WORKING PAPER

Depositors Disciplining Banks: The Impact of Scandals [1]

Mikael Homanen [2]

November 16, 2018

Abstract

Do depositors react to negative non-financial information about their banks? By using branch level data for the U.S., I show that banks, that financed the highly controversial Dakota Access Pipeline, experienced significant decreases in deposit growth, especially in branches located closest to the pipeline. These effects were greater for branches located in environmentally or socially conscious counties and data suggests that savings banks were among the main beneficiaries of this depositor movement. Using a global hand-collected dataset on tax evasion, corruption and environmental scandals related to banks, I show that negative deposit growth as a reaction to scandals is a more widespread phenomenon.

Keywords: Depositor Discipline, Bank Scandals, Environment, Tax Evasion, Corruption.

JEL Classification Codes: G21, G41, M14.

[1] I would like to thank Lint Barrage (discussant), Thorsten Beck, Renaud Beaupain (discussant), Aymeric Bellon, Peter Brok, Martin Brown, Jules van Binsbergen, Matthieu Chavaz, Anna Cororaton, Anastassia Fedyk (discussant), Erik Gilje, Maria Chiara Iannino (discussant), Randall Kroszner (discussant), Elisa Pazaj, Sébastien Pouget (discussant), Antonino Emanuele Rizzo (discussant), Orkun Saka, Luke Taylor, Van Hong Vu (discussant) and Stefan Zeume for their thoughtful discussions, and seminar participants at the Wharton School, ETHOS, MIDAs, Cass Business School, Tilburg University and conference participants at the Chicago Booth Stigler Center Political Economy of Finance 2018, Chicago Booth Rustandy Center Economics of Social Sector Organizations Conference, The Federal Reserve's Sixth Annual Community Banking Research and Policy Conference, PRI Academic Network Conference 2018, Inaugural Conference - Global Research Alliance for Sustainable Finance and Investment, European Financial Management Association 2018 Annual Meeting, 25th Global Finance Conference, 5th Sussex Young Finance Scholars Conference, Cass Research Days, 6th International Symposium on Environment & Energy Finance Issues and the 35th Annual Conference of the French Finance Association for valuable comments and suggestions. Special thanks to Glens Andersons for providing excellent research assistance. The YPCCC bears no responsibility for the analyses or interpretations of the data presented here. All remaining errors are mine.

[2] Cass Business School - City, University of London

1 Introduction

Understanding depositor behavior has been fundamental for evaluating the existence of market discipline in banking. As deposit institutions finance their operations with stable sources of financing, depositors serve a monitoring and disciplining role for these banks. The attention has so far concentrated on the perception of bank fundamentals, such as solvency and probability of default, hence, once banks are deemed too risky, depositors discipline banks by either withdrawing their funds or by demanding higher interest rates. To this date however, there has been little to no research on whether depositors react to information that go beyond financial fundamentals. Moreover, if depositors do in fact react to such information, is it because of financial motives or something else, such as social conscience? To shed light on these new ideas, this paper will attempt to test these hypotheses by examining the effects of bank scandals on depositor movement.

An extensive literature has established the importance of the banking system for the financing of the real economy. In the recent decade however, the banking sector has been under scrutiny as it has been perceived as a major conduit of business activities deemed unsustainable for the global economy. Even to this day, banks continue financing major coal and carbon intensive projects that undermine the Paris Agreement's aim of limiting global warming to 1.5°C above pre-industrial levels (Bank Track, 2017a). In addition, banks have been identified as some of the largest enablers of tax avoidance, thereby contributing to the $21-32 trillion of private financial wealth invested in tax havens (Henry, 2012), further generating obstacles for economic development (Alstadsæter et al., 2017). In order to force banks to internalize the costs of funding these activities, do we have to rely purely on regulatory measures or can we rely on disciplining by depositors?

This paper is the first to test depositor reactions to bank scandals. As such, it is the first thorough attempt of examining whether depositors discipline banks based on other sources of information than just financial health. With branch level data from the U.S., I make use of the 2016 Dakota Access Pipeline (DAPL) protests. This was a highly controversial project that was financed by, among others, nine major banks in the U.S. These banks were highly criticized by activist groups as the pipeline was intended to cross major rivers as well as ancient burial grounds. The results from the empirical analysis show that banks involved in financing the DAPL, had significant decreases in deposit growth and that the effect was stronger for branches located in states where the pipeline was present. These results indicate that depositor movement was heavily influenced by people's actual proximity to the scene of the controversy. In addition, the results show that the effects were stronger for envi-

ronmentally as well as socially conscious counties highlighting other non-financial drivers of depositor movement. The results also show that savings banks, which tend to be more localized institutions with more transparent asset allocations relative to larger banks, were among the main beneficiaries of this unanticipated depositor movement. I find that savings banks located in counties with proportionally more DAPL banks had significantly higher deposit growth rates, which is in line with prior findings (Brown et al., 2017). I further establish whether this new channel of depositor discipline holds for a multinational setting by using quarterly bank level data and a hand-collected dataset on bank level scandals. I find that total deposit growth decreases when banks are caught in tax evasion, corruption and environmental scandals. Furthermore, I find some evidence that, on average, larger banks that have not been involved in these scandals are rewarded with higher deposit growth rates.

The first contribution of this paper relates to the evolving literature on corporate social responsibility and ESG (environmental, social and governance) finance. While there is much evidence that investors and corporations are significantly more active in addressing and pricing positive and negative externalities,[1] there remains much debate as to what exactly these value adding or decreasing mechanisms are. Therefore, the first contribution of this paper is documenting a new and novel channel by which tractable ESG risks affect a firm's (in this case bank's) bottom line. While many papers have attempted to distinguish these channels, this is among the first that can clearly identify a business cost for not addressing ESG risks. Furthermore, this paper contributes to a much broader debate on the purpose of the firm. Hart and Zingales (2017) re-evaluate the purpose by making a crucial distinction that considers how individuals place different weights on the choice to take a socially efficient action. For them, this is highly dependent on the degree to which an individual feels responsible for the action in question. I directly tackle this novel distinction by showing that an individual's degree of responsibility (proxied by deposit ownership, social norms and climate change beliefs) has a direct effect on the choice to do the right or socially efficient action. In line with Hart and Zingales' conclusion that corporations should maximize shareholder welfare, this paper is the first to show that it makes financial sense to optimize corporations' strategies, conditional on the non-financial preferences of their creditors.

This paper further contributes to a range of literature on depositor behavior. In general, studies have shown that depositors discipline banks by either withdrawing deposits or by requiring higher

[1]There is an extensive literature documenting these new developments; Krüger (2015); Dimson et al. (2015); Ferrell et al. (2016); Lins et al. (2017); Liang and Renneboog (2017); Hartzmark and Sussman (2018), just to name a few. Servaes and Tamayo (2017) and Kitzmueller and Shimshack (2012) also provide useful literature reviews.

interest rates (Martinez Peria and Schmukler, 2001; Maechler and McDill, 2006). While depositors have traditionally been seen as reactive to fundamental information (Saunders and Wilson, 1996; Schumacher, 2000; Goldberg and Hudgins, 2002; Schnabel, 2009), recent evidence has indicated that they are sensitive to other sources of information (e.g. negative press rumors and regulatory signals), mechanisms (e.g banking relationships and social networks) and bank characteristics (e.g. Euro-area affiliation and perception of too-big-to-fail) (Hasan et al., 2013; Correa et al., 2013; Iyer et al., 2013; Oliveira et al., 2014; Iyer and Puria, 2012). While this paper contributes to the findings of "other sources of information", the novelty here comes from the information beyond financial fundamentals. Even though these papers demonstrate behavioral frictions, which may cloud depositor judgment, behavior is still largely founded on the perception of financial loss. As a counter example, Brown et al. (2017) examine Swiss depositor movement from the two largest banks in Switzerland during the financial crisis and find that the role of switching costs in deterring deposit withdrawals was independent of deposit insurance. They argue that it is reasonable to assume that the withdrawals of deposits were at least partly driven by disagreement with the bank's corporate policy, rather than by fear about losing savings.[2] While their paper provides indicative evidence of the non-financial preferences of depositors, as of yet, there exists no systematic analysis nor understanding on the other motivators of depositor discipline. This paper's next contribution is filling this gap, specifically, the other non-financial sources of depositor discipline.

This paper also contributes to the rising literature on corporate social responsibility in banking. While there is some evidence of misbehavior in the retail banking channel (Halan et al., 2016; Bursztyn et al., 2018; Fecht et al., 2018), on the corporate banking channel, a range of studies have documented that banks punish socially irresponsible firms by charging higher loan spreads and award responsible firms with lower loan spreads (Goss and Roberts, 2011; Hasan et al., 2014; Chava, 2014; Cheng et al., 2014; Kleimeier and Viehs, 2016). This paper further contributes to a much broader literature on corporate fraud (Dyck et al., 2010; Liu, 2016), tax evasion (Bennedsen and Zeume, 2017; Hasan et al., 2014; Johannesen, 2014; Johannesen and Zucman, 2014; Chernykh and Mityakov, 2016) and bribery (Zeume, 2017). Along with the essence of these papers, this study will increase our understanding on the nuances of corporate malpractice while providing further insights on how to tackle them.

Direct policy recommendations from this paper are difficult to justify, since there exist endless nuances as to what kinds of regulation are better fit for addressing various externalities. Nonetheless,

[2]Blickle (2017), further document this movement extensively.

the findings of this study show that depositor discipline can play an important role in forcing banks to internalize non-financial externalities on society from their risk decisions. While the findings of this study cannot infer the relative importance of regulatory and market responses to such externalities, they clearly show that reliance purely on government intervention might not be necessary.

