

C A G E

**Working Paper**

812/2026

July 2026

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ISSN: 2978-0276

Grant number: ES/7504701/1

**UNIVERSITY  
OF WARWICK**



**Economic  
and Social  
Research Council**

# Banking on a Corporate Rebrand

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July 4, 2026

## Abstract

Firms often rebrand to counter negative shocks, but can it work? Using a historical natural experiment, we analyze a large sample of companies from the same industry (banking) that shared very similar names, but overwhelmingly decided to change them in response to a common, negative news shock. U.S. entry into World War I in 1917 created a sudden anti-German backlash against anything that invoked an association with the now enemy. The shock itself was thus orthogonal to bank fundamentals and pre-existing trends, but pushed banks to reconsider their brands. After 1917, the few German-named banks that kept their tainted names saw significant declines in assets, deposits, and market share relative to other banks. However, German-named banks that rebranded mitigated much of the negative shock. Specifically, German-named banks that adopted a new non-ethnic brand name avoided between 75% and 85% of the anti-German effect, and those that adopted a new patriotic brand name were able to neutralize it completely. Overall, we find that “crisis rebranding” paid off in our historical setting regardless of the chosen brand, with patriotic rebranding proving the most effective at offsetting the exogenous shock.

*JEL Classification:* D22, G21, L25, M31, N12

*Keywords:* Corporate brands, brand management, brand equity, news shocks, reputation, World War I, commercial banks, patriotism

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We thank the editor, the associate editor, two anonymous referees, Xiaojing Dong, Andy Ferrara, Vicky Fouka, Markus Lampe, Desmond Lo, Martin Schreier, and Jianlin Wang as well as participants at the 2025 CEPR Applied Micro-Economic History Workshop in Heidelberg, the Leavey School of Business’s Marketing Department Seminar, the Economic History and Marketing Management brownbag seminars at Vienna University of Economics and Business, and departmental seminars at the Aix-Marseille School of Economics and Trinity College Dublin’s Economics Department for helpful comments and suggestions. We would also like to thank Eliza Maxfield for excellent research assistance as well as Peter Nencka for sharing code to identify historical populations of smaller U.S. cities and towns. Mitchener thanks the Ciocca Center for Entrepreneurship and Innovation at SCU for a grant funding this research. Any views expressed in this paper exclusively represent those of the authors and do not reflect the official viewpoint of the Oesterreichische Nationalbank, the European Central Bank or the Eurosistem. All remaining errors are our own.

# 1 Introduction

Firms often change their names in response to negative shocks when executives perceive the brand to be “tainted” and more of a liability than an asset (Muzellec and Lambkin, 2006; Wu, 2010; McDevitt, 2011; Joseph et al., 2021). Yet, despite a large literature on corporate rebranding (e.g. Horsky and Swyngedouw, 1987; Aaker, 1991; Stuart and Muzellec, 2004; Merrilees and Miller, 2008; Miller et al., 2014; Tsai et al., 2015; Fan et al., 2018; Zhao et al., 2018), we know little about whether rebranding efforts can effectively counter negative shocks to the value of corporate names. This gap in the literature is surprising because corporate names are regarded as important intangible assets (Shapiro, 1983; Tadelis, 1999). Companies devote significant resources to choosing and establishing their names (Keller, 2002, 2012; Bronnenberg et al., 2019), and thus corporate rebranding can imply substantial new costs (Klein and Leffler, 1981; Shetty, 2011; Minichilli et al., 2022).

One explanation for the limited empirical work on the effectiveness of rebranding in response to negative shocks is the challenge of endogeneity. Identification is daunting because, in most cases, the negative shock relates to the specific previous actions of the firm (e.g. Liu and Shankar, 2015; Wang et al., 2018; Hock and Raithel, 2020). For instance, ValuJet rebranded to AirTran in 1997 following a deadly 1996 crash in Florida, Philip Morris rebranded to Altria in 2003 after several high-profile tobacco lawsuits, and GMAC Bank rebranded to Ally Bank in 2009 after General Motors’ 2008 bailout. The unique nature of these shocks makes it difficult to measure the counterfactual of not rebranding. Instances where many similarly-named firms change their names in response to an exogenous, common shock are quite rare and often require studying firms in different industries due to trademark laws (e.g. Corbet et al., 2021).

In this paper, we utilize a natural experiment to surmount these empirical challenges in a specific historical context. The abrupt rise in animus toward ethnic Germans after U.S. entry into World War I (WWI) represented a significant negative “news shock” against the firms whose names invoked an association with the enemy, leading them to re-assess their corporate brands. We focus on the banking sector where, within a year and a half, more than 180 commercial banks throughout the U.S. removed the word “German” from their corporate identity. We hand-collect annual balance sheets for 24,629 commercial banks from 1912 to 1925 to measure the effect of this news shock and examine whether rebranding allowed German-named banks to mitigate it.

Our empirical setting has several unique features that allow us to identify the effects of this “crisis rebranding” in response to an exogenous shock. First, because regulatory restrictions on branching largely meant that banks operated in distinct geographic markets, the banks subject to the negative news shock all shared the word “German” in their corporate names prior to rebranding. This commonality greatly narrows any initial brand differences. Second, over 90% of German-named banks changed their name between mid-1917 and late-1919, but very few ever changed it in the decades before or after that window. The ability to focus on rebranding within this narrow window of time reduces the number of unobservable factors that might lead to name changes. Third, our study takes advantage of a unique setting where we can explore within-industry changes in corporate rebranding, helping us mitigate the potential bias arising from unobservables across industries. Fourth, the negative news shock that led many German-named banks to rebrand was due to national animus toward ethnic Germans rather than what the banks did *per se*. The shock was thus orthogonal to banks’ profitability, M&A activity, capital increases and changes in management. While each bank had the choice whether to rebrand when suddenly confronted with the exogenous shock, the fundamentals of rebranding German-named banks were similar to those of non-rebranding banks leading up to 1917 whether German or not.

Leveraging variation in the response of German-named banks to the shock, we use a synthetic difference-in-differences approach to identify several distinct effects. First, we find a sudden and sizable negative anti-German effect. Both German-named and non-German-named banks that kept their name (name keepers) performed similarly before the U.S. entered WWI, but diverged thereafter. On average, keeping the “tainted” brand after 1916 reduced German-named banks’ relative deposits, assets, and market shares by more than 40% through 1925. Second, we identify a strong positive neutral rebranding effect. German-named banks that rebranded by adopting a new non-ethnic name (neutral rebranders) were able to mitigate between 75% and 85% of the anti-German effect compared to German name keepers. Third, we show that a specific form of targeted rebranding allowed previously German-named banks to do even better than neutral rebranding. The deposits, assets, and market shares of those German-named banks that chose a new patriotic name (patriotic rebranders) grew 8–12% faster than those of neutral rebranders after 1916, fully offsetting the anti-German effect. Overall, we find that “crisis rebranding” paid off in our historical setting regardless of the chosen brand, but certain brand choices did more to offset the shock.

Researchers have found a variety of ways to measure the value of brands at the product level (e.g. Keller, 1993; Simon and Sullivan, 1993; Goldfarb et al., 2009; Allenby et al., 2014, 2019; Ben-Akiva et al., 2019; He and Calder, 2020), but the branding literature features few quantitative analyses of corporate rebranding. Due to the unique nature of firms’ rebranding decisions, much of the literature has relied on qualitative case studies of a single firm (Boyle, 2002; Verdin, 2002; Hatch and Schultz, 2003; Moore and Birtwistle, 2004). A few empirical studies also draw on name changes across industries and over time (Horsky and Swyngedouw, 1987; Fan et al., 2018; Miller et al., 2014). The historical rebranding episode studied in our paper builds on this prior research by allowing for the empirical analysis of many similarly-named firms, within a single industry, and during a short period of time. This enables the historical analysis to avoid many of the standard endogeneity concerns over why firms choose to rebrand and simultaneous confounders associated with rebranding (e.g. Dacin et al., 2002; Wu, 2010; Kalaighnam and Bahadir, 2013; Kashmiri and Mahajan, 2015; Tsai et al., 2015).

Our results offer novel refinements to the literature on crisis rebranding and boycotts triggered by exogenous shocks. First, in comparison to studies examining the effects of rapidly dissipating political shocks and boycotts (e.g., Chavis and Leslie (2009) look at the boycott of French wine during the Iraq war and Liaukonytė et al. (2023) study the boycott and counter “buycott” of Goya after their CEO’s support of Trump in 2020), the anti-German ethnic animus we analyze lasted through World War II. For example, banks that maintained their ethnic brand were still not rebounding from the shock by 1925, the end of our sample period. Our historical study thus provides an interesting example of firms not being able to wait out the shock. Moreover, the conventional view (e.g. Glynn and Marquis, 2004; Cooper et al., 2005; Muzellec and Lambkin, 2006; Vergne, 2012) is that rebranding in response to negative shocks is most effective when it decisively severs any association with the “tainted” corporate name. For our setting, we document that assessing a firm’s brand relative to the current climate might have been even more important. We show that targeted rebranding from one ethnic/national identity to another (e.g., changing from “German Bank” to “American Bank”) fully eliminated the impact of an exogenous negative news shock whereas rebranding along a different dimension (e.g., changing to “Farmers Bank”) did not. Our findings are thus consistent with the positive return to patriotic names, especially during wartime (Benos and Jochev, 2013; Biavaschi et al., 2017).

Finally, our study contributes to the economics of assimilation, discrimination, and taste

shocks (e.g. Charles and Guryan, 2011; Moser, 2012; Abramitzky et al., 2014; Nguyen et al., 2018; Abramitzky et al., 2020). Zooming in on firms, we complement recent evidence that anti-German discrimination after U.S. entry into WWI had lasting adverse effects on ethnic Germans’ labor market outcomes (Fouka, 2019, 2020; Ferrara and Fishback, 2024). In this sense, our paper is also related to Fouka and Voth (2023), Schoenmueller et al. (2023) and Proffen and Jürgensmeier (2024) who show that (sudden) changes in ethnic, national or political animus can affect consumer preferences and firms’ success. More generally, our paper connects to a recent literature exploring the economic effects of patriotism (Dávila and Mora, 2012; Caprettini and Voth, 2023).

The remainder of this paper is organized as follows. Section 2 discusses the historical background. Section 3 describes our data. Section 4 presents the main empirical results and robustness checks. Section 5 concludes and suggests some pathways for additional research. An Online Appendix offers details on the drivers of rebranding, and provides additional robustness checks and extensions.

## 2 Historical Background

Due to the consistent flows of migrants arriving from Germany and Austria over the previous century, Germans were not only the largest ethnic group in the U.S. by WWI (more than 10% of the country’s population in 1910), but were also considered by some to be the most socially and economically successful (e.g. Ferrara and Fishback, 2024). Local entrepreneurs established financial institutions to specifically serve the ethnic community. These banks often used the word “German” in their corporate names as a branding strategy to attract customers (depositors). The most common of these names were “German-American Bank,” “German Savings Bank,” “German State Bank,” and simply “German Bank.” Similar to German-language houses of worship, schools, and newspapers, several of the banks even hired presidents, cashiers, and tellers who could speak German when they were first founded. The lighter colored dots in Figure 1 display the locations of all 206 German-named commercial banks in the U.S. in 1916, with larger circumference circles indicating more banks. The banks tended to be located in urban areas with larger German communities (see Appendix Tables A1 and A2).

The similarity of German bank names did not reduce the value of banks’ brands. During the 1910s, many customers still relied on horses and wagons for transportation, which constrained their ability to bank in distant towns. Widespread adoption of automobiles in the 1920s would

Figure 1: **Banks with German names**



This figure shows the number and locations of all German-named banks in the U.S. in 1916 and 1920. See Section 3 for a discussion of the sources.

eventually give rural bank customers more choice over where to bank (Alston et al., 1994), but circa 1916, commercial banks served distinct, local markets. This geographical segmentation of the banking industry meant that two banks located in different cities could have identical corporate names without losing customers (who normally use brands to distinguish the quality and reliability of firms) or facing trademark infringement lawsuits.<sup>1</sup> This feature of the historical period limits any differences in the initial brands of German-named banks.

By 1916, many of these German-named banks had been serving their communities for decades. For instance, the average German-named bank was nearly 18 years old, comparable to non-German-named counterparts in the same towns. Appendix Table A3 shows German-named banks also had higher-than-average accumulated surplus and deposit bases in comparison to other banks located in the same town, suggesting they were both stable and successful. And, given the substantial spatial clustering of Germans and continuing immigration flows (Abramitzky and Boustan, 2017), the corporate brands of German-named banks provided a

<sup>1</sup>German-named banks were not the only ones with similar names. In our sample, over 3,200 banks had “First” and over 1,800 banks had “Farmers” as part of their name in 1916. Disputes over bank names and their trademarks appear to have become more salient with the deregulation of banking and branching at the end of the 20<sup>th</sup> century (Conley and Hunter, 2007).

natural marketing advantage in attracting new customers. Indeed, only two German-named banks changed their name in the 5 years before 1916, a lower rate than for non-German named banks over the same period.

All of this suggests that branding with a German name had proven to be advantageous to these financial institutions. However, as shown in Figure 1, only 12 of the 206 banks in 1916 with German names remained in operation with that name by 1920.<sup>2</sup> This was not due to these banks failing: only 12 of the German-named banks in our sample ceased operation from 1917 to 1921, with the preponderance of these exiting via mergers and acquisitions. Rather, it was due to the management of these banks overwhelmingly deciding to remove this specific ethnic identifier from their established corporate brand. Narrative evidence from newspapers indicates that the sudden rebranding decisions were due to a considerable negative news shock.

Historians have shown that animus toward Germans and German-Americans rose dramatically throughout the country after U.S. entry into WWI on April 6, 1917 on the side of France and the UK. Before the war, Germans had been viewed as hard-working, patriotic members of society who had quickly assimilated (Higham, 1955), but attitudes suddenly changed. For instance, Ferrara and Fishback (2024) find almost no newspaper articles using derogatory words, such as “huns”, when referring to German(-born) Americans before 1917, but in 1918, 15–20% used such words. Discrimination was pervasive and took many forms (Fouka, 2019) including: the banning of teaching children in German (Lleras-Muney and Shertzer, 2015); the reallocation of educational resources away from schools with German communities (Fouka, 2020; Schmick and Shertzer, 2020); the renaming of common foods (such as frankfurters and hamburgers to hot dogs and liberty steaks); labor market discrimination (Moser, 2012); and physical harm, such as lynchings and tarrings (Ferrara and Fishback, 2024). The backlash even pushed many Germans in the U.S. to Americanize their legal name in order to avoid discrimination (Biavaschi et al., 2017).

Banks were not immune to anti-German ethnic animus. Many local newspapers contemporaneously reported that banks with German names were rebranding in response to the shift in national attitudes, as the examples below illustrate:

- No one would have ever questioned the loyalty of all the people connected with the bank, but it just shows what a bad name will do even when it is attached to a good object. The change of name does not make Mr. Cole [Vice-President

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<sup>2</sup>Of the handful of German-named banks that kept the name through 1920, only one changed its name before the Great Depression. Hence, if a bank made it out of WWI with a German name, it was very likely to keep it.

of Germania State Bank] and his associates any more loyal, that would be impossible, but it just takes away a name that has a bad sound to the real American ear, at present. – *The Brookings Register, Brookings, South Dakota, Thursday, July 4, 1918, p.12*

- The ‘German’ has been expunged from the name of the German-American Savings Bank. This action was taken by the directors of the financial institution last night and the stockholders will be called in the near future so as to amend the articles of incorporation and take the necessary steps to make the change legal. The loyalty of the bank has never been in question and the action in changing the name was prompted by the sentiment against the German appellation. Officials of the bank have always taken a leading part in all patriotic movements. – *Muscatine News-Tribune, Muscatine, Iowa, Wednesday, April 10, 1918, p.8*

While all German-named banks started with a very similar brand, they did not all rebrand the same way. Many adopted their unique town, county, or state name, but a substantial share of banks with “German” in their names in 1916 rebranded in a manner that reporters referred to as the “Spirit of 1918” – a wave of patriotism sweeping the U.S. after its entry into the war. Following the commonly used “bag of words” methodology ([Gentzkow and Shapiro, 2010](#); [Enke, 2020](#)), we define a German-named bank as a “patriotic rebrander” if it changed its name to include one of the following words: “American,” “United States,” “Liberty,” or “Lincoln”.<sup>3</sup> Under this definition, roughly 40% of all German-named banks across the entire U.S. rebranded patriotically in the “Spirit of 1918.” Apart from location-related and patriotic new names, there were few other name clusters for the corporate rebranders. For instance, the combination of the next four most common new names (9 banks adopted “Farmers”, 5 adopted “Commercial”, 4 adopted “Citizens”, and 3 adopted “First”) represented only 11.5% of all rebranding German-named banks.

Newspaper articles provide clear illustrations of patriotic rebranding. For instance, the board of directors of the Germania Savings Bank sent the following circular to its shareholders after rebranding as American Savings Bank:

[O]wing to the fact that we are at war with Germany, and that there is considerable prejudice among the people of this country toward anything apparently connected by name or otherwise with Germany, and looking to the best interests of the Germania Savings Bank and its individual stockholders, and deeming it to be sound business policy to change the name of said bank, [we] adopt a patriotic name for the same [...]. – *Macon County Daily Telegraph, Macon, Georgia, Tuesday, May 29, 1917, p.11*

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<sup>3</sup>Our patriotic word bag is similar to those in other U.S. historical settings (c.f. [Esposito et al., 2023](#)).

In our empirical analysis, we test whether patriotic rebranding was more or less effective than the adoption of a non-ethnic new name (neutral rebranding) in offsetting the effects of the negative news shock on firm outcomes.

Not all German-named banks decided to rebrand. News articles reported that some were hesitant to change their names because their existing brands had significant value or because the cost of changing their names would be substantial, requiring everything from new building signage and stationery to printing new bank notes and checks. Eventually, a small number of German-named banks did not rebrand in response to the news shock, allowing us to disentangle the impact of the anti-German effect in the analysis below.

### 3 Data

Bank-level data are needed to identify and analyze the outcomes of commercial bank name changes. We therefore collected balance sheets from the *Annual Report of the Comptroller of the Currency* and from each state’s banking reports for the period 1912-1925.<sup>4</sup> Several states did not report individual bank balance sheets during our sample period and thus cannot be included in our study. The sample therefore consists of banking data for 28 states (17,790 individual banks in the cross-section for 1916). As seen in Appendix Figure B1, the data set includes banks from all regions of the U.S., covering states and locations with diverse economic, geographic and structural characteristics. The data set comprises more than 65% of all commercial banks and about 80% of all German-named banks operating in 1916. We determine each bank’s establishment date from *Rand McNally Banker’s Directory* and whether it was a Federal Reserve member using the *Annual Report of the Federal Reserve Board*.

We track any changes to the names of banks in our sample period using the official reports from various banking regulators and descriptions in *Rand McNally Banker’s Directory*. To the extent possible, we do not include name changes after mergers or receivership. We validate these changes for German-named banks using contemporary newspapers and the monthly American Bankers Association membership lists in the *Journal of the American Bankers Association*, which recorded updates to members’ corporate attributes (name, location, etc.).

