

Research on Bank Branch Penetration

OBJECTIVE

The purpose of MagnifyMoney's research is to understand bank branch penetration at the county and state level. In addition, the study also examines branch penetration rates by race in the country.



1. MagnifyMoney has defined branch penetration in the following way

- a. Bank branch penetration was defined as the number of financial institutions per capita in a particular geographic area. We have defined bank branch penetration as the number of financial institutions per 100,000 people in a particular geographic area. The research also examines 2 alternate definitions of branch penetration as mentioned in points (b) and (c)
- b. Branch penetration is defined as the number of financial institutions per person per square mile.
- c. Branch penetration is defined as the number of financial institutions per square mile

2. Data collection – We have used the following data sources

We need data regarding the locations of all financial institutions and the population distribution in terms of race for all the counties and states in United States.

- a. Federal Deposit Insurance Corporation – Current locations for all banking institutions (branches and main offices) was available on FDIC.gov (Data as of 01/14/2016)
- b. National Credit Union Administration – Current locations of all credit unions (branches and main offices) was available on NCUA.gov (Data as of 09/30/2015)
- c. United States Census Bureau – Population estimates and their distribution by race is available for all counties and states on census.gov (Data as of July, 2014)
- d. Land Area – Land and water areas for all states and counties are available on census.gov (Data as of January 1, 2010)

3. Data capture process

- a. All raw data files were available in CSV format along with their data dictionary.
- b. In order to connect (join) the different data sources, State and County FIPS codes were used. In case of the credit union branch locations file, FIPS (Federal Information Processing Standard) codes were not available in the files and thus were matched by their state and county names to the FIPS codes file available on the government website.
- c. There are some counties for which the corresponding data was not available.
 - 31 counties out of the 3,142 in the population data do not have corresponding bank branch data. These counties were assumed to have zero branches.
 - Some of the counties in the credit union branch data did not have corresponding FIPS codes and thus were not included in the analysis. These counties had 210 credit union branches out of the 21,877 overall branches.

4. Data aggregation was performed in the following way

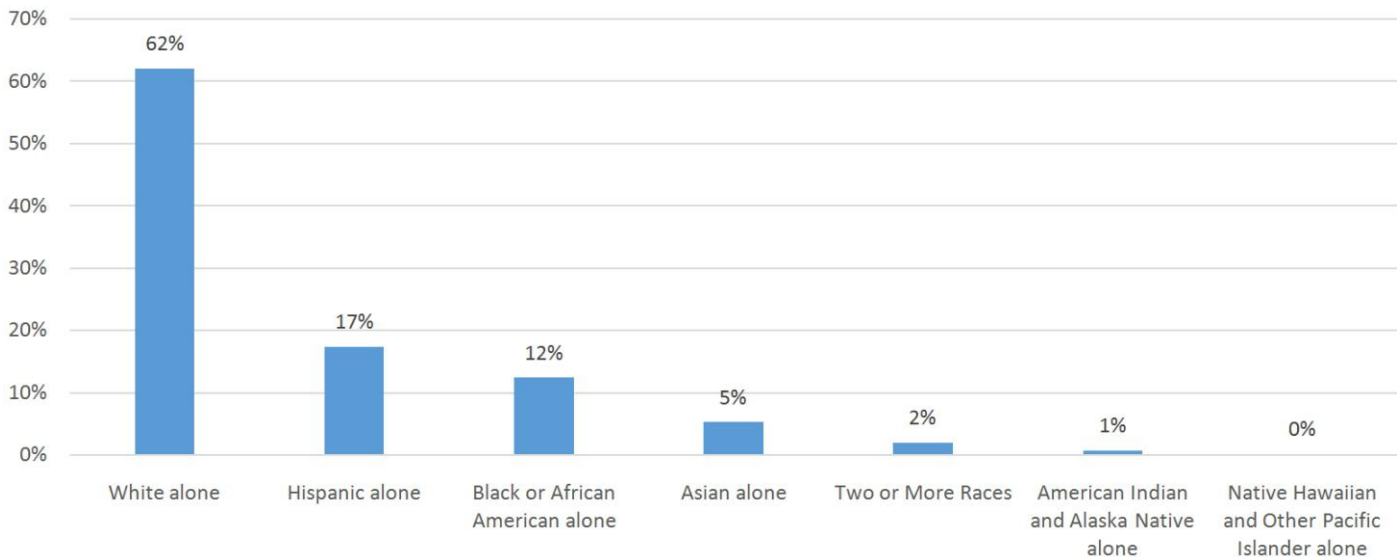
- a. Bank branch data was aggregated in excel pivot to find out the number of branches in each county. Similarly, credit union branch data was aggregated to find the number of credit union branches in each county.
- b. This aggregated data was then joined with the population distribution data to find the corresponding population and race distribution for each county in the branch data file. The join was made using the FIPS state and county codes.