The remainder of the paper is structured as follows: Section 2 elaborates on the composition of the data and section 3 presents the main empirical findings. Section 4 tackles a series of additional findings. Section 5 takes a broader view by analysing global bank scandals and lastly, section 6 concludes.

2 Data

The Dakota Access pipeline protests were grassroots movements that began early 2016 in reaction to an approved oil pipeline project in Northern United States. The pipeline begins in the Bakken shale oil fields in Northwest North Dakota and continues to South Dakota, Iowa, ending in Illinois. The pipeline sparked a lot of controversy from environmental activists as well native Americans, as the pipeline was intended to cross both the Missouri and Mississippi Rivers as well as ancient burial grounds. There was a total of 17 banks directly funding the construction of the DAPL[3] and the banks that had a significant proportion of branches in the U.S. were Bank of Tokyo Mitsubishi UFJ, BBVA, BNP Paribas, Citigroup, SunTrust Robinson Humphrey, TD Bank, Mizuho Bank, SMBC and Wells Fargo. The protests themselves were large in scale, but the rather surprising outcome was the attention on banks as well as the financial coordination among activists. By February 2017, over 700,000 people had signed one of six petitions addressed to banks financing the DAPL. Individuals who signed the petition collectively reported having over $2.3 billion invested in these banks through checking, mortgage, and credit card accounts. They threatened to divest their wealth if the banks continued financing DAPL and by then thousands had already closed their accounts removing over $55 million from these banks (BankTrack, 2017b). While the true extent of this movement is difficult to document, it is very likely that these actions and associated reputational costs were significant both in the U.S. and across the globe. Many banks, including ABN Amro and ING were quick to make public statements as a reaction to the scandal. They were publicly re-evaluating their commitments to the project and already by March 2017, ING had sold its stake in the DAPL loan (ING, 2017). Soon

[3]The 17 banks were Bank of Tokyo Mitsubishi UFJ, BayernLB, BBVA, BNP Paribas, Citigroup, Crédit Agricole, DNB ASA, ICBC, ING, Intesa Sanpaolo, Mizuho Bank, Natixis, SMBC, Société Générale, SunTrust Robinson Humphrey, TD Bank, and Wells Fargo. The energy and pipeline companies involved in the project were Dakota Access, LLC, a company owned by Philips 66, Energy Transfer Partners LP and Sunoco Logistics Partners LP. At a later stage, stakes in the pipeline were bought by MarEn Bakken Co LLC, which was a joint venture by Enbridge Incorporated and Marathon Petroleum Corporation.

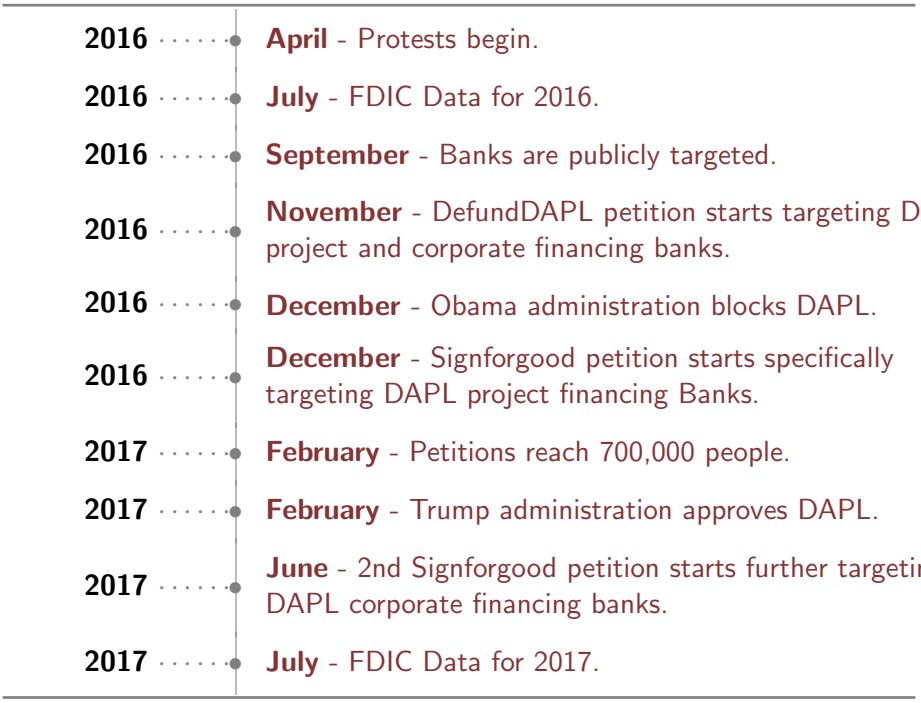
after, other banks including DNB ASA and BNP Paribas had sold their stakes as well. Interestingly, public pressure further increased and was not only directed at those financing the pipeline directly, but also those who provided corporate financing to the pipeline companies. Furthermore, Seattle ended up cutting ties with Wells Fargo, Los Angeles moved to divest from Wells Fargo, San Francisco moved to divest $1.2 billion from companies financing the DAPL, Norwegian wealth fund stated its intent to drop fossil energy investments and numerous Norwegian pension funds divested from companies behind DAPL. Interestingly, U.S. Bank stated its intent to stop financing pipeline projects, though later retracted and Nordea (the Nordic Banking and Investment group) had decided to exclude three companies behind DAPL, which was partially due to their unwillingness to talk about these issues.

To clearly identify depositor movement, I first collect the Federal Deposit Insurance Corporation (FDIC) summary of deposits (SOD) data for years 2012 - 2017. The data is based on an annual survey of branch office deposits as of June 30 for all FDIC-insured institutions, including insured U.S. branches of foreign banks. All institutions with branch offices are required to submit the survey and all responses are required by July 31. While the DAPL protests began April 2016, the attention on banks started around September 2016 as indicated by the timeline in figure 1. For this reason, the analysis assumes that the main shock took place in 2017 (i.e. July 2016 - June 2017). However, many regressions will be accounting for any effects that might have already risen in 2016 (i.e. July 2015 - June 2016).[4]

Overall, the dataset has detailed information on total deposits and other branch characteristics (including location) for over 100,000 bank branches across the U.S. In the analysis, I only consider branches that have less than $1.0 billion and more than $100,000 in deposits, since larger branches often house deposits from all over the country (including corporate, municipal and nonlocal retail consumers), while deposit growth rates for smaller branches might mislead the analysis with abnormally high or low growth rates. I also exclude banks that had been acquired in either 2017, 2016 or 2015 to retain the focus of the analysis on established branches. Overall, these exclusions remove less than 1.6% of the total sample. Furthermore, as certain regressions will attempt to identify non-financial determinants of depositor behavior, it will be important to rule out alternative explanations that might be correlated with locational characteristics. Therefore, later analyses will include county level data

[4]Interestingly, the pressure on banks did not peak in 2017. Protests have continued since June 2017 and with an even broader focus, e.g. with the inclusion of Tar Sand projects and the Keystone XL pipeline. The current banks are still being targeted since the June 2017 petitions and more banks have been included in subsequent petitions. NGOs have reported that that financial activism continues to this day and there have been no signs of these protests stopping as of yet.

Figure 1: Timeline of Events



on education, specifically, the percentage of people with a bachelor's degree or higher. The data is for 2012-2016 and collected from the *United States Department of Agriculture* county-level data sets. The analysis will also incorporate the percentage of the county that voted for Barack Obama in the 2012 presidential elections as a measurement for political affiliation. The data for this was collected from *the Guardian*. In addition, the analysis will control for the county population, which is collected from the *Northeast Regional Center for Rural Development*. Lastly, in order to investigate the non-financial determinants of depositor behavior, the analysis will make use of county level climate change beliefs as well as proxies for social preferences. This data will be further discussed in later sections.

The summary statistics can be found in table 1 and panel B presents the two-sample t-tests for equal means. The population of banks is split between those banks who financed the DAPL and those that did not. The results show that branches whose parent banks financed the DAPL had higher levels of deposits and slightly lower deposit growth rates. Furthermore, DAPL financing branches were located in relatively populous, educated and pro-Democratic counties. It was mainly larger commercial banks that financed the pipeline and data suggests that these characteristics were reflected in the branch level data. Panel C provides bank level summary statistics on the number of branches as well as the distribution of deposit growth data.

[Insert here Table 1]

3 Empirical Results

3.1 Main Results

To document the effects of the DAPL scandal on depositor behavior, I begin by visualizing the phenomenon with heat maps shown in figure 2. The first heat map shows the deposit growth rates for 2015 and the second one for 2016. Values are based on the average deposit growth rates for branches that financed the DAPL minus average state level deposit growth rates.[5] The darker colors in the heat maps translate to higher than state average deposit growth rates for the treated banks. As one can see, the areas closest to the pipeline, turn increasingly lighter in 2016 (first year of the scandal). This means, on average, banks who financed the DAPL pipeline became more likely to have lower than state average deposit growth rates during the first year of the scandal. Furthermore, once you take a glimpse into 2017, the changes look even starker. A clear majority of the states turn lighter indicating that depositor movement had become a nation wide phenomenon.

