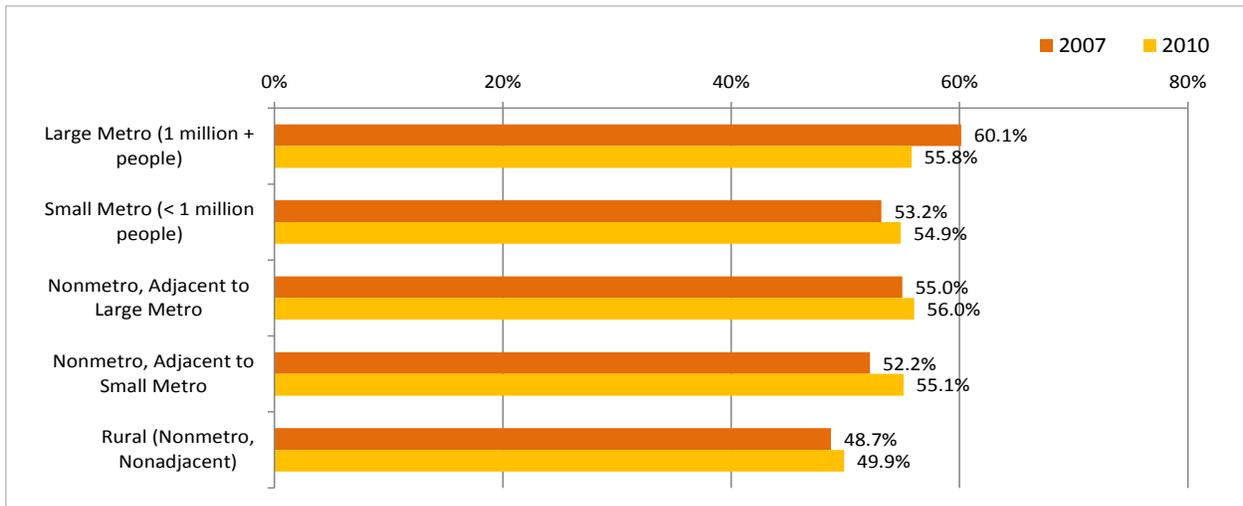