FINDINGS

Overall	
Total Population	318,857,056
Total Branches (Bank Branch & Credit Unions)	115,677
Branch Penetration (Per 100,000)	36.28

Overall Population Distribution By Race	
White alone	197,870,516
Hispanic alone	55,387,539
Black or African American alone	39,528,225
Asian alone	16,786,720
Two or More Races	6,388,399
American Indian and Alaska Native alone	2,349,923
Native Hawaiian and Other Pacific Islander alone	545,734

Population Distribution by Race



TOP 10 STATES & COUNTIES – BRANCH PENETRATION

Top 10 states

State	Total Branches	Total Population	Branch Penetration
North Dakota	556	739,482	75.19
South Dakota	577	853,175	67.63
Nebraska	1,235	1,881,503	65.64
Iowa	1,908	3,107,126	61.41
Kansas	1,728	2,904,021	59.50
District of Columbia	365	658,893	55.40
Maine	708	1,330,089	53.23
Vermont	329	626,562	52.51
Arkansas	1,526	2,966,369	51.44
Montana	517	1,023,579	50.51
	9,449	16,090,799	58.72

Top 10 Counties

State	County	Population	Branches	Branch Penetration
Nebraska	Hayes County	933	3	321.54
South Dakota	Jones County	975	3	307.69
North Dakota	Nelson County	3,045	8	262.73
Nebraska	Wheeler County	766	2	261.10
North Dakota	Towner County	2,310	6	259.74
Kansas	Gove County	2,727	7	256.69
Nebraska	Boyd County	2,033	5	245.94
Nebraska	Sioux County	1,303	3	230.24
Kansas	Jewell County	3,043	7	230.04
Kansas	Ness County	3,105	7	225.44
		20,240	51	251.98

BOTTOM 10 STATES AND COUNTIES – BRANCH PENETRATION

Bottom 10 states

State	Branches	Population	Branch Penetration
Nevada	623	2,839,099	21.94
California	8,833	38,802,500	22.76
Arizona	1,589	6,731,484	23.61
Georgia	2,943	10,097,343	29.15
New Mexico	653	2,085,572	31.31
Texas	8,502	26,956,958	31.54
North Carolina	3,175	9,943,964	31.93
Alaska	237	736,732	32.17
Rhode Island	341	1,055,173	32.32
Maryland	1,942	5,976,407	32.49
	28,838	105,225,232	27.41

Bottom 10 counties*

State	County	Population	Branches	Branch Penetration
Colorado	Park County	16,345	1	6.12
Virginia	Manassas Park city	15,174	1	6.59
Virginia	Caroline County	29,778	2	6.72
Virginia	Greensville County	11,681	1	8.56
Georgia	Lanier County	10,373	1	9.64
North Carolina	Hoke County	51,611	5	9.69
Arizona	Apache County	71,828	7	9.75
North Carolina	Northampton County	20,463	2	9.77
South Dakota	Todd County	9,882	1	10.12
Alaska	North Slope Borough	9,703	1	10.31
		246,838	22	8.91