[Insert here Figure 2]

To better identify the effects of the scandal, I continue the analysis by estimating a simple Diff-&-Diff style analysis shown below. The treatment is equal to one if the year was 2017 and the bank was involved in financing the DAPL. Since the assignment to the treatment group is not random by nature, this is not a pure Diff-&-Diff analysis. Therefore, it will be important to control for a host of factors. For the majority of base results, all regressions will include bank, state and year fixed effects to be assured that the results are not driven by any year or state level shocks nor bank specific characteristics. In addition, the regressions will include a range of bank and branch specific controls as described in table 1.[6]

$$Deposit\ Growth_{it} = \alpha_0 + \beta_1 Financed\ DAPL_i * 2017_i + \lambda X_{it} + \alpha_i + \theta_t + \epsilon_{it} \quad (1)$$

The regression results for this exercise are shown in table 2. All the columns include the full sample of U.S. states and show that financing the DAPL had a significant negative effect on deposit growth.

[5] Kentucky, Louisiana, Ohio and Rhode Island are the only states in which these banks did not have any significant operations and hence, there is no branch level information for them. This is why the states are white (i.e. "No data").

[6] The majority of the results control for total assets of the institution, total domestic deposits of the institution, asset specialization (international, agricultural, credit-card, commercial lending, mortgage lending, consumer lending, other specialized under 1 billion, all other under 1 billion and all other over 1 billion), type of branch service (brick and mortar, retail, cyber, military, drive through, mobile/seasonal and trust) major institution grouping (national member bank, state member bank, state nonmember bank, savings banks and savings and loans, state stock savings and loans, and other insured institution,)

Overall, financing the DAPL project had cost the affected banks between 1.5 - 2.2% decrease in deposit growth. The economic effects of the event are quite substantial, considering that the average deposit growth rate of the full sample is 8.6% and for the treated banks 8.3%. The results demonstrate that the incident was indeed a nation wide phenomenon as already evidenced by the high level of public awareness and engagement. To account for any time-varying, county-level demand-side shocks or branch specific characteristics, columns 3-4 report the interaction results with the inclusion of bank fixed effects (at the institution level), branch fixed effects as well as county-year fixed effects. The results hold after including these exhaustive controls. Overall, the results remain significant across the specifications and the magnitudes change very little.

[Insert here Table 2]

To get a better sense of the real impacts of the DAPL, I calculate the approximate loss of deposits for the affected group. In other words, I estimate the losses for the 10 902 (treated) branches in 2017, which had average branch level deposits of $101 million in 2016. Using the previously identified economic effect of -0.015% (and -0.020%) deposit growth rate, this would imply that the bank branches lost approximately $101 million * 0.015 (0.020) * 10 902 = $16.5 ($22.0) billion in total deposits in 2017 alone. While this is a large economic effect, generating reliable loss estimates is difficult and one might argue that if all these effects were caused by switchers, the estimates would be inflated due to double counting (though unlikely, since losses due to any unmet new deposit demand surely played a role as well). In other words, a "deposit loss" for treated banks naturally means "deposit gain" for other banks (due to switching) and this puts an upward bias in the diff-in-diff estimates. This means the estimates may double-count the effect by taking the difference between these two types of banks. Therefore, with full-switching, we can assume that these banks lost at least $8.25 - 11 billion in total deposits as a result of the scandal. This is by far the most conservative estimate, considering that the analysis also does not incorporate the largest U.S. bank branches (those with over $1 billion in deposits), which undoubtedly suffered from deposit losses as well. In addition, the FDIC does not collect data on credit unions, which were primary locations to which NGOs instructed their petitioners to transfer their funds. This biases against finding a result and implies that the deposit loss estimates would be understated. Later analysis incorporating bank level credit union data from call reports provide strong support for this claim.

While it is difficult to establish as to how many people might have moved their deposits, the results and anecdotal evidence may provide some indications. As stated earlier, 700,000 petitioners collectively reported having over $2.3 billion invested in these banks through checking, mortgage, and

credit card accounts. They threatened to divest their wealth if the banks continued financing DAPL (BankTrack, 2017b). Furthermore, in the second Signforgood petition, 150,000 petitioners had pledged to divest $4.4 billion. While it is difficult to get a sense of the actual amount of people that were responsible for the overall deposit losses, comparing petitioner statements with the estimated $8.25 - 22.0 billion change, gives us a glimpse of the extent and potential. Overall, the results highlight a large cost of doing business for these banks, yet we must be aware that this analysis is unable to capture further business losses as a result of employee morale or lower demand for other consumer products, which surely had some impact on these banks as well.

To further evaluate whether these changes were driven by traditional retail clients, figure A2 in the appendix reports the uninsured deposit growth rates of the treated and non-treated banks. The information was collected from the Federal Financial Institutions Examination Council (FFIEC) Central Data Repository's Public Data Distribution web site and more specifically, the Call Reports, which is available at the institution level (i.e. not the branch level). Bank branches can receive sizeable funding from large time deposits from U.S. money market funds and therefore it is important to examine whether these changes might have impacted the overall deposit growth results. The figure fails to indicate any substantial changes in these markets. It seems, large time deposits were not the primary driver of depositor movement. Furthermore, it was difficult to find any mentions of this event in analyst reports, which further yields support for this claim. The figure also serves as a partial test for arguments in favor of financial motives. If anyone were to move their deposits due to fears of these banks facing future financial difficulties, it would have been the uninsured depositors, which again, show no clear sign of movement. As a final point, those who might argue that financially less experienced retail clients might be biased in interpreting these events as a sign of future distress, depositors are insured by the FDIC up to at least $250,000. Therefore, it would be difficult to argue in favor of misguided movement in the retail deposit channel. Overall, the results indicate that retail depositors are therefore, a likely candidate for driving the changes in deposit growth.

In order to alleviate concerns that the empirical analyses might not be identifying a unique event specific to these banks, figure A3 in the appendix reports the total deposit growth rates of the treated and non-treated banks. The data is also from the FFIEC Call Reports. While the graph provides some convincing evidence that these banks were facing abnormally lower deposit growth rates, as a reminder, the data is only available at the institutional level, so we must be careful before making any strong statements based on these results. Identification is further complicated by the fact that DAPL

specific events took place across several accounting quarters and most of these banks experienced positive deposit growth rates during the overall time frame. While the figure provides partial evidence that the treated banks witnessed abnormally lower deposit growth rates, in order to provide further evidence that the results are identifying a unique event, table A1 in the appendix provides branch level regressions, whereby the interaction $2017 * FinancedDAPL$ is kept as the base variable. As the results show, all the alternative year times $FinancedDAPL$ interactions are positive and significant. These banks were doing strictly better across all years before and compared to 2017, further highlighting the importance and uniqueness of the DAPL events.

3.2 Channels of Depositor Movement

Even though depositor reactions are unlikely to be motivated by financial concerns, it is just as important to further gauge the non-financials motivators of the unanticipated depositor movement. These extended analyses will serve to further alleviate concerns on the financial motives of depositors (assuming financial motives are not fully correlated with social motives) and will provide interesting insights into the factors, which amplify pro-social depositor behavior. I begin this exercise by limiting the sample to only the states where the pipeline was actually present (i.e. North Dakota, South Dakota, Iowa and Illinois). The motivation for running this analysis is to understand whether those who were located closer to the scene of the controversy, were more likely to move their deposits. In these regressions, I also include an interaction with the year 2016 in case there were any effects that might have risen prior to June 2016. The results from this analysis are shown in table 3. The coefficients remain significant and negative, but most importantly, the coefficients are larger compared to the full sample results. This would suggest that people in these localities were more sensitive to the controversy and hence more driven to move their deposits.

[Insert here Table 3]

To better identify the proximity to pipeline effect, I run the same regression for the full sample of U.S. states, while including a triple interaction term accounting for whether the branch was located in a pipeline state. The results from this analysis are shown in table 4 and further show that on average, bank branches who financed the DAPL, had suffered an additional 2.6 -2.3% negative deposit growth rate, if they were located in the pipeline states. Even though the DAPL scandal was a nation-wide phenomenon, the results further highlight that people who were closest to the scene of the controversy and hence more likely to be impacted, were the ones who were more likely to move their deposits. These results are similar to findings by Levine et al. (2018) who document the increased migration of corporate executives after firms open industrial plants emitting toxic air pollutants. It is important

to clarify that in total, nine banks with branches in the U.S. financed the DAPL, however, not all of them had operations in the pipeline states. The banks that had a presence in these states were BNP Paribas, Citigroup, Wells Fargo and Mitsubishi UFJ. In total, they collectively held 17% of all deposits in South Dakota, 12% in North Dakota, 9% in Iowa and 3% Illinois. The results from this analysis are in line with earlier findings and further highlight an amplifying factor for depositor movement.

[Insert here Table 4]

While the locational effect of scandals partially determine the severity of depositor discipline, I examine other non-financially motivated mechanisms. To do so, I collected county level data from the *Yale Program on Climate Change Communication* (YPCCC). This data is based on surveys, which evaluate Americans' climate change beliefs, risk perceptions and policy support (Howe et al., 2015). I use their data from 2016 and in the analysis, I include a include a dummy "Happening 70", which is equal to 1 if at least 70% of the county thinks that global warming is happening. Approximately 17% of U.S. counties fall under this category. The dummy is used as a way to represent the counties where a clear majority of the population think climate change is happening. While incorporating a continuous variable might be of interest, the effects are mostly expected to appear in communities with relatively strong climate change beliefs as result of the intense polarization of public opinion (Hoffman, 2011). Table 5 shows the results of this analysis. The interactions are negative and significant, demonstrating that changes in deposits were further aggravated by local beliefs in climate change. Bank branches who financed the DAPL had a greater negative deposit growth rate if they were located in a county with stronger beliefs in climate change. To make sure the effects are not driven by other factors that might be correlated with climate change beliefs, all regressions include county level data on education, specifically, the percentage of people with a bachelor's degree or higher as well as county level population data for 2014. In addition, the results also include the percentage of the county that voted for Barack Obama in the 2012 presidential elections as a measurement for political affiliation. All the results hold after controlling for these alternative determinants of depositor behavior. As a further test, the third column of the analysis includes bank-year and state-year fixed effects as way to control for any other bank and state specific effects that might have risen in 2017. The results hold after including this conservative test, which yields strong support for the effects of DAPL and the additional drivers of depositor movement. As a final conservative test, the analysis makes use of the YPCCC data for 2014. One might argue that the DAPL event had an effect on local climate change beliefs and therefore, it would be more appropriate to incorporate prior county-level beliefs on climate change. Table A8 in the appendix show the results of this analysis. The findings remain the same and demonstrate that local climate change beliefs had an effect on depositor movement.