We identify German-named banks by the presence of the word “German” in the bank’s

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<sup>4</sup>For the few states that reported data every other year or did not report it in some years, we use linear interpolation to fill in the missing data. While the *Rand McNally Banker’s Directory* reports some basic balance sheet information for all banks, it does not contain a measure for total assets or liabilities during our period, nor does it provide sufficient information to accurately calculate such values. Further, the values in the *Directory* are self-reported by banks and therefore might not be consistently tabulated across locations.

name.<sup>5</sup> We exclude banks whose “German” refers to their town name or place (e.g., Germantown State Bank located in South Germantown, WI). Banks domiciled in these locations may have benefited from strong local German communities, perhaps helping to cushion the impact of the anti-German shock, and their name might have signaled local civic pride rather than a connection to Germany. We also exclude those German-named banks that closed or merged with another bank after 1917 and that changed their name before 1917 (only two banks; none changed their name after 1919).

Across the entire U.S., 206 banks had German corporate brand names prior to American entry into the war and more than 180 subsequently changed their names. For our sample of states with bank balance sheet data, we have an unbalanced panel of 159 German-named banks that did not close or merge with another bank. Of these 159, 83 chose new neutral brands, 72 rebranded patriotically, and four kept their “contaminated” brands through 1925. The balanced version of the panel that we use for most of our empirical analysis contains 79 German-named banks, of which 38 are neutral rebranders, 39 are patriotic name changers, and two kept their names. The unbalanced sample also contains 23,810 non-German-named banks that kept their name whereas the balanced sample includes 8,251.

Figure 2 displays the number of banks that changed their name in each year, splitting the sample into German-named banks (dark bars) and all other banks (light bars). The vast majority of German-named banks changed their names between 1917 and 1919, with more than 125 banks rebranding in 1918 alone.<sup>6</sup> For comparison, each year a relatively small number of non-German-named banks in our sample rebranded, generally between 20 and 50 per year. Throughout the analysis, we drop non-German-named banks that rebranded as their decisions were closely related to their fundamentals (see Appendix C).

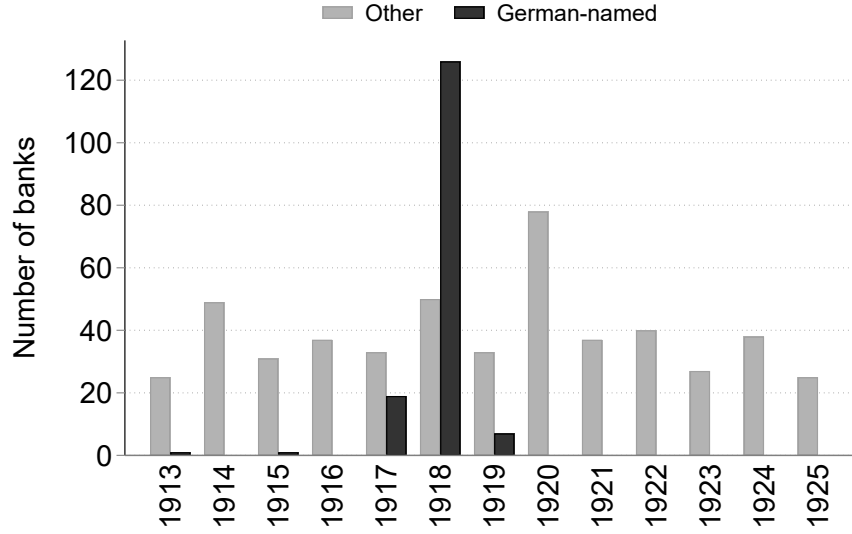
We augment the bank-level balance sheet data with information on each bank’s president (i.e., the CEO) from *Rand McNally Banker’s Directory*. We digitized these names for 1916 (20,262 individuals) and 1920 (21,741 individuals) and matched them with the balance sheet data. This matching provides measures of president turnover for 94% of the banks in our

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<sup>5</sup>Our empirical results are not sensitive to broadening the definition to include closely associated names (e.g., “Teutonic Bank”), names that reference German town names (e.g., “Bank of Berlin”) or names referring to non-allied countries besides Germany (i.e., Austria-Hungary, the Scandinavian countries, and Switzerland). We exclude these from the baseline sample because it is unlikely that they would have experienced the same anti-German effect as the other banks with “German” in their name. At the same, it also unlikely that they would have been completely untreated like non-German-named banks.

<sup>6</sup>Because nearly all German-named banks changed their name, the spatial distribution of German rebranders looks very similar to Figure 1 (see Appendix Figure B2).

Figure 2: **Bank name changes**



This figure plots the number of German-named and non-German-named banks (labeled “other”) that rebrand in each year during our sample period.

sample.<sup>7</sup>

To capture differences in customers and markets, we assemble data for a variety of town (municipality) and county-level measures. We obtain the population in 1910 of each town with a bank drawing on U.S. Census data so we can observe the size of the relevant market for banks. We start with the *United States Historical City Populations, 1790–2010* data set compiled by Erik Steiner and Jason A. Heppler ([U.S. Census Bureau and Steiner, 2022](#)) and then obtain any missing towns by scraping the official Census population from their Wikipedia pages.<sup>8</sup> Another town-level variable we collected was the headquarters’ locations of all German-language newspapers published in the U.S. at the beginning of 1917. We gathered these data from the online repository of the *Library of Congress*. We also obtained information on economic structure and demographic differences across counties from the U.S. census of 1910 and 1920 as published by [Haines and ICPSR \(2010\)](#) and [Haines et al. \(2016\)](#).

<sup>7</sup>In absolute numbers, we are able to match president data across time and to the balance sheets for 16,730 out of 17,790 banks active in 1916. Unmatched banks are due to exits before 1920 or entries after 1916.

<sup>8</sup>We thank Peter Nencka for sharing his methodology and script for scraping small-town census data.

## 4 Corporate Name Changes and Firm-level Outcomes

### 4.1 Empirical Strategy

To assess the impact of the negative news shock and of crisis rebranding on the performance of German-named banks, we focus on three relevant outcomes for commercial banks: (1) the log of total assets, (2) the log of total deposits, and (3) the log of the market share of a bank’s deposits in the town where the bank operates. Assets (notably loans and investments) are used to generate profits, and thus represent a bank’s productive capacity. Deposits reflect how customers perceive the bank, in terms of stability and the services it provides. Banks that are losing deposits also find it harder to generate profits through liquidity transformation (i.e., turning short-term liabilities into long-term assets such as loans, investments, and securities). Finally, we capture bank performance relative to peers through their market share of local deposits.<sup>9</sup>

Our novel bank-level data covering *all* banks in 28 U.S. states allow us to identify four distinct effects using changes in the bank outcomes before and after the US entered WWI in 1917:

1. **Anti-German effect.** This effect measures the extent to which the negative news shock following U.S. entry into WWI impacted German-named banks. We obtain the *anti-German effect* by comparing the few German-named banks that kept their tainted name (German name keepers) to non-German-named banks that did not rebrand (non-German name keepers).
2. **Neutral rebranding effect.** This effect measures whether and to what extent German-named banks were able to mitigate the negative news shock by switching to a new neutral name, such as “Commercial Bank”, “Second Bank” or simply “State Bank.” We obtain the *neutral rebranding effect* by comparing German name keepers to German-named banks that rebranded but did *not* adopt a specifically patriotic new name (German neutral rebranders), as defined in Section 2.
3. **Patriotic framing effect.** This effect measures the incremental benefit accruing to German-named banks that adopted explicitly patriotic new names (German patriotic

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<sup>9</sup>Because we lack historical income statements for banks in our sample, we cannot examine revenue or profit.

rebranders) in response to the negative news shock. We obtain the *patriotic framing effect* by comparing German patriotic rebranders to German neutral rebranders.

4. **Combined Effect.** This effect measures the total effect of patriotic rebranding. We obtain the *combined effect* by comparing German patriotic rebranders to non-German name keepers. It represents the combination of the *anti-German effect*, the *neutral rebranding effect* and the *patriotic framing effect*.

To illustrate and quantify these four distinct effects in several complementary ways, we first provide event-study plots to let the raw data speak for themselves. Next, we use synthetic control techniques to tease out plausibly causal estimates of each effect. Given so few German-named banks kept their names and stayed in operation through 1925, a synthetic control approach is most suitable for estimating the anti-German effect and the neutral rebranding effect. It is also capable of reliably estimating the patriotic framing and combined effects. Finally, we employ a series of robustness checks, including a staggered difference-in-differences approach, to show that our key findings are robust to a variety of modeling choices and controls.

## 4.2 Descriptive Event-Study Plots

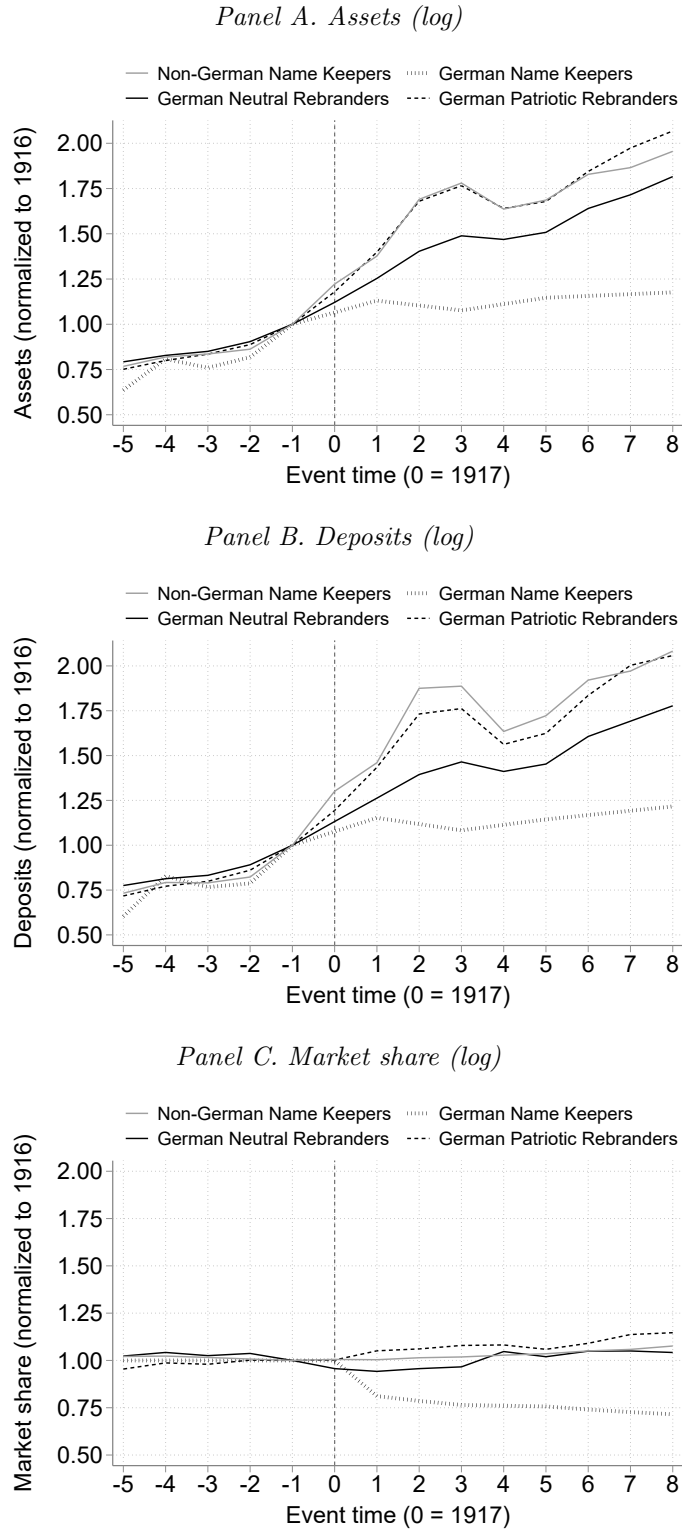
As a starting point for our analysis, Figure 3 constructs descriptive event-study plots for the four main groups of banks between 1912 and 1925: non-German name keepers, German name keepers, German neutral rebranders, and German patriotic rebranders. To construct the plots shown in the figure, we begin by normalizing, for each individual bank, the evolution of total assets (Panel A), total deposits (Panel B) and the market share of deposits (Panel C) by the respective value in 1916. As a first line of defense against spurious effects (e.g., survivorship bias or particularly high growth rates of newly founded banks), we only rely on banks for which we have a balanced panel.<sup>10</sup> Based on the normalized bank-level paths, we then compute the average trends of each group and normalize event time so that 1917 corresponds to time 0. The vertical line in each panel represents the normalized date (1917).

Figure 3 reveals two important preliminary insights. First, the evolution of the three outcome variables shows no pronounced pre-trends in the run-up to the negative news shock. All four bank groups evolve in parallel and display remarkably similar growth rates prior to 1917.

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<sup>10</sup>A balanced panel is also required for the construction of synthetic controls. However, as a robustness check, we relax this constraint in our staggered difference-in-differences model.

Figure 3: **Descriptive event-study plots**



This figure shows descriptive event-study plots for four different groups of banks between 1912 and 1925 based on the balanced bank-level panel data: non-German-named banks that kept their names (8,251 individual banks), German-named banks that kept their existing brands (two banks), German-named banks that adopted neutral (i.e., non-patriotic) new names (38 individual banks), and German-named banks that adopted patriotic new names (39 individual banks). To construct the plots, we first normalize, for each bank, the evolution of total assets (Panel A), total deposits (Panel B) and the market share of deposits (Panel C) by their respective value in 1916. Second, based on the normalized bank-level paths, we compute and report the average trends of each group shown in the figure. We also normalize event time so that 1917 = 0.

The parallel trends underscore that the negative news shock was not anticipated and that German-named banks did no worse than other banks before U.S. entry into WWI. We formally corroborate this insight in Appendix C, where we show that firm-level fundamentals cannot explain the timing of rebranding decisions by German-named banks. This finding is in stark contrast to non-German-named banks whose rebranding was predictable.

Second, Figure 3 indicates a consistent hierarchy of group performance across all three panels. German name keepers, which forms the group that captures the anti-German effect relative to non-German name keepers, clearly performed the worst after 1916. Their deposits and assets were nearly 50% lower and their market share over 25% lower than the next lowest group. This effect seems to have persisted, as there was little catch-up over time. German neutral rebranders did substantially better than German name keepers, but fell behind after 1916 relative to non-German name keepers and German patriotic rebranders. These last two groups not only exhibit the highest growth after 1916 but follow largely identical paths. Overall, the event-study plots based on the raw data suggest that crisis rebranding was beneficial for German-named banks. Depending on the rebranding strategy they pursued, Figure 3 suggests that rebranders either partially or fully mitigated the negative consequences of the anti-German effect.

### 4.3 Synthetic Difference-in-Differences Estimates

To allow for causal inference on the performance gaps between the four groups of banks, we draw on synthetic difference-in-differences, or SDiD, as pioneered by Arkhangelsky et al. (2021). SDiD is suitable for inference both when there are very few or multiple treated units. It can also accommodate staggered entry into treatment (as discussed in Section 3), allowing us to use the same estimation framework to identify all four of our effects of interest (i.e., the anti-German, neutral rebranding, patriotic framing and combined effects).<sup>11</sup> In addition, SDiD relaxes the requirement of exact pre-treatment fit of treatment and control groups in levels that is common for standard synthetic control analysis, relying instead on a (weighted) parallel trends assumption.

Like all research designs that construct synthetic control units by matching pre-treatment

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<sup>11</sup>Treatment with the anti-German shock is set to start in 1917. The effect of neutral rebranding takes places from 1917 onward because our analysis compares the German name keeper as the treated unit to German-named banks rebranding in a neutral way. Treatment with patriotic rebranding is staggered, depending on when a German-named bank chose to adopt a patriotic name. The rebranding, however, all takes place within two and a half years, meaning the results are similar if we start rebranding treatment in 1917.

trends, SDiD is susceptible to spurious correlations. Even in our setting characterized by a news shock orthogonal to fundamentals, rebranding could coincide with other structural adjustments (e.g., management changes, infusions of capital, etc.). From an econometric perspective, these coincidental bank-level changes represent potential confounders of the rebranding effect. In our baseline specifications, we address these threats to identification by creating the cleanest comparison groups possible, and show the results are robust to alternative approaches in the next subsection.

We obtain clean comparison groups through the following steps. First, German-named banks may have considered rebranding as part of a multifaceted strategy to signal a separation of their new corporate identity from the tainted German label. In particular, anecdotal evidence suggests that German-named state banks joined the Federal Reserve System following the news shock to advertise their association with a distinctly American institution (see Appendix D.1). We therefore exclude all state banks that became Federal Reserve members in 1917, 1918 and 1919 from our baseline SDiD estimation sample.

Second, firms often seek additional capital when rebranding in order to expand into new business areas or reach a broader customer base. We already exclude name changes that result from a merger or acquisition from the analysis, but any capital increases immediately after rebranding would be difficult to disentangle. In Appendix D.2, we show that capital changes do not significantly accompany name changes at German-named banks, on average, but do accompany those at the non-German rebranders that we drop from the sample. Nevertheless, we err on the side of caution and exclude all banks that changed their paid-in capital in 1917, 1918 or 1919 from our baseline SDiD estimation sample.

Third, the existing literature suggests that rebranding often goes hand in hand with changes in management (Dacin et al., 2002; Wu, 2010; Kashmiri and Mahajan, 2015; Tsai et al., 2015). In Appendix D.3, we provide evidence for a statistically and economically highly significant correlation between CEO turnover and rebranding in the case of banks with non-German corporate brands, but not for German-named banks. To again err on the safe side, we exclude all banks which replaced their president between 1916 and 1920 from our baseline SDiD estimation sample.

Armed with the balanced and cleaned estimation sample, we compute the average treatment effect on the treated ( $\tau^{\text{SDiD}}$ ) for each of our effects of interest following the procedure in

Arkhangelsky et al. (2021).<sup>12</sup> We first estimate unit weights ( $\omega_i^{\text{SDiD}}$ ) that align the pre-treatment trend of control units with that of the treated unit(s). After applying  $\omega_i^{\text{SDiD}}$  to re-weight the control units, we estimate a standard two-way fixed effects regression to obtain  $\tau^{\text{SDiD}}$ . Moreover, instead of assigning an equal weight to all pre-treatment periods as in conventional DiD, SDiD also uses time weights ( $\lambda_t^{\text{SDiD}}$ ) to focus on the most informative pre-treatment time periods only. SDiD selects time weights so that the weighted average of pre-treatment outcomes predicts average outcomes during the treatment period for control units, up to a constant. Equation 1 summarizes how we estimate our treatment effects of interest.

$$\left(\hat{\tau}^{\text{SDiD}}, \hat{\alpha}, \hat{\beta}\right) = \arg \min_{\tau, \alpha, \beta} \left\{ \sum_{i=1}^N \sum_{t=1}^T \hat{\omega}_i^{\text{SDiD}} \hat{\lambda}_t^{\text{SDiD}} (Y_{i,t} - \alpha_i - \beta_t - \tau D_{i,t})^2 \right\} \quad (1)$$

$Y_{i,t}$  represents the outcome for bank  $i$  in time  $t$ ,  $\alpha_i$  are bank-level fixed effects, and  $\beta_t$  are year-fixed effects. For the anti-German effect and the neutral rebranding effect estimation, the treatment dummy  $D_{i,t}$  indicates the German name keepers and first turns on in 1917. For the patriotic name changes, the treatment dummy,  $D_{i,t}$ , takes the value of 1 in the year in which a German-named bank chooses a patriotic name and is equal to 1 in all subsequent years (recall that German-branded banks changed their names between 1917 and 1919 as shown in Figure 2).<sup>13</sup> Treatment is absorbing in the sense that  $D_{i,t}$  does not revert to 0 once it has been activated.