* Counties having zero branches are excluded

BRANCH PENETRATION AND CO-RELATION WITH RACE

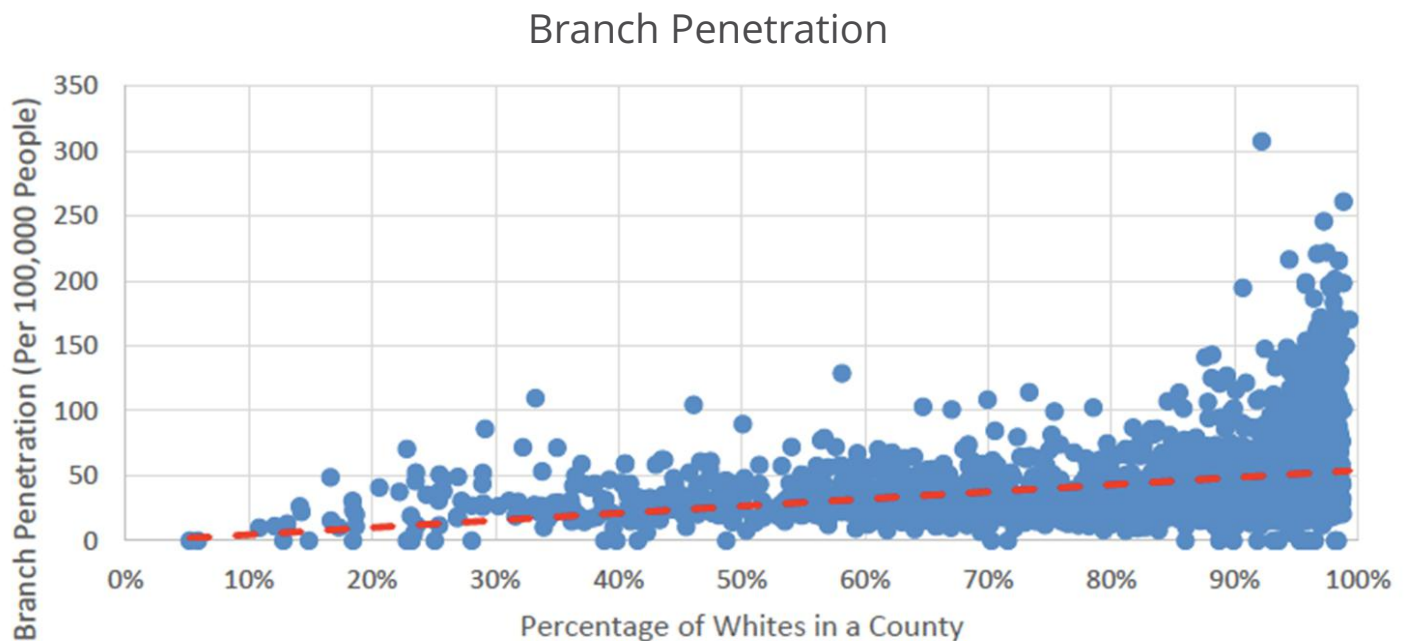
Branch Penetration by majority race in the county

The below table looks at branch penetration based on the majority race in that county. Majority is defined as population proportion being more than 50% of the overall county population. The table indicates that branch penetration rates are higher than national average in counties with white majority and lower for counties that have black majority or other non-white majority.

Majority Race	Number of Counties	Total Population	Number of Branches	Branch Penetration	Branch Penetration National Average Comparison
White	2,778	216,530,143	87,907	40.60	111.91%
Hispanic	94	16,552,491	3,726	22.51	62.05%
Black	93	6,525,492	2,090	32.03	88.28%
American Indian	26	331,256	68	20.53	56.58%
All Non-white	364	102,326,913	27,770	27.14	74.81%