[Insert here Table 5]

The next stage of the analysis is to further gauge the effects of personal responsibility depositors might feel due to the negative externalities caused by their banks (as proposed by Hart and Zingales (2017)). To further tackle this responsibility channel, the analysis includes a variable "Human 55", which is is equal to 1 if at least 55% of the county thinks global warming is caused mostly by human activities. Approximately 9% of U.S. counties fall under this category. The results from this analysis remain similar to earlier findings and provide additional insights to the non-financial determinants of depositor discipline.

[Insert here Table 6]

As another examination of non-financial drivers, the analysis makes use of the county level social capital data from Rupasingha et al. (2006). More specifically, the analysis will incorporate their 2014 data on the number of non-profit organizations within a county (without including those with an international approach) to proxy for county level willingness for tackling societal issues. Table 7 shows the results of this analysis. The interactions are negative and significant across the U.S., demonstrating that changes in deposit growth were further aggravated by local social norms. The results hold after controlling for county level education, population as well as political affiliation.

[Insert here Table 7]

As a final examination of the non-financial drivers of depositor movement, the analysis makes use of state level data from *Google Trends*. The motivation for this final analysis is to find a proxy that would best represent DAPL specific local support. While county level climate change attitudes and other factors are good proxies for general social preferences, they might still be unable to fully capture area specific interests for supporting the DAPL movement. To address this concern, the analysis uses a variable *Donate to Standing Rock*, which is equal to the intensity of Google searches between 4/4/2016 - 11/9/2017 for the search term. Figure A1 in the Appendix displays the hetergoneity of those searches across the U.S and table 8 shows the results of this analysis. The interactions are negative and significant adding strength to earlier findings. As indicated by the figure, there are states across the U.S. that had a missing values for this particular search term. To mitigate this concern, columns 1-3 show the results, while converting the missing values to zero and columns 4-6 include the unconverted results. The results hold under both specifications.

[Insert here Table 8]

4 Further Findings

4.1 Savings Banks

While deposit growth decreases for banks involved in the DAPL incident, it is worthwhile exploring whether the uninvolved banks enjoy any spillovers as a result of depositor movement. To do so, I create a dummy equal to one if the branch did not finance the DAPL and is state-chartered savings bank. This test is motivated by Brown et al. (2017) who found that deposit withdrawals from distressed banks in Switzerland were unrelated to household coverage by deposit insurance. They assume that deposit withdrawals from UBS (distressed bank that incurred investment losses in the wake of the U.S. subprime crisis) were at least partly driven by disagreement with the bank's corporate policy, rather than by fear about losing savings. This was further motivated by the fact that while customer deposits declined strongly at the two large banks (UBS and Credit Suisse), deposits at the domestically focused cantonal banks and savings banks increased throughout the crisis. More specifically, there is additional documentation that local mortgage lenders (Raiffeisenbanks) were direct recipients of the new clients that migrated away from UBS (Blickle, 2017). In similar spirit, Giannetti and Wang (2016) find that in the U.S., state-level corporate fraud decrease stock market participation and more interestingly, Gurun et al. (2017) find that residents who were exposed to the infamous Madoff Ponzi scheme, were more likely to withdraw their assets from investment advisors and subsequently increase their deposits at banks. Motivated by these findings and insights, I test whether U.S. savings banks faced similar advantages during the DAPL incident.

The results in table 9 show that savings banks were the main beneficiaries of this unanticipated depositor movement. This is done by incorporating a triple interaction term with a variable measuring the proportion of DAPL branches in a given county. Intuitively, if the locality has more DAPL branches, the likelihood of savings banks exhibiting higher deposit growth should increase as a result of greater levels of depositor movement. The results demonstrate that savings banks in counties with more DAPL banks enjoyed higher deposit growth rates as a result of the scandal. In order to be assured that the results are not driven by any time-varying, state-level demand-side shocks nor bank-year specific characteristics, column 10 reports the interaction results with the inclusion of state-year fixed effects as well as bank-year fixed effects. Overall, these results demonstrate the impacts of the pipeline controversy and its heterogenous effects on depositors.

[Insert here Table 9]

4.2 Wells Fargo

During the DAPL scandal, Wells Fargo was going through a series of corruption scandals unrelated to the DAPL incident. The bank had created (without customer's permission) millions of fraudulent accounts as sales staff desperately tried to hit unreasonable sales targets. Furthermore, thousands of auto loan customers were charged for car insurance that they did not need (Fox and Duren, 2017). As a result of all these scandals, 18% of Wells Fargo's branches lost deposits, while competitor deposit growth rates had improved during the same time frame (Tor, 2017). These incidents do not necessarily go against the main findings of the extended analysis, however, to establish that changes in deposits were partially driven by the pipeline scandal as well as the proximity to the pipeline, I exclude the Wells Fargo branches from the sample. Wells Fargo had the largest amount of branches in the treatment group and therefore, this serves as a conservative approach to the analysis. The results in table A2 in the appendix show that branches that financed the DAPL had incurred significantly greater deposit losses, even after excluding the branches owned by Wells Fargo.

4.3 Credit Unions

The overall results of this study are most likely understated. As mentioned earlier, the FDIC does not cover nor insure credit unions, which hold a non-negligible amount of $1 trillion in total deposits. Credit unions are covered by the National Credit Union Administration (NCUA) and as a comparison, the FDIC covers approximately $11.1 trillion in total deposits. Overall, not including these banks in the analysis biases against finding any results as NGOs quite often instructed petitioners to move their funds to more local institutions, i.e. savings banks and more relevantly, credit unions. Unfortunately, this paper cannot include credit union data in the main analysis. Though branch level data is provided by the NCUA, their data does not provide deposit information at the branch level. Therefore, this analysis will incorporate call report data at the institutional level as an alternative. This data is added to the main dataset providing approximately 6,000 additional banks to the main analysis. The analysis will assume that each institution operates as its own individual branch, located at the headquarter's address. Overall, this is not a major problem for the analysis as most credit unions in the US are small with few branches, which operate within a geographically close proximity. The main drawback is is that the data cannot be used in the primary analyses of this paper as it would not allow for specific controls found in the FDIC dataset nor bank-year fixed effects that are useful in the extended analyses of the paper.

Table 10 shows the main results after incorporating credit union data in the analysis. As a

comparison, columns 3-4 show the very same results excluding credit unions. In line with prior expectations, the results show that branches which financed the DAPL, had significant decreases in deposit growth. The results are stronger once the credit unions are incorporated in the analysis. This provides further evidence that the earlier results were indeed underestimating the effects of the DAPL incident on the treated branches.

[Insert here Table 10]

As an additional test, table A3 in the appendix re-creates the earlier deposit windfall results for the non-treated branches. More specifically, the analysis tests whether savings and credit unions had higher deposit growth rates if there were more DAPL financing branches operating in the same county. The variable savings bank is a dummy equal to one if the entity is either a savings bank or a credit union. In line with earlier results, the findings show that these entities were in fact doing well if there were more DAPL financing branches in the vicinity. While it would be interesting to test whether there were any heterogenous effects on these institutions (e.g. whether credit unions received more of the deposit windfall than savings banks), unfortunately, this analysis will not be able to make any further inference as the credit union data is only available at the institution level, which therefore limits the reliable identification strategies available for further tests.

4.4 Further Protests

Between September 2016 and June 2017, bank protests often concentrated on the "project" financing banks as emphasized in earlier sections and analyses. However, as time went on, protests grew larger and so did the list of banks that were targeted. Among the major petitions, "DefundDAPL" and "Signforgood" began including banks that provided corporate loans to the companies in charge of the pipeline construction. These were known as the corporate financing banks. While these banks were not generally targeted until June 2017, some early stage protests took place already February 2017. This was mainly as a result of the "DefundDAPL" movement that had started in November 2016. The banks that were in these extended lists included Citizens Bank, Comerica, U.S. Bank, PNC, JPMorgan Chase, Bank of America, RBC, Origin Bank and HSBC. While other banks were included in these lists as well, all of these banks specifically, had major branch level presence in the U.S.

