

## Appendix to *Chicago Fed Letter* No. 524: Bank Branch Access in the Seventh District

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Here we present additional analysis that we completed for our [Chicago Fed Letter](#) on bank branch access in the [Seventh Federal Reserve District](#).<sup>1</sup>

Figure A1, panels A and B show the share of households using in-person banking as their primary access method across the Seventh Federal Reserve District states, revealing that reliance on in-person banking varies considerably by both income and race. Figure A1, panels C and D display the corresponding bank branch visitation rates in the previous 12 months, illustrating that demographic groups that rely more on branches actually visit them less frequently.

Considering differences across states, we show in panels A and C of figure A1 that in-person banking preferences and visitation in the last 12 months vary similarly by household income across all five District states. However, as we show in panels B and D of figure A1, in-person banking preferences and visitation are less consistent by race across states. For example, in Illinois, roughly 40% of Black households primarily rely on in-person bank access, though 60% of Black households do so in Michigan; in addition, roughly 90% of Black households in Iowa visited a physical branch in the past 12 months, though this share was about 60% in the four other District states. Among White households, in-person banking preferences and visitation are more consistent across District states.

Figure A2, panel A reveals how different states have fared in terms of bank branch access between the 2011 access peak and 2024: In that panel, the access level in 2011 is fixed at 1.0 such that the access levels in each year are plotted relative to 2011. All states show similar patterns of decline, with access dropping for most states to roughly 70% to 75% of their 2011 levels by 2024. Iowa shows the most gradual decline in access between 2011 and 2024: Its access level decreases closer to 85% of its 2011 peak. Illinois and Michigan show steeper drops relative to their respective 2011 peaks.

Figure A2, panel B examines major metropolitan areas (more specifically, [core based statistical areas](#), or CBSAs) using the same approach where the branch access levels in each year are relative to 2011. All metro areas—Chicago, Detroit, Milwaukee, Indianapolis, and Des Moines—show declines from their 2011 access peak levels. Chicago shows the steepest decline, as that metro area is at around 70% of its 2011 access level in 2024. Des Moines maintains the most stable pattern, decreasing to only about 85% of its peak in 2024.

Figure A2, panel C measures change in branch access by [Federal Reserve Districts](#) over the period 2011–24. As noted in the main article, the Seventh District had the largest decline in access among the 12 Fed Reserve Districts.

Like figures 4 and 5 in the main article, panels A and B of figure A3 present the results of regression analysis.<sup>2</sup>

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<sup>1</sup> Throughout this appendix, when we discuss *Seventh District* data, those are for areas only within the [official boundaries of our Federal Reserve District](#); however, when we discuss data for *individual Seventh District states* (namely, Illinois, Indiana, Iowa, Michigan, and Wisconsin), those are for the *entirety* of those states (*including* those areas of Illinois, Indiana, Michigan, and Wisconsin that fall outside the official boundaries of the Seventh District).

<sup>2</sup> See notes 8 and 13 in the main article for details the on regressions run to generate the results presented in panels A and B of figure A3, which are for selected Seventh District metropolitan areas instead for Seventh District states (as in figures 4 and 5 of the main article).

Figure A3, panel A examines the patterns presented in figure 4 of the main article at the metropolitan area level (instead of the state level) within the Seventh District for census block groups observed at a monthly frequency during the years 2018–19. The results show that major metro areas exhibit similar relationships to their respective states. For bank branch access patterns by income, most metropolitan areas show small negative relationships. For branch demand patterns by income, all metropolitan areas show strong positive relationships ranging from roughly 15% in Chicago to 29% in Milwaukee.

