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RESEARCH ARTICLE

Stakeholder Cues, National Origin, and Public Opinion Towards Firms: Evidence in the Context of the First Bank in an American Indian Nation

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Abstract
When and how does stakeholder credibility matter in shaping public opinion? We explore this question in a real-world setting: in order to fight its citizens' financial exclusion—a key barrier to development in Indian Country—American Indian Nation "A" negotiated the first entry of the first bank to its reservation. The bank is owned by American Indian Nation "B." To the Federal Reserve, the bank branch is a potential proof-of-concept for the capacity of tribe-to-tribe investment to improve capital access in underserved Native communities. The bank's success ultimately depends on whether Nation A's citizens use its services; in the months before its opening, all three stakeholders independently attempted to influence public opinion toward the bank. We collaborated to conduct a first-of-its-kind survey of Nation A's tribal members, finding high baseline buy-in especially given the bank's nationality, but weak and even counterproductive treatment effects of pro-banking cues provided by Nation A and the Federal Reserve. Our results make clear the practical benefits of theory-building around stakeholder credibility, and the crucial role of individual attitudes in the political economy of development.

Keywords: American Indian; capital access; financial exclusion; economic development; foreign direct investment; international economic relations; randomized control trials

"A fundamental human right"

Access to credit, which Nobel Peace Prize winner Muhammad Yunus pronounced as "a fundamental human right," is inequitably distributed in the United States.[1] Roughly 16% of Black, as well as Latinx adults, do not have a bank account, compared with 7% of White adults. Among Black adults with bank accounts, 29% are reliant on alternative, and often more predatory, financial services, such as auto title, payday, and non-bank loan debt and/or check cashing services, consistent with being underbanked.

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[1]Nobel Lecture, 10 December 2006.

The figure for underbanked Latinx adults is similar, at 25% and falls to 11% for White adults.[2] For American Indians and Alaskan Natives (AIAN) living in and around the 326 independent jurisdictions in Indian Country, the problem of un- and underbanking has long been understood as even more extreme, but efforts to quantify its scope have been stymied by consistent undersampling of AIAN communities in national surveys (Brown, Cookson, and Heimer, 2019; Akee and Jorgensen, 2014).[3] American Indians living on reservations are some of the most economically marginalized US communities (Akee and Taylor, 2014), with lower average credit limits (Dimitrova-Grajzl et al., 2015), higher mortgage interest rates (Feir and Cattaneo, 2020), and less access to financial markets (Wellhausen, 2017; Brown, Cookson, and Heimer, 2019; Anderson and Parker, 2008).

In a first-of-its-kind survey, the authors collaborated with one American Indian nation, Nation "A," to measure its tribal members' capital access.[4] Nation A, a federally recognized tribe with more than 10,000 members, is among some of the most economically marginalized communities. Extrapolating from the survey, an extraordinary 33% of Nation A tribal members do not have a bank account, and 50% of those with bank accounts are underbanked.[5] Even in the context of the strong prepandemic economy, 31% of Nation A survey respondents reported that they could not come up with $400 in case of an emergency, whether through savings or (informal or formal) borrowing, and a further 16% were unsure.[6] Such high percentages in our survey of Nation A were not unexpected, as its reservation is a "banking desert" without a local provider of formal financial services and has been that way for longer than tribal elders can remember. The closest retail bank branch is about ten miles away on roads that are difficult to drive in winter.

Nation A leaders have long deliberated on how to improve capital access. As the reservation's second biggest town is not covered by cell service, internet-enabled solutions remain unrealistic.[7] The Nation A government runs a well-received small-dollar loan program, but expansion is not thought viable. Rather, discussions have centered on attracting a physical branch of a preexisting retail bank. Indeed, physical branches remain important throughout the United States; in 2017, 84% of Americans visited branches, and almost all did more than access the ATM (Merry, 2018). It was therefore a turning point when Nation A's tribal government successfully negotiated the entry of a commercial bank branch, and it was all the more notable as the branch is owned by American Indian Nation "B."

Nearby Nation B's urban reservation helps to make its casino and hotel very profitable, although, like many American Indian nations, it is diversifying away from gaming given gaming's uncertain future. One of Nation B's key ventures is Bank [X].[8] Bank [X] is unique in pursuing expansion in Indian Country; to this end, it has become certified as a Community Development Financial Institution (CDFI), a federal program that allows it to reorient from profit-maximization toward commercial viability. Bank [X] proposed to open its first Indian Country investment on Nation A's reservation.

For the branch to be commercially viable, as Bank [X] requires, and to improve access to capital on the reservation, as Nation A desires, Nation A's tribal members must support the branch and, most importantly, become its customers. Previously un- and underbanked customers would derive direct, material benefits, and more customers overall would both improve the branch's commercial viability and its potential for contributing to community development. These outcomes are consistent with the mission of the Federal Reserve System, the external institution with a specific mission to mitigate financial exclusion in Indian Country. The Federal Reserve is further interested in proof-of-concept of a

[2]These estimates come from the Collaborative Multi-racial Post-Election Survey 2020 and are the authors' calculation. These estimates align with national averages as of 2018 published by Demirguc-Kunt et al. (2018).

[3]Indian Country is the US nomenclature for reserved lands; the US federal government recognizes 574 nations at the time of writing. See Ben Kessler, Native Americans, the census' most undercounted racial group, fight for an accurate 2020 tally. *NBC News*, 29 December 2019.

[4]Consistent with their sovereign rights, Nation A's legislature approved our study conditional on anonymity.

[5]As only 44% own a credit card, the majority do not have the option to accrue credit card debt.

[6]Compare 31% to 12% in the 2019 US Survey of Household Economics and Decision-making (SHED).

[7]Contrast this with Sub-Saharan Africa, where 21% of adults have mobile money accounts, and half of these adults do not have traditional commercial bank accounts (Demirguc-Kunt et al., 2018).

[8]Bank [X] is licensed in the US and subject to US banking regulations. As is common in Indian Country, the firm is wholly state-owned; given our commitment to non-deception, we cannot manipulate whether the bank's state ownership impacts attitudes.

Native-owned bank successfully expanding via investment in other American Indian nations. Thus Bank [X], Nation A, and the Federal Reserve System shared the goal of bolstering tribal members' buy-in to the bank branch before its groundbreaking. Individual-level public opinion—for example, general trust in banks, or support for Bank [X] in particular—can affect economic development even in highly impoverished settings when opinions are translated into consumer choices (Rudra and Tobin, 2017). Thus how to promote potential community buy-in for the bank is important.

These unique circumstances offered an opportunity to evaluate the success of stakeholders[9] in influencing public opinion regarding the bank, in an environment where results are consequential for individuals' choices over their personal finances and development outcomes across the target population as a whole. The authors solicited interventions from the bank, Nation A's tribal government, and the Federal Reserve System to include in the survey, conducted from January through March 2020, prior to the bank's planned groundbreaking in the summer of 2020. Each independently supplied a cue that invoked their credibility as a source, allowing an exploration of when and how stakeholder credibility matters in shaping public opinion (Pornpitakpan, 2004).

Our survey revealed very high and quite homogeneous baseline support, further reinforced after cueing the bank's Native ownership. However, the average treatment effects (ATEs) of the tribal government and Federal Reserve experimental interventions are small in magnitude, often insignificant, and exhibit unintended effects—in some cases *reducing* support for Bank [X]. Average treatment effects are highly similar for both Nation A and Federal Reserve treatments, allaying the concern that the Federal Reserve's US-tied identity undermines its credibility among Nation A residents. However, exploratory analyses suggest that pro-banking cues from the tribal government and the Federal Reserve reduced support among lower-income respondents but proved effective among those with more information about Bank [X]'s ownership structure before the survey and those employed by the tribe. Our nuanced results illustrate the need for renewed theory-building around the political economy of credibility at the most micro-level.

In what follows, we discuss the theory related to stakeholder interventions and individual attitude, our real-world setting and ethical considerations driving our research design, emphasizing the scholarly benefits of stakeholder-driven hypothesis testing. We situate survey interventions in cueing theory, discuss survey results, and explore potential heterogeneous effects of the interventions. We conclude with implications for scholars and practitioners concerned with the political economy of development. Our results suggest that using stakeholder cues to generate public backing for development-enhancing projects may even be counterproductive, a caution that is especially relevant for underserved communities with a history of marginalization.

Theory: Stakeholder credibility and individual attitudes

Given broad agreement among stakeholders that Nation A's residents would benefit from using Bank [X]'s services, what strategies can be used to increase support for the bank? To answer this question we borrow insights from scholarship on cues, or "information that enables people to form evaluations about an attitude object without in-depth knowledge" (Eagly and Chaiken, 1993; Nicholson, 2011). When elites provide cues, a key prediction is that effectiveness varies with the credibility of the source (Mondak, 1993; Guisinger and Saunders, 2017). Source credibility results from the source's perceived trustworthiness, expertise, or some combination (Pornpitakpan, 2004). The basic idea is that individuals are more likely to adopt a position on a given issue—even if they know little about it—if the position is endorsed by an actor that they deem credible, while endorsements from non-credible sources may fail to shift public opinion.

Typically, top-down interventions around financial exclusion teach the respondent *why* they should support the bank via a financial literacy mechanism. In the lab, interventions that instruct respondents on their material self-interests have been shown to change attitudes (Rho and Tomz, 2017) In the field,

[9]We use the term "stakeholders" throughout the paper to refer to the three actors with the most proximate interest in the success of Bank [X]: Bank [X] itself, Nation A's government, and the Federal Reserve System.

financial literacy programs have been deployed in underserved communities around the world, with meaningful evidence of effectiveness (Goyal and Kumar, 2021). However, financial literacy interventions have not solved Nation A's issue. For example, of our Nation A respondents who reported being unbanked, 37% of them said that they had participated in a formal financial literacy program, and 50% self-reported levels of financial knowledge above 6 on a 10-point scale.