Table 1 summarizes the main results for all average treatment effects of interest and outcome variables. We provide dynamic effect estimates, the paths of constructed synthetic controls, and the selected time weights in Appendix Figures B3 – B8.

Our econometric results echo the event-study plots. All estimated effects are statistically significant at conventional levels. First, we find evidence for a large and negative anti-German effect (Panel A). Specifically, German name keepers experienced significant declines in assets, deposits, and market shares compared to non-German name keepers after 1916. These declines are economically large, ranging from 42% to 44%. The wait and see approach does not seem to have been viable as anti-German ethnic animus continued for quite some time after WWI and

<sup>12</sup>Our cleaning approach requires that we drop one of our two German name keeper banks, as it changed both its capital and joined the Federal Reserve. The baseline results for the anti-German effect and the neutral rebranding effect reported below are similar, albeit a bit smaller in size, if we were to keep this bank in the analysis. Also, as shown in Appendix Table E5, the results are similar when we include all banks that changed their capital, directors, or Fed membership.

<sup>13</sup>In our robustness checks, we also run difference-in-differences models using an estimator that explicitly accounts for staggered entry into treatment (Borusyak et al., 2024).

Table 1: **Average treatment effects on bank-level outcomes (SDiD)**

| <b>Panel A. Anti-German effect</b>                                       |                       |                       |                        |
|--------------------------------------------------------------------------|-----------------------|-----------------------|------------------------|
| <i>German name keepers relative to non-German name keepers</i>           |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.5401**<br>(0.2340) | -0.5637**<br>(0.2717) | -0.5846***<br>(0.1468) |
| ATET (percent difference)                                                | -41.73%               | -43.09%               | -44.27%                |
| Total banks (German name keepers)                                        | 5,091 (1)             | 5,091 (1)             | 5,091 (1)              |
| <b>Panel B. Neutral rebranding effect</b>                                |                       |                       |                        |
| <i>German name keepers relative to German neutral rebranders</i>         |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.4042**<br>(0.1872) | -0.3488*<br>(0.2032)  | -0.4956***<br>(0.1261) |
| ATET (percent difference)                                                | -33.25%               | -29.45%               | -39.08%                |
| Total banks (German name keepers)                                        | 17 (1)                | 17 (1)                | 17 (1)                 |
| <b>Panel C. Patriotic framing effect</b>                                 |                       |                       |                        |
| <i>German patriotic rebranders relative to German neutral rebranders</i> |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | 0.0790*<br>(0.0466)   | 0.0941*<br>(0.0527)   | 0.1182**<br>(0.0480)   |
| ATET (percent difference)                                                | +8.23%                | +9.87%                | +12.54%                |
| Total banks (patriotic rebranders)                                       | 38 (22)               | 38 (22)               | 38 (22)                |
| <b>Panel D. Combined effect</b>                                          |                       |                       |                        |
| <i>German patriotic rebranders relative to non-German name keepers</i>   |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.0361<br>(0.0412)   | -0.0548<br>(0.0415)   | 0.0205<br>(0.0368)     |
| ATET (percent difference)                                                | -3.55%                | -5.33%                | +2.08%                 |
| Total banks (patriotic rebranders)                                       | 5,112 (22)            | 5,112 (22)            | 5,112 (22)             |

This table presents synthetic difference-in-differences (SDiD) estimates for all average treatment effects on the treated (ATET): the anti-German effect (Panel A) compares German name keepers to non-German name keepers, the neutral rebranding effect (Panel B) compares German neutral rebranders to German name keepers, and the patriotic framing effect (Panel C) compares German patriotic rebranders to German neutral rebranders. Panel D contains the combined effect, which compares German patriotic rebranders to non-German name keepers, checking whether the neutral and patriotic framing effects together mitigate the anti-German effect. Given that we only have one treated unit, Panel A and Panel B display placebo-method based standard errors clustered at the bank level in parentheses. In Panel C and Panel D, we use conventional bootstrapped standard errors, also clustered at the bank level. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

likely through WWII.

Second, the neutral rebranding effect mitigated a substantial portion of the anti-German effect, but did not fully eliminate it (Panel B). Specifically, German name keepers experienced significant declines in the three outcomes after 1916 compared to German neutral rebranders, but the decline was smaller than that relative to non-German name keepers. For example, German name keepers experienced a relative decline in total assets of 42% compared to non-German name keepers but only 33% compared to German neutral rebranders. Hence, based on the ATET in log points, neutral rebranding on average mitigated about 75% of the anti-German effect on total assets.

Third, we find a positive patriotic framing effect (Panel C). Compared to German neutral rebranders, German patriotic rebranders saw a significant 8% to 12% boost in assets, deposits, and market share after 1916. Measured in log points, the non-nested estimates in Panels A, B and C suggest that the neutral rebranding effect and the patriotic framing effect together make up for more than 89% of the negative anti-German effect on total assets and 79% of the effect on total deposits.<sup>14</sup> Based on the same estimates, patriotic rebranding even appears to have more than fully overcome the negative effect on market share (105%).

Yet, because the separate SDiD analyses in Panel A, B and C are not a nested model, simply adding up the three estimated ATETs does not conclusively answer the question of whether the combination of the effects (anti-German effect – neutral rebranding effect + patriotic framing effect) for any of the three outcomes is *statistically* different from zero. To demonstrate that patriotic rebranding effectively overcame the anti-German effect, we need to show that German patriotic rebranders did not significantly differ from non-German name keepers. We thus run a fourth SDiD analysis comparing non-German name keepers and German patriotic rebranders to produce a *combined effect*. The results displayed in Panel D fail to reject the null that German patriotic rebranders performed the same as non-German name keepers for any of the three outcome variables.

While the anti-German shock is clearly exogenous to the fundamentals and previous decisions of the German-named banks, bank management still had the choice to rebrand and what new name to select. These choices are unlikely to bias our results for several reasons. First, the various groups' observable fundamentals and pre-trends were very similar before 1917. Second, while some pre-existing differences could have enabled particular German-named banks to

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<sup>14</sup>To illustrate, for total assets we calculate the extent of mitigation as follows:  $(0.4042 + 0.0790)/0.5401 \times 100$ .

perform better after 1917, the most likely reason this might occur would be that those German-named banks that chose to keep their name did so because the German communities in which they established their banks were better equipped to weather the anti-German shock. However, if this were true, it should bias the anti-German and the neutral rebranding effects towards zero. Instead, it is more likely that German-named banks that did not rebrand simply misjudged the cost of keeping their names and suffered as a result.

Another potential source of concern would be if, conditional on deciding to rebrand, German-named banks that chose patriotic names were unobservably different from those that chose neutral new names in ways that would only matter during the negative news shock. For instance, patriotic rebranders may have more aggressively promoted their rebranding, previously served more American-identifying customers, or had managers with stronger American ties. These factors may have been important when confronting the anti-German effect and thus led German patriotic rebranders to perform better relative to German neutral rebranders only after 1916.

However, the evidence does not support this possibility. The specific name choice seems related to the cost of changing a name rather than being drawn to the actual patriotic name itself. Specifically, over 60% of patriotic rebranders had “German-American” in their name, and chose to simply drop the “German” word. Indeed, we find similar results when we control the fraction of German immigrants in the county (see next subsection). Furthermore, patriotic rebranders’ presidents were no less likely to have a German last name than neutral rebranders. Compared to neutral rebranders, patriotic rebranders had also accrued similar brand value as proxied by bank age in 1916.<sup>15</sup> Finally, news articles reporting on the rebranding German-named banks in our sample do not describe examples of patriotic rebranders announcing special war programs or community investments after rebranding. American communities were, in general, seeking to display their patriotism after US entry into the war and, at least publicly, it does not seem to be the case that patriotic rebranders were working harder to win over depositors than neutral rebranders after the news shock. While it is impossible to fully rule out every potential

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<sup>15</sup>The marketing science literature suggests that firms that have established a loyal customer base through a well-established corporate brand might experience greater losses when changing their names (e.g. [Horsky and Swyngedouw, 1987](#); [Muzellec and Lambkin, 2006](#); [Shetty, 2011](#); [Lam and Shankar, 2014](#); [Miller et al., 2014](#)). In Appendix Table A4, we decompose the sample of German rebranders by bank age (a commonly used proxy for accrued brand value) rather than their new brand name. The results show that the joint impact of anti-German and rebranding effects was more negative for those German-named banks with above median age (19 years) as of 1916. The cleaned and balanced estimation sample contains 16 neutral rebranders and 22 patriotic rebranders. Exactly 8 neutral rebranders and 11 patriotic rebranders are classified as treated based on their age. Hence, treatment based on accrued brand value as proxied by bank age in 1916 was balanced across neutral and patriotic rebranders.

issue, any endogeneity of patriotic rebranding relative to neutral rebranding should affect the patriotic framing effect rather than the average rebranding effect. To put it another way, our results clearly show that rebranding helped banks avoid a large portion of the anti-German sentiment regardless of any endogenous name choice.

The data show that rebranding helped German-named banks avoid at least some of the anti-German effect after U.S. entry into WWI. The exact choice of a new brand then dictated how much of the anti-German effect a bank was able to avoid. These results refine the conventional view that rebranding along a conceptually different dimension represents the most effective remedy for a tainted name (e.g. Glynn and Marquis, 2004; Cooper et al., 2005; Muzellec and Lambkin, 2006; Vergne, 2012). Patriotic rebranding strategies that followed the zeitgeist (i.e., the “Spirit of 1918”) paid off, even though they continued to follow the previous conceptual dimension of ethnic/national identity. Further, at least in this case, banks could not simply wait out the shock as the impact of the anti-German effect continued through 1925 and likely longer given the rise of the Nazi party in the early-1930s.

#### 4.4 Robustness Checks

As shown in Appendix Figures B3 – B8, the synthetic controls we construct to estimate our effects of interest nicely approximate the pre-treatment trends of the different groups of banks. Nevertheless, to rule out alternative explanations, we conduct a battery of robustness checks.

First, we examine whether the effects arise from a mismatch between the locations of German banks and non-German name keepers. For starters, it could be that banks located in the country’s financial centers (Chicago and New York City) were special because they sat at the top of the American pyramid banking sector structure (e.g. Anderson et al., 2018; Mitchener and Richardson, 2019; Calomiris et al., 2022). Another possibility is that the agricultural boom-and-bust cycle associated with WWI affected banks differentially across states (Rajan and Ramcharan, 2015; Jaremski and Wheelock, 2020). Alternatively, it might have been the case that German-named banks were more likely to be located in places with large German populations, and if Germans were more likely to migrate during the war, then all banks might have lost deposits in those places.<sup>16</sup> We therefore estimate models where we drop New York City and Chicago banks (Appendix Table E1); only include banks located in Midwestern and

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<sup>16</sup>In our staggered difference-in-differences specifications below, we explicitly control for the share of a county’s population that was German interacted with year-fixed effects.

Great Plains states as these were more uniformly exposed to the agricultural boom and bust (Appendix Table E2); and only include banks in counties that had German-named banks as of 1916 before the news shock (Appendix Table E3). In each of these cases, our baseline results continue to hold.

Second, we investigate whether our results are driven by our definition of German-named banks. As discussed earlier, our baseline German-named banks variable only includes banks with “German” in their name. We chose this definition so that all banks we study had a very similar name prior to the war. Nevertheless, there were several other bank brands that depositors could have associated with Germany (e.g., “Teutonia National Bank”, “Bank of Bismarck”, “Bank of Hamburg”, or “Westphalia State Bank”). While we drop these other banks in the baseline analysis, Appendix Table E4 uses a broader definition of German-branded banks that includes these other types of German-named banks as well as banks with names referring to non-allied countries besides Germany (i.e., Austria-Hungary, the Scandinavian countries, and Switzerland). The main consequence of including these additional banks is that we gain an extra name keeper to study. As a result, the anti-German effect and the neutral rebranding effect are estimated with more precision than in Table 1, while their sizes remain largely unaffected.

Third, we address the confounder problem induced by structural changes simultaneous to rebranding in an alternative way. Instead of dropping banks that experienced changes in Fed membership, paid-in capital, or their bank president, we keep them in the sample and add time-varying controls for these variables into our SDiD estimation framework. In addition, we control for the total number of banks in a given town to rule out that the impact of rebranding on market shares is driven by spuriously correlated exits of local banks. We summarize the results in Appendix Table E5. The size and signs of the effects remain qualitatively unchanged, yet some of the effects are less precisely estimated than in Table 1. One potential explanation for this lower precision is the specific way in which SDiD handles the inclusion of covariates, as it may not fully capture factors that likely have time-varying effects during the war.<sup>17</sup>

Fourth, we draw on staggered difference-in-differences (DiD) regressions to account for additional observable factors that could be at play in a bank’s decision to change its name and granular-fixed effects at the bank and state-year level to absorb unobserved heterogeneity. The

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<sup>17</sup>SDiD first estimates the coefficients on controls based on pre-treatment data only. It then residualizes the outcome variable across all time periods by drawing on the estimated relationships from the pre-treatment data. Finally, it runs the standard SDiD procedure on the residualized outcomes. Whether coefficients based on pre-treatment data accurately capture the impact of time-varying controls during a war or crisis periods is an open question.

drawback of the staggered DiD is that there is an insufficient number of German name keepers to isolate the anti-German effect. Instead, we can only credibly estimate three effects: two that are exactly as above, and one that is a combination of two effects from our SDiD approach. As before, we can estimate the *patriotic framing effect* (comparing German neutral rebranders to German patriotic rebranders similar to Panel C in Table 1) and the *combined effect* (comparing German patriotic rebranders to non-German name keepers similar to Panel D in Table 1). Finally, we also estimate the *joint* impact of the *anti-German effect* and the *neutral rebranding effect* (comparing German neutral rebranders to non-German name keepers, i.e. a combination of Panels A and B in Table 1).

Equation 2 summarizes our baseline staggered DiD estimation equation where  $Y$  is the outcome variable for bank  $i$  in time  $t$ .

$$Y_{i,t} = \alpha_i + \delta_{s,t} + \beta D_{i,t} + \mathbf{X}'_{i,t} \Gamma + \sum_{k=1913}^{1925} [\mathbf{Z}_c \times \mathbb{1}(t = k)_t]' \Upsilon + \varepsilon_{i,t} \quad (2)$$

$\delta_{s,t}$  are state-year fixed effects that control for time varying, region-specific factors, such as changes in state bank regulations or exposure to the agricultural boom-and-bust cycle. The control vector  $\mathbf{X}'$  contains the following time-varying bank-level variables: (1) an indicator for whether the bank was a member of the Fed; (2) the logarithm of bank age plus 1; (3) the logarithm of the number of banks in each location; (4) the logarithm of paid in capital. The control vector  $\mathbf{Z}'$  contains time-invariant location- and bank-level variables interacted with year dummies. As the location-level, we include farms per capita in the county in 1910; (log) 1910 town population; the number of German newspapers per capita in the town; and the share of the county's population in 1910 that is German born.<sup>18</sup> At the bank-level, we include the 1916 values of the log of total assets, surplus and profits/capital, leverage ratio, and market share, as well as a dummy variable for bank-level management turnover between 1916 and 1920.<sup>19</sup> We estimate equation 2 using the imputation approach proposed by [Borusyak et al. \(2024\)](#) to account for the staggered adoption of treatment though the results are robust to using a standard two-way fixed effects estimator instead.

We start with estimating the *joint* impact of anti-German and the neutral rebranding effects in Panel A of Table 2. Echoing our SDiD findings in Table 1, neutral rebranding was on average

<sup>18</sup>[Ferrara and Fishback \(2024\)](#) show that many Germans migrated internally to escape animus toward ethnic Germans and this out-migration may have affected local banks (e.g., via deposit outflows).

<sup>19</sup>Unlike the synthetic control approach, the model is able to utilize an unbalanced panel. Yet, equation 2 requires that a bank was present in 1916 to be included in the estimation sample.

Table 2: German bank name changes and firm-level outcomes (staggered DiD)

| <b>Panel A. Anti-German and neutral rebranding effect</b>              |                        |                        |                       |
|------------------------------------------------------------------------|------------------------|------------------------|-----------------------|
| <i>Neutral German rebranders relative to non-German name keepers</i>   |                        |                        |                       |
|                                                                        | (1)                    | (2)                    | (3)                   |
|                                                                        | Assets (log)           | Deposits (log)         | Market share (log)    |
| ATET                                                                   | -0.0830***<br>(0.0270) | -0.1071***<br>(0.0324) | -0.0671**<br>(0.0335) |
| Observations                                                           | 185,483                | 185,483                | 185,483               |
| Adjusted R <sup>2</sup>                                                | 0.9767                 | 0.9622                 | 0.9748                |
| R <sup>2</sup> (within)                                                | 0.2984                 | 0.2316                 | 0.3152                |
| <b>Panel B. Patriotic framing effect</b>                               |                        |                        |                       |
| <i>German patriotic rebranders relative German neutral rebranders</i>  |                        |                        |                       |
|                                                                        | (1)                    | (2)                    | (3)                   |
|                                                                        | Assets (log)           | Deposits (log)         | Market share (log)    |
| ATET                                                                   | 0.1081***<br>(0.0410)  | 0.1516***<br>(0.0485)  | 0.1314***<br>(0.0489) |
| Observations                                                           | 1,828                  | 1,828                  | 1,828                 |
| Adjusted R <sup>2</sup>                                                | 0.9871                 | 0.9795                 | 0.9855                |
| R <sup>2</sup> (within)                                                | 0.4612                 | 0.4176                 | 0.3871                |
| <b>Panel C. Combined effect</b>                                        |                        |                        |                       |
| <i>German patriotic rebranders relative to non-German name keepers</i> |                        |                        |                       |
|                                                                        | (1)                    | (2)                    | (3)                   |
|                                                                        | Assets (log)           | Deposits (log)         | Market share (log)    |
| ATET                                                                   | -0.0071<br>(0.0277)    | -0.0065<br>(0.0315)    | -0.0015<br>(0.0328)   |
| Observations                                                           | 185,412                | 185,412                | 185,412               |
| Adjusted R <sup>2</sup>                                                | 0.9767                 | 0.9623                 | 0.9747                |
| R <sup>2</sup> (within)                                                | 0.2983                 | 0.2315                 | 0.3148                |

This table presents staggered difference-in-differences estimates for three average treatment effects on the treated (ATET). Panel A calculates the joint effect of the anti-German effect and neutral rebranding effect by comparing German neutral rebranders to non-German name keepers. Panel B calculates the patriotic framing effect by comparing German patriotic rebranders to German neutral rebranders. Panel C contains the combined effect which compares German patriotic rebranders to non-German name keepers, checking whether the neutral rebranding effect and the patriotic framing effect together mitigate the anti-German effect. All three panels draw on estimation equation 2 to obtain the pooled ATET. We use the imputation approach proposed by [Borusyak et al. \(2024\)](#) to estimate the ATET. All regressions include bank and state-year fixed effects, as well as the control vectors  $\mathbf{X}'$  and  $\mathbf{Z}'$ . R<sup>2</sup> statistics were obtained using the TWFE estimator. Clustered (bank-level) standard errors are shown in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

insufficient to fully mitigate the anti-German effect. German-named banks that rebranded in this manner on average experienced a decline in their assets by 8.0%, deposits by 10.1%, and market share by 6.5% relative to non-German-named banks that did not change their names.<sup>20</sup> The estimated values are slightly smaller than those implied by the SDiD model, suggesting that the inclusion of a large number of additional controls leads to an even stronger neutral rebranding effect.