Table 11 reports the main empirical results by incorporating the extended treatment group, i.e. by including both the project and corporate financing banks. The results are significant and provide evidence that even the extended group was affected during the treatment period. Interestingly, the

overall results are weaker, which suggest that the larger and perceptionally vaguer group was not being targeted as successfully on average. Anecdotal evidence does suggest that some of the corporate financing banks also received much attention and public scrutiny. For example, U.S. Bank, Bank of America and Citizens Bank experienced numerous of branch level protests and after major public pressure, Citizens Bank ended up withdrawing from the pipeline loan in March 2018. While U.S. Bank received much attention from branch level protests, activists also climbed the U.S. Bank stadium in Minneapolis, Minnesota and hung large banners protesting the banks commitment for financing the DAPL project. This pressure initially led U.S. Bank to publicly state that it would stop financing future pipelines, however, this later turned out to be a false commitment. U.S. Bank was later found financing new pipeline projects not too long after the protests. While some banks faced immense public pressure, certain banks, including HSBC, which has large branch level presence in the U.S., faced very limited public scrutiny. This would indicate that there were some levels of heterogeneity as to which banks were ultimately targeted by local grassroots movements. Most likely, both the heterogeneity and timing are partial explanations as to why the overall effect on deposit growth is smaller compared to earlier results. The next sections will test for whether the extended group was differentially affected by the non-financial motivators of depositor discipline, i.e. proximity to pipeline, climate change beliefs and social values.

[Insert here Table 11]

Table A9 reports the results for branches located in pipeline states with the inclusion of the extended treatment group. Overall, the results are similar, but most importantly, the results are stronger compared to earlier findings. These coefficient results are not only greater in size, but also in significance as they hold after accounting for branch and county-year fixed effects. This result highlights some of the earlier heterogeneity. While the extended group of banks were generally being targeted by protesters, it seems they were targeted more in areas where it really mattered, in this case, the pipeline states.

[Insert here Table A9]

While the pipeline state results in itself are interesting, perhaps there are other channels that show a similar story. Tables A10 and A11 take a further dive into the drivers of alternative sources of depositor movement while incorporating the extended treatment group. Table A10 shows the results of the analysis after the incorporation of the YPCCC data on climate change beliefs. While the coefficient signs are negative, the results remain insignificant. On the other hand, the effects of local societal attitudes proxied by county level number of NGOs, in table A11, show negative and significant

results similar to earlier findings. What is most notable about these results is that while the coefficient size is smaller, the results are stronger. The results hold for all previous specifications, but also after the inclusion of state-year and bank-year fixed effects. Overall, the results highlight that while the masses did not pay as much attention to this larger list of banks, there was clear heterogeneity as to how and when these branches were targeted. Results suggest that proximity to the pipeline had a clear effect on all banks and that county level attitudes had further heterogeneous impacts on the extended treatment group.

[Insert here Table A10]

[Insert here Table A11]

As a sanity check, table A12 shows the results for savings banks after adjusting for the amount of extended DAPL group financing banks present in each county. It is likely that savings banks experienced higher deposit windfalls in counties with more extended group DAPL financing banks. Results are similar to earlier findings and showcase the phenomenon that savings banks, which were located in DAPL heavy counties, benefited from the DAPL incident.

[Insert here Table A12]

5 Global Scandals

As much as it is interesting to identify a new and significant incident (i.e. the DAPL), it is just as important to explore the external validity of this new depositor discipline finding. One might argue that the DAPL was a one-off incident and that on a global scale these effects are virtually non-existant or undetectable. While branch level analyses provide granularity to explore the drivers of depositor movement, a cross-country study will be important for broader implications. In addition, while the DAPL scandal was a very specific event, it is worthwhile to explore whether other types of non-financial scandals have an effect on depositor behavior. Therefore, to investigate the global implications of these findings, this study incorporates a novel hand-collected dataset on global bank scandals, which include all major bank specific events on tax evasion, corruption and environmental scandals.

The data on bank scandals has been collected from a range of primary sources. The preliminary information was largely collected from major non-governmental organizations (NGOs) that deal with,

among other things, the reporting of unethical bank behavior. These include the following organizations; *BankTrack*, *Global Witness*, *Greenpeace*, *Oxfam*, *Tax Justice Network* and the *International Consortium of Investigative Journalists*. These institutions have either extensively documented or campaigned against commercial banks and their operations. With the purpose of covering globally significant scandals, these organizations have covered the majority of these distinct and high-profile events.

The majority of the scandals were collected by searching through all major NGO's historical campaigns with the key word; "bank". The results were then refined manually to identify cases that explicitly targeted deposit-taking commercial banks or their financed operations. Therefore, even though in certain cases the operations themselves might have been the focus of a campaign, the scandal is included in the dataset if the bank(s) themselves were extensively highlighted during the scandal. The reason for collecting this data primarily via campaign information (relative to news specific search engines) is because it is more likely that a globally-significant scandal is reported by at least one of these institutions (i.e. the NGOs). News organizations or mainstream media do not have similarly strict mandates for covering such events. However, if these events are also covered by the mainstream media, this will give us an indication of the severity of these scandals as well as public awareness.

The scandals are classified into three overall categories; i) Tax Evasion ii) Environment and iii) Corruption. Tax evasion scandals are defined as events where banks were specifically targeted and identified as conduits of evasion or money laundering practices. These include well known events such as *Panama Leaks* and *Lux Leaks*, which caused wide-spread reputational shocks to the banks involved. Environmental scandals include bank financed operations that were deemed controversial by the public for being harmful to the environment. These include events such as the *Dakota Access Pipeline* and the controversial *Carmichael Coal Mine* project in Queensland, Australia. These events often cover multiple issues including the violations of indigenous peoples' territorial rights, but more often, they revolve around the destruction of the local habitat and the environment (e.g. deforestation and the pollution of local rivers). Corruption events are loosely defined as all other events not covered by tax evasion and environmental scandals. These are high profile cases associated with corporate malpractice in the banking community. Cases vary from well-known events, such as the *Libor Scandal* (illegal manipulation of interbank lending rates), the provision of banking services to corrupt government officials, (e.g. President Omar al-Bashir of Sudan and James Ibori, former governor of Nigeria's oil-rich Delta State) and conducting business activities with sanctioned nations.

One concern for identifying scandals is determining the relevant dates in which the news broke out. In many cases, the start date is the date at which the event gained international attention and news coverage. For example, *Panama Leaks* was a well-publicized scandal by investigative journalists, who made sure the information spread globally at the precise moment that they released the leaked documents. However, in other cases, such as the Dakota Access Pipeline, events and global attention slowly progressed as the localized protests grew from month to month. In addition, these as well as other scandals, progressed with geographic heterogeneity, whereby the scandal was first recorded in one country and later spread to other localities. For every scandal in the dataset, a search was conducted for the first mention of the scandal (whether it be via the NGO or news). This was then used as the initial date of the scandal. This was done by both manual searches as well as Factiva searches aided by major key words associated for each scandal (which also included bank names). The dataset also includes a "high impact" date for each scandal. This was most often the date at which multiple newspapers covered the event. This was determined in multiple ways with the aid of Factiva as well as Google Trends. There were rarely any difficulties determining a fair date for the "high impact" date and fortunately, for most events, the start and high impact dates are in the same reporting quarter. As a result, the analysis will not rely on potentially subjective measures of high impact dates. Nonetheless, this study acknowledges the potential conflicts that this measure might create and therefore the main analysis will only incorporate "start date" as an indication for scandal specific time lines.

It is important to clarify that these events are by no means mutually exclusive. There are certain cases where Tax Evasion and Corruption are not clearly separable, for example, in the case of money laundering services provided to corrupt officials in developing countries. Therefore, our analysis will mainly incorporate the variable *Scandal*, for whether the bank experienced any of the three types of events. At later stages, the categorical information will be utilized to further examine whether certain types of scandals are associated with greater losses in deposit growth. As a final refinement of the data, the dataset excludes all events that were only reported by the NGOs (i.e. the events for which no obvious media reporting was found).

Bank level information has been collected from the *SNL Financial* database, which provides detailed and standardized data on financial institutions in the U.S., Europe, Middle East and Africa. Most importantly, the database covers banks on a quarterly basis, thus providing much needed granularity to the analysis. Compared to other standard databases, including *Bankscope* (which only

provide financial data on an annual basis), this will bring more confidence to the empirical findings. In the analysis, I exclude all unconsolidated banks as well as banks that have zero total deposits. All the bank level controls and deposit information are available on a quarterly basis.[7] As standard controls, all empirical tests will account for *Total Assets*, *Total Equity / Total Assets*, *Non-performing Loans / Total Loans*, and *Return on Assets*.[8] In total, the analysis will include approximately 2,100 banks from 31 countries for the years 2010-2016.

After merging the scandal dataset with the bank level balance sheet information, in total, the analyses include 26 unique events, which translate to 140 bank-specific scandals (most scandals involve multiple banks). This provides the econometric analysis with 150 scandal specific quarter-bank observations for which there is also deposit data available[9].

The summary statistics of the key variables are presented in table A4 and table A5 presents the correlations between key variables included in the regressions. On average, quarterly deposit growth is 1.4% during the sample period. Deposit growth is negatively correlated with the size of the bank (*Total Assets*) and, as one might expect, negatively correlated with under performing banks (*NPLs / Total Loans*). On a similar note, less risky (*Total Equity / Total Assets*) and more profitable (*ROAA*) banks are positively correlated with deposit growth.

5.1 Scandals and Deposit Growth

To further establish the effect of scandals on depositor behavior, I begin the analysis by estimating the following empirical specification:

$$Deposit\ Growth_{it} = \alpha_0 + \beta_1 Scandal_{it} + \lambda X_{it} + \epsilon_{it} \tag{2}$$

Scandals are quarter specific and are assumed to affect all banking entities under the same holding

[7] *Total Deposits* are total deposits from customers. For U.S. banks, this is the total deposits from customers and banks.