Rather than adopting a teaching-based treatment, we draw on theories of elite cues to create two simple and straightforward endorsement-based treatments: we provide respondents with brief messages from two key stakeholders (Nation A's government and the Federal Reserve) in support of Bank [X] and/or its mission. It's important to note that the text of both messages was provided directly by the stakeholders and was not edited or standardized by the authors. In making this choice, we sacrifice perfect comparability across treatments; however, in return, we gain increased external validity by adopting language that each stakeholder would be likely to use in other real-world policy messaging. In addition to our randomized treatments, we conduct observational analyses in which respondents are asked how the identity of a hypothetical bank's owners would affect their support for its operations; these analyses are designed to gauge the extent to which Bank [X]'s Native ownership may affect its support among Nation A residents.

We argue that, to the extent that the stakeholders are indeed perceived as credible by Nation A's residents, each of the three stakeholders should derive their credibility from a distinct source: Bank [X]'s credibility stems from the identity of its owners, the Nation A legislature's credibility stems from its democratic institutions, and the Federal Reserve's credibility stems from its technocratic expertise on financial issues. In the sections below, we describe how we attempt to map these distinct forms of credibility to our treatments and observational analyses.

Bank [X]: Credibility through identity

Because Bank [X] is not from Nation A, attitudes about its credibility are likely informed by attitudes about its origins. In consumer decision-making, home-country bias is well documented (Verlegh, 2007). Broadly, political and public preferences align with domestically generated economic activity (Bauerle Danzman, 2020). Indeed, Zaheer (1995) introduced the concept of the "liability of foreignness" to summarize the various cleavages between firms operating in and out of their home jurisdictions. Accordingly, individuals are expected to prefer a domestic business, if given the choice.

Hypothesis 1a: *All else equal, respondents prefer a domestically owned bank to a foreign-owned bank.*

Should a domestically owned business not be an option, might attitudes vary depending on the qualities of a foreign-owned business? Public opinion regarding economic integration, especially in a developing context, is shaped by a variety of factors, including fairness and exploitation (Weitz-Shapiro and Winters, 2017) and colonial history (Arias and Girod, 2014). Nation A is, in many ways, an archetype of these factors. Its US-caused incomplete sovereignty, itself inextricably linked to settler colonialism, means that it is deeply economically integrated with the United States while also constrained in its set of economic policy choices (Feir et al., 2023; Leonard, Parker and Anderson, 2020). US/American-owned banks have long been the only realistic foreign investors in Nation A, but no such bank has seriously explored opening on its reservation. Even setting aside possible discrimination-based motivations, this lack of interest is consistent with the high costs of cross-border transactions into sovereigns with unique civil law and courts, small populations, and high poverty levels (Wellhausen, 2017).[10] At the time of the survey, there was no US/American-owned firm investing on the reservation; the few local US-branded

[10]Among US banks that do invest elsewhere in Indian Country, political risk management strategies can be normatively questionable; for example, mobile homes are common on reservations, since they can be physically seized and thus better act as collateral.

stores are franchises that shift risks onto the Nation A operators, a phenomenon understood by the community.[11]

That a bank with a shared Native identity is the one bank that pursued entering Nation A is consistent with a wealth of scholarship. In-group preferences have substantial influences on facilitating economic transactions, especially via the mechanism of establishing trust (Charness and Chen, 2020; Shayo, 2020; Kalin and Sambanis, 2018). In the specific setting of foreign-owned banks entering developing states, Mian (2006) provides empirical evidence that cultural similarities between home and host correlate with improved market outcomes. These findings are consistent with research in an international relations context that connects moral values such as in-group/loyalty and fairness/respect to individual attitudes over foreign policy (Kertzer et al., 2014). Taken together, the implications for our setting are that shared Native identity matters, that in-group understanding and shared values among Native peoples would ease economic transactions, and that Nation A tribal members would support the policy choice to leverage a bank that is Native-owned as a developmental strategy.

That this first instance of cross-border investment is Native-owned upends the expectation that a foreign investor in Nation A must also be a US/American-owned one. Nonetheless, the realistic alternative remains a US/American-owned bank, and there is reason to believe cueing that identity could increase support. Thus, it is appropriate to use US/American ownership as the comparison group, and expectations regarding Native ownership are consistent with a most-likely case of an identity-based advantage.

Hypothesis 1b: *All else equal, respondents prefer a Native-owned local bank to one owned by a non-Native US/American company.*

However, there is extreme variation among Indian Country nations' bilateral relations and perceptions of shared identity, which becomes especially relevant when moving from preferences over a hypothetical Native-owned bank to a specific bank owned by Nation B. Much about Nation B is familiar to those in Nation A. On one hand, it is well known that Nation B's economic success translates into a high per capita disbursement to its membership, compared to the low-to-no per capita disbursement in Nation A.[12] On the other hand, Nation A took action to support Nation B during a difficult historical period in B's relations with the US federal government, and that cooperation continues to be referenced and honored by leaders in Nation B.

At the same time, Bank [X] from Nation B is cognizant of potential liabilities in Nation A, and it negotiated terms of entry consistent with mitigating the political risk inherent in cross-border transactions. While the Nation A government welcomed Bank [X]'s proposal, it took well over a year from Bank [X]'s initial inquiry to a positive, unanimous vote from the legislature. One key issue was to specify Bank [X]'s access to dispute resolution in case of conflict. Bank [X] and Nation A ultimately agreed to use third-party, private arbitration outside of the civil law and courts of Nation A, Nation B, or US state and federal systems.[13] Bank [X] also required as a condition of entry that the Nation A government move its finances to the branch. These terms demonstrate that Bank [X] is cognizant of political risks arising from its foreign origin, which are not obviously negated by its perceived competitive advantages of Native ownership.

Nevertheless, in choosing to cue its Native and specific Nation B ownership in the survey, Bank [X] made clear its expectation that its national origin is a source of net competitive advantage in Nation A.[14]

[11]Other American Indian nations do host investment from the US as well as other foreign states, for example, via Foreign Trade Zones (FTZs). See: *Tribal Economic Development Principles-at-a-Glance Series*, US Department of the Interior (accessed November 2021).

[12]Consistent with Nation A's and B's sovereignty, the value of their per capita payments was not disclosed to the authors.

[13]Nations A and B each have sovereignty over their civil legal systems like many, though not all, nations in Indian Country (Wellhausen, 2017).

[14]As is common in Indian Country, the firm is wholly state-owned; given our commitment to non-deception, we cannot manipulate whether state ownership impacts attitudes.

Bank [X]'s CEO—Nation B's face on Nation A's reservation—expects the bank's Nation B identity to add to rather than detract from its Native competitive advantage.[15] Our prior aligns with his.

Hypothesis 1c. *Respondent support for Bank [X] will match or exceed their support for a Native-owned bank of unspecified origin.*

We did not test H1a, H1b, or H1c experimentally due to concerns about statistical power. However, we expect to find observational data consistent with the transitive implication that respondents support Nation A ownership, over Native ownership, over US/American ownership; and that the same ranking holds if Nation B is substituted for general Native ownership.[16]

Nation A: Credibility through democracy

In our first experimental intervention, we consider Nation A's implicit hypothesis that its endorsement will have a positive effect on respondent buy-in. Nation A is a parliamentary democracy with a legislative and judicial branch. Its elected legislature voted unanimously to approve the terms of Bank [X]'s entry. The legislature also unanimously approved the following for inclusion in the survey: "We would like you to know that the [Nation A] Tribal Legislature supports the opening of a bank on the [Nation A] Reservation." The literature suggests that unanimity on the part of elites providing a cue meaningfully increases its effectiveness.[17] In contrast, the divergent effects of political polarization on public opinion is well established, whether over domestic or international issues (Aldrich et al., 2006; Druckman, Peterson, and Slothuus, 2013; Guisinger and Saunders, 2017; Saunders, 2022).

The legislators' approval of this intervention suggests that they see it as coming from a credible messenger, with sufficient trustworthiness and/or expertise that the cue will have its intended positive effects. Two possible counteracting theories are worth considering. First, the Nation A intervention cues the respondent that the legislature endorses the opening of a bank in general, and not Bank [X] in particular. In light of scholarship on business–government relations, especially in a cross-border context, it is understandable that the legislature does not explicitly "hitch its wagon" to Bank [X] and thereby risk political backlash should the venture fail to provide desired benefits (Walter, 2021).[18] In this sense, the non-specificity is by design aimed at preserving credibility. The intervention invokes the legislature's credibility with regard to its economic development strategy in principle and not in practice. Even for respondents predisposed to respond to the intervention, the onus is on them to interpret that the legislature intends to increase buy-in to Bank [X] in particular.

A second possibility is that dissatisfaction with the government's development and social welfare policies would weaken the credibility and thus the effects of the legislature's endorsement in isolation (Tsai, Morse, and Blair, 2020). Indeed, the tribe has not always been marked by such poor economic conditions. Entrepreneurship and economic success are important themes in Nation A's early history, which could suggest disappointment and distrust in the current government's judgment over economic development policy. Conversations of the research team with some tribal members suggest that among some there is frustration with the fairness and community-mindedness of the government's budget decisions especially in the preceding year, as well the role of family networks in elections. Thus it could be that a statement by the tribal legislature will not resonate as credible with its citizens (as may be the case with any government–citizen communication).

Nonetheless, we align our prior with the legislature's expectation that the net effect of their endorsement will be positive. We expect to find positive within-subject effects on support for Bank [X]

[15]Conversations with Bank [X] CEO, July 2019.