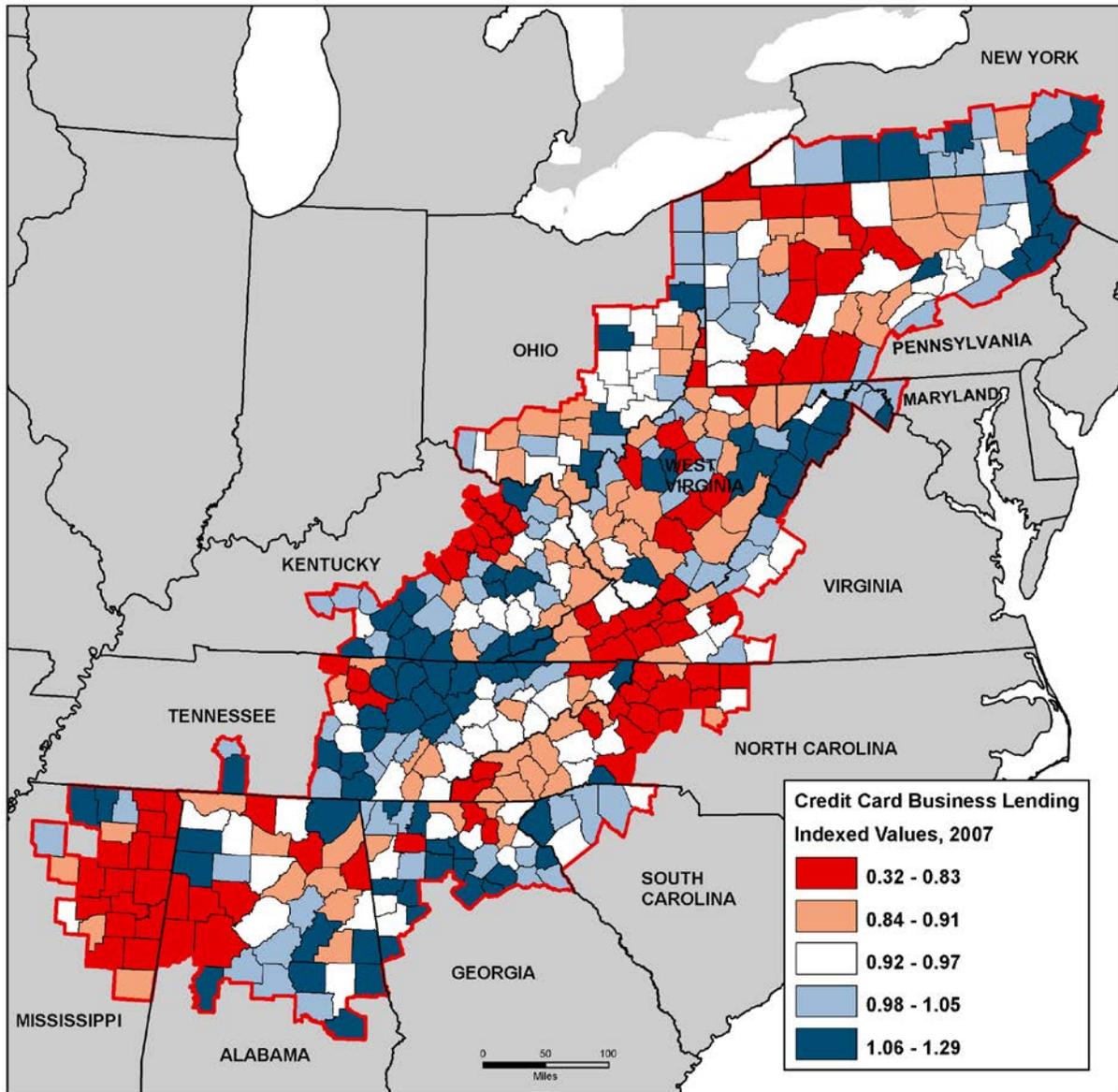