[8] *Total Assets* are all assets owned by the company as of the date indicated, as carried on the balance sheet and defined under the indicated accounting principles. *Tota Equity / Total Assets* is equal to equity as a percent of assets. *NPLS / Loans* is nonperforming loans, net of guaranteed loans, as a percent of loans before reserves. Lastly, *ROAA* is the return on average assets; net income as a percent of average assets

[9] These observations correspond to the scandals incorporated in the main analysis for years after 2009 and for banks operating in OECD countries. These restrictions are in place so that the results do not pick up any unintended effects caused by the 2008 financial crisis nor any other effects that might rise due to the limited sample representation from non-OECD countries. Overall, the second exclusion removes less than 21% of the available observations. Furthermore, it is noteworthy to mention that an important control, namely *Non-performing Loans / Total Loans* reduces the sample size significantly. Omitting this control would provide the analysis with 33 unique events, translating to 179 bank-scandals and 271 scandal-quarter-bank observations. The main findings of this section remain unchanged after the exclusion of this bank level control

structure. The dependent variable will be *Total Deposit Growth* and I regress scandals on the quarter level as well as their lags to further document the short and medium term effects of these events. Scandals are reported across three distinct events; tax evasion, corruption and environment. However, the analysis will mainly incorporate the *Scandal* variable, which equals one if the bank incurred either of these three distinct events.

The main results are reported in table 12. Overall, the results show that scandals have a negative effect on *Total Deposit Growth*. Once banks are involved in scandals, on average, deposit growth decreases by 1.5 - 2.1% the following quarter after the scandal. The regressions incorporate winsorized *Total Deposit Growth* (at the 1st and 99th percentiles) as well as bank fixed effects. This is to address potential effects of outliers and bank specific determinants of deposit growth. In addition, the second column of each variable controls for country-year fixed effects. This is an important control as it accounts for any country-year specific changes in deposit growth. As one might expect, both the significance as well as economic magnitude decrease in the following quarter after the scandal.[10]

[Insert here Table 12]

To further document the heterogenous effects of different types of scandals, table 13 reports the regression results for each individual type of scandal. The table shows that environmental scandals are on average the costliest for banks causing a negative deposit growth rate of 2.7%. Tax Evasion scandals are less costly, but also cause a significant decrease for deposit growth rates totaling 1.8%. Interestingly, corruption scandals are insignificant under these specifications. One major reason for this is that corruption scandals are very heterogenous. Compared to the other types of scandals, corruption scandals have often very different start and peak dates, sometimes taking over two years for the international press to cover these incidents. Because of these inherent difficulties, start dates are perhaps not the best dates for determining a treatment quarter and therefore in table A6 in the appendix, I incorporate the "peak date" as the main treatment quarter observation. The results from this analysis also show that corruption scandals can create significant depositor movement, but determining the precise impact dates can be challenging.

[Insert here Table 13]

[10] Additional tests show that interactions between scandals and bank financial health (i.e. *Total Equity / Total Assets* and *NPLs / Total Loans*) do not significantly affect the changes in deposit growth. This suggests that changes in deposit growth are more likely to be driven by non-financial determinants. Furthermore, additional tests regressing scandals on banks controls, show that standard bank level characteristics are not clear determinants as to whether banks were involved in scandals. This suggests that these scandals can be treated more or less as exogenous events. While banks are currently differentiating themselves across various initiatives and social corporate strategies, historically speaking, these types of scandals can be treated as previously un-anticipated reputational shocks. These results are not reported in this paper for brevity.

5.2 Non-scandalous Competitors

While deposit growth decreases for banks involved in scandals, it is worthwhile to explore whether banks uninvolved in scandals are rewarded for their relatively ethical behavior. To do so, I create a dummy equal to one for each quarter-country pair if the bank is the largest bank by total deposits and has never been involved in scandals. I also create this country-pair dummy for banks who are not characterized as a systematically important bank (SIB). These country-pair dummies provide additional insight into whether large established banks also enjoy the effects of a positive non-scandalous reputation. The results in table A7 in the appendix show that banks who are not involved in scandals enjoy higher total deposit growth rates. In addition, they confirm that the effect holds for large banks and not just local banks, which often enjoy competitive advantages from close client relationships influenced by relationship banking and social capital (Brown et al., 2017; Ostergaard et al., 2015; Jin et al., 2017).

6 Conclusion

The purpose of this study is to document a new and novel channel of depositor discipline. By using U.S. branch level deposit data, I find that banks who financed the controversial Dakota Access Pipeline had significantly lower deposit growth rates, especially when branches were located closest to the pipeline and in environmentally and socially conscious counties. I find that local savings banks were among the major beneficiaries of this deposit movement, which is also in line with prior evidence. Furthermore, by using a hand-collected dataset on global bank scandals, I find that deposit growth decreases when banks are involved in tax evasion, corruption or environmental scandals. This is consistent with the disciplining and monitoring role of depositors, while extending to non-financial conditions (e.g. bank financial health). Lastly, I find that depositors, on average, reward larger banks who are not involved in these types of scandals.

While one may still argue that these scandals have had little impacts on the balance sheets of these banks, a closer examination of each event has revealed surprising bank level operational changes. After the DAPL incident, several banks re-evaluated their commitments to the pipeline loan after which many ended up in fully selling their stakes in the project. Managerial layoffs are not uncommon after scandals and sometimes even the composition of the board has been put into question. As a reaction to other environmental scandals, Santander was quick to discontinue all financing to a company driv-

ing deforestation in Indonesia and after another, yet similar incident, both the Commonwealth Bank of Australia and Standard Chartered pulled out from the Carmichael coal mine project. While it is difficult to truly identify how and to what extent the depositor channel influenced these operational decisions, they have certainly played a role in all of them.

The results from this study highlight the importance of depositor activism on bank fundamentals. Bank involvement in perceptually non-ethical activities do not only require regulatory oversight, but depositors can have real impact as well. As financial institutions are increasingly being evaluated for their financial and non-financial activities, I show a surprising, yet important disciplinary channel for bank behavior.

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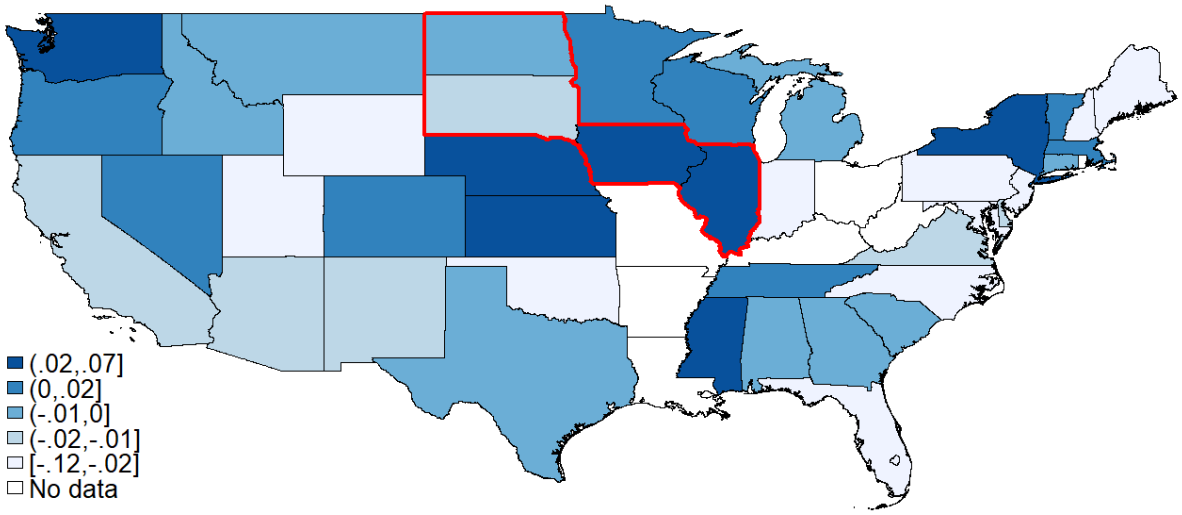
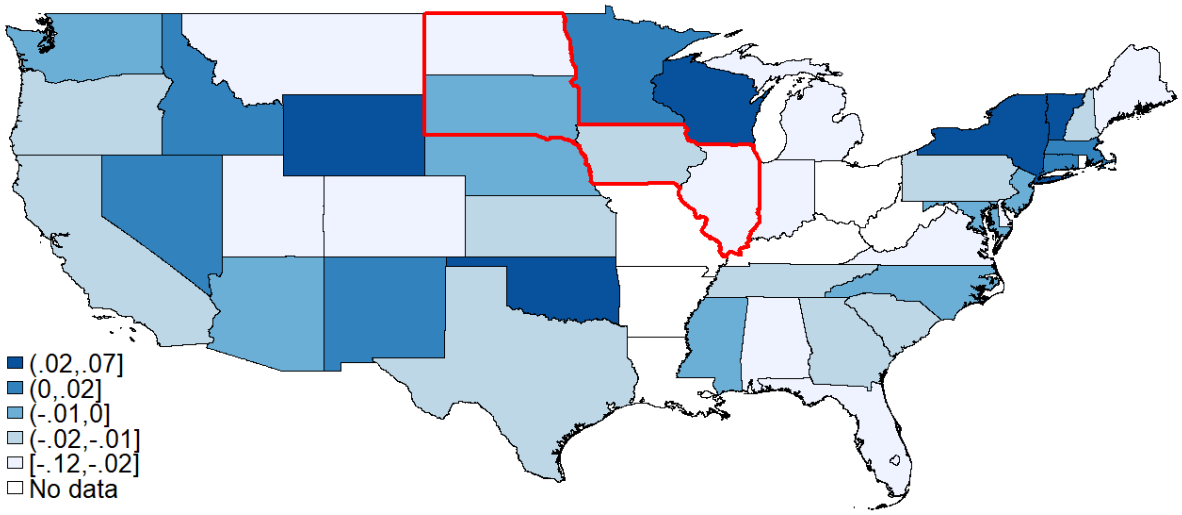
Figure 2: Dakota Access Pipeline: State-Average Adjusted Deposit Growth Rates for Treated Banks