[16]Nor do we expect these rankings to vary as a result of randomized experimental interventions.

[17]A trusted interlocutor supports our interpretation that unanimity is implied in the cue, although to be clear it is not explicit.

[18]Late in the survey those receiving the Nation A endorsement were informed that the legislature agreed as terms of Bank [X]'s entry "to move all of the Tribe's banking services (excluding investments and 401k) to Bank [X]." We cannot experimentally test the effect of this non-randomized information. However, within-subject reactions are highly correlated (correlation coefficient of 0.46 on a 5-point scale), which helps mitigate concerns over the move from hypothetical to specific.

after receiving the cue, and as well as effects on levels relative to a control group that does not receive any experimental intervention.

Hypothesis 2a. *Following the Nation A intervention, respondent support for Bank [X] will increase relative to (a) their baseline support and (b) a control group that does not receive the intervention.*

When asked about their attitudes toward becoming Bank [X]'s future customers, respondents are obviously not making binding commitments. Still, raising the possibility of becoming a customer asks respondents to consider the bank's potential role in their own consumption choices (Gopalan and Rajan, 2018). A positive effect of the intervention would indicate that the government can causally affect respondents' intentions over what to do with their own money. When put this way, it is reasonable to suspect respondents could see the intervention as an overstep that damages the government's credibility as a trustworthy messenger, as opposed to one with commercial interests. That said, we again align our prior with the legislature's implied hypothesis.

Hypothesis 2b. *Following the Nation A intervention, respondents reported willingness to become a customer of Bank [X] will increase relative to (a) their baseline willingness and (b) a control group that does not receive this intervention.*

Federal reserve: Credibility through technocratic expertise

In our second experimental intervention, the cue is a statement provided by the Federal Reserve Bank Board of Governors to the authors for inclusion in the survey: "We would like you to know that the Central Bank of the United States, the Federal Reserve, supports the expansion of safe and accessible retail financial services for underserved populations and minority communities." The intended positive cue is consistent with scholarship on the credibility of external institutions with subject-matter expertise, especially in the development space (Broome, Homolar, and Kranke, 2018). For example, in the context of foreign aid, cueing an external institutional "brand" has been linked to positive or at least null effects on support for local government (Dietrich, Mahmud, and Winters, 2018; Dietrich and Winters, 2015). Further, the statement is consistent with widely accepted best practices. It is well established that predatory service providers do harm, especially in marginalized communities (Demirguc-Kunt et al., 2018).[19] Further, when it comes to expanding formal financial services via cross-border investment, Gopalan and Rajan (2018) and Léon and Zins (2020) provide compelling empirical evidence that foreign-owned formal service providers have had success in improving capital access in underserved states.

It is an advantage that we employ the Federal Reserve's true language approved exactly for this purpose. As well established by Baerg (2020), Central Bank messaging is subject to detailed word-smithing in order to achieve its goals. The statement's specific design choices reinforce the importance of eliciting true cues, which can circumvent the theoretical shortcomings of "engineered" cues especially on behalf of an institution with such precise messaging (Alt, Lassen, and Marshall, 2016). However, those design choices also raise complications relevant to the Federal Reserve's status as a meaningful or credible messenger to survey respondents. First, the statement includes phrasing that may be unfamiliar and thus generate noisy responses. In particular, the statement refers to the relatively abstract concept of "retail financial services," which is terminology consistent with the Federal Reserve principle of non-endorsement of any specific commercial entity. The word "bank" is not inclusive of all formal financial service providers, which puts the onus on respondents to understand an on-reservation bank branch as within the scope of the statement. Of course, the statement does not cue Bank [X] either.

Second, building theory around the Federal Reserve's credibility as a messenger requires us to pin down what respondents think the Federal Reserve is. Formally, the Federal Reserve System is a non-profit, institutional actor with subject-matter expertise that serves all of the greater United States, including all nations in Indian Country. It is highly autonomous and not subject to direct control by the

[19]In Indian Country, see arguments by the non-profit Oweesta Corporation (https://www.oweesta.org/).

US federal government. That said, it is unrealistic to expect respondents to know, much less understand, the Federal Reserve's complicated and unique status as not strictly private nor public. We expect the Federal Reserve to be understood as an institution originating from the US Federal Government, which is considered to be external to Nation A and Indian Country as a whole.[20] We expect cueing it as "the Central Bank of the United States" to reinforce this interpretation. Undoubtedly, the consequences of settler colonialism and the specific historical injustices faced by Nation A have the potential to impugn the credibility of an institution tied to the United States, especially in terms of its trustworthiness (Feir et al., 2023; Carlos, Feir, and Redish, 2022). Therefore, there is a legitimate concern that the Federal Reserve intervention could have a counterproductive, negative effect on respondent attitudes if it cues the US federal government.

Still, our prior is that the Federal Reserve statement will have a positive effect on individual attitudes, consistent with its intent. As before, we expect to find positive within-subject effects after receiving this intervention, and as well as effects on levels relative to a control group that does not receive any experimental treatment.

Hypothesis 3a. *Following the Federal Reserve intervention, respondent support for Bank [X] will increase relative to (a) their baseline support and (b) a control group that does not receive this intervention.*

To be clear, the Federal Reserve does not give personal financial advice. While its statement provides detail as to what the Federal Reserve supports, it does not contain a financial literacy component to explain why, and it is not connected to a hypothetical bank or Bank [X] in particular. Thus, although a statement from an external institution with expertise in banking could conceivably be a credible and meaningful input into the decision to become a Bank [X] customer, it is deliberately designed not to speak to respondents' personal consumption decisions. Additionally, linking a US-tied institution directly to personal financial decisions could generate distrust sufficient to swamp credibility on the expertise dimension. Nonetheless, our prior is that the Federal Reserve intervention will not only increase respondent support for a bank opening but also their willingness to become customers once Bank [X] opens.

Hypothesis 3b. *Following the Federal Reserve intervention, respondents reported willingness to become a customer of Bank [X] will increase relative to (a) their baseline willingness and (b) a control group that does not receive this intervention.*

We pause to emphasize that the Nation A and Federal Reserve treatments are not parallel. While neither treatment references Bank [X] by name, they employ different language at different levels of generality that communicates different information. While our commitment to non-deception in this real-world setting facilitated buy-in from our stakeholders and meets our ethical priorities, this is a key methodological tradeoff. Nevertheless, implicit in both stakeholders' interventions is the intent to move attitudes in the same, positive direction, though there are plausible counteracting effects in either case. Of particular concern was that the Federal Reserve's chosen intervention would be so polluted by its US-tied identity as to have the opposite effect of the Nation A intervention. This made our empirical findings regarding non-engineered interventions all the more relevant to the Federal Reserve and its strategic communication decisions.

Research design and implementation considerations

The authors collaborated on the first non-Census scientific survey of adult (18+) Nation A tribal members, funded by the Federal Reserve and executed by the authors together with enumerators from Nation A's tribal college. The authors participated in their institution's IRB approval process, the

[20]To our knowledge, Nation A has had very little prior exposure to the Federal Reserve System; the Fed has not conducted any programming in collaboration with the tribe.

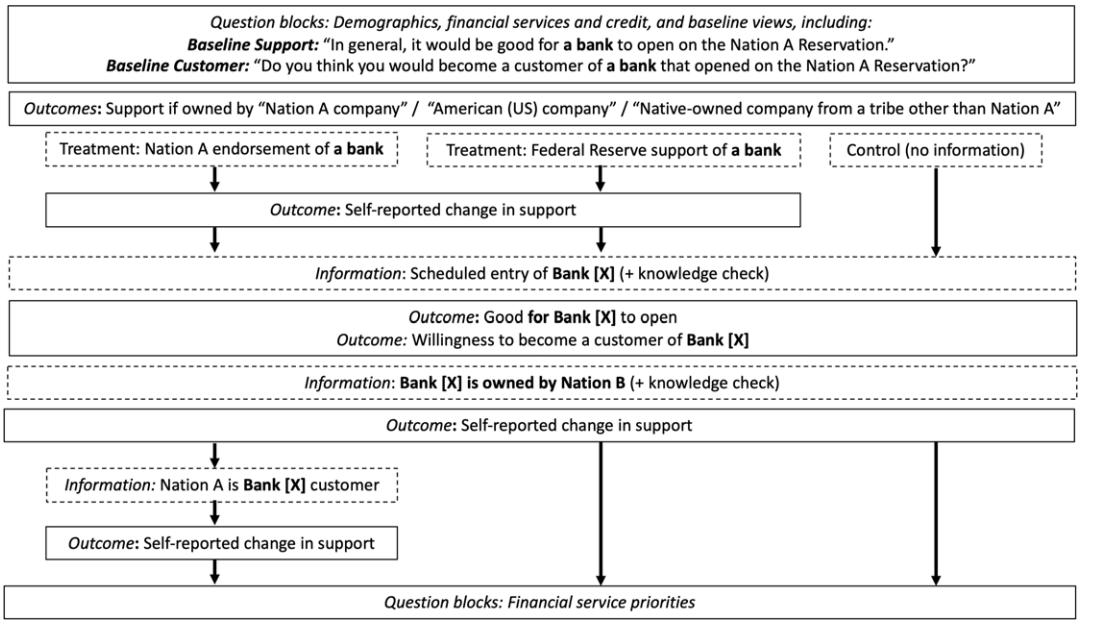

Figure 1. Survey flow.

appropriate processes at the Federal Reserve System, and the Tribal approval process to ensure that the research was both ethical and valuable. Bank [X] to endorsed the survey and the capacity of the authors to conduct it. Bank [X] did so while also making clear that it is not part of the research team; it has no privileged access to data; and its investment is in no way conditional on the survey.[21] In several rounds of in-person testimony, legislators carefully reviewed the survey with the authors.[22] As was their right, legislators required the authors to cut voting and ideology questions, as well as questions viewed as simplistic or disrespectful. The authors also committed to anonymizing public-facing research (hence Nation "A").[23]

Figure 1 summarizes the survey flow.[24] Dotted boxes indicate the points at which the survey introduced different pieces of information, alongside an information check where appropriate. The survey begins with blocks of questions on demographics; financial knowledge; use of financial services and credit; and respondents' baseline support for and willingness to become a customer of a local bank. These blocks are followed by our main questions of interest, in an observational form and then a randomized experimental design. The last block is specific to the needs of our stakeholders, including questions about respondents' priorities regarding financial services and their preferred means of accessing a local bank branch.[25]

The survey was intended to run from January through May 2020, which would be approximately one month before Bank [X]'s scheduled groundbreaking. After that time, Nation A would no longer be in a credibly prelocal bank context. We of course stopped the survey abruptly in March, consistent with

[21]Bank [X] made a charitable donation to the authors' tribal college partners, as appropriate under Nation A, Nation B, and US law.