Figure 1-16: Credit Card Market Share by Economic Status



Map 1-7: Credit Card Business Lending Index, 2007

Ratio of Credit Card Business Loans to Small Business Loans, Indexed Values (U.S. =1)



Map Title: Credit Card Business Lending Index, 2007

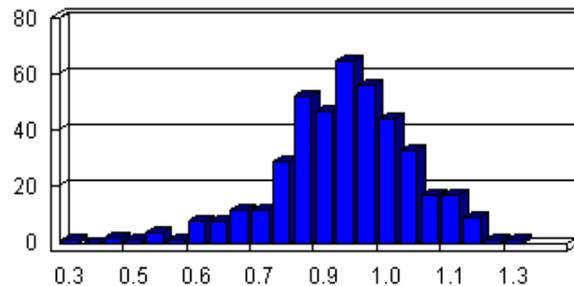
Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012

Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2007

Statistics of Indexed Values

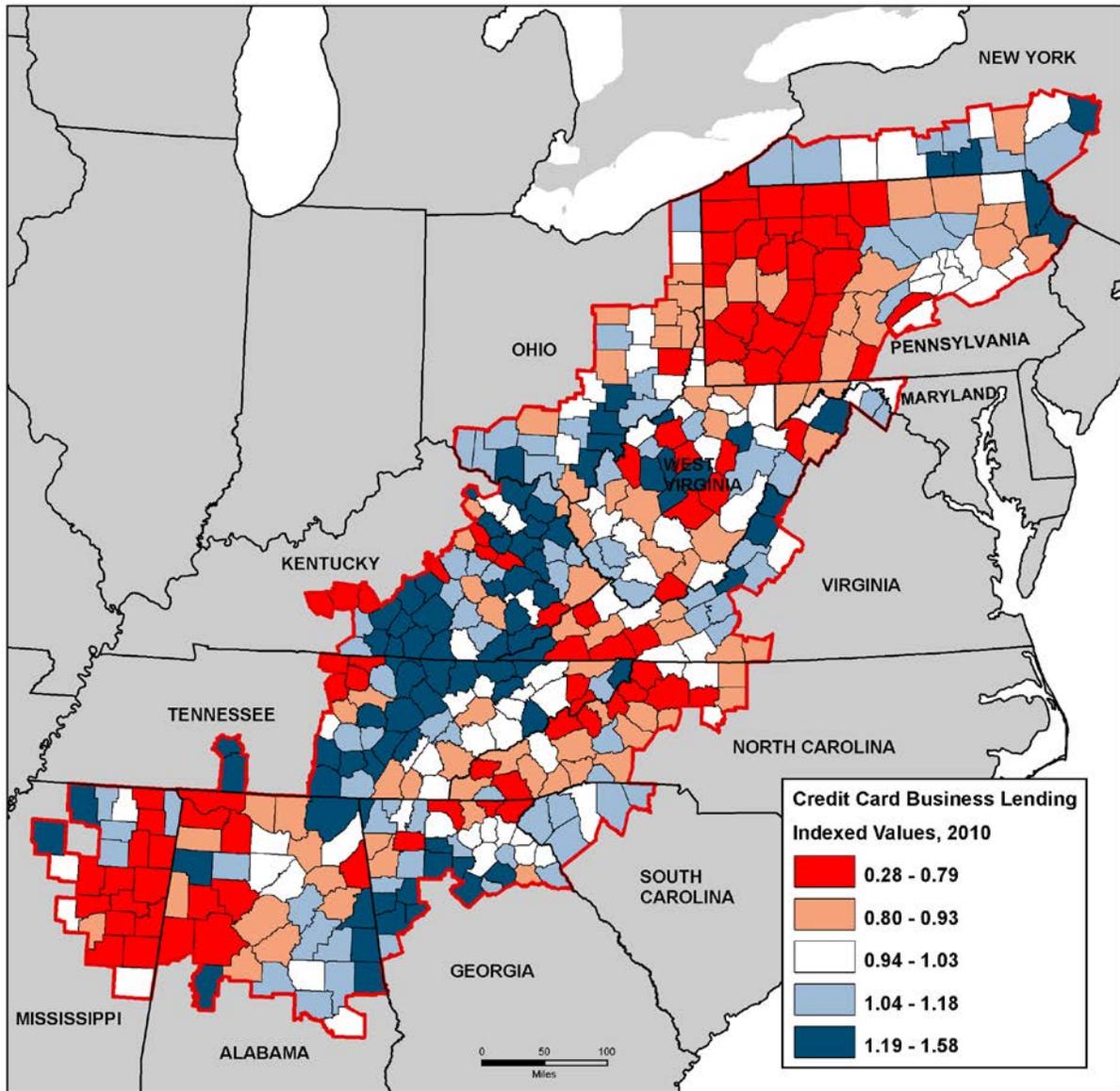
Count	420
Minimum	0.315
Maximum	1.292
Mean	0.934
Standard Deviation	0.146

Histogram of Indexed Values



Map 1-8: Credit Card Business Lending Index, 2010

Ratio of Credit Card Business Loans to Small Business Loans, Indexed Values (U.S. =1)



Map Title: Credit Card Business Lending Index, 2010
 Source: ARC and National Community Reinvestment Coalition, "Access to Capital and Credit in Appalachia" 2012
 Data Source: CRA small business loan data and Dun and Bradstreet (D&B), 2010