Racial patterns in bank branch access and demand in major metropolitan areas are also similar to those of their respective states, as reported in figure 4 of the main article. Chicago shows about 13% lower access for all-Black neighborhoods compared with all-White neighborhoods, and Milwaukee, about 4% lower; in contrast, Detroit shows about 11% higher access for all-Black neighborhoods. The demand patterns by race reveal that all-Black communities (relative all-White ones) show higher demand in most major cities. Milwaukee shows the strongest pattern, at almost 36% higher demand, and Chicago and Detroit show about 11% and 15%, respectively. Indianapolis shows about 5% lower demand.<sup>3</sup>

Figure A3, panel B examines the patterns presented in figure 5 of the main article at the metropolitan area level (instead of the state level) within the Seventh District. The results show similar patterns across major cities over the period 2011–24. Recall that bank branch access dropped virtually everywhere across the Seventh District over the period 2011–24 (figure 3 in the main article). Chicago shows a small negative income coefficient (of about  $-0.2\%$ ) and a positive racial coefficient (of about  $1.1\%$ ), indicating that higher-income areas experienced slightly larger declines in branch access over time while predominantly Black neighborhoods experienced smaller declines in such access. Indianapolis shows a positive income coefficient (of about  $0.7\%$ ) and a negative racial coefficient (of about  $-0.9\%$ ), indicating that higher-income areas experienced smaller declines in branch access over time while predominantly Black neighborhoods experienced larger declines in such access.

In figure A3, panel B, Des Moines displays the strongest positive income relationship at  $2.8\%$ , meaning higher-income neighborhoods experienced the smallest declines in branch access. Detroit shows negative coefficients for both income ( $-1.2\%$ ) and race ( $-0.2\%$ ), indicating that both higher-income and predominantly Black neighborhoods experienced larger losses in branch access. Milwaukee shows a negative income coefficient ( $-0.4\%$ ) and a substantial negative racial coefficient ( $-2.8\%$ ).<sup>4</sup>

These heterogeneous patterns across states (in figures 4 and 5 of the main article) and metropolitan areas (in figure A3, panels A and B in this appendix) reveal the complex forces that drove branch closures during the 2011–24 period. Unlike the more consistent patterns we observe for access and demand levels in 2018–19, the patterns for changes in access since 2011 likely reflect the interaction of multiple factors: banking industry consolidation, local economic conditions, demographic changes, and evolving customer preferences for digital banking.

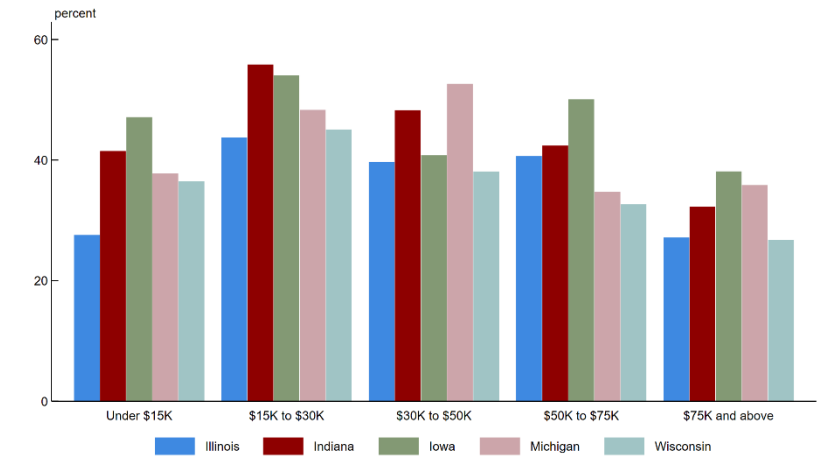
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<sup>3</sup> The following relationships presented in figure A3, panel A are precisely estimated: income–access for Detroit; income–demand for all CBSAs; race–access for Chicago and Detroit; and race–demand for Chicago, Detroit, and Milwaukee. Standard errors for these and all other estimates presented in figure A3, panel A are available upon request.