[22]We check robustness to account for those involved in this process that may have taken the survey (specifically, by controlling for tribal government employment and prior knowledge of Bank [X]'s opening).

[23]Although unfortunate from a research design perspective, in the authors' view getting legislative sign-off on a pre-approval plan would have overly lengthened or upset the approval process, as the legislature rejected the involvement of other external parties.

[24]See Appendix B.2 for question wording.

[25]The last block also provided additional information to the Nation A treatment group as described in footnote 18. Figure 1 excludes a concluding intervention in which the enumerator provided information to the respondent on how to access their free annual credit reports (annualcreditreport.com). We find normatively positive high levels of respondent follow-up but no significant effects of the treatments. Results are available upon request.

public health priorities around the arrival of the COVID-19 pandemic.[26] Nonetheless, we collected 982 responses from the target population, adult (18+) Nation A's legally recognized members.[27] For its part, Bank [X] delayed its scheduled groundbreaking until it was prudent to hold a socially distanced event.

To conduct the survey, we collaborated with Nation A's tribal college to hire and train ten enumerators, who were all female students without prior experience.[28] Enumerators facilitated the survey on tablet computers via the offline Qualtrics app (Bush and Prather, 2019). Although originally offered as an incentive to collect a given number of survey responses, due to the pandemic halt all enumerators were gifted their tablets regardless of whether they collected at least 100 responses. Enumerators set up stations in high-foot traffic areas on the Nation A reservation, including the casino lobby, which is a typical space used for community events; the health clinic; senior centers; government offices; and the main tribally owned enterprise during shift breaks.[29] Enumerators also leveraged their personal connections, for instance to the main on-reservation bar and restaurant; disability care services; and drug and alcohol rehabilitation services.

We instructed enumerators to use convenience sampling, rather than selecting potential respondents randomly or randomly within demographic strata, for three reasons. First, the legislature required as a condition of approving the project that as many people from their community as possible participate in the survey. Second, our enumerators helped us settle on a $10 gift card to the only on-reservation grocery store as an effective form of compensation for survey respondents, which had the added benefit of keeping funds in the local economy. Our enumerators assured us that, in this small and low-income community, news of the incentive would travel fast. We therefore saw it as a high risk that randomly denying some tribal members the opportunity to receive a gift card would generate unpredictable confounders via resentment or other mechanisms. Third, methodology aside, the authors believe that implementing randomization—thereby forcing enumerators to prevent fellow tribal members from having their voices heard in the first non-Census survey—was simply inappropriate. However, even enumerators' implicit sampling strategies were stymied by the survey's abrupt stop after three months (of a planned five).

To determine whether or not our convenience sample is reasonably representative, we compare it to population averages in Nation A's official records and its US state (Appendix B.3). The key observational imbalance is our oversample of women, which may be a function of the composition of our (female) enumerators' social networks (Schroedel et al., 2020). Each of two treatment groups and the third control group are generally well balanced on observables, indicative of successful randomization. Nonetheless, we report results with and without a battery of controls (listed in Appendix B.1).

The work was conducted to ensure that the tribe and bank gained from the research given the ethical importance of reciprocity in Indigenous research (Feir and Hancock, 2016; Drawson, Toombs and Mushquash, 2017; Hayward et al., 2021). Thus the authors delivered a community report to the tribe, the tribal college, and Bank [X] answering questions related to their research interests. The community also directly benefited from the hiring and training of the enumerators, and the provision of technology through the enumerators keeping their tablets. The authors were told by partners at the tribal college the report they delivered would be used as teaching material.

Results

Baseline measures of attitudes provide a reference point on which to layer inferences regarding stakeholder cues. As the stakeholders hoped, baseline attitudes toward an on-reservation bank in

[26]We find little evidence of differential responses to treatment between earlier and later respondents, increasing our confidence that the SUTVA assumption holds (see Appendix B.5).

[27]We exclude 29 respondents who report that they are already customers of Bank [X]. The target population incorporates registered descendants, a legal distinction that is not relevant here.

[28]Enumerators were paid $15/hour (compared to the on-reservation average of $9/hour).

[29]Our tribal college partner organized a large initial roll-out in the casino lobby, with free breakfast and lunch. Unexpectedly, the casino donated $5 match play coupons to respondents on the day. Results are robust to a casino or first-day fixed effect.

Nation A were very favorable and also low variance. For both a hypothetical bank and the specific Bank [X], over 49% respondents chose the highest level of support (Appendix A.1). There is some indication of lower support for Bank [X], which makes sense given the introduction of confounders associated with a specific named firm, although changes in the distribution are small in magnitude.[30] Two concerns are that high baseline support will generate inferential challenges due to ceiling effects, and treatment effects may be small in magnitude in terms of movement on the relevant scale. Importantly, results are robust to data manipulations accounting for potential ceiling effects (Appendix Figure A.3 and Table B.4). Additionally, one of our question formats asks respondents directly whether and in which direction an intervention changed their support, which allows even the most (least) enthusiastic respondents to express even more (less) enthusiasm without censoring. Incorporating such atypical questions is consistent with calls to experiment with the design of survey experiments (Clifford, Sheagley, and Piston, 2021).

Observational results: National origins

We ask all respondents their opinion on the extent to which different national origins of the owner of a hypothetical on-reservation bank would cause their support to increase, decrease, or stay the same (1-5 scale). All respondents consider the same three kinds of owners, presented in a randomized order: a "Nation A-owned company," "a Native-owned company from a tribe other than Nation A," and "an American (US) company."[31] See Figure 2 for a visualization of results. Consistent with H 1a, domestic ownership is preferred to American (US) ownership; domestic ownership is also preferred to foreign ownership by another Native nation, although that effect is not as stark. Consistent with H1b, between foreign choices, non-A Native ownership is preferred to American (US) ownership.

Later in the survey, all respondents are informed that Bank [X] is 100% owned by Nation B and asked to self-report how this information might change their attitudes. Consistent with H1c, a very large proportion answer that their support of Bank [X] was the same or higher, and there is not heterogeneity across treatment groups (Figure 3). Further, in the associated knowledge check question, 45% of respondents answered that they already knew that Bank [X] was owned by Nation B, and 96% of them answered as predicted by H1c.[32] Taken together, these results support Bank [X]'s implicit hypothesis that its Native identity and Nation B identity in particular provide positive cues to respondents.

Experimental results: Nation A and Federal Reserve interventions

We leverage three experimental outcome variables: a respondent's self-report of the effect of the treatment; their posttreatment answer as to whether it is good for Bank [X] to open; and their posttreatment answer as to how likely it is that they will become a customer of Bank [X]. We first measure "difference(s) in levels," or the difference between treatment groups in the average value of the relevant posttreatment survey item. Formally, we calculate the quantity $\bar{Y}_{D=1}^{Post} - \bar{Y}_{D=0}^{Post}$.[33] Second, "differences(s) in changes" is the difference between treatment groups in the average *change* between respondents' baseline and posttreatment responses to the relevant survey item.[34] Formally, we calculate the quantity:

[30]Changing from a hypothetical to a true, concrete setting could also reduce noise in question answers if respondent attention increases.

[31]We chose the name "American (US) company" in consultation with our local partners to avoid implying that Native companies are not themselves American.

[32]The 8% of respondents who decreased support after learning of Nation B's ownership (inconsistent with H1c) also had lower baseline support.

[33]For *Self-reported treatment effect?* the control group outcome is a vector of zeros.

[34]Measuring within-subject change requires asking similar questions at different points in the survey. This could generate fatigue, which may change the variance of responses even within the control group if, for example, respondents become more likely to select a "middle of the road" answer, or if responses become more random. Helpfully, we cannot reject the hypothesis that the variance in question responses within the control group before and after treatment is the same (Appendix A.1). In the case of consistency bias, our results could be thought of as a lower bound of the treatment effect (Falk and Zimmermann, 2013).