Next, we examine the patriotic framing effect by comparing German patriotic rebranders to German neutral rebranders in Panel B in Table 2. Similar to the SDiD findings in Panel C of Table 1, rebranding patriotically compared to neutrally is predicted to increase a bank’s assets by 10.8%, deposits by 15.2%, and market share by 13.1% by 1925. These are slightly higher than the SDiD findings (7.9%, 9.4%, and 11.8%), suggesting that within the staggered DiD model, the patriotic framing effect is also a little stronger.

Finally, Panel C reports the combined effect results. Specifically, we compare the outcomes of German patriotic rebranders to non-German banks that do not rebrand. Similar to Panel D in Table 1, German patriotic rebranders’ outcomes are not significantly different from the non-German name keepers. If anything, the estimated difference between the groups for assets and deposits is smaller for the staggered DiD than the SDiD (-0.71% vs. -3.55% for assets, -0.65% vs. -5.33% for deposits, and -0.15% vs. 2.08% for market share). The results in Table 2 thus confirm the key insights from our SDiD estimates under additional time-varying controls and fixed effects.

## 5 Conclusion

We exploit a natural experiment to study the causal impact of rebranding in a specific historical context. U.S. entry into WWI in 1917 and the resulting surge in animus toward ethnic Germans represented a shock to banks whose names invoked an association with Emperor Wilhelm’s German Reich. Within several months, more than 180 commercial banks across the U.S. removed the word “German” from their corporate brand names. All of them had been operating in the same industry with similar business models and nearly identical brand names, but in different local markets. We leverage these German-named banks to conduct an analysis of rebranding choices in response to the exogenous negative news shock.

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<sup>20</sup>Appendix Figure E1 summarizes the corresponding fully interacted year-by-year results for the five years before and after corporate rebranding. It suggests no significant pre-trends in any of its panel and we confirm this visual insight using formal tests. This result underscores that, once more, German-named banks did no worse than non-German-named banks before U.S. entry into WWI.

Drawing on novel annual firm-level balance sheet data on banks between 1912 and 1925, our empirical analysis shows that the anti-German effect on bank outcomes was strongly negative. While German-named banks had similar fundamentals and pre-trends compared to other banks before 1917, the few that kept their name saw substantial declines in the assets, deposits, and market shares relative to non-German-named banks thereafter. Moreover, we find that rebranding mitigated much of the anti-German effect. Specifically, German-named banks that adopted a neutral new name performed significantly better than German name keepers after 1916. Finally, we show that German-named banks that chose a new patriotic brand name explicitly aimed to offset the news shock managed to fully avoid the negative anti-German effect. German patriotic rebranders fared significantly better than German neutral rebranders and no different than non-German-named banks.

We study the response to a unique exogenous historical news shock. While our findings do not necessarily apply to rebranding instances that arise from endogenous shocks, our study underscores that crisis rebranding can benefit firms, and that a “sit-tight-and-wait” strategy might not always constitute an effective response. Moreover, the incremental benefit accruing to German-named banks that adopted explicitly patriotic names suggests that successful crisis rebranding does not have to require choosing a new name along a conceptually different dimension to successfully sever the link to a tainted brand. In our context, patriotic rebranding strategies that followed the zeitgeist were most successful, even though they continued to follow the previous conceptual dimension of ethnic/national identity.

Our results suggest several avenues for future research. First, future work could investigate the factors driving the persistence – or fading – of (negative) news shocks to corporate names over time. Most German-named banks likely believed that the negative shock they faced after 1916 would not be short-lived and therefore chose to rebrand. While the existing literature says little about how animus toward ethnic Germans in the U.S. evolved during the interwar period, World War II, and beyond, German names and brands are once again positively perceived today.<sup>21</sup> To the best of our knowledge, it remains an open question when and why precisely the tide turned again. Second, our paper studies crisis rebranding in response to an exogenous shock that was unrelated to the actions of the specific firms that rebranded. In many cases, firms decide to rebrand after a crisis of their own making. Our study cannot shed light on the

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<sup>21</sup>For example, in its [2014 Super Bowl commercial](#), Volkswagen U.S. prided itself on its German tradition and engineering skills. Moreover, a 2024 [YouGov](#) survey suggests that consumers (even when isolated to Americans) around the world trust German products the most of any foreign products.

extent to which the rebranding response to exogenous versus endogenous shocks might need to be different, and suggests that further study is warranted. Third, our work highlights the vast historical variation in branding, marketing, and management strategies that remains to be studied. For example, due to the lack of trademark protection and the presence of distinct, partly segmented local markets, U.S. firms historically operated in potentially interesting quasi-experimental settings. While new data continues to become available, they have only started to be examined with an eye towards modern questions.

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# Banking on a Corporate Rebrand

## APPENDIX FOR ONLINE PUBLICATION

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This version: July 4, 2026

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We thank the editor, the associate editor, two anonymous referees, Xiaojing Dong, Andy Ferrara, Vicky Fouka, Markus Lampe, Desmond Lo, Martin Schreier, and Jianlin Wang as well as participants at the 2025 CEPR Applied Micro-Economic History Workshop in Heidelberg, the Leavey School of Business's Marketing Department Seminar, the Economic History and Marketing Management brownbag seminars at Vienna University of Economics and Business, and departmental seminars at the Aix-Marseille School of Economics and Trinity College Dublin's Economics Department for helpful comments and suggestions. We would also like to thank Eliza Maxfield for excellent research assistance as well as Peter Nencka for sharing code to identify historical populations of smaller U.S. cities and towns. Mitchener thanks the Ciocca Center for Entrepreneurship and Innovation at SCU for a grant funding this research. Any views expressed in this paper exclusively represent those of the authors and do not reflect the official viewpoint of the Oesterreichische Nationalbank, the European Central Bank or the Eurosysteem. All remaining errors are our own.

# APPENDIX FOR ONLINE PUBLICATION

## A Additional Tables

Table A1: **German-named banks vs. other banks: mean comparison tests (1916)**

|                                                             | Other             | German-named    | $\Delta$ of means | SE of $\Delta$ | t-stat for $\Delta$ |
|-------------------------------------------------------------|-------------------|-----------------|-------------------|----------------|---------------------|
| Total assets (in 100K USD)                                  | 11.57<br>[17,496] | 22.69<br>[174]  | -11.12            | 7.41           | -1.50               |
| Total deposits (in 100K USD)                                | 9.60<br>[17,496]  | 19.73<br>[174]  | -10.13            | 6.41           | -1.58               |
| Leverage ratio (total assets/capital and surplus)           | 6.28<br>[17,496]  | 7.67<br>[174]   | -1.39             | 0.22           | -6.42***            |
| Liquid asset ratio (specie and due from banks/total assets) | 0.23<br>[17,496]  | 0.20<br>[174]   | 0.02              | 0.01           | 2.25**              |
| Loan share (loans/total assets)                             | 0.63<br>[17,496]  | 0.67<br>[174]   | -0.04             | 0.01           | -2.66***            |
| Bonds share (bonds and stocks/total assets)                 | 0.09<br>[17,496]  | 0.09<br>[174]   | 0.00              | 0.01           | 0.32                |
| Bonds to loans ratio (bonds and stocks/loans)               | 0.54<br>[17,225]  | 0.18<br>[172]   | 0.36              | 2.88           | 0.13                |
| Deposit share (total deposits/total assets)                 | 0.77<br>[17,496]  | 0.83<br>[174]   | -0.06             | 0.01           | -6.36***            |
| Market share in location (total deposits)                   | 0.58<br>[17,496]  | 0.38<br>[174]   | 0.20              | 0.03           | 7.32***             |
| Excess market share in location (total deposits)            | 1.00<br>[17,496]  | 0.99<br>[174]   | 0.01              | 0.04           | 0.36                |
| Surplus and profits/capital                                 | 0.61<br>[17,496]  | 0.80<br>[174]   | -0.20             | 0.05           | -3.89***            |
| Bank age                                                    | 15.46<br>[17,496] | 18.88<br>[174]  | -3.42             | 1.01           | -3.39***            |
| National bank (dummy)                                       | 0.27<br>[17,496]  | 0.14<br>[174]   | 0.13              | 0.03           | 3.85***             |
| Fed member bank (dummy)                                     | 0.27<br>[17,496]  | 0.14<br>[174]   | 0.13              | 0.03           | 3.71***             |
| Only bank in town (dummy)                                   | 0.34<br>[17,496]  | 0.19<br>[174]   | 0.15              | 0.04           | 4.09***             |
| Share of German population (county, 1910)                   | 2.93<br>[17,144]  | 6.36<br>[174]   | -3.43             | 0.24           | -14.56***           |
| German newspapers per 100K inhabitants (city, 1910)         | 1.61<br>[17,496]  | 6.22<br>[173]   | -4.61             | 1.19           | -3.86***            |
| Farms per 1,000 inhabitants (county, 1910)                  | 98.52<br>[17,150] | 75.44<br>[174]  | 23.08             | 3.60           | 6.42***             |
| City population (in K, 1910)                                | 58.95<br>[16,310] | 167.77<br>[170] | -108.82           | 31.21          | -3.49***            |

This table presents mean comparison tests for bank-level variables (measured in 1916), town-level variables (measured in 1910) and county-level variables (measured in 1910), comparing German-named banks to all other banks present in our sample in 1916. The number of individual bank observations is shown in square brackets. Many locations did not feature German-named banks and many locations were single bank towns. These features of our data explain why the sample size in the table above is larger than in Table A3 below. The excess market share of bank  $i$  in location  $L$  is defined as follows: excess market share $_{i,L}$  = market share $_{i,L}/(1/\text{number of banks}_{i,L})$ . Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

Table A2: German-named banks vs. other banks: mean comparison tests (1920)

|                                                             | Other              | German-named    | $\Delta$ of means | SE of $\Delta$ | t-stat for $\Delta$ |
|-------------------------------------------------------------|--------------------|-----------------|-------------------|----------------|---------------------|
| Total assets (in 100K USD)                                  | 16.98<br>[19,315]  | 33.34<br>[154]  | -16.37            | 11.50          | -1.42               |
| Total deposits (in 100K USD)                                | 14.09<br>[19,315]  | 28.13<br>[154]  | -14.04            | 9.57           | -1.47               |
| Leverage ratio (total assets/capital and surplus)           | 8.25<br>[19,315]   | 9.73<br>[154]   | -1.47             | 0.29           | -5.03***            |
| Liquid asset ratio (specie and due from banks/total assets) | 0.14<br>[19,315]   | 0.14<br>[154]   | 0.01              | 0.01           | 0.92                |
| Loan share (loans/total assets)                             | 0.67<br>[19,315]   | 0.68<br>[154]   | -0.01             | 0.01           | -0.72               |
| Bonds share (bonds and stocks/total assets)                 | 0.13<br>[19,315]   | 0.14<br>[154]   | -0.01             | 0.01           | -0.68               |
| Bonds to loans ratio (bonds and stocks/loans)               | 0.81<br>[19,021]   | 0.25<br>[153]   | 0.56              | 3.75           | 0.15                |
| Deposit share (total deposits/total assets)                 | 0.79<br>[19,315]   | 0.83<br>[154]   | -0.05             | 0.01           | -4.62***            |
| Market share in location (total deposits)                   | 0.57<br>[19,315]   | 0.40<br>[154]   | 0.17              | 0.03           | 6.07***             |
| Excess market share in location (total deposits)            | 1.00<br>[19,315]   | 1.00<br>[154]   | 0.00              | 0.05           | 0.05                |
| Surplus and profits/capital                                 | 0.75<br>[19,315]   | 0.87<br>[154]   | -0.12             | 0.06           | -1.91*              |
| Bank age                                                    | 17.41<br>[19,315]  | 22.87<br>[154]  | -5.46             | 1.12           | -4.89***            |
| National bank (dummy)                                       | 0.26<br>[19,315]   | 0.14<br>[154]   | 0.13              | 0.04           | 3.52***             |
| Fed member bank (dummy)                                     | 0.31<br>[19,315]   | 0.27<br>[154]   | 0.05              | 0.04           | 1.23                |
| Only bank in town (dummy)                                   | 0.32<br>[19,315]   | 0.18<br>[154]   | 0.14              | 0.04           | 3.69***             |
| Share of German population (county, 1920)                   | 1.83<br>[19,227]   | 4.14<br>[154]   | -2.30             | 0.15           | -14.94***           |
| Farms per 1,000 inhabitants (county, 1920)                  | 95.39<br>[19,232]  | 73.78<br>[154]  | 21.61             | 3.86           | 5.60***             |
| City population (in K, 1920)                                | 70.85<br>[17,735]  | 201.17<br>[151] | -130.32           | 38.43          | -3.39***            |
| Farmland value (percent change, 1910-1920)                  | 95.41<br>[18,863]  | 88.93<br>[154]  | 6.48              | 5.25           | 1.23                |
| Improved acres (percent change, 1910-1920)                  | 3.57<br>[18,863]   | -1.73<br>[154]  | 5.31              | 1.81           | 2.94***             |
| Mortgage debt per farm (percent change, 1910-1920)          | 199.74<br>[18,845] | 144.19<br>[154] | 55.56             | 21.75          | 2.55**              |

This table presents mean comparison tests for bank-level variables (measured in 1920), town-level variables (measured in 1920) and county-level variables (measured as changes between 1920 and 1910), comparing German-named banks to all other banks present in our sample in 1920. The number of individual bank observations is shown in square brackets. The excess market share of bank  $i$  in location  $L$  is defined as follows: excess market share $_{i,L}$  = market share $_{i,L}$ /(1/number of banks $_{i,L}$ ). Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

Table A3: **German-named banks vs. other banks: within-town mean comparison tests (1916)**

|                                                             | Difference | SE of difference | t-stat for difference |
|-------------------------------------------------------------|------------|------------------|-----------------------|
| Total assets (in 100K USD)                                  | -13.44     | 12.88            | -1.04                 |
| Total deposits (in 100K USD)                                | -9.89      | 11.14            | -0.89                 |
| Leverage ratio (total assets/capital and surplus)           | 0.47       | 0.23             | 2.02**                |
| Liquid asset ratio (specie and due from banks/total assets) | -0.00      | 0.01             | -0.14                 |
| Loan share (loans/total assets)                             | 0.01       | 0.01             | 1.06                  |
| Bonds share (bonds and stocks/total assets)                 | -0.01      | 0.01             | -0.83                 |
| Deposit share (total deposits/total assets)                 | 0.03       | 0.01             | 3.11***               |
| Market share in location (total deposits)                   | -0.02      | 0.02             | -1.07                 |
| Surplus and profits/capital                                 | 0.19       | 0.07             | 2.68***               |
| Bank age                                                    | -0.39      | 1.38             | -0.28                 |
| National bank (dummy)                                       | -0.16      | 0.05             | -3.49***              |

This table shows within-town mean comparison tests between German-named and other banks in our sample for 1916 (11,713 banks in total, 141 of which have German names). We obtain the within-town difference in means estimates by regressing the variable of interest on a German bank dummy and town fixed effects. Note that several German-named banks drop from the estimation sample for 1916 (c.f. Table A1) because they were the only bank in their town. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

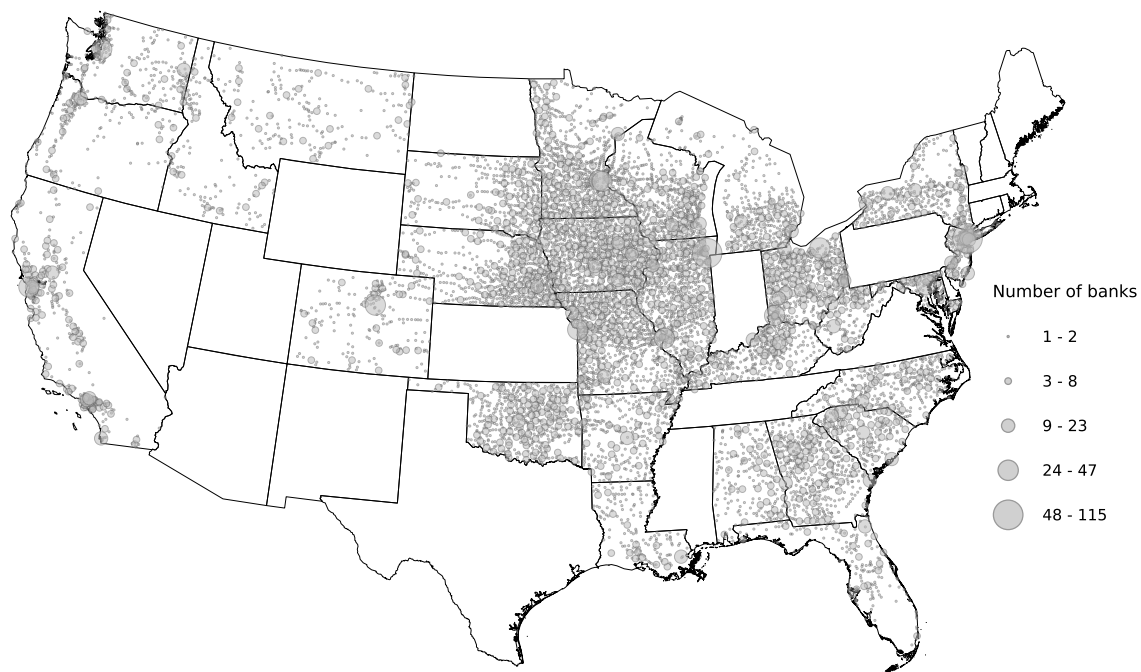
Table A4: **Heterogeneity by accrued brand value**

| <i>Established German rebranders relative to less established German rebranders</i> |                        |                        |                        |
|-------------------------------------------------------------------------------------|------------------------|------------------------|------------------------|
|                                                                                     | (1)                    | (2)                    | (3)                    |
|                                                                                     | Assets (log)           | Deposits (log)         | Market share (log)     |
| ATET (in log points)                                                                | -0.2110***<br>(0.0561) | -0.2202***<br>(0.0560) | -0.1571***<br>(0.0554) |
| ATET (percent difference)                                                           | -19.02%                | -19.76%                | -14.54%                |
| Total German rebanders (banks aged $\geq 19$ years)                                 | 38 (19)                | 38 (19)                | 38 (19)                |