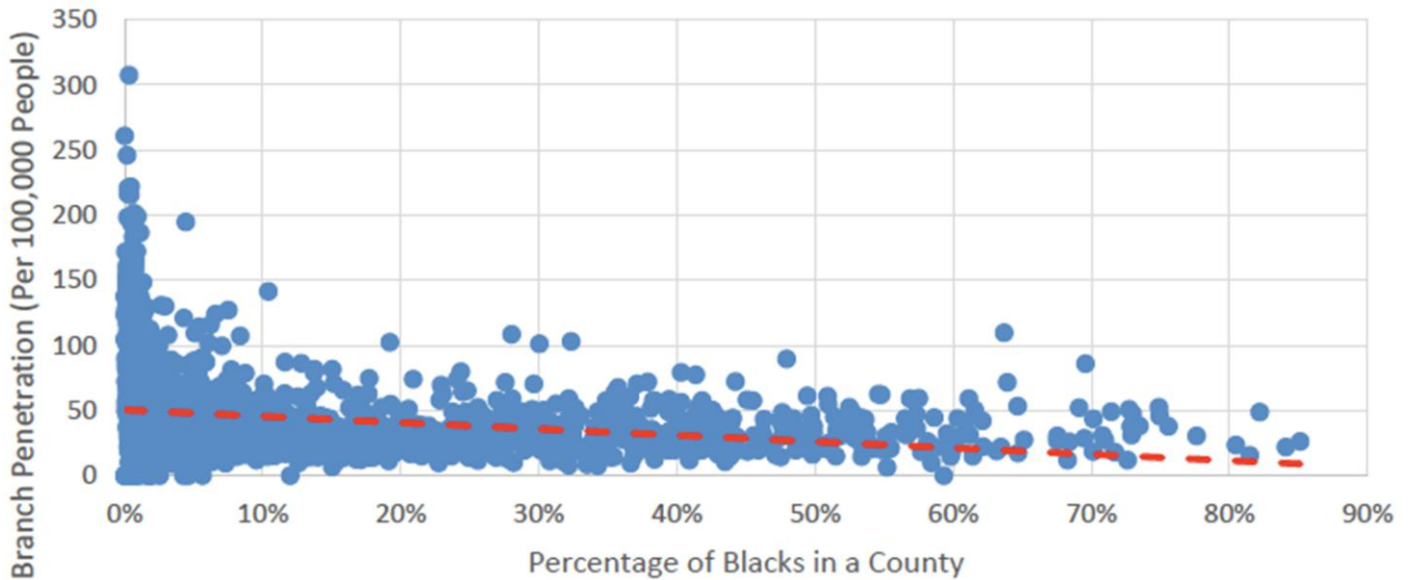
Branch Penetration race in the county

The next chart looks at branch penetration based on the % of whites in the county. The chart clearly indicates that as % of the whites in the county increases the branch penetration increases as well.



The next chart is a similar chart however now it looks at branch penetration based on the % of blacks in the county. The chart clearly indicates that the branch penetration falls as % of blacks in the county increases.