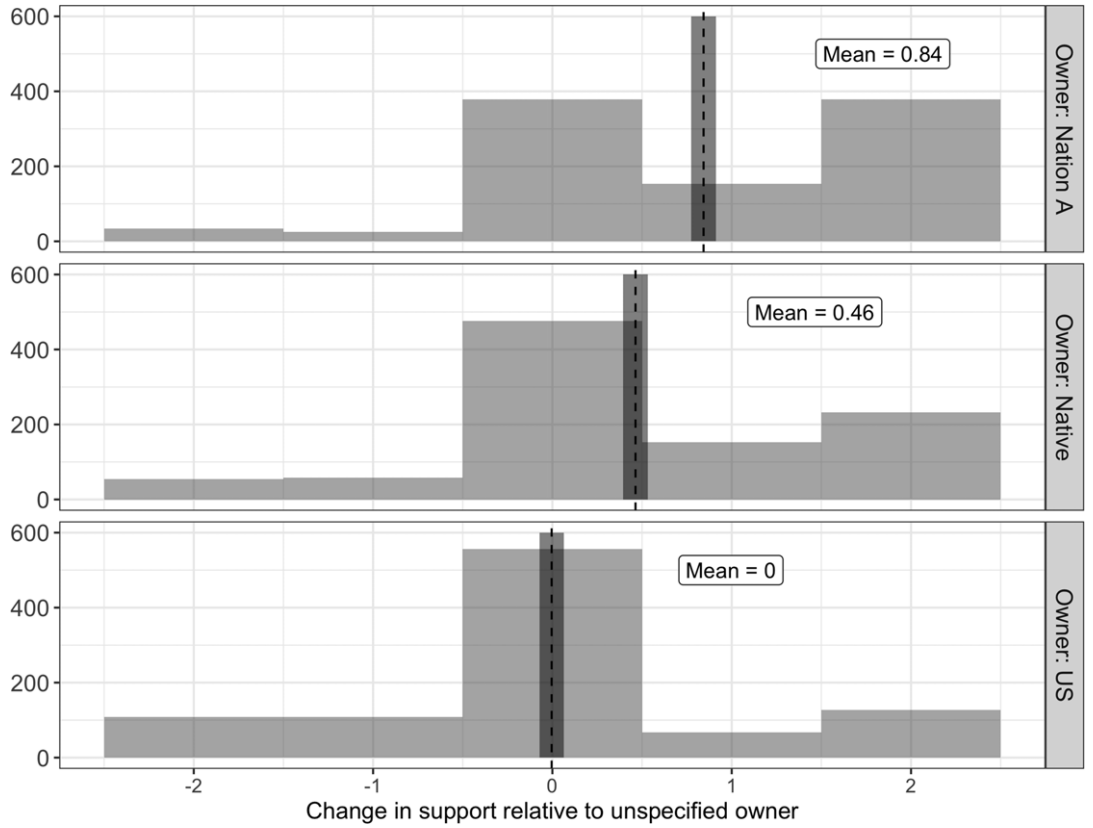

Figure 2. Evidence of home bias (H1a) and Native- over US-ownership preferences (H1b).
Notes: Each plot reports the distribution of relevant responses. Dashed vertical lines identify the distribution means, and the shaded regions surrounding the lines are 95% confidence intervals.

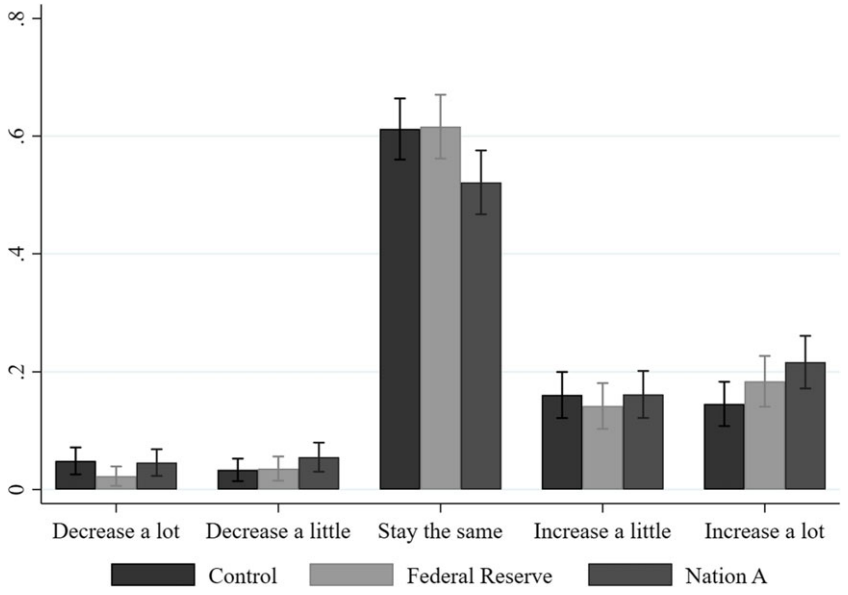

Figure 3. Evidence of overall stable or increasing support for Bank [X] after 100% Nation B ownership is cued posttreatment (H1c).

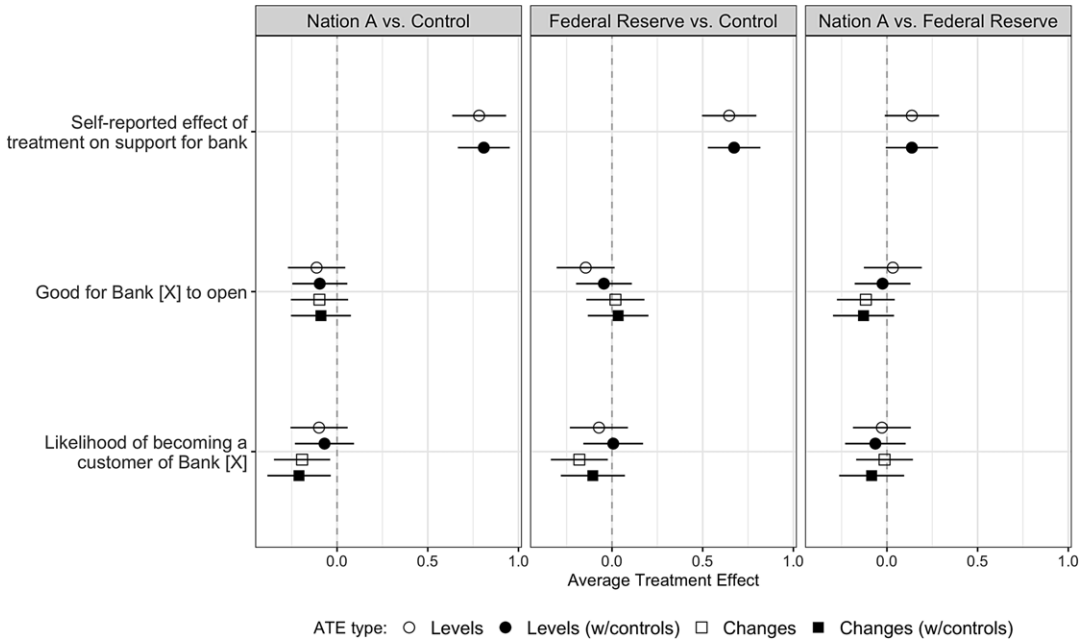

Figure 4. Causal effects of the Nation A intervention and the Federal Reserve intervention, alone and compared.
Notes: Standardized treatment effects. 95% confidence intervals. For controls, see Appendix Table B.1.

$$\left[\frac{\Sigma_{i=1}^{n} Y_{i,D=1}^{Post} - Y_{i,D=1}^{Pre}}{n}\right] - \left[\frac{\Sigma_{i=1}^{m} Y_{i,D=0}^{Post} - Y_{i,D=0}^{Pre}}{m}\right] = \overline{\Delta Y}_{D=1} - \overline{\Delta Y}_{D=0} \quad (1)$$

Because of our commitment to non-deception, the survey moves from a hypothetical bank to Bank [X] in particular. If this generates confounders that are not balanced across the treatment groups, we could misattribute changes to treatment effects. This is a key motivation for our empirical strategy that considers both levels and changes relative to appropriate baselines, without and with a battery of controls (Appendix B.1). Figure plots standardized "difference(s) in levels" and "difference(s) in changes" estimates, which can be interpreted as the ATE measured in standard deviations of Y.[35] Estimates use seemingly unrelated regression (SUR) to account for possible correlation in the standard errors across outcomes.

The first panel of Figure 4 reports the results for the Nation A intervention, and the second for the Federal Reserve intervention. Overall, ATEs relative to the control group are quite similar for each intervention. The third panel directly compares the effects of the Nation A intervention to those of the Federal Reserve intervention. In eight of ten estimates, the difference between the treatments is statistically insignificant and near zero in magnitude. For the outcome variable *Self-reported treatment effect*, the Nation A treatment effect is larger than the Federal Reserve. However, both underlying effects are positive and large. The results are potentially reassuring to those in the Federal Reserve System, insofar as its intervention was not differentially counterproductive.

Results on more standard outcome variables that do not rely on self-reports are much more muted. There is no evidence that either treatment has a positive effect on the outcome *Good for Bank [X] to open* (H2a and H3a), and several point estimates are negative though insignificant. Nor do the treatments have positive effects on the outcome most important for the success of this commercial venture as an economic development strategy, *Likely customer of Bank [X]* (H2b and H3b). In fact, each of the Nation A and the Federal Reserve treatments has negative and significant effects in "difference(s) in changes" specifications (square markers). In other words, we find evidence that the Nation A and

[35]"Differences-in-changes" are not relevant to the *Self-reported treatment effect?* outcome.

Federal Reserve interventions *reduced* interest in becoming a customer for Bank [X], which is normatively consequential especially given high baseline support.

Returning to our research question: our findings suggest that, yes, the credibility of a stakeholder can affect its ability to shift public opinion. Individual-level support for Bank [X] is consistent with the role of shared identity in facilitating trust. However, the unintended effects of the Nation A and Federal Reserve interventions suggest the need for further theory-building around the political economy of source credibility at the individual-level.

Extension: Exploring unintended treatment effects

We look into the possibility of heterogeneous treatment effects in a post hoc, exploratory exercise, in the spirit of theory-building and to identify patterns of potential use to practitioners. We focus on the "difference(s) in changes" of the *Likely Bank [X] customer* outcome, because it is of special importance to economic development outcomes. We also focus on those receiving the Nation A intervention, as heterogeneous effects would be of special importance to Nation A policymakers in understanding the limits of the government's source credibility with its own population.