Statistics of Indexed Values

Count	420
Minimum	0.279
Maximum	1.58
Mean	0.975
Standard Deviation	0.234

Histogram of Indexed Values

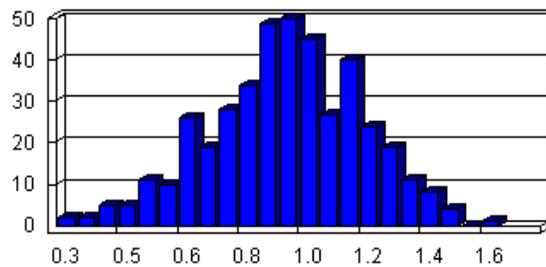


Figure 1-17: Credit Card Market Share by State

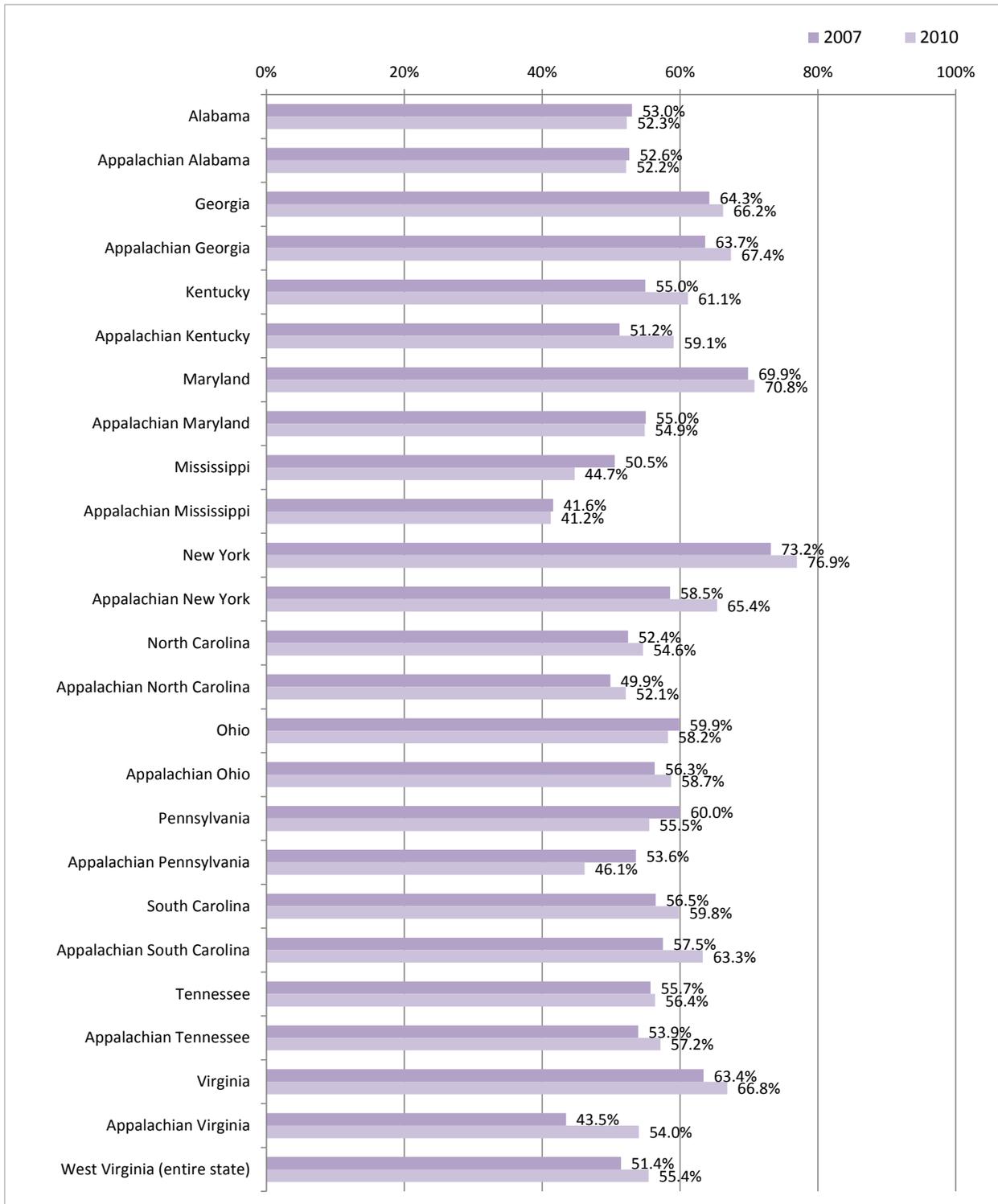


Table 1-11: Credit Card Market Share in Appalachia

	2007			2010		
	Number of Credit Card Business Loans	Number of Small Business Loans	Ratio of Credit Card Business Loans to Small Business Loans	Number of Credit Card Business Loans	Number of Small Business Loans	Ratio of Credit Card Business Loans to Small Business Loans
United States	8,440,545	13,437,779	62.8%	2,602,710	4,197,610	62.0%
Appalachian Region	442,857	808,877	54.7%	139,864	255,231	54.8%
Subregions						
Northern Appalachia	144,641	265,062	54.6%	46,644	93,452	49.9%
North Central Appalachia	31,478	59,519	52.9%	11,270	19,678	57.3%
Central Appalachia	19,963	38,372	52.0%	7,104	12,085	58.8%
South Central Appalachia	79,628	156,224	51.0%	26,100	47,760	54.6%
Southern Appalachia	167,147	289,700	57.7%	48,746	82,256	59.3%
County Types						
Large Metro (1 million + people)	140,520	233,652	60.1%	40,108	71,892	55.8%
Small Metro (< 1 million people)	172,949	325,376	53.2%	56,769	103,484	54.9%
Nonmetro, Adjacent to Large Metro	25,721	46,778	55.0%	8,209	14,654	56.0%
Nonmetro, Adjacent to Small Metro	71,385	136,848	52.2%	23,805	43,204	55.1%
Rural (Nonmetro, Nonadjacent)	32,282	66,223	48.7%	10,973	21,997	49.9%
Economic Status						
Distressed	13,354	25,190	53.0%	4,477	7,461	60.0%
At-Risk	25,919	52,515	49.4%	9,521	18,619	51.1%
Transitional	233,843	448,203	52.2%	80,354	147,088	54.6%
Competitive	100,517	176,965	56.8%	29,110	57,498	50.6%
Attainment	57,565	85,936	67.0%	16,402	24,565	66.8%
Alabama	82,094	154,821	53.0%	24,546	46,944	52.3%
Appalachian Alabama	52,819	100,348	52.6%	15,880	30,438	52.2%
Non-Appalachian Alabama	29,275	54,473	53.7%	8,666	16,506	52.5%
Georgia	265,068	412,517	64.3%	72,227	109,030	66.2%
Appalachian Georgia	85,049	133,604	63.7%	23,147	34,345	67.4%