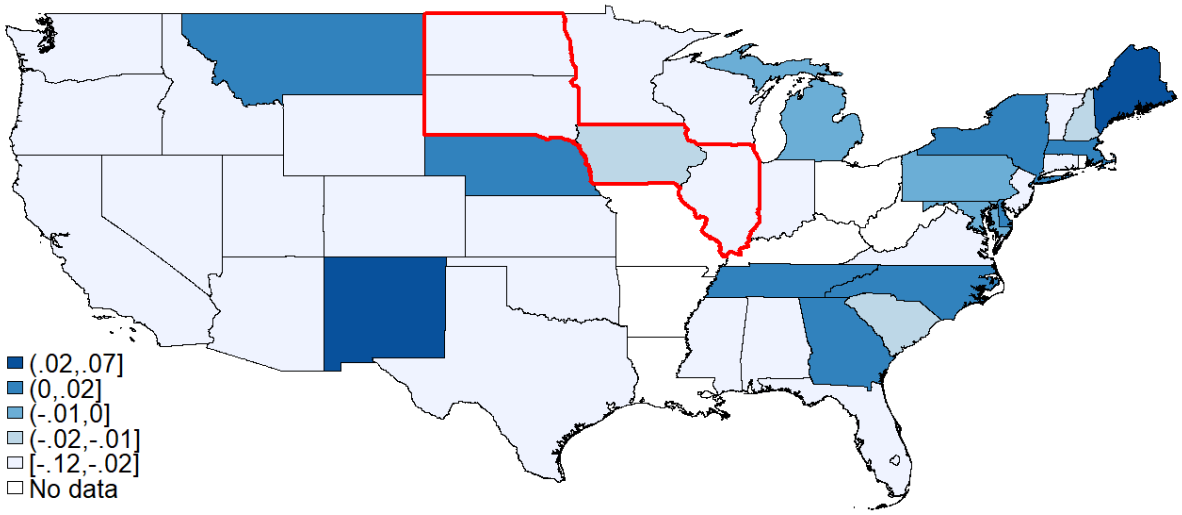
(a) **July 2014 - June 2015**



(b) **July 2015 - June 2016**



(c) **July 2016 - June 2017**



Notes: The red line highlights the pipeline states. Kentucky, Louisiana, Arkansas, Missouri, West Virginia, Ohio and Rhode Island are categorized as "No data", because these states had either zero or less than eight branches in total from the treatment group. Legends are determined by the five quartiles from 2015.

Table 1: Summary Statistics

(a) Branch Controls

VARIABLES	(1) N	(2) mean	(3) sd
Branch Data and Controls			
Annual branch level deposit growth, winsorized at the 1st and 99th percentile	416,594	0.0862	0.230
Factor variable that defines the type of service the branch office provides	416,594	11.18	1.254
Industry classification grouping which indicates the institution's primary asset specialization	416,594	4.853	2.399
Factor variable that indicates major groupings of the institution	416,594	2.330	1.810
Total assets of the institution	416,594	3.930e+08	6.689e+08
Total deposits of the institution	416,594	2.543e+08	4.229e+08
Treatment Variables			
Equal to one if the branch financed the Dakota Access Pipeline	416,594	0.131	0.337
Equal to one if the branch financed the Dakota Access Pipeline and the year is 2016	416,594	0.0260	0.159
Equal to one if the branch financed the Dakota Access Pipeline and the year is 2017	416,594	0.0253	0.157
County Level Information			
Percentage of the county that thinks global warming is happening	415,533	69.43	6.287
Percentage of the county that thinks global warming is caused mostly by human activities	415,533	52.62	6.006
Number of non-profit organizations (without including those with an international approach)	416,578	3,853	6,533
Percent of adults with a bachelor's degree or higher, 2012-2016	416,578	30.16	11.32
Percentage of the county that voted for Barack Obama in the 2012 presidential elections	400,110	47.44	16.84
Population 2014	416,578	898,249	1.649e+06

(b) Two-Sample t-Test for Equal Means

VARIABLES	(1) N	(2) Mean Did not Finance DAPL	(3) Mean Financed DAPL	(4) t-test
Branch Deposits	416594	63250	95241	***
Annual branch level deposit growth, winsorized at the 1st and 99th percentile	416594	0.087	0.083	***
Percent of adults with a bachelor's degree or higher, 2012-2016	416578	29.64	33.56	***
Percentage of the county that voted for Barack Obama in the 2012 presidential elections	400110	46.96	50.66	***
Population 2014	416578	830554	1347573	***

(c) Deposit Growth by Bank

BANKS	(1) Number of Branches	(2) N	(3) mean	(4) sd
MITSUBISHI UFJ FINANCIAL GROUP, INC.	351	1,475	0.118	0.257
BANCO BILBAO VIZCAYA ARGENTARIA, S.A.	653	3,278	0.0973	0.219
BNP PARIBAS	526	2,747	0.101	0.227
CITIGROUP INC.	714	4,030	0.105	0.254
MIZUHO FINANCIAL GROUP, INC.	1	5	0.199	0.735
SUNTRUST BANKS, INC.	1395	7,124	0.0466	0.191
TORONTO-DOMINION BANK, THE	1237	6,302	0.126	0.268
WELLS FARGO & COMPANY	5937	29,538	0.0744	0.149
SUMITOMO MITSUI FINANCIAL GROUP, INC. / TRUST HOLDINGS, INC.	10	51	0.0456	0.215

Notes: Branch level data and controls are all collected from the *FDIC* for 2012-2017. County level education information come from the *United States Department of Agriculture* county-level data sets. County-level information on climate change beliefs come from the *Yale Program on Climate Change Communication*. Population data and number of non-profit organizations come from the *Northeast Regional Center for Rural Development* website. Lastly, the full U.S. 2012 election county-level results is collected online from the *the Guardian*.

Table 2: DAPL Main Results

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017	-0.020***	-0.018***	-0.022***	-0.015***	-0.015***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Financed DAPL	-0.022***	-0.022***			
	(0.002)	(0.002)			
Observations	416,594	416,594	416,513	412,557	411,930
Controls	Yes	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes	Yes
Bank FE	No	No	Yes	No	No
State FE	Yes	No	No	No	No
Year FE	Yes	No	No	No	No
State*Year	No	Yes	Yes	Yes	No
County*Year	No	No	No	No	Yes
Years	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 3: DAPL State Subsample Analysis

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017	-0.044***	-0.040***	-0.028**	-0.057***	-0.051***	-0.044***
	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)	(0.014)
Financed DAPL * 2016				-0.050***	-0.045***	-0.042***
				(0.012)	(0.013)	(0.016)
Financed DAPL	-0.059***	-0.063***		-0.049***	-0.054***	
	(0.009)	(0.009)		(0.009)	(0.010)	
Observations	31,433	31,433	31,422	31,433	31,433	31,422
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	No	No	Yes	No	No	Yes
State FE	Yes	No	No	Yes	No	No
Year FE	Yes	No	No	Yes	No	No
State*Year	No	Yes	Yes	No	Yes	Yes
Years	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch
States	DAPL States	DAPL States	DAPL States	DAPL States	DAPL States	DAPL States

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 4: 2017 - DAPL Full Sample Analysis

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017 * DAPL State	-0.029**	-0.026**	-0.023*
	(0.012)	(0.012)	(0.012)
Financed DAPL * 2016 * DAPL State	-0.041***	-0.036***	-0.033***
	(0.012)	(0.012)	(0.012)
Financed DAPL * 2017	-0.020***	-0.016***	-0.023***
	(0.002)	(0.003)	(0.003)
Financed DAPL * 2016	0.001	0.003	-0.004
	(0.002)	(0.002)	(0.003)
Finance DAPL * DAPL State	0.000	-0.001	0.011
	(0.008)	(0.008)	(0.009)
Financed DAPL	-0.022***	-0.022***	
	(0.002)	(0.002)	
Observations	416,594	416,594	416,513
Controls	Yes	Yes	Yes
Bank FE	No	No	Yes
State FE	Yes	No	No
Year FE	Yes	No	No
State*Year	No	Yes	Yes
Years	All	All	All
Cluster	Branch	Branch	Branch
States	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 5: DAPL & Climate Change Beliefs

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)
Happening 70 * Financed DAPL * 2017	-0.013***	-0.018***	-0.019***	-0.012**
	(0.005)	(0.005)	(0.005)	(0.005)
Happening 70 * 2017	-0.002	-0.005**	-0.003	-0.003
	(0.002)	(0.002)	(0.003)	(0.003)
Happening 70 * Financed DAPL	0.001	-0.022	-0.032	0.004
	(0.002)	(0.041)	(0.041)	(0.003)
Financed DAPL * 2017	-0.016***	-0.006	-0.004	
	(0.004)	(0.004)	(0.004)	
Happening 70	0.001	-0.020	-0.019	0.017***
	(0.002)	(0.028)	(0.028)	(0.001)
Percent of Adults With a Bachelor's Degree or Higher	0.002***	0.001	0.001	
	(0.000)	(0.001)	(0.001)	
Percent of Votes for Obama	0.000	0.002*	0.002*	
	(0.000)	(0.001)	(0.001)	
Population 2014	0.000***	-0.000	-0.000	
	(0.000)	(0.000)	(0.000)	
Observations	398,980	395,158	395,158	407,998
Controls	Yes	Yes	Yes	Yes
Bank Fe	Yes	No	No	No
Branch FE	No	Yes	Yes	No
State FE	No	No	No	No
Year FE	Yes	Yes	No	No
State*Year	No	No	Yes	Yes
Bank*Year	No	No	No	Yes
Cluster	Branch	Branch	Branch	Branch
States	All	All	All	All