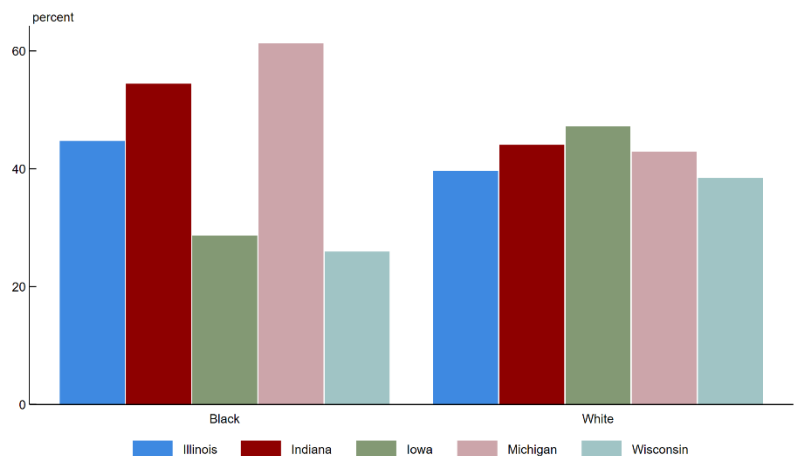
<sup>4</sup> The following relationships presented in figure A3, panel B are precisely estimated: Detroit income and change in branch access over time and Chicago race and change in branch access over time. Standard errors for these and all other estimates presented in figure A3, panel B are available upon request.

A1. Bank branch use and visitation patterns in Seventh District states, 2019

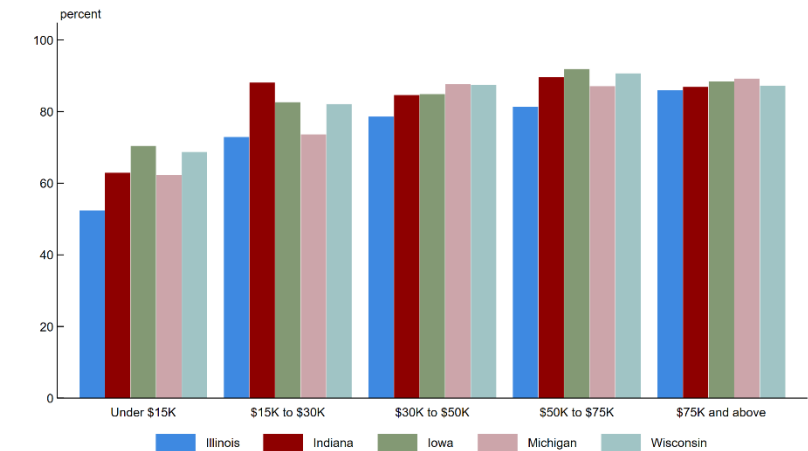
A. Household share with main mode of access being in-person, by income



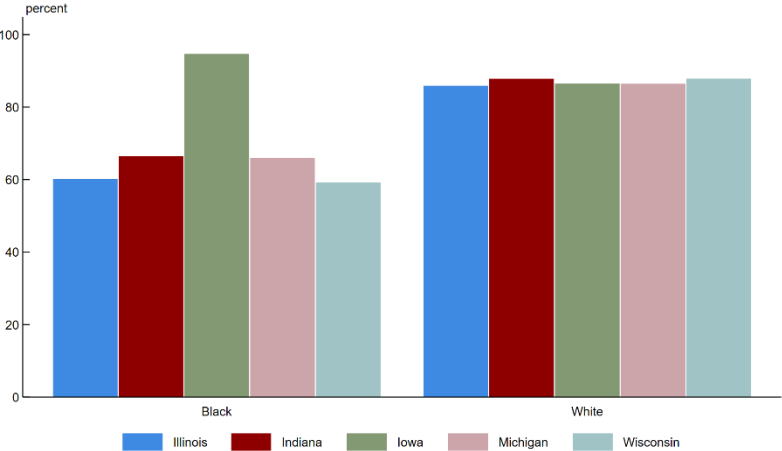
B. Household share with main mode of access being in-person, by race