Non-Appalachian Georgia	180,019	278,913	64.5%	49,080	74,685	65.7%
Kentucky	64,901	118,063	55.0%	25,109	41,075	61.1%
Appalachian Kentucky	12,539	24,487	51.2%	4,682	7,926	59.1%
Non-Appalachian Kentucky	52,362	93,576	56.0%	20,427	33,149	61.6%
Maryland	173,251	248,007	69.9%	48,221	68,107	70.8%
Appalachian Maryland	4,868	8,846	55.0%	1,534	2,796	54.9%
Non-Appalachian Maryland	168,383	239,161	70.4%	46,687	65,311	71.5%
Mississippi	41,451	82,053	50.5%	13,572	30,367	44.7%
Appalachian Mississippi	7,288	17,516	41.6%	2,507	6,079	41.2%
Non-Appalachian Mississippi	34,163	64,537	52.9%	11,065	24,288	45.6%
New York	709,385	969,471	73.2%	237,225	308,303	76.9%
Appalachian New York	18,272	31,216	58.5%	6,977	10,676	65.4%
Non-Appalachian New York	691,113	938,255	73.7%	230,248	297,627	77.4%
North Carolina	178,922	341,140	52.4%	59,487	108,924	54.6%
Appalachian North Carolina	31,989	64,128	49.9%	10,142	19,459	52.1%
Non-Appalachian North Carolina	146,933	277,012	53.0%	49,345	89,465	55.2%
Ohio	218,498	364,863	59.9%	73,684	126,530	58.2%
Appalachian Ohio	29,625	52,594	56.3%	9,801	16,697	58.7%
Non-Appalachian Ohio	188,873	312,269	60.5%	63,883	109,833	58.2%
Pennsylvania	268,990	448,313	60.0%	86,302	155,425	55.5%
Appalachian Pennsylvania	101,577	189,468	53.6%	31,483	68,219	46.1%
Non-Appalachian Pennsylvania	167,413	258,845	64.7%	54,819	87,206	62.9%
South Carolina	84,640	149,892	56.5%	27,009	45,139	59.8%
Appalachian South Carolina	21,991	38,232	57.5%	7,212	11,394	63.3%
Non-Appalachian South Carolina	62,649	111,660	56.1%	19,797	33,745	58.7%
Tennessee	111,411	199,969	55.7%	36,334	64,456	56.4%
Appalachian Tennessee	44,891	83,223	53.9%	14,229	24,897	57.2%
Non-Appalachian Tennessee	66,520	116,746	57.0%	22,105	39,559	55.9%
Virginia	189,332	298,547	63.4%	60,873	91,083	66.8%
Appalachian Virginia	8,649	19,900	43.5%	3,642	6,740	54.0%
Non-Appalachian Virginia	180,683	278,647	64.8%	57,231	84,343	67.9%
West Virginia (entire state)	23,300	45,315	51.4%	8,628	15,565	55.4%