Branch Penetration

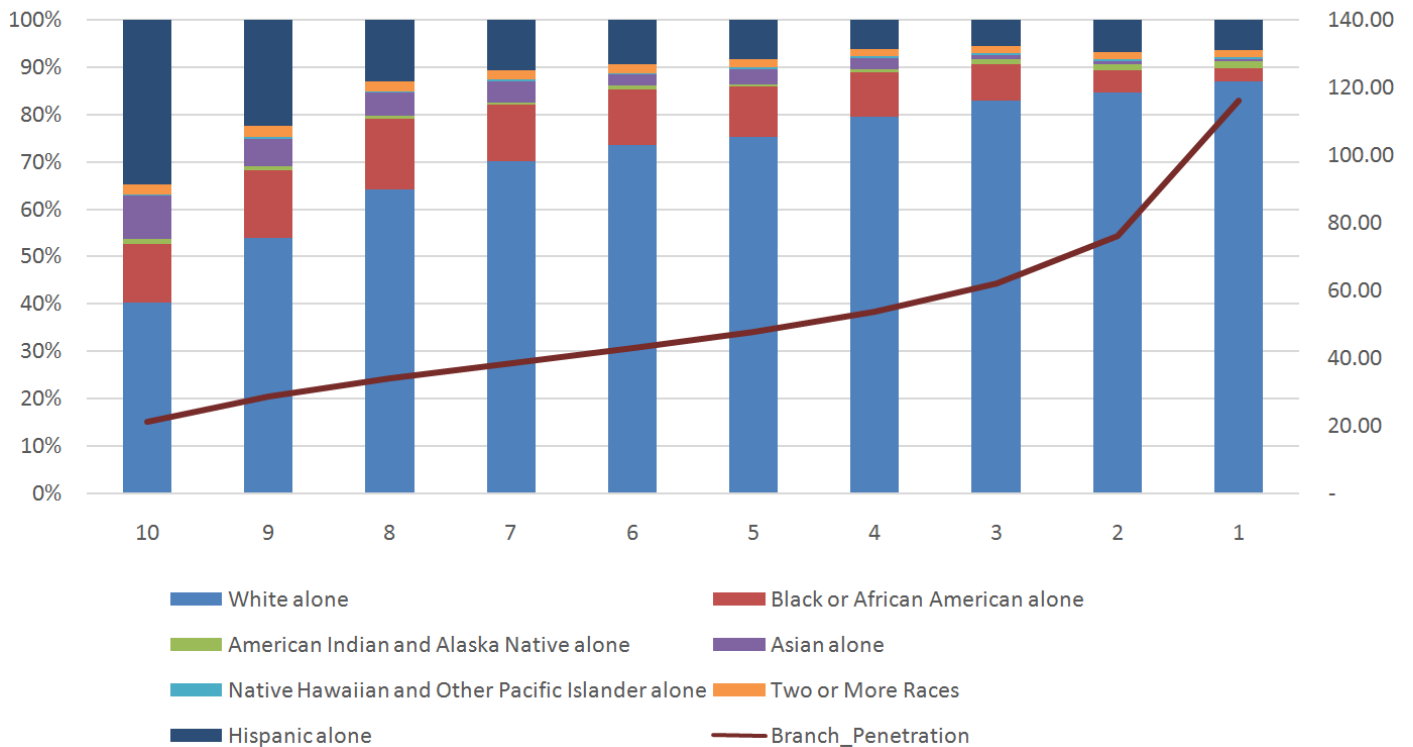


Race Distribution based on Branch Penetration Deciles

In the chart below we looked at branch penetration for all 3142 US counties. First Decile has 314 counties with the highest branch penetration rate. Decile 1 (X axis) counties have a total population of 1,958,944 persons and 2,276 branches, resulting in branch penetration of approximately 116.19 (Right hand side Y-Axis). 87% of Decile 1 population is white, 3% are black, 6% are Hispanic (Left hand side Y axis).

Similarly Decile 10 has the 314 counties with the lowest branch penetration rate. Decile 10 counties have a total population of 65,740,948 people and 13,873 branches, thus having branch penetration of approximately 21.10. 40% of Decile 10 counties is while, 12% are balck, 35% are Hispanic.

Branch Penetration Deciling



In the above graph, illustrates that branch penetration rates tend to be higher in counties with population with more whites and as the race distribution shifts towards other races the branch penetration goes down.

10 Worst Counties

Below are the majority black counties that have the lowest branch penetration rates:

10 Counties with Lowest Branch Penetration

State	County	Proportion of Blacks in County	Branch Penetration
Georgia	Hancock County	72.30%	11.75
Georgia	Clayton County	66.29%	15.32
Alabama	Bullock County	69.12%	18.58
Mississippi	Jefferson County	84.87%	26.32
Louisiana	East Carroll Parish	67.01%	26.71
Mississippi	Noxubee County	71.51%	26.99
Alabama	Wilcox County	70.52%	27.03
Alabama	Perry County	67.13%	30.53
Virginia	Petersburg city	76.41%	30.58
Mississippi	Claiborne County	83.38%	33.04

In this data, MagnifyMoney ranked counties that are least 65% black. The results show the 10 counties with the lowest branch penetration.

Branch Penetration based on alternate definitions

In the following analysis we have defined branch penetration as number of branches per person per square mile area in a county.

Top 10 states and counties – Branch Penetration Per Person Per Square Mile

Top 10 States

State	Land Area (Square Miles)	Total Branches	Total Population	Population Density (Persons per square mile)	Branch Density (Branches Per 1000 Square Miles)	Branch Penetration (Per Person Per Square Mile)
Alaska	570,640.95	237	736,732	1.29	0.42	183.57
Texas	261,231.71	8502	26,956,958	103.19	32.55	82.39
Montana	145,545.80	517	1,023,579	7.03	3.55	73.51
North Dakota	69,000.80	556	739,482	10.72	8.06	51.88
South Dakota	75,811.00	577	853,175	11.25	7.61	51.27
Nebraska	76,824.18	1235	1,881,503	24.49	16.08	50.43
Kansas	81,758.72	1728	2,904,021	35.52	21.14	48.65
Wyoming	97,093.14	291	584,153	6.02	3.00	48.37
New Mexico	121,298.15	653	2,085,572	17.19	5.38	37.98
Idaho	82,643.12	726	1,634,464	19.78	8.78	36.71
	1,581,847.56	15,022.00	39,399,639.00	24.91	9.50	603.12