This table presents synthetic difference-in-differences (SDiD) estimates for the average treatment effect of established brand value on the treated, defined as German-named banks aged 19 years or more in 1916 (i.e., the sample median of German-named banks that rebranded). The results show that the joint impact of anti-German and rebranding effects was more negative for those German-named banks with above median age. The cleaned and balanced estimation sample contains 16 neutral rebranders and 22 patriotic rebranders. Exactly 8 neutral rebranders and 11 patriotic rebranders are classified as treated based on their age. Hence, accrued brand value as proxied by bank age in 1916 was evenly split across neutral and patriotic rebranders. We display bootstrapped standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

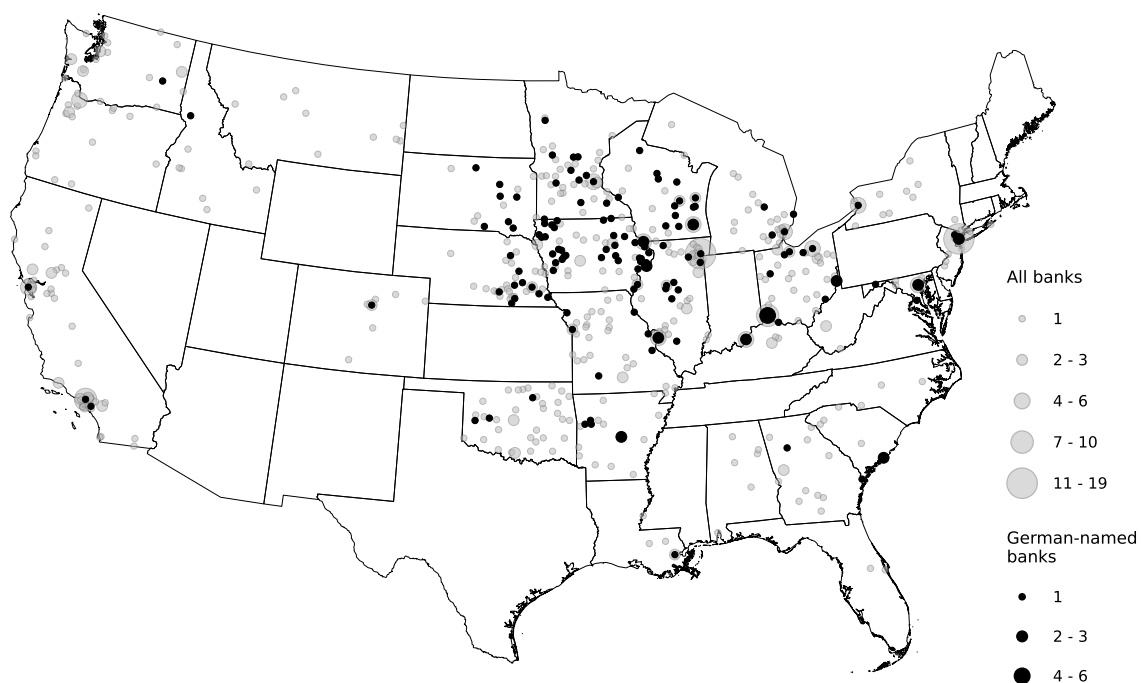
## B Additional Figures

Figure B1: Banks in sample



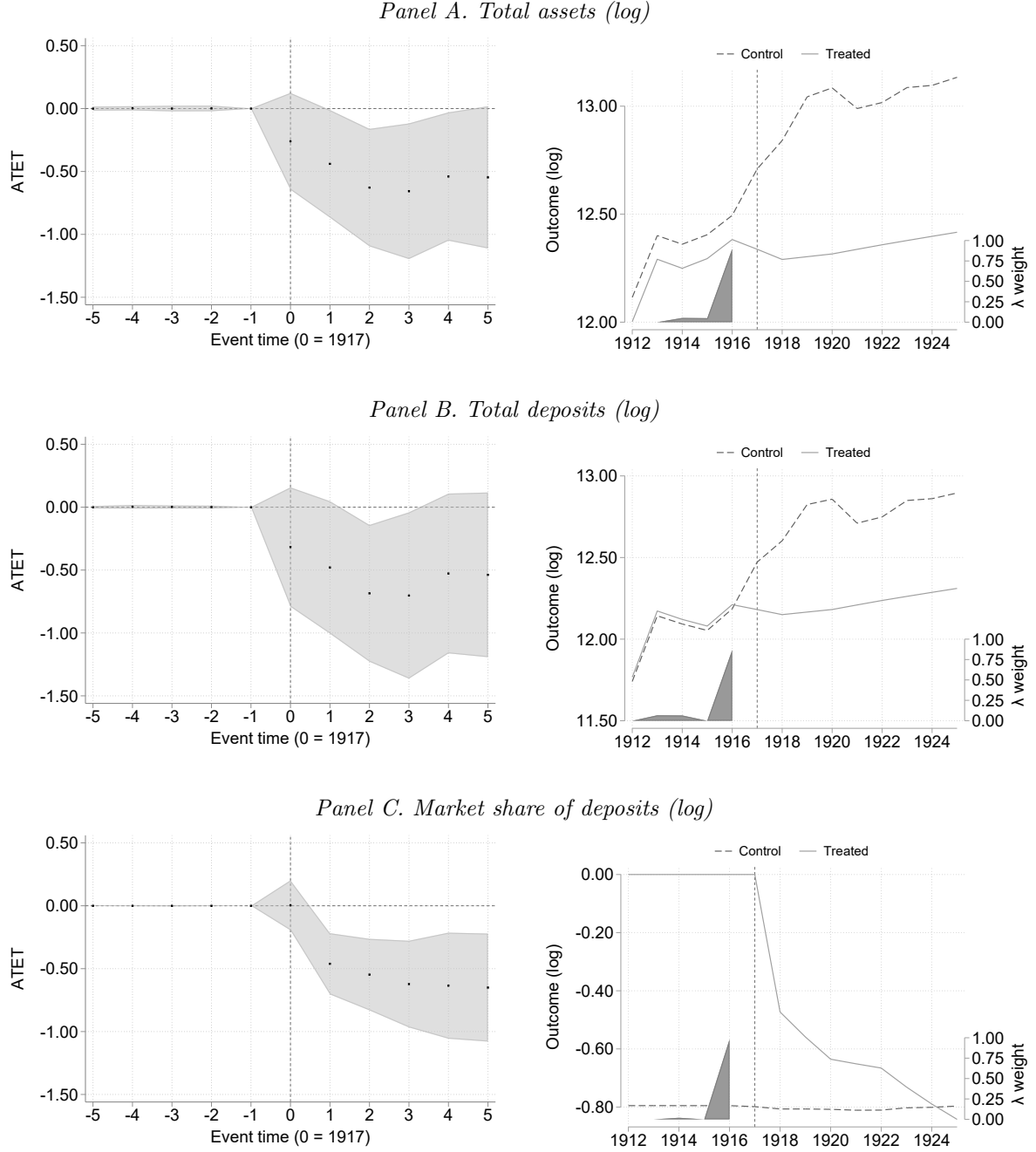
This figure shows the number and locations of all banks in our sample as of 1916.

Figure B2: **Geographic locations of banks changing name (1913–1925)**



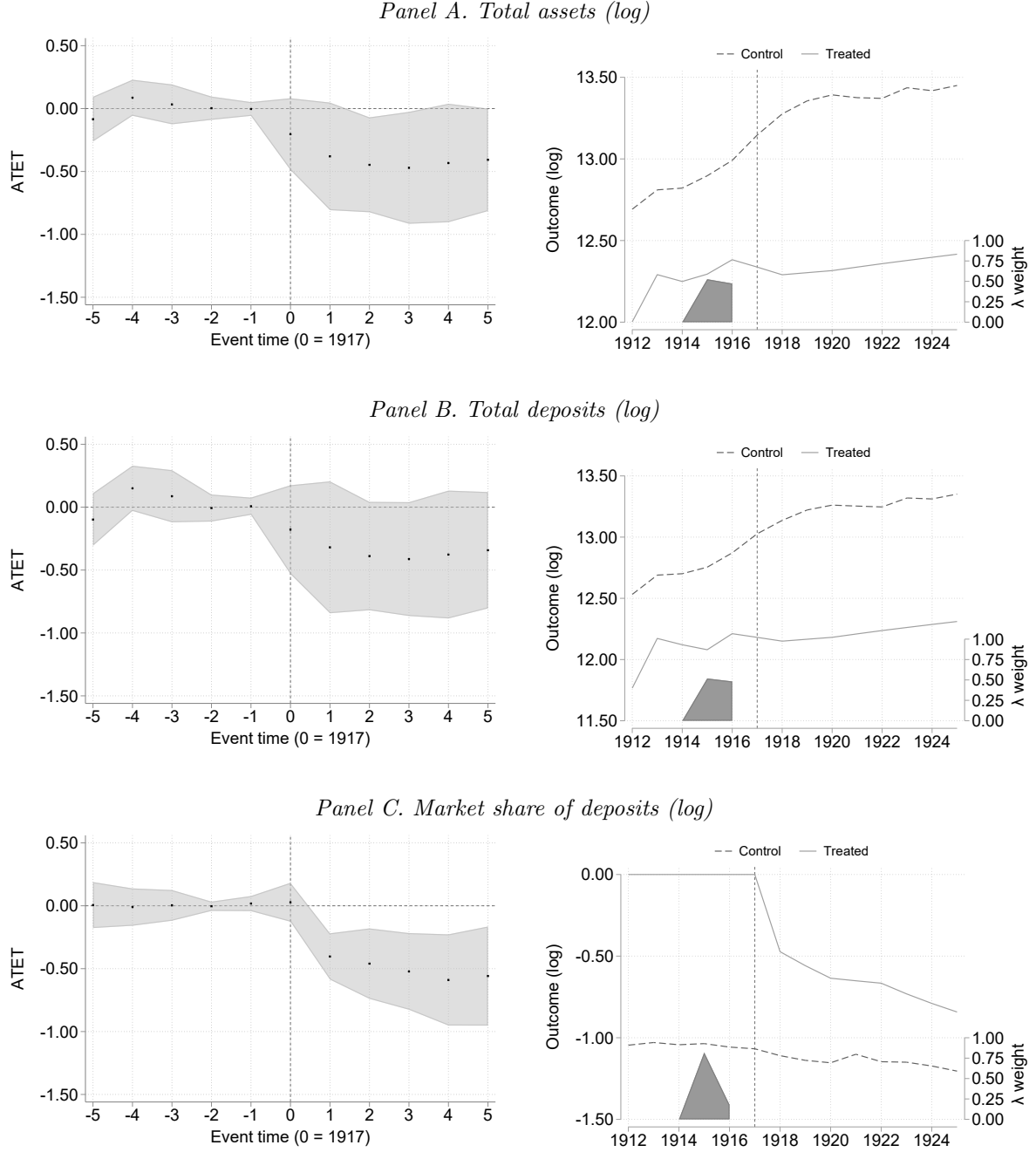
This figure shows the number and locations of all banks in our sample that changed their name between 1913 and 1925. We plot the total number name changing banks in a location in gray, and overlay it with the number of German-named banks that changed their name in black.

Figure B3: Dynamic anti-German effect



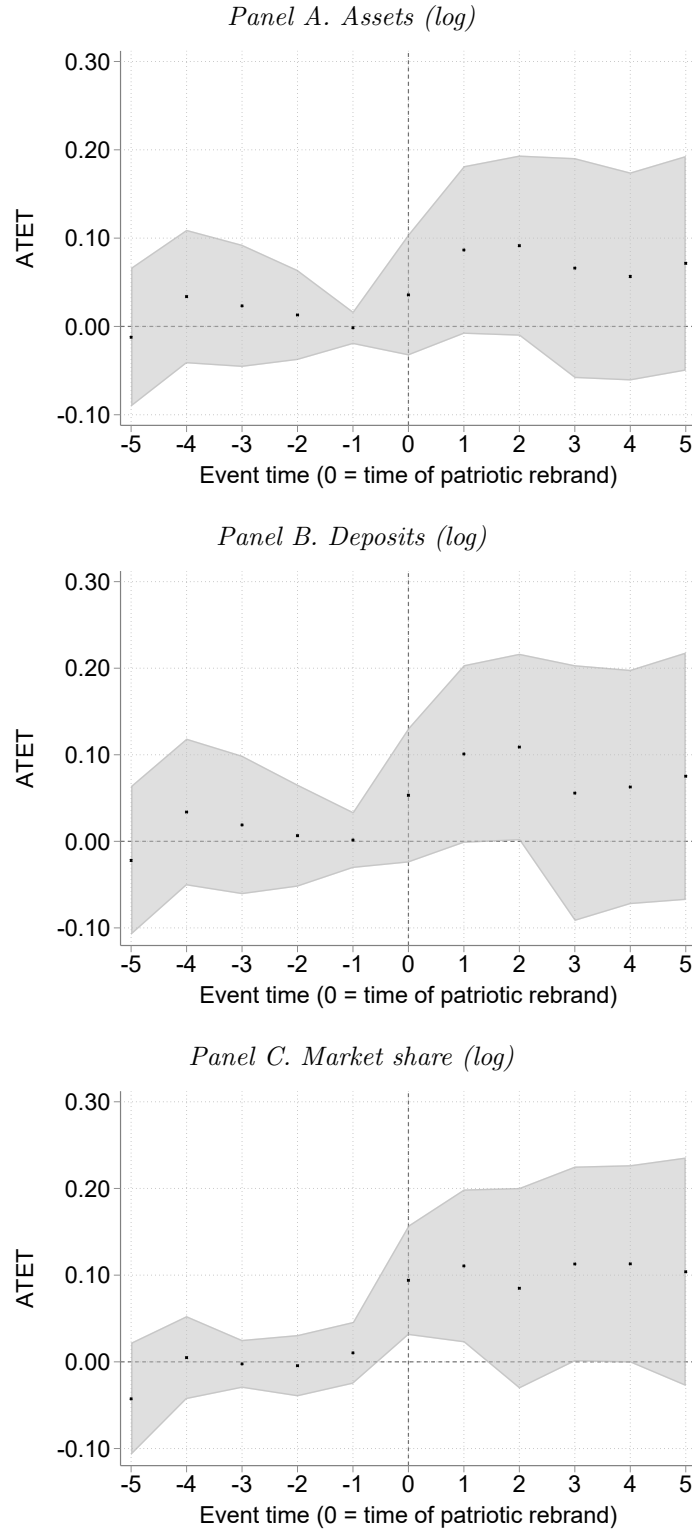
This figure shows the dynamic anti-German effect obtained by estimating the event-study version of the synthetic difference-in-differences regression in equation 1. We compare German name keepers (treated unit) to non-German name keepers (control group). The left column in the three panels A, B, and C plot the treatment effect of keeping the German name on the evolution of assets, deposits and market share respectively. We also display 95% confidence intervals based on standard errors using the placebo-based method as proposed by [Arkhangelsky et al. \(2021\)](#). The right column in each panel shows the constructed synthetic control and the underlying time ( $\lambda$ ) weights.

Figure B4: Dynamic neutral rebranding effect



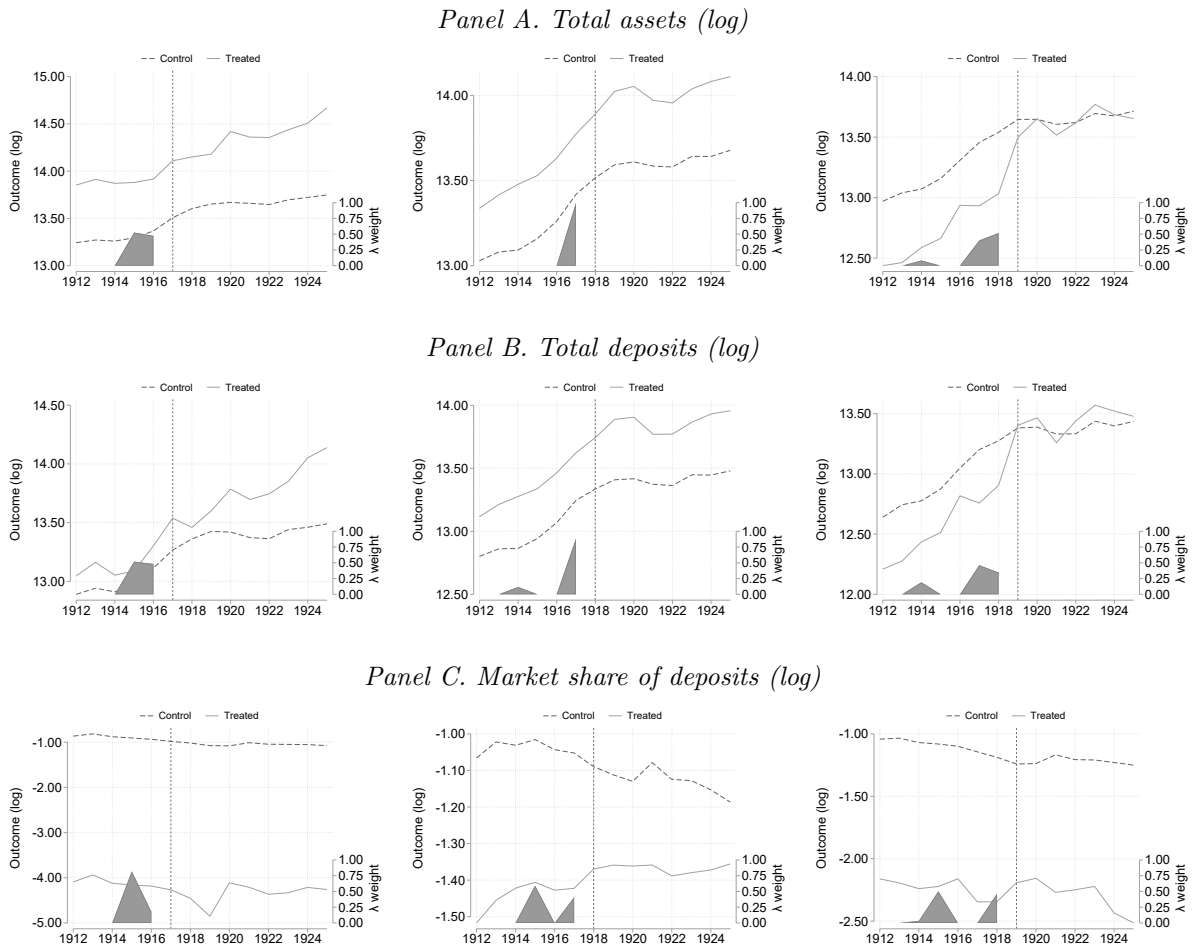
This figure shows the dynamic neutral rebranding effect obtained by estimating the event-study version of the synthetic difference-in-differences regression in equation 1. We compare German name keepers (treated unit) to German neutral rebranders (control group). The left column in the three panels A, B, and C plot the treatment effect of keeping the German name on the evolution of assets, deposits and market share respectively. We also display 95% confidence intervals based on standard errors using the placebo-based method as proposed by [Arkhangelsky et al. \(2021\)](#). The right column in each panel shows the constructed synthetic control and the underlying time ( $\lambda$ ) weights.