We employ the following process. First, we want to know which of our pretreatment covariates (Appendix Table B.1) are the best predictors of how participants responded to treatment; we will focus our heterogeneity analysis on these important variables. To answer this question, we first regress the outcome variable on a set of covariates for the treatment and control groups, and we predict the counterfactual outcomes for each treatment group (Appendix Table B.7). We then use these predicted counterfactual outcomes to generate estimated individual-level treatment effects (Appendix Figure A.2). We then form an indicator variable of whether each individual's predicted treatment effect was in the unintended direction.

Now that we have estimated individual-level treatment effects—and dichotomized them by expected (positive) vs. unexpected (negative) directionality—we want to know which individual-level covariates best explain them. To do so, we use lasso regression, which minimizes the sum of squared errors while constraining the sum of all estimated coefficients below some threshold, and in the process retains the strongest predictors of the indicator variable while shrinking the rest of the coefficients towards zero (Tishbirani, 1996). This data-driven process leaves us with the most relevant covariates to our outcome of interest; we chose this route, selecting variables according to their predictive power instead of their theoretical motivation, in the interest of contributing to future theory-building and providing policy-relevant information to policymakers.

Once we've identified these meaningful respondent characteristics, we directly test for heterogeneous treatment effects. To do so, for each (binary) characteristic, we first use SURs to estimate the treatment effect separately for groups with and without a given characteristic. Formally, for each characteristic c:

$$Y_i = \delta^{c=0} D_i + \varepsilon_i \tag{2}$$

$$Y_i = \delta^{c=1} D_i + \varepsilon_i \tag{3}$$

We then perform chi-squared tests to assess the difference between treatment effects for the subgroups with and without a given characteristic ($\delta^{c=1} - \delta^{c=0}$). Figure 5 reports the results of this procedure for each respondent characteristic and for both treatments, along with robust 95% confidence intervals. When estimates are positive, individuals with those characteristics were especially enthusiastic in response to Nation A's intervention. In other words, compared to their initial interest in becoming a customer of Bank [X], individuals with these characteristics were the most likely to become more interested upon learning of their government's support. In contrast, when estimates are negative, the Nation A intervention was so unhelpful as to be counterproductive. In other words, compared to their initial interest in becoming a customer of Bank [X], individuals with these characteristics were the most likely to report *less* interest upon learning of their government's support.

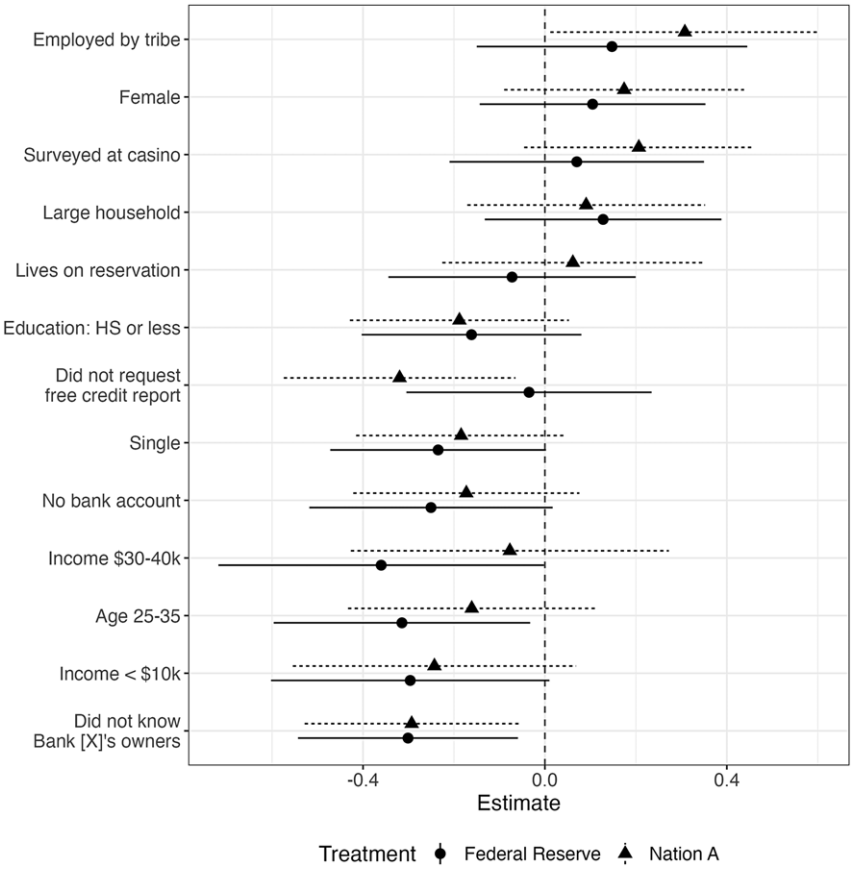

Figure 5. Which respondent characteristics conditioned the effects of treatment on their likelihood of becoming a customer of Bank [X]? Positive values indicate that the treatment had a more positive effect among individuals with the given characteristic; negative values indicate that the treatment had a more negative effect for individuals with the given characteristic.

Overall, Figure 5 suggests that ATEs masked heterogeneity across groups of respondents that merits further attention.[36] First, particularly for the Nation A treatment, individuals with stronger ties to the community appeared to respond more positively. Those employed by the tribe and those who were surveyed at the casino (a community gathering place, and also the location of the survey roll-out event) seem to have more positive treatment effects, though the latter effect is not statistically significant. Likewise, respondents who paid close attention to tribal affairs would almost certainly have knowledge of Bank [X]'s owners, so the strongest predictor of unintended treatment effects (to the left of the dashed line) suggests weak community involvement. If stakeholders expect that individuals connected to the community are also effective in persuading other community members, then focusing interventions on them could be one way to maximize impact.

Given the policy goal that Bank [X]'s entry would mitigate financial exclusion, and the context of very high baseline buy-in, some of the characteristics associated with more negative responses to the treatments are normatively concerning. In particular, the most negative treatment effects are found for respondents who are young, low-income (particularly *very* low-income), and who lacked knowledge of and experience with consumer finance (those who lacked bank accounts, and who did not show interest in a free credit report when offered). Our overall interpretation of this exercise is that the Nation A and Federal Reserve interventions were damaging especially to respondents in groups that they were most

[36]Missing age was also recovered via the lasso procedure (small in magnitude, negative coefficient). We excise it from Figure 4 and focus instead on characteristics we see as reasonably interpretable even via post hoc speculation.

interested in targeting. As the interventions relied on a credibility mechanism, a broader takeaway is that stakeholders' ex ante evaluations of their credibility—and not only its average, but also its distribution in the target population—is a key input to deciding whether intervention in itself is on net a productive choice.

Conclusion

We worked with partners to implement a unique survey for American Indian Nation A to assess the financial circumstances of their members, their demands for financial services, and their support for the opening of a bank on their reservation and what factors affect it. This circumstance was made additionally unique by the fact a bank, owned by another Nation B, was scheduled to actually open, which was not known by all members. Before the bank's opening, Nation A had no formal financial service provider on their reservation.

By successfully negotiating the entry of a bank branch to its reservation, Nation A made a policy choice to leverage cross-border investment in a bank in order to mitigate financial exclusion in its jurisdiction. However, the strategy of fighting financial exclusion via economic integration in the form of an on-reservation bank relies on the voluntary consumption choices of the Nation's citizens and those living nearby, and thus their attitudes toward and intention to use the bank branch.

We find very high baseline buy-in to a hypothetical local bank branch, as well as the specific Native-owned Bank [X] from Nation B, consistent with expectations that shared identity builds trust and credibility. Our experimental interventions used true cues chosen by stakeholders, employed without deception, in a real-world environment where treatment effects matter. Some survey respondents randomly received a statement of support related to the bank branch either by Nation A's government or a generic statement of support for limiting financial exclusion by the Federal Reserve System. Both interventions had parallel effects generating weak and even mildly counterproductive results. We also offer a post hoc exploration of what may influence how respondents received the statements of support. If there is variation among citizens in how they view the credibility of the Federal Reserve System or the tribal government, the effects of the interventions may also vary. Exploratory analyses suggest that lower-income, young, and underbanked respondents appear to have been less interested in becoming bank customers as a result of stakeholder intervention. They were also more likely to be negatively affected by stakeholder statements of support if they didn't know that the bank opening was owned by Bank [X]. However, those employed by the tribe were more likely to be positively impacted by the intervention.

There are many actors in the world interested in leveraging the benefits of investment in and access to banking to promote economic well-being in financially underserved areas. However, actors should be aware that in a context with high baseline support for policies that could in principle achieve this, their explicit statements of support may not have the effects they intend. If the perceived credibility of the actors wanting to promote a specific policy is distributed unevenly across a population of interest, then cues from them could generate unintentionally counterproductive effects.

Competing interests. The authors declare no competing interests.