Top 10 Counties

State	County	Population	Branches	Land Area (Persons per square mile)	Population Density (Persons per square mile)	Branch Density (Branches Per 1000 Square Miles)	Branch Penetration (Per Person Per Square Mile)
Alaska	Valdez-Cordova Census Area	9,488	6	34,239.88	0.28	0.18	21.65
Alaska	Southeast Fairbanks Census Area	6,931	3	24,768.81	0.28	0.12	10.72
Alaska	North Slope Borough	9,703	1	88,695.41	0.11	0.01	9.14
Nebraska	Cherry County	5,762	7	5,960.42	0.97	1.17	7.24
Alaska	Bethel Census Area	17,868	3	40,570.00	0.44	0.07	6.81
Idaho	Idaho County	16,215	12	8,477.35	1.91	1.42	6.27
Nevada	Lincoln County	5,184	3	10,633.20	0.49	0.28	6.15
Alaska	Matanuska-Susitna Borough	97,882	23	24,607.90	3.98	0.93	5.78
Montana	Carter County	1,169	2	3,340.75	0.35	0.60	5.72
Oregon	Harney County	7,126	4	10,133.17	0.70	0.39	5.69
		177,328	64	251,427	0.71	0.25	90.74

Bottom 10 States & Counties – Branch Penetration Per Person Per Square Mile

Top 10 States

State	Land Area (Square Miles)	Branches	Population	Population Density (Persons per square mile)	Branch Density (Branches Per 1000 Square Miles)	Branch Penetration (Per Person Per Square Mile)
Vermont	9,216.66	329	626,562	67.98	35.70	4.84
New Hampshire	8,952.65	550	1,326,813	148.20	61.43	3.71
Massachusetts	7,800.06	2734	6,745,408	864.79	350.51	3.16
Maryland	9,707.24	1942	5,976,407	615.66	200.06	3.15
New Jersey	7,354.22	3507	8,938,175	1,215.38	476.87	2.89
Hawaii	6,422.63	469	1,419,561	221.02	73.02	2.12
Connecticut	4,842.36	1524	3,596,677	742.75	314.72	2.05
Delaware	1,948.54	342	935,614	480.16	175.52	0.71
Rhode Island	1,033.82	341	1,055,173	1,020.66	329.85	0.33
District of Columbia	61.05	365	658,893	10,793.03	5,978.90	0.03
	57,339.22	12,103	31,279,283	545.51	211.08	22.19

Bottom 10 Counties*

State	County	Population	Branches	Land Area (Persons per square mile)	Population Density (Persons per square mile)	Branch Density (Per 1000 sq miles)	Branch Penetration (Per Person Per Square Mile)
Virginia	Manassas Park city	15,174	1	2.53	5,988.16	394.63	0.0002
Virginia	Lexington city	7,311	4	2.50	2,927.91	1,601.92	0.0014
Virginia	Falls Church city	13,601	12	2.00	6,803.90	6,003.00	0.0018
Virginia	Poquoson city	12,048	3	15.32	786.58	195.86	0.0038
Virginia	Buena Vista city	6,603	4	6.70	984.93	596.66	0.0041
Virginia	Hopewell city	22,196	10	10.28	2,159.56	972.95	0.0046
Virginia	Manassas city	42,081	20	9.88	4,258.78	2,024.09	0.0047
New York	Bronx County	1,438,159	164	42.10	34,163.79	3,895.86	0.0048
Virginia	Radford city	17,646	10	9.87	1,787.48	1,012.97	0.0056
Virginia	Covington city	5,802	46	5.47	1,061.08	1,097.29	0.0057
		1,580,621	234	106.65	14,821.19	2,194.18	0.0158

*Counties having zero branches are excluded

Branch Density

The final analysis looks at states and counties having highest and lowest branch density. Branch density is defined as number of branches per 1000 square miles area.