Figure B5: **Dynamic patriotic framing effect**



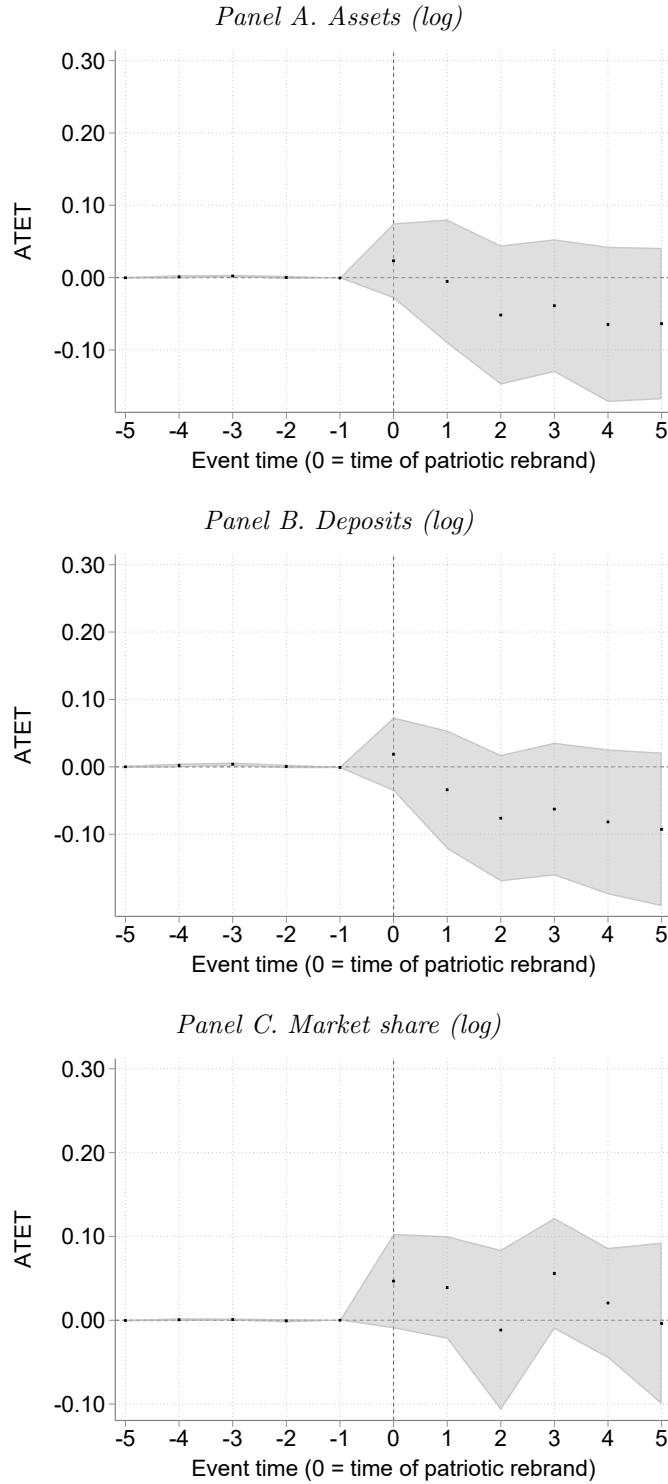
This figure shows the dynamic patriotic framing effect obtained by estimating the event-study version of the synthetic difference-in-differences regression in equation 1. We compare German patriotic rebranders (treatment group) to German neutral rebranders (control group). The three panels A, B, and C plot the treatment effect of choosing a patriotic name on the evolution of assets, deposits and market share respectively. We also display 95% confidence intervals based on standard errors using the bootstrap-based method as proposed by [Arkhangelsky et al. \(2021\)](#). We plot the constructed synthetic controls for each year cohort and the underlying time ( $\lambda$ ) weights in Figure B6. Since patriotic rebranding happened in 1917, 1918 and 1919, treatment is staggered. Hence, event-time is centered around the time of the patriotic rebranding (corresponding to event-time 0). In contrast, for ease of exposition Figure 3 in the main paper uses a common event time definition (0 = 1917) for all effects.

Figure B6: Cohort-specific synthetic controls for patriotic framing effect



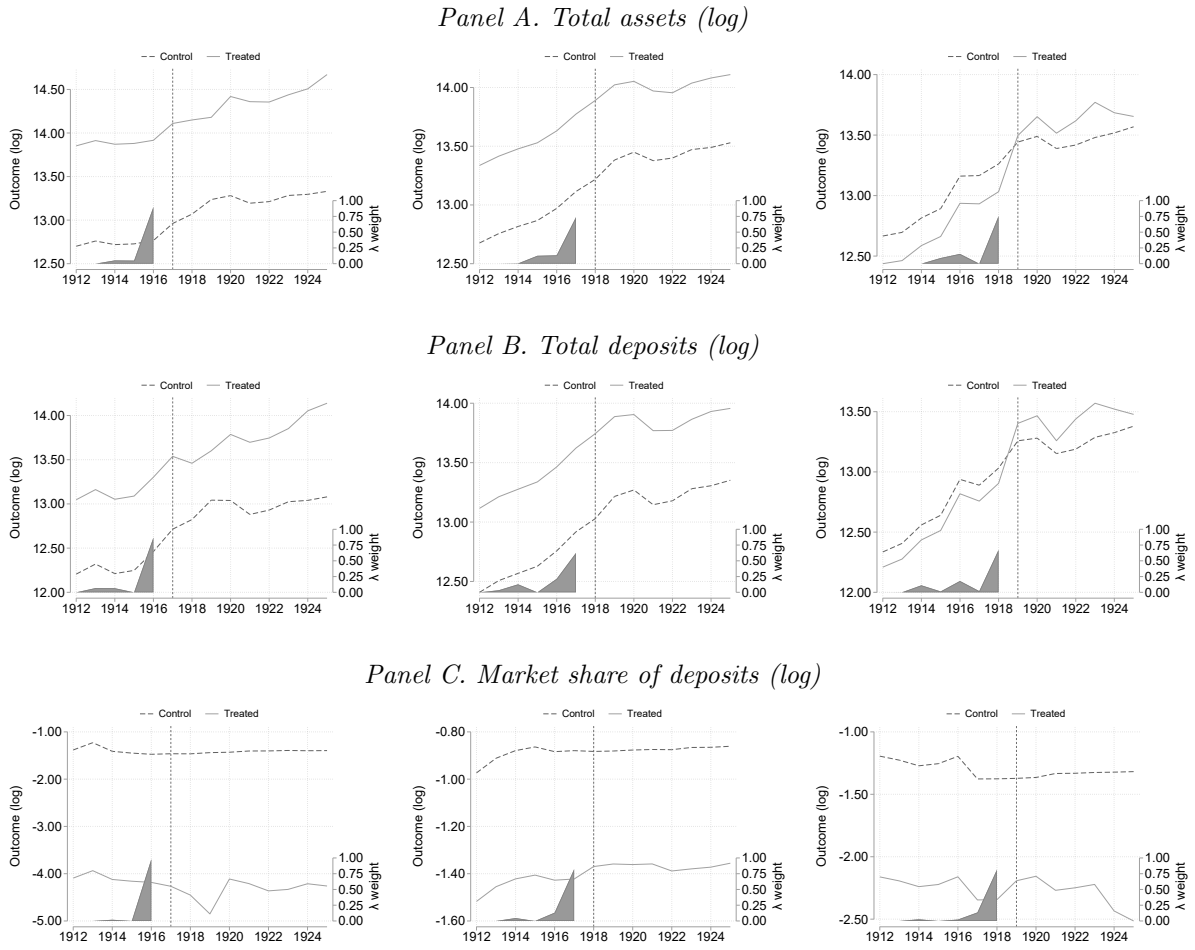
This figure plots the constructed synthetic controls for each year cohort and the underlying time ( $\lambda$ ) weights for the treatment effects displayed in Figure B5. The left, middle and right columns show synthetic counterfactuals for patriotic rebranders in 1917, 1918 and 1919 respectively.

Figure B7: **Dynamic combined effect**



This figure shows the dynamic combined effect obtained by estimating the event-study version of the synthetic difference-in-differences regression in equation 1. We compare German patriotic rebranders (treatment group) to non-German-named banks that did not rebrand (control group). The three panels A, B, and C plot the treatment effect of choosing a patriotic name on the evolution of assets, deposits and market share respectively. We also display 95% confidence intervals based on standard errors using the bootstrap-based method as proposed by [Arkhangelsky et al. \(2021\)](#). We plot the constructed synthetic controls for each year cohort and the underlying time ( $\lambda$ ) weights in Figure B8. Since patriotic rebranding happened in 1917, 1918 and 1919, treatment is staggered. Hence, event-time is centered around the time of the patriotic rebranding (corresponding to event-time 0). In contrast, for ease of exposition Figure 3 in the main paper uses a common event time definition (0 = 1917) for all effects.

Figure B8: Cohort-specific synthetic controls for combined effect



This figure plots the constructed synthetic controls for each year cohort and the underlying time ( $\lambda$ ) weights for the treatment effects displayed in Figure B7. The left, middle and right columns show synthetic counterfactuals for patriotic rebranders in 1917, 1918 and 1919 respectively.

## C Additional Information on the Frequency and Drivers of Re-branding

This section provides more details regarding the frequency and drivers of name changes in the commercial banking industry in the 1910s and 1920s. We begin by estimating non-parametric survival models to show how the number of rebranders evolved over time relative to the number of banks that kept their corporate brand names. Specifically, we estimate the following equation:

$$\hat{S}(t) = \prod_{t_i \leq t} \left( \frac{n_i - d_i}{n_i} \right) \quad (\text{C.1})$$

where  $\hat{S}(t)$  is the estimated survival probability at time  $t$ ,  $t_i$  stands for number of times at which name changes occur,  $n_i$  represents the number of banks at risk just before time  $t_i$ , and  $d_i$  captures the number of name changes occurring at  $t_i$ .

Panel A of Figure C1 shows separate Kaplan-Meier estimates of equation C.1 for German-named and all other banks. This figure shows that only 2% of non-German-named banks changed their names between 1912 and 1925 (521 out of all 24,437 unique non-German-named banks active in at least one year between 1912 and 1925). At the same time, over 90% of German-named banks changed their names between 1917 and 1919.<sup>1</sup> Using the more specific dates of German name changes, Panel B of the figure shows that a few German-named banks changed their names in the latter half of 1917, most changed their name in 1918, and a few more rebranded at the beginning of 1919. In other words, the raw data show that the preponderance of German-named banks changed their name within a narrow time window – between mid-1917 and the beginning of 1919 – suggesting that this group of banks may have been subjected to a common shock.

To relate our analysis to existing hypotheses in the literature (e.g. [Dacin et al., 2002](#); [Cooper et al., 2005](#); [Kashmiri and Mahajan, 2015](#); [Tsai et al., 2015](#)), we use parametric survival models to explore whether business fundamentals and market structure are drivers of when banks changed their names. We examine these factors for the full sample of banks as well as for German-named banks since the non-parametric evidence suggests that the latter group changed their names in a tightly clustered window of time, likely in response to a negative news shock.

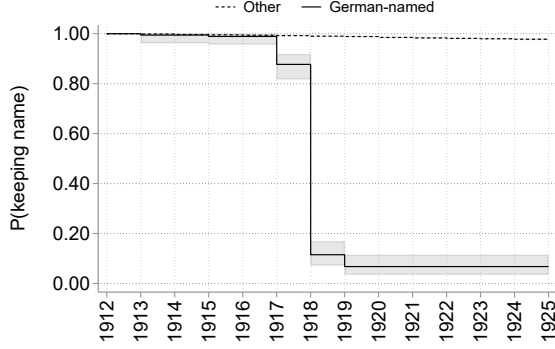
We also use our parametric survival models to assess whether particular bank names affected

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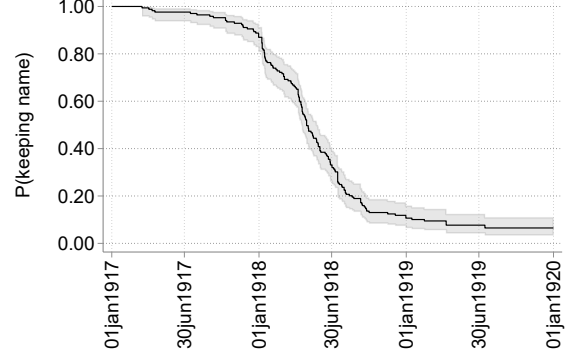
<sup>1</sup>Cox tests for the equality of survivor functions reject the null hypothesis of equality.

Figure C1: **Non-parametric survival estimates**

Panel A. German-named vs. other banks (in years)



Panel B. German-named banks (exact dates)



This figure shows non-parametric survival estimates for bank name changes. Panel A plots Kaplan-Meier survival estimates (including 95% confidence intervals) for the probability that banks of a given type (German-named banks and non-German-named banks, labeled “other”) kept their name beyond a certain point in time. We obtain these estimates using equation C.1. Cox regression-based tests for the equality of survivor functions reject the null hypothesis of equality ( $\chi^2$ -statistic of 8312.91 and p-value of 0.00). Panel B focuses on German-named banks only and uses exact dates for name changes to zoom into the period between 1917 and 1920.

the timing of the name change. We leverage our unique within-industry data (i.e., recall that banks operated in geographically segmented markets) to explore common branding strategies of banks during our sample period. We represent these branding strategies using indicator variables to identify groups of banks that share common “name stems.” We focus on name stems or branding strategies that are frequently used by banks and that may signal information to their customers about their characteristics (e.g., security and stability) or the distinct, local markets they are serving. If these indicator variables slow down the time to when banks changed their names, this can be interpreted as evidence that bank attached specific value to their existing names.

To predict factors that led banks to change their names during our sample period, we augment equation C.1 with a matrix ( $\mathbf{X}$ ) of time-varying bank-level covariates (all lagged by one year):

$$\log L(\Upsilon, \gamma) = \sum_{i=1}^n [\delta_i \log h(t_i | \mathbf{X}_{i,t-1}) + \log S(t_i | \mathbf{X}_{i,t-1})], \quad (\text{C.2})$$

where  $\log L$  represents the log-likelihood function.  $\Upsilon$  is a vector of coefficients corresponding to the matrix of control variables  $\mathbf{X}$ ,  $\gamma$  is the shape parameter of the log-logistic distribution,  $\delta$  represents a dummy variable indicating bank name changes,  $h$  is the hazard function,  $t$  marks the time to name change (or censoring if no change occurs by the end of 1925), and  $S$  stands for the survival function.<sup>2</sup> Matrix  $\mathbf{X}$  includes variables capturing branding strategies, business

<sup>2</sup>The full notations for the survival and hazard functions are  $S(t) = \frac{1}{1 + (\frac{t}{\lambda})^\gamma}$  and  $h(t | \mathbf{X}_{i,t-1}) = \frac{\gamma / \lambda_i (t / \lambda_i)^{\gamma-1}}{1 + (t / \lambda_i)^\gamma}$ ,

fundamentals, charter value, measures of local bank competition, and town and county-level measures of economic structure.

To explore the potential value in corporate names, the baseline model includes three of the most frequently used branding strategies for American banks during our sample period: (1) bank names that contained their location as the first word of the name (signaling their intended market of interest to customers); (2) banks that had “First” in their name (perhaps signaling to (potential) customers that they entered the local market early or were the first bank in a town and potentially conveying that they are the most stable of bank in that town); and (3) bank names that referred to farming or agriculture (perhaps targeting a relevant customer base). In 1916, approximately 22% of all bank names contained the location as the first word of the name; 18% of all bank names had a “First” in their name; and 11% of banks had names referring to farming activities as captured by the name stubs “Farm” or “Agricultur”. In Table C1, we show that banks with names referring to farming or agriculture were more prevalent in counties with higher shares of farmland and in counties with more farms per inhabitants, even after controlling for other bank- and location-specific fundamentals. Similarly motivated branding strategies likely applied to other bank names, such as e.g. “Industrial Bank,” “Planters and Growers Bank,” or “Traders and Manufacturers Bank” etc. Izumi et al. (2024) show that similar branding strategies continue to persist in 2022.

Business fundamentals include a proxy for bank profitability, percentage changes in deposits and paid-in capital (both measured as year-on-year changes), the leverage ratio (total assets to equity, which we define as paid-in capital plus surplus and undivided profits), and a dummy that takes a positive value if a bank’s CEO stays the same between 1916 and 1920. The construction and definition of other variables capturing charter value, competition and local economic structure are straight-forward as described in Table C2.

Table C2 displays the estimated hazard ratios based on equation C.2, where values above 1 indicate slower changes and those below 1 indicate faster changes. The first column in the table examines the drivers of non-German-named bank name changes, including the implied value of specific branding strategies banks employed during our sample period. The regression estimates show that banks including a location in their name, the word “First,” or words referencing farming rebranded more slowly. Firmly established banks (such as those with more years in operation and hence established brands), those with a larger market share, higher profits and

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where  $\lambda_i = \exp(\mathbf{X}_{i,t-1}\Upsilon')$ .