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Appendix

A Figures

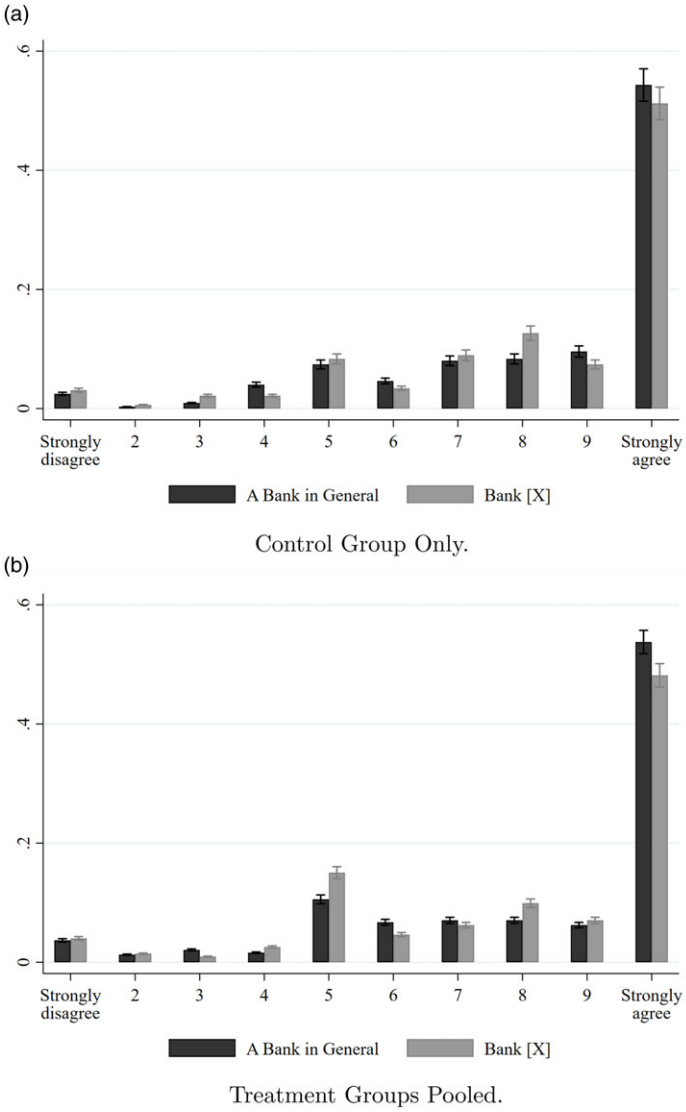

Figure A.1. *"It would be good for (a bank/Bank [X]) to open a branch on the Nation A Reservation."* Patterns are consistent with descriptive expectations of high baseline support and a skewed distribution.

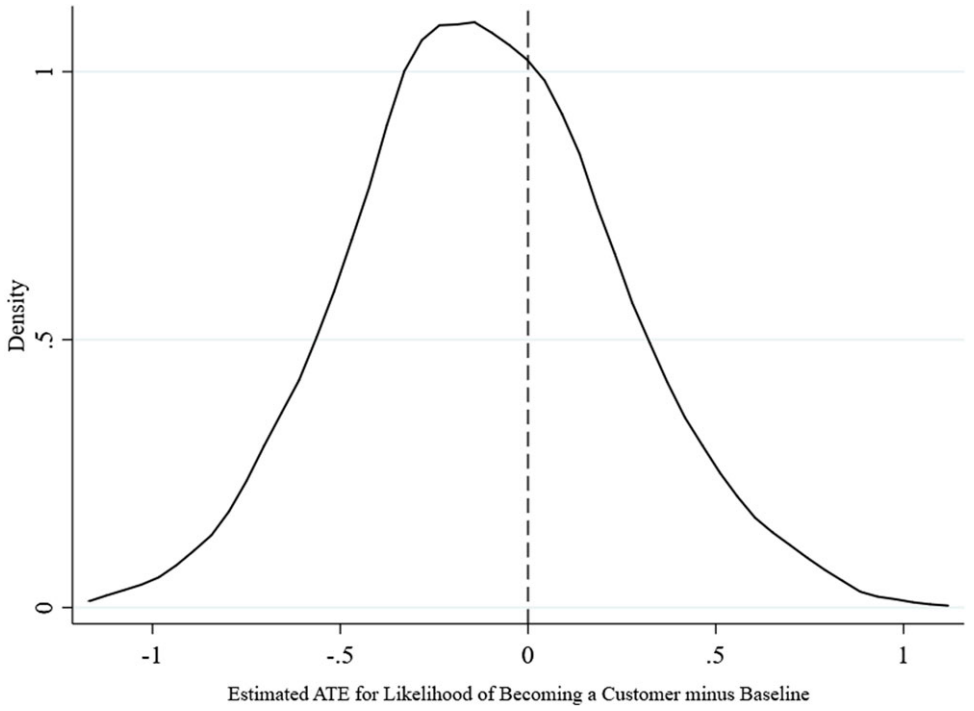

Figure A.2. Distribution of estimated individual treatment effects on *Likely to become a customer of Bank [X]?* in terms of change from baseline.

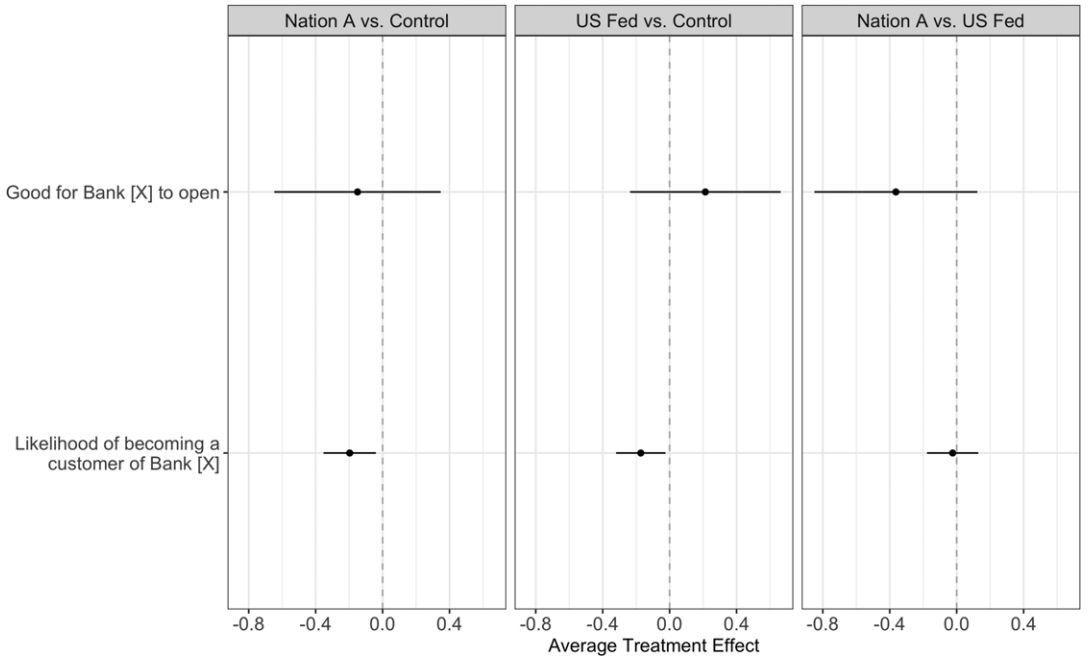

Figure A.3. Testing for ceiling effects: main differences-in-changes results, re-estimated after dropping respondents who gave the most positive possible response to the baseline items.

B Tables

Table B.1. List of covariates included in controls and ATE lasso procedure

Indicator of whether someone took the survey on a tablet
Enumerator fixed effects
Indicator of having less than a high school education
Indicator of having a high school education
Indicator of having a some college
Indicator for indicating sex as female
Indicator of having a household having at least four dependents (either adults or children)
Indicator of being Single (rather than married or in a common law relationship)
Indicator for living on the reservation
Indicator for not being employed
Indicator for being employed by the tribal government (government only—not enterprises)
Indicator for having an invalid age answer
Indicator for being 18–25 years old
Indicator for being 26–35 years old
Indicator for being 36–45 years old
Indicator for being 46–55 years old
Indicator for having household income less than $10,000
Indicator for having household income between $10,000 to 20,000
Indicator for having household income between $20,000 to 30,000
Indicator for having household income between $30,000 to 40,000
Indicator for having household income between $40,000 to 50,000
Indicator for having done the survey at the Casino
Indicator for having done the survey on their cellphone
Indicator for having done the survey at the first day of the rollout
Their ranking of support for a Nation A-owned bank opening
Their ranking of support for a US owned bank opening
Their ranking of support for a Native-owned bank opening
Indicator of being an enrolled member
Indicator of having not having got their free credit report
Indicator of not being able to get $400 in an emergency
Indicator of having Internet access at home
Indicator of listening to Natin A news most of the time
Indicator of having payday loan debt
Indicator of not having a credit card
Indicator of having trust in banks five or less out of 10
Indicator of not having a bank account
Indicator of not wanting a bank account

(*Continued*)

Table B.1. (*Continued*)

Indicator of self-assessed "very bad" credit
Indicator of having more than four different sources of debt
Indicator of using cash checking services most of the time
Indicator of having a self-assessed financial knowledge less than 5 out of ten
Indicator of having self-assessed financial satisfaction less than four out of ten
Indicator of not knowing their could get a free credit report
Indicator of not knowing Bank [X] was Nation B-owned
Indicator of not knowing Bank [X] was going to open

Notes: The precise questions related to the outcome variables of interest and their respective baselines can be found in Table 1.