Top 10 States and Counties – Number of branches per 1000 square miles

Top 10 States

State	Land Area (Square Miles)	Branches	Population	Population Density	Penetration (Per Person Per Square Mile)	Branch Density
District of Columbia	61.05	365	658,893	10,793.03	0.03	5,978.90
New Jersey	7,354.22	3507	8,938,175	1,215.38	2.89	476.87
Massachusetts	7,800.06	2734	6,745,408	864.79	3.16	350.51
Rhode Island	1,033.82	341	1,055,173	1,020.66	0.33	329.85
Connecticut	4,842.36	1524	3,596,677	742.75	2.05	314.72
Maryland	9,707.24	1942	5,976,407	615.66	3.15	200.06
Delaware	1,948.54	342	935,614	480.16	0.71	175.52
New York	47,126.39	6,433	19,746,227	419.01	15.35	136.51
Pennsylvania	44,742.70	5507	12,787,209	285.79	19.27	123.08
Florida	53,624.76	6471	19,893,297	370.97	17.44	120.67

Top 10 Counties

State	County	Population	Branches	Land Area (square mile)	Population Density	Branch Penetration (Per Person Per Square Mile)	Branch Density
New York	New York County	1,636,268	789	22.83	71,674.97	0.0110	34,561.30
California	San Francisco County	852,469	328	46.87	18,186.78	0.0180	6,997.63
Virginia	Falls Church city	13,601	12	2.00	6,803.90	0.0018	6,003.00
District of Columbia	District of Columbia	658,893	365	61.05	10,793.03	0.0338	5,978.90
Virginia	Fairfax city	24,483	37	6.24	3,924.19	0.0094	5,930.44
New York	Kings County	2,621,793	413	70.82	37,022.61	0.0112	5,832.02
Massachusetts	Suffolk County	767,254	284	58.15	13,193.49	0.0215	4,883.58
New York	Queens County	2,321,580	484	108.53	21,390.74	0.0226	4,459.51
Virginia	Alexandria city	150,575	66	15.03	10,020.30	0.0066	4,392.09
New Jersey	Hudson County	669,115	193	46.19	14,485.83	0.0133	4,178.30

Bottom 10 States & Counties – Branch Density

Bottom 10 States – Branch Density

State	Land Area (Square Miles)	Branches	Population	Population Density	Penetration (Per Person Per Square Mile)	Branch Density
Alaska	570,640.95	237	736,732	1.29	183.57	0.42
Wyoming	97,093.14	291	584,153	6.02	48.37	3.00
Montana	145,545.80	517	1,023,579	7.03	73.51	3.55
New Mexico	121,298.15	653	2,085,572	17.19	37.98	5.38
Nevada	109,781.18	623	2,839,099	25.86	24.09	5.67
South Dakota	75,811.00	577	853,175	11.25	51.27	7.61
North Dakota	69,000.80	556	739,482	10.72	51.88	8.06
Idaho	82,643.12	726	1,634,464	19.78	36.71	8.78
Utah	82,169.62	1060	2,942,902	35.81	29.60	12.90
Arizona	113,594.09	1589	6,731,484	59.26	26.81	13.99

Bottom 10 Counties – Branch Density*

State	County	Population	Branches	Land Area (square mile)	Population Density	Branch Penetration (Per Person Per Square Mile)	Branch Density
Alaska	North Slope Borough	9,703	1	88,695.41	0.11	9.1410	0.01
Alaska	Northwest Arctic Borough	7,717	1	35,572.58	0.22	4.6096	0.03
Alaska	Dillingham Census Area	4,988	1	18,568.78	0.27	3.7227	0.05
Alaska	Bethel Census Area	17,868	3	40,570.00	0.44	6.8116	0.07
Alaska	Nome Census Area	9,817	2	22,961.76	0.43	4.6780	0.09
Alaska	Southeast Fairbanks Census Area	6,931	3	24,768.81	0.28	10.7209	0.12
New Mexico	Catron County	3,556	1	6,923.69	0.51	1.9470	0.14
Alaska	Valdez-Cordova Census Area	9,488	6	34,239.88	0.28	21.6525	0.18
Nevada	Lander County	6,009	1	5,490.11	1.09	0.9136	0.18
Montana	Garfield County	1,309	1	4,675.36	0.28	3.5717	0.21

*Counties having zero branches have been excluded