Table 1-12: Credit Card Market Share (in Dollars) in Appalachia

	2007			2010		
	Credit Card Small Business Loans (Amount)	Small Business Loans (Amount)	Ratio	Credit Card Small Business Loans (Amount)	Small Business Loans (Amount)	Ratio
United States	\$66,209,352	\$324,325,913	20.4%	\$17,790,765	\$173,436,472	10.3%
Appalachian Region	\$3,153,370	\$23,965,813	13.2%	\$882,000	\$13,342,550	6.6%
Subregions						
Northern Appalachia	\$1,009,829	\$7,282,956	13.9%	\$277,263	\$5,110,722	5.4%
North Central Appalachia	\$224,571	\$1,606,299	14.0%	\$79,525	\$1,101,456	7.2%
Central Appalachia	\$136,295	\$811,477	16.8%	\$43,428	\$454,146	9.6%
South Central Appalachia	\$566,875	\$5,050,897	11.2%	\$170,865	\$2,615,336	6.5%
Southern Appalachia	\$1,215,800	\$9,214,184	13.2%	\$310,919	\$4,060,890	7.7%
County Types						
Large Metro (1 million + people)	\$1,030,786	\$6,619,126	15.6%	\$254,774	\$3,699,442	6.9%
Small Metro (< 1 million people)	\$1,232,436	\$10,848,636	11.4%	\$371,807	\$6,067,377	6.1%
Nonmetro, Adjacent to Large Metro	\$175,825	\$1,152,371	15.3%	\$45,576	\$656,345	6.9%
Nonmetro, Adjacent to Small Metro	\$495,863	\$3,638,568	13.6%	\$141,774	\$1,955,243	7.3%
Rural (Nonmetro, Nonadjacent)	\$218,460	\$1,707,112	12.8%	\$68,069	\$964,143	7.1%
Economic Status						
Distressed	\$89,830	\$492,229	19.4%	\$26,227	\$233,528	11.2%
At-Risk	\$174,761	\$1,284,550	13.9%	\$57,558	\$814,478	7.1%
Transitional	\$1,625,194	\$13,722,200	12.3%	\$498,585	\$7,728,094	6.5%
Competitive	\$733,299	\$5,838,093	12.5%	\$185,284	\$3,445,967	5.4%
Attainment	\$445,802	\$2,170,027	18.0%	\$114,346	\$1,120,483	10.2%
Alabama	\$560,283	\$5,827,455	9.6%	\$143,249	\$2,633,016	5.4%
Appalachian Alabama	\$365,222	\$3,791,119	9.6%	\$93,549	\$1,665,817	5.6%
Non-Appalachian Alabama	\$195,061	\$2,036,336	9.6%	\$49,700	\$967,199	5.1%
Georgia	\$1,966,896	\$11,224,500	17.5%	\$476,195	\$4,977,683	9.6%
Appalachian Georgia	\$632,333	\$3,630,619	17.4%	\$155,584	\$1,532,318	10.2%
Non-Appalachian Georgia	\$1,334,563	\$10,725,267	12.4%	\$320,611	\$3,445,365	6.8%
Kentucky	\$481,491	\$3,185,311	15.1%	\$174,969	\$2,133,357	8.2%
Appalachian Kentucky	\$87,093	\$499,233	17.4%	\$29,285	\$280,712	10.4%