Table C1: **Determinants of bank names referring to farming**

|                                              | Name refers to farming (dummy) |                   |                   |                    |
|----------------------------------------------|--------------------------------|-------------------|-------------------|--------------------|
|                                              | (1)                            | (2)               | (3)               | (4)                |
| <b>Farming indicators</b>                    |                                |                   |                   |                    |
| Share of land in farms (county, 1910)        | 0.05***<br>(0.00)              |                   | 0.04***<br>(0.00) | 0.04***<br>(0.00)  |
| Farms per 1,000 inhabitants (county, 1910)   |                                | 0.04***<br>(0.00) | 0.03***<br>(0.00) | 0.01**<br>(0.00)   |
| <b>Bank name variables</b>                   |                                |                   |                   |                    |
| Name contains location (dummy)               |                                |                   |                   | -0.33***<br>(0.02) |
| “First Bank” (dummy)                         |                                |                   |                   | -0.35***<br>(0.03) |
| German name (dummy)                          |                                |                   |                   | 0.00<br>(0.00)     |
| <b>Business fundamentals</b>                 |                                |                   |                   |                    |
| (Surplus and profits)/capital                |                                |                   |                   | 0.00<br>(0.00)     |
| Percentage change in deposits                |                                |                   |                   | 0.00<br>(0.00)     |
| Percentage change in paid-in capital         |                                |                   |                   | 0.00<br>(0.00)     |
| Leverage ratio                               |                                |                   |                   | 0.01**<br>(0.00)   |
| <b>Charter value</b>                         |                                |                   |                   |                    |
| Market share in location (deposits)          |                                |                   |                   | -0.05***<br>(0.00) |
| Bank age (log)                               |                                |                   |                   | -0.03***<br>(0.00) |
| Total assets (log)                           |                                |                   |                   | -0.02***<br>(0.01) |
| National bank (dummy)                        |                                |                   |                   | 0.01<br>(0.01)     |
| <b>Competition and local econ. structure</b> |                                |                   |                   |                    |
| Number of banks in location (log)            |                                |                   |                   | -0.05***<br>(0.01) |
| Share of German born pop. (county, 1910)     |                                |                   |                   | 0.01***<br>(0.00)  |
| City population (log, 1910)                  |                                |                   |                   | -0.02***<br>(0.00) |
| German newspapers per capita (city, 1910)    |                                |                   |                   | 0.00<br>(0.00)     |
| Observations                                 | 17,444                         | 16,819            | 16,819            | 15,079             |
| Mean value of outcome variable               | 0.11                           | 0.10              | 0.10              | 0.10               |
| Pseudo R <sup>2</sup>                        | 0.03                           | 0.02              | 0.04              | 0.26               |

This table presents average marginal effects obtained from a standard logit regression. The estimation sample contains all active banks in 1916. The outcome variable is a dummy that indicates whether a bank had a name referring to farming as captured by the name stubs “Farm” or “Agricultur”. Explanatory variables are measured at the end of 1915 (except where indicated otherwise). All continuous variables are standardized. Heteroskedasticity-robust standard errors for marginal effects are shown in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

Table C2: Drivers of commercial bank name changes

| Variables                                    | Estimation sample       |                   |                     |                     |
|----------------------------------------------|-------------------------|-------------------|---------------------|---------------------|
|                                              | Non-German-named<br>(1) | All<br>(2)        | German-named<br>(3) | German-named<br>(4) |
| <b>Branding strategies</b>                   |                         |                   |                     |                     |
| Name contains location (dummy)               | 1.41***<br>(0.18)       | 1.28***<br>(0.11) | 1.63<br>(4.39)      | 1.52***<br>(0.13)   |
| “First Bank” (dummy)                         | 2.56***<br>(0.62)       | 1.92***<br>(0.29) |                     |                     |
| Name refers to farming (dummy)               | 1.46**<br>(0.27)        | 1.33**<br>(0.16)  |                     |                     |
| German name (dummy)                          |                         | 0.09***<br>(0.01) |                     |                     |
| <b>Business fundamentals</b>                 |                         |                   |                     |                     |
| (Surplus and profits)/capital                | 1.45***<br>(0.14)       | 1.14**<br>(0.06)  | 1.00<br>(0.00)      | 1.03<br>(0.03)      |
| Percentage change in deposits                | 0.98<br>(0.02)          | 0.98<br>(0.01)    | 0.71<br>(0.22)      | 0.97<br>(0.02)      |
| Percentage change in paid-in capital         | 0.92***<br>(0.02)       | 0.95***<br>(0.01) | 1.01<br>(0.01)      | 1.02<br>(0.01)      |
| Leverage ratio                               | 1.01<br>(0.05)          | 1.01<br>(0.03)    | 1.00<br>(0.01)      | 1.02<br>(0.02)      |
| CEO stays (dummy)                            | 1.48***<br>(0.14)       | 1.26***<br>(0.07) | 1.01<br>(0.01)      | 0.97<br>(0.03)      |
| <b>Charter value</b>                         |                         |                   |                     |                     |
| Market share in location (deposits)          | 1.33***<br>(0.11)       | 1.19***<br>(0.06) | 1.01<br>(0.02)      | 1.08**<br>(0.04)    |
| Bank age (log)                               | 1.08<br>(0.08)          | 1.13***<br>(0.05) | 1.00<br>(0.02)      | 1.02<br>(0.04)      |
| Total assets (log)                           | 0.98<br>(0.08)          | 1.03<br>(0.05)    | 1.01<br>(0.02)      | 0.93**<br>(0.04)    |
| National bank (dummy)                        | 1.253<br>(0.19)         | 1.09<br>(0.09)    | 1.01<br>(0.01)      | 1.02<br>(0.06)      |
| <b>Competition and local econ. structure</b> |                         |                   |                     |                     |
| Number of banks in location (log)            | 1.13<br>(0.10)          | 1.07<br>(0.06)    | 1.02<br>(0.02)      | 1.16<br>(0.14)      |
| Farms per 1,000 inhabitants (county, 1910)   | 1.27***<br>(0.08)       | 1.15***<br>(0.04) | 1.00<br>(0.02)      | 1.04*<br>(0.02)     |
| City population (log, 1910)                  | 0.80*<br>(0.10)         | 0.87**<br>(0.06)  | 0.95<br>(0.04)      | 0.83**<br>(0.08)    |
| Share of German born pop. (county, 1910)     | 0.92**<br>(0.04)        | 0.95***<br>(0.02) | 1.01*<br>(0.01)     | 1.05**<br>(0.02)    |
| German newspapers per capita (city, 1910)    | 1.04<br>(0.09)          | 1.02<br>(0.02)    | 1.01***<br>(0.00)   | 1.06***<br>(0.01)   |
| Observations                                 | 157,286                 | 158,069           | 783                 | 162                 |
| Adjusted R <sup>2</sup>                      | 0.46                    | 0.89              | 0.06                | 0.24                |
| Time unit                                    | years                   | years             | years               | days                |
| Controls                                     | time-varying            | time-varying      | time-varying        | 1916                |

This table presents parametric survival estimates for the time to name changes. We obtain these estimates using equation C.2. Columns 1–3 use annual time stamps for name changes, whereas column 4 draws on the exact dates for name changes of German-named banks. All continuous variables are standardized and coefficients are shown in time ratio format (exponentiated coefficients). Time ratios above 1 indicate that a one standard deviation increase in the covariate increases median survival time by  $(\text{time ratio} - 1) \times 100$  percent. Time ratios below 1 indicate that a standard deviation increase in the covariate reduces median survival time by  $(1 - \text{time ratio}) \times 100$  percent. For the multiple-record per bank data in columns 1–3, we report clustered (bank-level) standard errors for non-exponentiated coefficients in parentheses. For the single-record per bank data in column 4, we cluster standard errors by census region. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

surplus (where surplus is shareholder equity above capital), and those located in farming areas were also slower to rebrand. By contrast, those in large cities with more competition or that had large increases in paid-in capital changed their names faster.<sup>3</sup> These findings confirm two general hypotheses in the branding literature for our setting: (1) banks attach distinct value to their brand names and (2) rebranding is costly for banks. Those banks that were already established in their markets and had accrued brand value were less likely to feel compelled to change their names. Moreover, corporate brand names that appeal to customers or that invoke a firm’s position or its security and soundness seem to matter, suggesting that commercial banks viewed their names as intangible assets whose values were based on customer perceptions about their identity. The estimation results in column (1) also provide *prima facie* evidence that CEO turnover often goes along with bank name changes. Banks that kept their CEO between 1916 and 1920 are substantially slower to change their names as evidenced by the 56% increase in their median time to a name change.

Column (2) expands the sample to include German-named banks and adds an indicator representing this ethnicity-based branding strategy. The German-name indicator variable is not only statistically significant, but predicts that most German-named banks were going to change their name. Specifically, the survival ratio implies that the median time until a rebrand decreased by 90% for German-named banks. Moreover, while German-named banks comprise less than 1% of all commercial banks in our sample, their addition alters the predictive power of several other variables. For example, the coefficient on a bank’s surplus falls both in terms of size and statistical significance, which may suggest that the factors leading German-named banks to change their name were orthogonal to factors leading to the rebranding of other banks. To further substantiate this conjecture, we implement a simple back-of-the-envelope analysis. We apply the survival estimates from column (1) to the period between 1917–1920 to obtain an out-of-sample median survival time for the names of German-named banks. We find that this out-of-sample median survival time amounts to 29 years, whereas the Kaplan-Meier estimate is only 2 years. In this way, the typical factors that would lead most banks to change their name worked against German-named banks that rebranded.

To further differentiate the rebranding decision for German-named banks compared to other banks, Column (3) focuses only on the sub-sample of German-named banks.<sup>4</sup> In contrast to

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<sup>3</sup>Our results are not sensitive to including a separate Fed member indicator variable. This is likely because the vast majority of Fed members at the time were national banks, an indicator variable already included in Table C2.

<sup>4</sup>We drop the indicator variables for farming-related names and for “First bank” in the bank’s name since

other banks that changed their names, we find that business fundamentals, market competition, and charter value do not significantly predict a name change for German-named banks. Furthermore, the only local market condition that significantly predicts a German-named bank's name change is German newspapers per capita. This town-level proxy for the influence of local German culture or customer base somewhat slows the time it takes for a German-named bank to rebrand. Overall, as can be inferred from the low adjusted  $R^2$  relative to the previous two columns, the model underlying the results in Column (3) does not do a good job of predicting German-named bank rebranding, suggesting German-named banks were fundamentally responding to different factors than other banks rebranding during this period – a finding that informs the structure of our empirical tests in the main paper.<sup>5</sup>

Given that most German-named banks changed their name in a very narrow time window, it is possible that annual data are missing variation in the decision to change a name. Therefore, column (4) uses information on the exact dates of rebranding for German-named banks to examine factors that may have mattered for explaining fine-grained variation in the timing of these name changes. We measure all variables in  $\mathbf{X}$  as of 1916 except the percentage changes in deposits and paid-in capital, which are measured between 1916 and 1917. Besides confirming the importance of the proxy for the influence of local German culture or customer base, the coefficients suggest that German-named banks with higher market shares and German-named banks with location-based names waited longer to rebrand. Larger German-named banks (as measured by (log) total assets) and German-named banks in larger cities changed their names faster. However, the main finding from Column (4) is that a bank's business fundamentals remain uninformative for explaining the granular variation in the timing of German-named bank rebranding in 1917, 1918, and 1919.

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only one German-named bank in our estimation sample featured such names.

<sup>5</sup>To limit unobserved heterogeneity, our paper's focus is on name changes that took place between 1917 and 1920. The findings discussed above remain qualitatively unchanged when we re-estimate the multiple-record per bank regressions in columns 1–3 of Table C2 for the period 1917–1920 only.

## D Potential Confounders of Rebranding Effects

### D.1 Fed Membership Adoption by German-named Banks

Anecdotal evidence suggests that state banks, which once had German names, were looking to signal patriotism beyond their name changes. While national banks were required to join the Federal Reserve System upon its establishment in 1914, Congress gave state-chartered banks the choice to join. Relatively few state banks chose to join citing higher regulations and restrictions (Anderson et al., 2018; Calomiris and Jaremski, 2022). Membership, however, allowed banks to advertise their association with a distinctly American institution, and could have been used to counteract the negative German news shock. Suggestive evidence for changes in membership status are visible when we compare the mean values of the Fed membership dummy for German-named banks in 1916 and 1920 (see Tables A1 and A2).

To formally test this hypothesis, we predict whether a state bank would adopt Federal Reserve membership in a given year using the following equation:

$$Y_{i,t} = \Gamma \sum_{k=1914}^{1925} [\mathbb{1}(\textit{German})_i \times \mathbb{1}(t = k)_t] + \phi_i + \delta_{(S)t} + u_{i,t} \quad (\text{D.3})$$

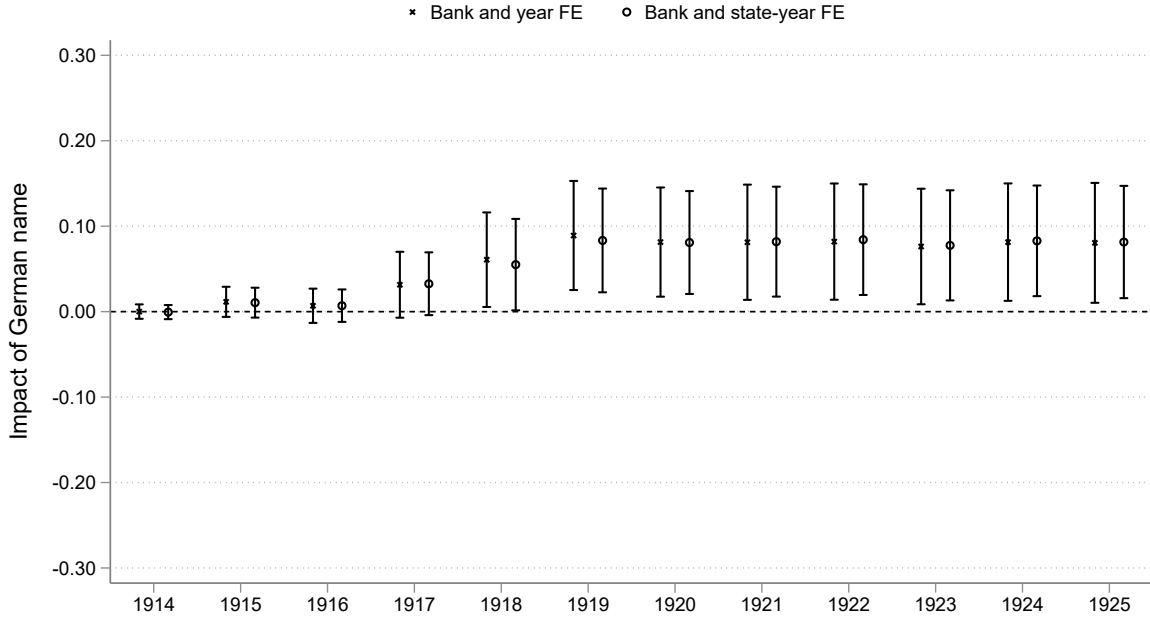
where  $Y_{i,t}$  represents a dummy for Federal Reserve membership,  $\mathbb{1}(\textit{German})_i$  is an indicator flagging banks with a German name, and  $\mathbb{1}(t = k)$  stands for saturated set of year dummies (1913 serves as the base year). We also control for bank and year or state-year fixed effects ( $\phi_i$  and  $\delta_{(S)t}$  respectively).

The coefficients on the interaction term for each year are provided in Figure D1.<sup>6</sup> The results show that German-named banks were no more likely to adopt membership before 1917. However, starting in 1918 (and coincident with most of the name changes), German-named banks became more likely to join the Fed compared to other banks. The statistically significant difference persists through the end of our sample in 1925 and is robust to controlling for state-specific time trends. The absence of pre-trends and the robustness of estimates to the inclusion granular and demanding fixed effects strongly suggests that we can interpret the effects as causal and persistent. Based on these results, we either exclude banks that adopted Fed membership or control for a time-varying dummy of Fed membership in the main paper.

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<sup>6</sup>We do not include 1912 in the regression because the Fed was not started until 1914.

Figure D1: **Impact of German name on Fed membership**



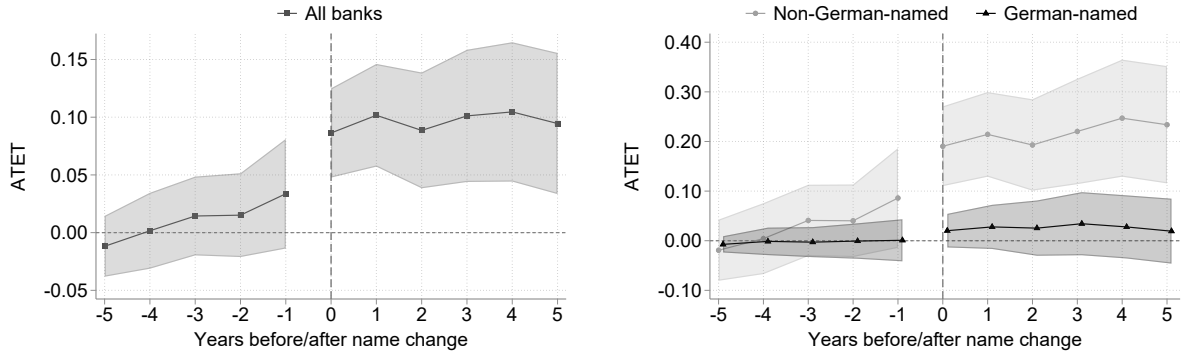
This figure plots event-study estimates for the impact of German-named banks on state-chartered banks' Federal Reserve membership, using 1913 as the base year. Note that the Federal Reserve System was only founded in late 1913. We obtain these estimates using equation D.3. 95% confidence intervals.

## D.2 Changes in Paid-in Capital

Firms often decide to rebrand when they implement larger structural or organizational changes (Kalaighnam and Bahadir, 2013). Increases in paid-in capital often accompany wider restructuring in the banking industry – e.g., to scale operations and outperform potential local competitors. For this reason, we examine the correlation between increases in paid-in capital and rebranding in our sample of banks.

Figure D2 shows the results. We find that capital increases either just before (we reject the null of the pre-trends at the 5% level) or simultaneously with rebranding events – but *only* for non-German-named banks. German-named banks are clearly different: their paid-in capital exhibits neither pre-trends, nor increases when and after rebranding happens. We draw two conclusions from this analysis. First, it is important to take into account a bank's time-varying capital to disentangle the impact of name changes. Second, the results in Figure D2 provide additional evidence that the rebranding of German-named was plausibly exogenous to fundamentals.

Figure D2: **Bank name changes and changes in paid-in capital**



This figure plots staggered difference-in-differences estimates for the impact of bank name changes on bank-level paid-in capital (including 95% confidence intervals using clustered bank-level standard errors). We estimate equation 2 in the main paper, using the natural logarithm of paid-in capital as the dependent variable. The left column shows the results we obtain when we pool all banks (German-named and non-German-named banks, including non-German-named rebranders). The right column differentiates between rebranding by banks with German names and rebranding by non-German-named banks. In all specifications, non-German-named banks that did not change their name serve as the control group. The joint test for pre-trends for the pooled estimates (p-value of 0.33) and for the estimates involving only non-German-named banks (p-value of 0.36) do not reject the null of no pre-trends relative to banks that do not change their names but the uptick just before treatment ( $t = -1$ ) is both visible and statistically significant for non-German-named banks (p-value of 0.09). For German-named banks, we find no evidence for pre-trends relative to banks that did not change their names (p-value of 0.63). All regressions include bank and state-year fixed effects, as well as the control vectors  $\mathbf{X}'$  and  $\mathbf{Z}'$ .

### D.3 CEO turnover

Similar to capital increases, changes in management often accompany rebranding decisions (Dacin et al., 2002; Wu, 2010; Kashmiri and Mahajan, 2015; Tsai et al., 2015). Drawing on our bank-level data for CEO turnover between 1916 and 1920, we can estimate the correlation between rebranding decisions and changes in banks' top-level management. Specifically, we regress a dummy variable indicating whether a bank president stays the same between 1916 and 1920 on a binary variable that flags rebranding in 1917, 1918 or 1919. We do so for two different estimation samples: non-German-named banks and German-named banks narrowly defined based on the "German" stub, following the approach in the main paper.