C. Household share that visited branch in last 12 months, by income



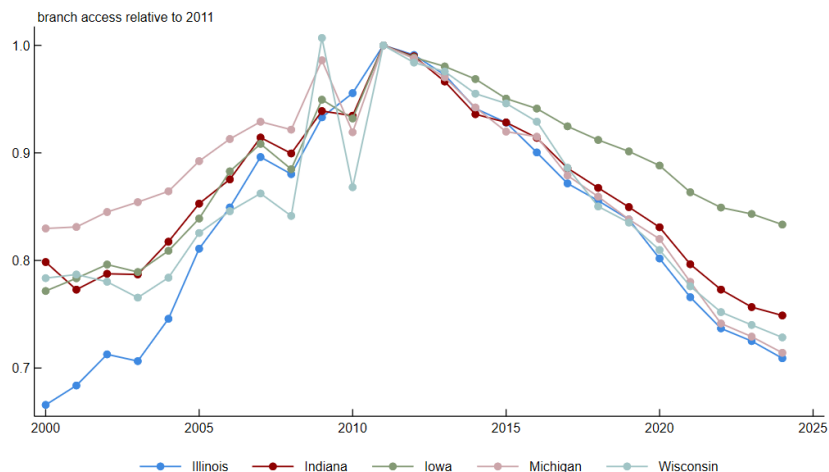
D. Household share that visited branch in last 12 months, by race



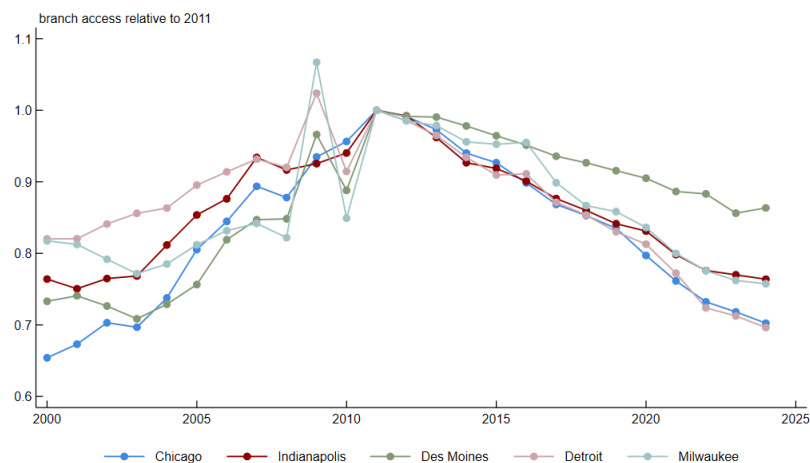
Note: For all four panels, the entirety of the Seventh District states is considered in the analysis.  
Source: Authors' calculations based on data from the Federal Deposit Insurance Corporation, 2019 FDIC Survey of Household Use of Banking and Financial Services.

## A2. Change in bank branch access over time, by geography

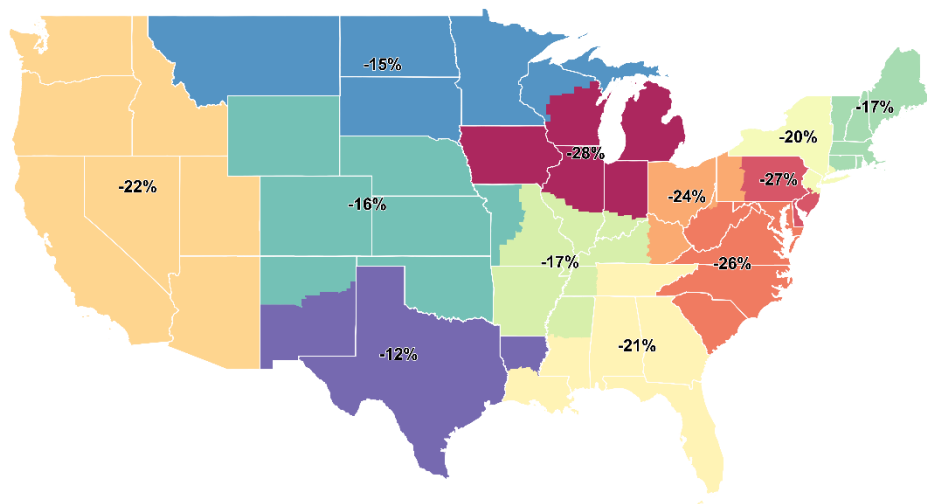
A. Branch access relative to 2011, by state, 2000–24