Non-Appalachian Kentucky	\$394,398	\$2,686,078	14.7%	\$145,684	\$1,852,645	7.9%
Maryland	\$1,352,290	\$6,040,036	22.4%	\$317,715	\$2,841,401	11.2%
Appalachian Maryland	\$34,830	\$271,031	12.9%	\$9,315	\$175,767	5.3%
Non-Appalachian Maryland	\$1,317,460	\$5,769,005	22.8%	\$308,400	\$2,665,634	11.6%
Mississippi	\$267,409	\$2,529,250	10.6%	\$72,663	\$1,515,669	4.8%
Appalachian Mississippi	\$46,518	\$551,393	8.4%	\$14,396	\$272,295	5.3%
Non-Appalachian Mississippi	\$220,891	\$1,977,857	11.2%	\$58,267	\$1,243,374	4.7%
New York	\$5,447,179	\$19,914,993	27.4%	\$1,583,619	\$9,643,636	16.4%
Appalachian New York	\$121,931	\$721,522	16.9%	\$37,739	\$383,744	9.8%
Non-Appalachian New York	\$5,325,248	\$19,193,471	27.7%	\$1,545,880	\$9,259,892	16.7%
North Carolina	\$1,351,977	\$11,537,683	11.7%	\$385,199	\$5,633,301	6.8%
Appalachian North Carolina	\$230,973	\$2,045,398	11.3%	\$71,474	\$947,159	7.5%
Non-Appalachian North Carolina	\$1,121,004	\$9,492,285	11.8%	\$313,725	\$4,686,142	6.7%
Ohio	\$1,654,136	\$10,142,341	16.3%	\$528,291	\$7,875,456	6.7%
Appalachian Ohio	\$213,093	\$1,160,385	18.4%	\$68,729	\$863,491	8.0%
Non-Appalachian Ohio	\$1,441,043	\$8,981,956	16.0%	\$459,562	\$7,011,965	6.6%
Pennsylvania	\$1,914,658	\$13,184,892	14.5%	\$526,992	\$8,033,802	6.6%
Appalachian Pennsylvania	\$712,425	\$5,519,598	12.9%	\$185,671	\$3,915,651	4.7%
Non-Appalachian Pennsylvania	\$1,202,233	\$7,665,294	15.7%	\$341,321	\$4,118,151	8.3%
South Carolina	\$628,783	\$4,776,873	13.2%	\$168,168	\$2,294,399	7.3%
Appalachian South Carolina	\$171,727	\$1,241,053	13.8%	\$47,390	\$590,460	8.0%
Non-Appalachian South Carolina	\$457,056	\$3,535,820	12.9%	\$120,778	\$1,703,939	7.1%
Tennessee	\$811,532	\$6,511,859	12.5%	\$238,302	\$3,836,647	6.2%
Appalachian Tennessee	\$317,373	\$2,749,951	11.5%	\$88,728	\$1,500,176	5.9%
Non-Appalachian Tennessee	\$494,159	\$3,761,908	13.1%	\$149,574	\$2,336,471	6.4%
Virginia	\$1,489,279	\$7,961,982	18.7%	\$426,930	\$4,116,094	10.4%
Appalachian Virginia	\$57,820	\$509,108	11.4%	\$22,004	\$309,375	7.1%
Non-Appalachian Virginia	\$1,431,459	\$7,452,874	19.2%	\$404,926	\$3,806,719	10.6%
West Virginia (entire state)	\$162,032	\$1,275,403	12.7%	\$58,136	\$905,585	6.4%