The results in Table D1 confirm a statistically and economically highly significant correlation between CEO turnover and rebranding for non-German-named banks. The bank president was 11 percentage points less likely to remain in office if the bank also rebranded. For German-named banks, we find no statistically significant correlation, although the point estimates remains negative. Overall, these findings suggest that CEO turnover can be an important confounder of the rebranding effect, in particular in the case of non-German-named banks.

Table D1: **CEO turnover and rebranding decisions**

|                                   | (1)<br>CEO stays (dummy)<br>( <i>Non-German-named banks</i> ) | (2)<br>CEO stays (dummy)<br>( <i>German-named banks</i> ) |
|-----------------------------------|---------------------------------------------------------------|-----------------------------------------------------------|
| $\mathbb{1}(\textit{Rebranding})$ | -0.1135***<br>(0.0233)                                        | -0.0888<br>(0.1444)                                       |
| Sample period                     | 1917–1919                                                     | 1917–1919                                                 |
| Observations                      | 16,501                                                        | 168                                                       |
| Share CEO stays                   | 68.3%                                                         | 61.3%                                                     |
| Share rebranding                  | 2.3%                                                          | 92.3%                                                     |
| Pseudo $R^2$                      | 0.0011                                                        | 0.0017                                                    |

This table presents average marginal effects from probit regressions. The binary dependent variable equals one if a bank’s CEO remained in office between 1916 and 1920.  $\mathbb{1}(\textit{Rebranding})$  is a dummy that equals one if the bank changed its name in one of the years 1917, 1918, or 1919. Column (1) covers all non-German-named banks and column (2) restricts the sample to banks with a German name (following the main definition used in the main paper). Heteroskedasticity robust standard errors are shown in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ .

## E Robustness Checks

Table E1: Average treatment effects on bank-level outcomes (excluding banks in Chicago and NYC)

| <b>Panel A. Anti-German effect</b>                                     |                        |                        |                        |
|------------------------------------------------------------------------|------------------------|------------------------|------------------------|
| <i>German name keepers relative to non-German name keepers</i>         |                        |                        |                        |
|                                                                        | (1)                    | (2)                    | (3)                    |
|                                                                        | Assets (log)           | Deposits (log)         | Market share (log)     |
| ATET (in log points)                                                   | -0.5398***<br>(0.1753) | -0.5630***<br>(0.2027) | -0.5831***<br>(0.1851) |
| ATET (percent difference)                                              | -41.71%                | -43.05%                | -44.19%                |
| Total banks (German name keepers)                                      | 5,044 (1)              | 5,044 (1)              | 5,044 (1)              |
| <b>Panel B. Combined effect</b>                                        |                        |                        |                        |
| <i>German patriotic rebranders relative to non-German name keepers</i> |                        |                        |                        |
|                                                                        | (1)                    | (2)                    | (3)                    |
|                                                                        | Assets (log)           | Deposits (log)         | Market share (log)     |
| ATET (in log points)                                                   | -0.0335<br>(0.0398)    | -0.0525<br>(0.0422)    | 0.0236<br>(0.0409)     |
| ATET (percent difference)                                              | -3.29%                 | -5.11%                 | +2.39%                 |
| Total banks (patriotic rebranders)                                     | 5,065 (22)             | 5,065 (22)             | 5,065 (22)             |

This table presents synthetic difference-in-differences (SDiD) estimates for two average treatment effects on the treated (ATET): the anti-German effect (Panel A) and the combined effect (Panel B). The estimation sample excludes banks located in Chicago and New York City. The neutral rebranding effect and the patriotic framing effect displayed in Table 1 in the main paper remain unchanged (no bank in the two corresponding estimation samples was located in Chicago or New York City) and are thus not again reported here. In Panel A, we show placebo-method based standard errors clustered at the bank level in parentheses. In Panel B, we display bootstrapped standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

Table E2: **Average treatment effects on bank-level outcomes (banks located in Midwestern and Great Plains states only)**

|                                                                          |                      |                      |                        |
|--------------------------------------------------------------------------|----------------------|----------------------|------------------------|
| <b>Panel A. Anti-German effect</b>                                       |                      |                      |                        |
| <i>German name keepers relative to non-German name keepers</i>           |                      |                      |                        |
|                                                                          | (1)                  | (2)                  | (3)                    |
|                                                                          | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                     | -0.4534*<br>(0.2443) | -0.4749*<br>(0.2765) | -0.5759***<br>(0.1829) |
| ATET (percent difference)                                                | -36.45%              | -37.81%              | -43.78%                |
| Total banks (German name keepers)                                        | 2,198 (1)            | 2,198 (1)            | 2,198 (1)              |
| <b>Panel B. Neutral rebranding effect</b>                                |                      |                      |                        |
| <i>German name keepers relative to German neutral rebranders</i>         |                      |                      |                        |
|                                                                          | (1)                  | (2)                  | (3)                    |
|                                                                          | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                     | -0.3886*<br>(0.2278) | -0.3237<br>(0.2548)  | -0.4953***<br>(0.1061) |
| ATET (percent difference)                                                | -32.20%              | -27.65%              | -39.06%                |
| Total banks (German name keepers)                                        | 14 (1)               | 14 (1)               | 14 (1)                 |
| <b>Panel C. Patriotic framing effect</b>                                 |                      |                      |                        |
| <i>German patriotic rebranders relative to German neutral rebranders</i> |                      |                      |                        |
|                                                                          | (1)                  | (2)                  | (3)                    |
|                                                                          | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                     | 0.1127*<br>(0.0590)  | 0.1253**<br>(0.0614) | 0.1461***<br>(0.0494)  |
| ATET (percent difference)                                                | +11.93%              | +13.34%              | +15.73%                |
| Total banks (patriotic rebranders)                                       | 31 (18)              | 31 (18)              | 31 (18)                |
| <b>Panel D. Combined effect</b>                                          |                      |                      |                        |
| <i>German patriotic rebranders relative to non-German name keepers</i>   |                      |                      |                        |
|                                                                          | (1)                  | (2)                  | (3)                    |
|                                                                          | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                     | 0.0239<br>(0.0476)   | 0.0193<br>(0.0469)   | 0.0661<br>(0.0412)     |
| ATET (percent difference)                                                | +2.42%               | +1.95%               | +6.83%                 |
| Total banks (patriotic rebranders)                                       | 2,215 (18)           | 2,215 (18)           | 2,215 (18)             |

This table presents synthetic difference-in-differences (SDiD) estimates for all average treatment effects on the treated (ATET): the anti-German effect (Panel A), the neutral rebranding effect (Panel B), and the patriotic framing effect (Panel C). Panel D contains the combined effect, checking whether the neutral rebranding effect and the patriotic framing effect together mitigate the anti-German effect. The estimation sample contains only banks located in Midwestern and Great Plains states. In Panel A and Panel B, we show placebo-method based standard errors clustered at the bank level in parentheses. In Panel C and Panel D, we display bootstrapped standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

Table E3: **Average treatment effects on bank-level outcomes (only banks in counties with German-named banks as of 1916)**

| <b>Panel A. Anti-German effect</b>                                     |                      |                      |                        |
|------------------------------------------------------------------------|----------------------|----------------------|------------------------|
| <i>German name keepers relative to non-German name keepers</i>         |                      |                      |                        |
|                                                                        | (1)                  | (2)                  | (3)                    |
|                                                                        | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                   | -0.5304*<br>(0.3022) | -0.5842*<br>(0.3453) | -0.5932***<br>(0.2231) |
| ATET (percent difference)                                              | -41.16%              | -44.24%              | -44.75%                |
| Total banks (German name keepers)                                      | 712 (1)              | 712 (1)              | 712 (1)                |
| <b>Panel B. Combined effect</b>                                        |                      |                      |                        |
| <i>German patriotic rebranders relative to non-German name keepers</i> |                      |                      |                        |
|                                                                        | (1)                  | (2)                  | (3)                    |
|                                                                        | Assets (log)         | Deposits (log)       | Market share (log)     |
| ATET (in log points)                                                   | -0.0428<br>(0.0440)  | -0.0633<br>(0.0490)  | -0.0029<br>(0.0449)    |
| ATET (percent difference)                                              | -4.19%               | -6.14%               | -0.29%                 |
| Total banks (patriotic rebranders)                                     | 733 (22)             | 733 (22)             | 733 (22)               |

This table presents synthetic difference-in-differences (SDiD) estimates for two average treatment effects on the treated (ATET): the anti-German effect (Panel A) and the combined effect (Panel B). The estimation sample excludes banks located in counties without any German-named banks in 1916. By definition, the neutral rebranding and the patriotic framing effects displayed in Table 1 in the main paper remain unchanged and are thus not again reported here. In Panel A, we show placebo-method based standard errors clustered at the bank level in parentheses. In Panel B, we display bootstrapped standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

Table E4: **Average treatment effects on bank-level outcomes (broader definition of German-named banks and non-allied country banks)**

| <b>Panel A. Anti-German effect</b>                               |                        |                        |                        |
|------------------------------------------------------------------|------------------------|------------------------|------------------------|
| <i>German name keepers relative to non-German name keepers</i>   |                        |                        |                        |
|                                                                  | (1)                    | (2)                    | (3)                    |
|                                                                  | Assets (log)           | Deposits (log)         | Market share (log)     |
| ATET (in log points)                                             | -0.4921***<br>(0.1666) | -0.5460***<br>(0.1762) | -0.4741***<br>(0.1233) |
| ATET (percent difference)                                        | -38.87%                | -42.07%                | -37.75%                |
| Total banks (German name keepers)                                | 5,092 (2)              | 5,092 (2)              | 5,092 (2)              |
| <b>Panel B. Neutral rebranding effect</b>                        |                        |                        |                        |
| <i>German name keepers relative to German neutral rebranders</i> |                        |                        |                        |
|                                                                  | (1)                    | (2)                    | (3)                    |
|                                                                  | Assets (log)           | Deposits (log)         | Market share (log)     |
| ATET (in log points)                                             | -0.4421***<br>(0.1453) | -0.4306***<br>(0.1548) | -0.4018***<br>(0.0965) |
| ATET (percent difference)                                        | -35.73%                | -34.99%                | -33.09%                |
| Total banks (German name keepers)                                | 18 (2)                 | 18 (2)                 | 18 (2)                 |

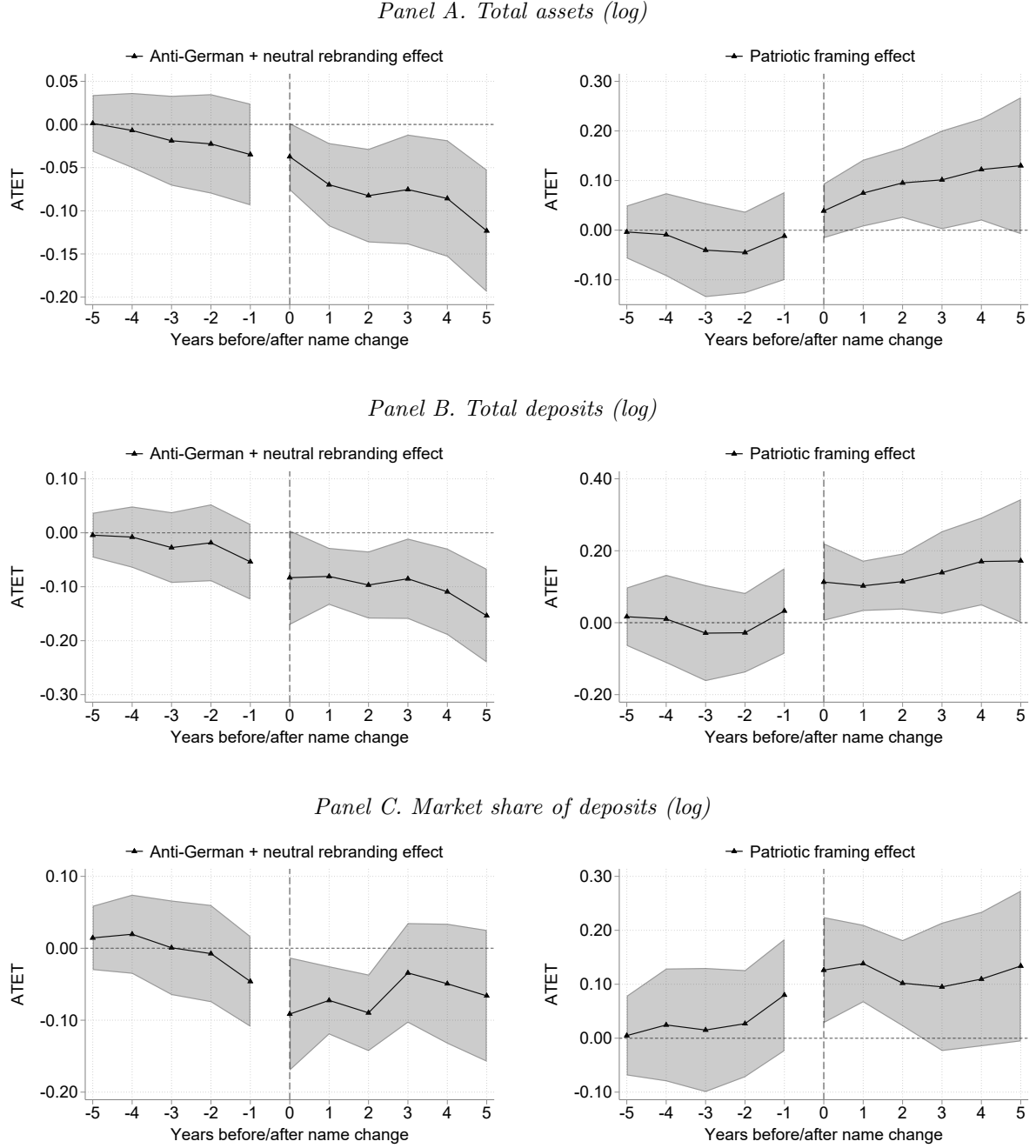
This table presents synthetic difference-in-differences (SDiD) estimates for two average treatment effects on the treated (ATET): the anti-German effect (Panel A) and the neutral rebranding effect (Panel B). We use a broader definition of German-named banks, including closely associated names (e.g., “Teutonic Bank”), names that reference German town names (e.g., “Bank of Berlin”) or names referring to non-allied countries besides Germany (i.e., Austria-Hungary, the Scandinavian countries, and Switzerland). Compared to Table 1, we only gain one additional name keeper (Hanover National Bank in New York City) as all other potential name keepers held brands directly reflecting their town’s name. We gain no additional neutral rebrander because all candidate banks (Bank of Steuben, Bank of Berlin, Bank of Steger, and New Berlin Bank) either changed their name outside the 1917–1919 window or increased their capital. Moreover, we gain no additional patriotic rebrander. Even though several Scandinavian-named banks change their brand to a new patriotic one, all these banks drop from the estimation sample, either due to an unbalanced sample, capital changes, or a name change later than 1919. For this reason, the patriotic framing effect and the combined effect displayed in Table 1 remain unchanged and are thus not again reported here. In Panel A and B, we show placebo-method based standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

Table E5: **Average treatment effects on bank-level outcomes (including time-varying controls)**

| <b>Panel A. Anti-German effect</b>                                       |                       |                       |                        |
|--------------------------------------------------------------------------|-----------------------|-----------------------|------------------------|
| <i>German name keepers relative to non-German name keepers</i>           |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.5203**<br>(0.2315) | -0.5484**<br>(0.2755) | -0.4733**<br>(0.2171)  |
| ATET (percent difference)                                                | -40.56%               | -42.21%               | -37.71%                |
| Total banks (German name keepers)                                        | 8,224 (1)             | 8,224 (1)             | 8,224 (1)              |
| <b>Panel B. Neutral rebranding effect</b>                                |                       |                       |                        |
| <i>German name keepers relative to German neutral rebranders</i>         |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.4408**<br>(0.2076) | -0.3617<br>(0.2303)   | -0.5296***<br>(0.1545) |
| ATET (percent difference)                                                | -35.65%               | -30.35%               | -41.12%                |
| Total banks (German name keepers)                                        | 39 (1)                | 39 (1)                | 39 (1)                 |
| <b>Panel C. Patriotic framing effect</b>                                 |                       |                       |                        |
| <i>German patriotic rebranders relative to German neutral rebranders</i> |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | 0.0697*<br>(0.0422)   | 0.0861*<br>(0.0460)   | 0.0612<br>(0.0424)     |
| ATET (percent difference)                                                | +7.22%                | +8.99%                | +6.31%                 |
| Total banks (patriotic rebranders)                                       | 77 (39)               | 77 (39)               | 77 (39)                |
| <b>Panel D. Combined effect</b>                                          |                       |                       |                        |
| <i>German patriotic rebranders relative to non-German name keepers</i>   |                       |                       |                        |
|                                                                          | (1)                   | (2)                   | (3)                    |
|                                                                          | Assets (log)          | Deposits (log)        | Market share (log)     |
| ATET (in log points)                                                     | -0.0031<br>(0.0343)   | -0.0214<br>(0.0384)   | 0.0203<br>(0.0269)     |
| ATET (percent difference)                                                | -0.31%                | -2.12%                | +2.05%                 |
| Total banks (patriotic rebranders)                                       | 8,262 (39)            | 8,262 (39)            | 8,262 (39)             |

This table presents synthetic difference-in-differences (SDiD) estimates for all average treatment effects on the treated (ATET): the anti-German effect (Panel A), the neutral rebranding effect (Panel B), and the patriotic framing effect (Panel C). Panel D contains the combined effect, checking whether the neutral rebranding effect and the patriotic framing effect together mitigate the anti-German effect. We control for time-varying Fed-membership (dummy variable), paid-in capital (log), CEO turnover between 1916 and 1920 (dummy interacted with post-1917 indicator) and the number of banks in town (log). In Panel A and Panel B, we show placebo-method based standard errors clustered at the bank level in parentheses. In Panel C and Panel D, we display bootstrapped standard errors clustered at the bank level in parentheses. Asterisks indicate statistical significance: \* for  $p < 0.1$ , \*\* for  $p < 0.05$ , and \*\*\* for  $p < 0.01$ . In the last row of each panel, we display the total number of banks in the estimation sample and provide the number of treated banks in parentheses.

Figure E1: **Dynamic effects of bank name changes**



This figure plots staggered difference-in-differences estimates for the effects of German bank name changes on bank-level outcomes (including 95% confidence intervals using clustered bank-level standard errors). We estimate equation 2 using the imputation approach proposed by [Borusyak et al. \(2024\)](#). All regressions include bank and state-year fixed effects, as well as the control vectors  $\mathbf{X}'$  and  $\mathbf{Z}'$ . Visual inspection and formal statistical tests provide no systematic evidence for pre-trends. We cannot reject the null of no pre-trend at any conventional confidence levels in five out of the six plots. The p-values attached to the no pre-trend test for total assets are 0.68 (joint effect) and 0.43 (patriotic framing effect); for total deposits, they amount to 0.30 (joint effect) and 0.30 (patriotic framing effect); and for the market share p-values stand at 0.04 (joint effect) and 0.21 (patriotic framing effect).