B. Branch access relative to 2011, by selected metropolitan area, 2000–24



C. Change in branch access, by Federal Reserve District, 2011–24

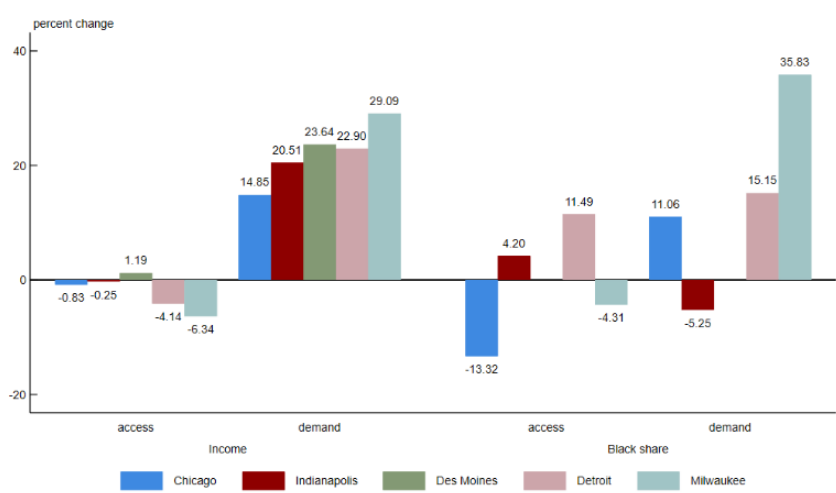


Notes: In panels A and B, for each geography respectively, we plot a time series of the ratio of access in a given year from 2000 through 2024 to the access measure in 2011 (available upon request). In panel C, we report the results from a similar exercise to derive the percent change in the access ratio for Federal Reserve Districts. For details on the bank branch access measure, see the main article's text. For panel A, the *entirety* of the Seventh District states is considered in the analysis. For panel B, we use [core based statistical areas as defined and determined by the U.S. Census Bureau](#) for the selected Seventh District metropolitan areas. For panel C, details about the Federal Reserve Districts are [available online](#).

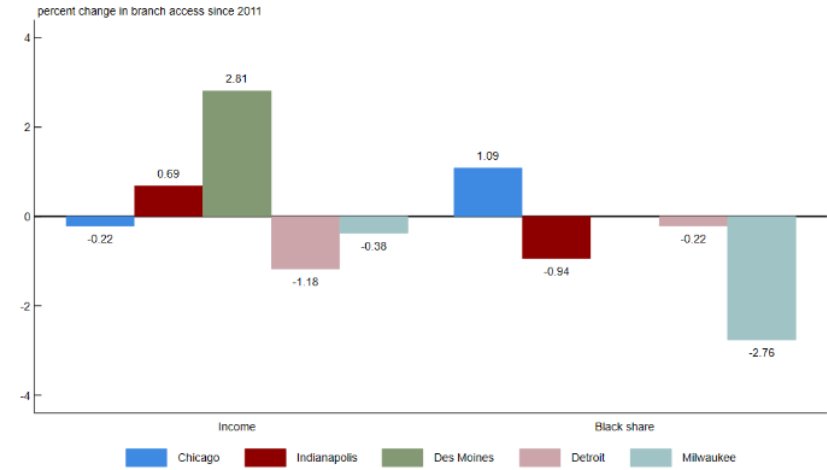
Sources: Authors' calculations based on data from SafeGraph and the Federal Deposit Insurance Corporation.

A3. Selected metropolitan areas in Seventh District: Bank branch access and demand and change in branch access, by income and race

A. Access and demand in 2018–19



B. Change in access over the period 2011–24



Notes: We use [core based statistical areas as defined and determined by the U.S. Census Bureau](#) for the selected Seventh District metropolitan areas. Des Moines’s estimates for racial composition are excluded here because Iowa's estimates for racial composition are often imprecise on account of limited variation in Black population shares across the state's neighborhoods, making it difficult to derive reliable statistical estimates. For details on the bank branch access and demand measures, see the main article’s text.

Sources: Authors’ calculations based on data from SafeGraph, the Federal Deposit Insurance Corporation, and U.S. Census Bureau, *American Community Survey* (ACS), five-year estimates for 2007–11.