Table B.2. Experimental outcome variables and associated questions

	Outcome	Exact question
1	*Self-reported treatment effect?*	We would like you to know [statement treatment]. Does knowing this about the [treatment] make your support for a bank opening on the [Redacted] Reservation increase, decrease, or stay the same? (0 Decrease a lot to 5 Increase a lot)
2	*Good for Bank [X] to open?*	How much do you agree with this statement, on a scale from strongly disagree (1) to strongly agree (10)? "It would be good for Bank [X] to open a branch on the [Redacted] Reservation."
3	**Baseline for** *Good for Bank [X] to open?*	How much do you agree with this statement, on a scale from strongly disagree (1) to strongly agree (10)? "In general, it would be good for a bank to open on the [Redacted] Reservation."
4	*Likely customer of Bank [X]?*	Do you think you will become a customer of Bank [X] when it opens on the [Redacted] Reservation? (0 Definitely not to 5 Definitely yes)
5	**Baseline for** *Likely customer of Bank [X]?*	Do you think you would become a customer of a bank that opened on the [Redacted] Reservation? (0 Definitely not to 5 Definitely yes)

Table B.3. How representative is our sample? Comparison of our respondents to Nation A administrative data and 2013-2018 American Community Survey data for American Indians living in the same US state as Nation A's reservation

	Nation A Records	ACS
Average age	0.64	
Proportion female	0.11***	0.13***
Single		0.09***
No children in household		−0.03+
Employed		0.16***
Less than HS		−0.09***
High school or GED		0.00
Some college		0.03
−year degree		0.05***
−year degree		0.01
Advanced degree		−0.01

(*Continued*)

Table B.3. (*Continued*)

	Nation A Records	ACS
to 24		−0.04**
to 34		0.06***
to 44		−0.01
to 54		−0.03+
to 64		0.00
and over		−0.04**

Notes: Differences in proportions or means reported. Observations vary due to missing responses. + $p < 0.10$, *$p < 0.05$, **$p < 0.01$ ***$p < 0.001$.

Table B.4. Testing for ceiling effects: regressions of outcome variables on treatments, controlling for baseline response

Comparison:	Control				Federal Reserve	
Outcome:	Support	Customer	Support	Customer	Support	Customer
Federal reserve treatment	−0.082	−0.153***				
	(0.151)	(0.058)				
Nation A treatment			−0.231	−0.142**	−0.080	0.012
			(0.152)	(0.058)	(0.156)	(0.060)
Baseline FE	Y	Y	Y	Y	Y	Y
Num. Obs.	628	622	645	637	625	623
R^2	0.186	0.126	0.143	0.107	0.166	0.096
R^2 Adj.	0.173	0.119	0.130	0.100	0.152	0.089

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table B.5. Very little evidence of violations of SUVTA

		Levels		Changes	
	Self-reported	Open	Customer	Open	Customer
Federal reserve	0.770***	−0.00929	0.228	0.0888	−0.270**
	(0.121)	(0.160)	(0.164)	(0.142)	(0.143)
Days since start	−1.85e−16	0.00761**	0.00380	0.00114	−0.00254
	(0.000)	(0.004)	(0.004)	(0.003)	(0.004)
(Federal reserve) × Days since start	−0.00865**	−0.00627	−0.0108**	−0.00571	0.00797
	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
Roll-Out day	−5.23e−15	0.165	0.252**	−0.137	−0.0932
	(0.000)	(0.121)	(0.129)	(0.122)	(0.123)
(Federal reserve) × (Roll-out day)	0.0559	−0.0925	−0.351**	0.0461	−0.164
	(0.151)	(0.180)	(0.180)	(0.190)	(0.188)

(*Continued*)

Table B.5. (*Continued*)

		Levels		Changes	
	Self-reported	Open	Customer	Open	Customer
Nation A	0.828***	0.0399	0.0291	0.000663	−0.226
	(0.131)	(0.162)	(0.176)	(0.141)	(0.148)
(Nation A) × (Days since start)	−0.00462	−0.0108**	−0.00762	−0.00493	0.00186
	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)
(Nation A) × (Roll-out day)	0.0840	0.0755	−0.00672	−0.0172	0.0102
	(0.149)	(0.176)	(0.187)	(0.179)	(0.178)
Observations	982	970	946	949	941
Adjusted R^2	0.124	0.006	0.008	−0.002	0.011

Notes: Linear outcome model used. Heteroskedasticity robust standard errors reported. Interpretation: Across five models, we recover only a few non-systematic, small magnitude, and weakly significant relevant coefficients. We interpret this as very little evidence of differential responses to treatment between earlier and later respondents, increasing our confidence that the SUTVA assumption holds.

Table B.6. No evidence in support of fatigue effects

	Good for Bank/Bank [X] to Open	Likelihood of Becoming Customer of Bank/Bank[X]
Ha: ratio < 1	0.2436	0.4771
Ha: ratio $! = 1$	0.4872	0.9541
Ha: ratio > 1	0.7564	0.5229

Notes: Classic *F*-test for differences in variance within the control group before and after treatment. *P*-values reported in cells. Interpretation: We cannot reject the hypothesis that the variance in question responses within the control group before and after treatment is the same; therefore, we do not find evidence in support of fatigue effects.

Table B.7. Models that predict *Likely customer of Bank [X]?*, by treatment group

	Control	Federal Reserve	Nation A
Less than high school degree	0.0774	−0.307	0.447
	(0.184)	(0.256)	(0.298)
High School or GED	0.0658	−0.0780	−0.0625
	(0.155)	(0.166)	(0.135)
Some college but no degree	−0.0448	−0.104	0.0798
	(0.154)	(0.149)	(0.123)
Female	−0.0988	0.0319	0.0574
	(0.111)	(0.108)	(0.120)
Has at least four dependents	−0.0858	*0.186	−0.0191
	(0.115)	(0.103)	(0.132)
Single	0.0213	−0.0779	−0.0402
	(0.107)	(0.110)	(0.120)
Lives on reservation	−0.0897	−0.155	0.117
	(0.120)	(0.111)	(0.128)
Not employed	0.0824	0.232	0.0900
	(0.113)	(0.148)	(0.125)

(*Continued*)

Table B.7. (*Continued*)

	Control	Federal Reserve	Nation A
Employed in Tribal Government	−0.121	−0.143	0.00485
	(0.144)	(0.119)	(0.140)
Missing age	0.297	0.0450	0.0722
	(0.203)	(0.192)	(0.274)
18 to 24	0.0511	−0.262	0.228
	(0.296)	(0.290)	(0.227)
25 to 34	0.234	−0.105	0.190
	(0.158)	(0.149)	(0.160)
35 to 44	−0.0373	−0.0520	−0.0803
	(0.163)	(0.150)	(0.149)
45 to 54	−0.191	−0.0487	−0.186
	(0.140)	(0.164)	(0.152)
Less than $10,000	−0.0433	−0.369*	−0.457**
	(0.162)	(0.189)	(0.195)
Between $10 to $20,000	−0.0803	−0.151	−0.349**
	(0.178)	(0.173)	(0.148)
Between $20 to $30,000	0.114	−0.197	−0.165
	(0.166)	(0.170)	(0.151)
Between $30 to $40,000	0.260	−0.348*	−0.156
	(0.180)	(0.177)	(0.167)
Between $40 to $50,000	*0.243	0.0974	0.0306
	(0.141)	(0.154)	(0.174)
Took at casino	−0.150	−0.0192	**0.258
	(0.123)	(0.101)	(0.114)
Survey taken with enumerator	0.240	0.0666	−0.223
	(0.440)	(0.263)	(0.275)
Took on personal cell phone	0.0947	−0.443	−0.251
	(0.470)	(0.290)	(0.288)
Nation A ownership change support?	−0.0335	−0.0161	0.0109
	(0.049)	(0.045)	(0.047)
Native ownership change support?	−0.0527	0.0213	−0.0166
	(0.054)	(0.044)	(0.045)
US-ownership change support?	−0.0133	−0.0937*	−0.00483
	(0.055)	(0.056)	(0.051)
Enrolled member	0.0841	0.106	0.125
	(0.098)	(0.122)	(0.121)
Can't get $400 in emergency	0.00374	0.0862	0.0384
	(0.103)	(0.117)	(0.110)

(*Continued*)

Table B.7. (*Continued*)

	Control	Federal Reserve	Nation A
Has internet at home or smartphone	−0.178	−0.0812	−0.193
	(0.158)	(0.124)	(0.206)
Pays attention to Nation A news most times	0.172	−0.0454	0.0573
	(0.108)	(0.103)	(0.103)
Has payday loan debt	−0.0943	−0.000183	−0.0374
	(0.158)	(0.143)	(0.131)
Doesn't have a credit card	−0.114	0.151	−0.0657
	(0.116)	(0.109)	(0.099)
Less than median (7/10) bank trust	0.145	0.0655	*0.200
	(0.103)	(0.095)	(0.107)
No bank account	0.0720	−0.203	−0.0620
	(0.121)	(0.131)	(0.151)
Didn't know Bank [X] was Nation B-owned	*0.201	−0.156	−0.0652
	(0.114)	(0.106)	(0.098)
Didn't know Bank [X] was going to open	−0.196	−0.0401	−0.187
	(0.135)	(0.114)	(0.122)
Didn't know about free credit report	−0.0441	−0.123	−0.116
	(0.102)	(0.099)	(0.104)
Self-assessed financial knowledge < 5/10	0.134	0.115	0.103
	(0.149)	(0.165)	(0.165)
Satisfaction with finances < 4/10	−0.296*	−0.0395	−0.317**
	(0.157)	(0.116)	(0.142)
Uses check cashing most of the time	*0.274	0.135	0.239
	(0.157)	(0.171)	(0.224)
Doesn't have or want a bank account	−0.256	−0.0422	0.0670
	(0.297)	(0.164)	(0.198)
More than four sources of debt	0.150	0.161	0.0370
	(0.144)	(0.138)	(0.162)
Very bad self-assessed credit	0.0936	0.232	0.143
	(0.259)	(0.149)	(0.163)
Observations	299	290	298
Adjusted R^2	0.014	0.065	0.034
Actual mean of outcome	0.071	−0.059	−0.11
Predicted Mean of Outcome	0.071	−0.059	−0.11

Notes: Linear outcome model used. Heteroskedasticity robust standard errors reported. Observations vary due to missing responses.

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