1.3.5 RELATIONSHIP BETWEEN LENDING AND BANK BRANCHES

Correlation statistical analysis suggests a relationship among bank branches and the level of small business lending at a county level. NCRC’s previous study for ARC in 2007 found that higher levels of lending occurred in counties with higher numbers of branches.⁷ This study reconfirms previous findings.

Tables 1-13 through 1-15 show statistically significant correlation coefficients between the number of branches and the number and dollar amount of small business loans for 2007 and 2010. For both credit card and non-credit card lending, a higher number of branches is associated with a higher number of loans on a county level in Appalachia. The same relationship is found between the dollar amount of deposits and the number of small business loans on a county level for 2007 and 2010 (see Table 1-16).

Table 1-13: Correlation among Branches and All Small Business Lending

	Correlation Coefficients	
	2007	2010
Normalized (Count)	0.3720*	0.3272*
Not normalized (Count)	0.9348*	0.9735*
Not normalized (Amount)	0.9256*	0.9694*

Table 1-14: Correlation among Branches and Non-Credit Card Lending

	Correlation Coefficients	
	2007	2010
Normalized (Count)	0.2688*	0.2358*
Not normalized (Count)	0.9639*	0.9643*
Not normalized (Amount)	0.9210*	0.9672*

Table 1-15: Correlation among Branches and Credit Card Lending

	Correlation Coefficients	
	2007	2010
Normalized (Count)	0.3829*	0.336
Not normalized (Count)	0.8978	0.9324
Not normalized (Amount)	0.8789	0.9016

Table 1-16: Correlation among Deposits and All Small Business Lending

	Correlation Coefficients	
	2007	2010
Normalized (Count)	0.2573*	0.2187*
Not normalized (Count)	0.8610*	0.9095*
Not normalized (Amount)	0.8592*	0.93*

*Statistically significant at the 0.001 level. Normalized here means loans divided by small businesses, count refers to number of loans and amount refers to dollar amount of loans.

⁷ The previous NCRC study for ARC can be accessed via http://www.arc.gov/research/researchreportdetails.asp?REPORT_ID=8

1.3.6 SPATIAL PATTERNS OF LENDING

As Table 1-17 shows, spatial autocorrelation analysis reveals that the lending patterns described above are non-random and are clustered. In other words, the spatial autocorrelation analysis confirms that lending is indeed concentrated in Northern Appalachia, non-distressed counties, and metropolitan counties.

Clustering in the lending pattern was analyzed using the global spatial autocorrelation statistics for year 2007 and 2010 in the Appalachia Region. Global spatial statistics are estimated using the Moran's I measure.

Table 1-17: Spatial Autocorrelation of Lending Variables

Lending Type	Moran's I	
	2007	2010
All small business lending	0.02	0.02
Ratio of small business loans to small business	0.16	0.11
All non-credit card small business lending	0.02	0.02
Ratio of non-credit card small business loans to small business	0.11	0.08
All credit card small business lending	0.02	0.02
Ratio of credit card small business loans to small business	0.16	0.12
SBA lending	0.02	0.02
SBA loans per 10,000 small businesses	0.07	0.01

*All values are statistically significant at the 0.001 level. Moran's I values above 0 represent a clustered pattern.