Notes: *Happening 70* is equal to 1 if at least 70% of the county thinks that global warming is happening. Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 6: DAPL & Climate Change and Human Responsibility

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)
Human 55 * Financed DAPL * 2017	-0.010**	-0.015***	-0.016***
	(0.005)	(0.005)	(0.005)
Human 55 * 2017	-0.004*	-0.008***	-0.007**
	(0.002)	(0.002)	(0.003)
Human 55 * Financed DAPL	0.003	-0.026	-0.036
	(0.003)	(0.048)	(0.047)
Financed DAPL * 2017	-0.020***	-0.009***	-0.008**
	(0.003)	(0.004)	(0.004)
Human 55	0.004**	-0.022	-0.019
	(0.002)	(0.034)	(0.034)
Percent of Adults With a Bachelor's Degree or Higher	0.002***	0.001	0.001
	(0.000)	(0.001)	(0.001)
Percent of Votes for Obama	-0.000	0.002*	0.002*
	(0.000)	(0.001)	(0.001)
Population 2014	0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Observations	398,980	395,158	395,158
Controls	Yes	Yes	Yes
Bank Fe	Yes	No	No
Branch FE	No	Yes	Yes
State FE	No	No	No
Year FE	Yes	Yes	No
State*Year	No	No	Yes
Cluster	Branch	Branch	Branch
States	All	All	All

Notes: *Human 55* is equal to 1 if at least 55% of the county thinks global warming is caused mostly by human activities. Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 7: DAPL & Charitable Behavior

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)
Ln(Number of Non-Profits) * Financed DAPL * 2017	-0.004***	-0.004***	-0.005***	-0.007***	-0.005***	-0.006***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Ln(Number of Non-Profits) * 2017	-0.001***	-0.000	0.001	-0.002***	-0.000	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ln(Number of Non-Profits) * Financed DAPL	0.000	-0.000	0.001	-0.014**	-0.000	-0.018***
	(0.001)	(0.001)	(0.001)	(0.006)	(0.001)	(0.006)
Financed DAPL * 2017	0.014	0.015	0.014	0.038***	0.013	0.035***
	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)	(0.013)
Ln(Number of Non-Profits)	0.010***	0.008***	0.008***	0.030*	0.009***	0.030*
	(0.001)	(0.001)	(0.001)	(0.016)	(0.001)	(0.016)
Financed DAPL	-0.020***	-0.021***				
	(0.007)	(0.007)				
Percent of Adults With a Bachelor's Degree or Higher	0.001***	0.001***	0.001***	-0.001	0.001***	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Percent of Votes for Obama	-0.000***	-0.000***	-0.000	0.001	-0.000***	0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Population 2014	0.000	-0.000	-0.000	-0.000*	0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	400,110	400,110	400,026	396,187	400,026	396,187
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fe	No	No	Yes	No	Yes	No
Branch FE	No	No	No	Yes	No	Yes
State FE	No	No	No	No	No	No
Year FE	Yes	No	No	Yes	Yes	No
State*Year	No	Yes	Yes	No	No	Yes
Years	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 8: DAPL & Donating to Standing Rock

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)
	Converted Missing Values			Non-Converted Missing Values		
Ln(Donate to Standing Rock) * Financed DAPL * 2017	-0.003**	-0.003**	-0.006***	-0.019***	-0.020***	-0.029***
	(0.001)	(0.001)	(0.002)	(0.004)	(0.004)	(0.005)
Ln(Donate to Standing Rock) * 2017	0.002***	0.002***	0.002***	0.007***	0.006***	0.008***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Ln(Donate to Standing Rock) * Financed DAPL	0.001	0.001	-0.040**	0.021***	0.020***	-0.042***
	(0.001)	(0.001)	(0.016)	(0.003)	(0.003)	(0.016)
Financed DAPL * 2017	-0.011**	-0.014**	0.003	0.052***	0.050***	0.091***
	(0.005)	(0.005)	(0.006)	(0.016)	(0.017)	(0.018)
Ln(Donate to Standing Rock)	-0.000	0.000	-0.012	-0.015***	-0.015***	0.081
	(0.000)	(0.000)	(0.021)	(0.001)	(0.002)	(0.104)
Financed DAPL	-0.021***			-0.103***		
	(0.003)			(0.010)		
Percent of Adults With a Bachelor's Degree or Higher	0.002***	0.002***	0.001	0.002***	0.001***	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
Percent of Votes for Obama	-0.000***	0.000	0.002	-0.000**	0.000	0.001
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
Population 2014	0.000***	0.000***	-0.000	0.000***	0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	400,110	400,026	396,187	318,789	318,722	315,583
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fe	No	Yes	No	No	Yes	No
Branch FE	No	No	Yes	No	No	Yes
State FE	No	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Years	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch
State	All	All	All	All	All	All

Notes: *Ln(Donate to Standing Rock)* is equal to the search intensity of the Google search term "Donate to Standing Rock" using Google Trends. These are state specific values between 15-100. Columns 1-3 convert all missing values to zero and columns 4-6 are unconverted. Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 9: DAPL & Savings Banks - Full Sample Analysis

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)
Savings Bank * 2017 * Proportion of DAPL Banks	0.085**	0.090**	0.077*	0.135***	0.140**
	(0.040)	(0.041)	(0.042)	(0.051)	(0.071)
Savings Bank * 2017	-0.005	-0.003	-0.003	-0.012**	
	(0.005)	(0.005)	(0.005)	(0.006)	
Savings Bank * Proportion of DAPL Banks	-0.027	-0.027	-0.001	0.212***	
	(0.023)	(0.023)	(0.028)	(0.052)	
Proportion of DAPL Banks * 2017	-0.045***	-0.033***	-0.021*		
	(0.008)	(0.012)	(0.013)		
Savings Bank	-0.013***	-0.013***	0.019**		
	(0.003)	(0.003)	(0.009)		
Proportion of DAPL Banks	0.104***	0.098***	0.079***		
	(0.007)	(0.007)	(0.007)		
Observations	416,594	416,594	416,513	411,930	408,123
Controls	Yes	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes	No
Bank FE	No	No	Yes	No	No
State FE	Yes	No	No	No	No
Year FE	Yes	No	No	No	No
State*Year	No	Yes	Yes	No	No
Year*County	No	No	No	Yes	Yes
Bank*Year	No	No	No	No	Yes
Years	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 10: 2017 - DAPL Main Results and Credit Unions

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)
	With Credit Unions		Without Credit Unions	
Financed DAPL * 2017	-0.014***	-0.013***	-0.012***	-0.011***
	(0.003)	(0.003)	(0.003)	(0.003)
Financed DAPL	0.002	-0.032	0.000	-0.035
	(0.043)	(0.048)	(0.043)	(0.048)
Observations	443,145	442,521	412,562	411,935
Branch FE	Yes	Yes	Yes	Yes
State*Year	Yes	No	Yes	No
County*Year	No	Yes	No	Yes
Years	All	All	All	All
Cluster	Branch	Branch	Branch	Branch
States	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 11: 2017 - DAPL Main Results and Extended Treatment Group

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017	-0.010***	-0.008***	-0.008***
	(0.002)	(0.002)	(0.002)
Financed DAPL	-0.002	-0.002	
	(0.002)	(0.002)	
Observations	416,594	416,594	416,513
Controls	Yes	Yes	Yes
Bank FE	No	No	Yes
State FE	Yes	No	No
Year FE	Yes	No	No
State*Year	No	Yes	Yes
Years	All	All	All
Cluster	Branch	Branch	Branch
States	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table 12: Scandals & Deposit Growth

VARIABLES	(1) Total Deposit Growth (Winsor .01)	(2) Total Deposit Growth (Winsor .01)	(3) Total Deposit Growth (Winsor .01)	(4) Total Deposit Growth (Winsor .01)	(5) Total Deposit Growth (Winsor .01)	(6) Total Deposit Growth (Winsor .01)
Scandal Start	-0.003	-0.004				
	(0.007)	(0.007)				
L. Scandal Start			-0.021***	-0.015**		
			(0.007)	(0.006)		
L2. Scandal Start					-0.005	-0.002
					(0.009)	(0.010)
L. TA (W.01)	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
L. TE / TA (W.01)	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
L. NPLs / TL (W.01)	-0.003***	-0.002***	-0.003***	-0.002***	-0.003***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
L. ROAA (W.01)	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	36,431	36,431	36,431	36,431	36,087	36,087
Number of Banks	2,110	2,110	2,110	2,110	2,102	2,102
Country	OECD	OECD	OECD	OECD	OECD	OECD
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	Yes	No	Yes	No
Year FE	Yes	No	Yes	No	Yes	No
Country x Year	No	Yes	No	Yes	No	Yes
Quarter Num FE	Yes	Yes	Yes	Yes	Yes	Yes
Years	>2009	>2009	>2009	>2009	>2009	>2009
Cluster	Bank	Bank	Bank	Bank	Bank	Bank

Standard errors are in parentheses and clustered at the bank level
*** p<0.01, ** p<0.05, * p<0.1

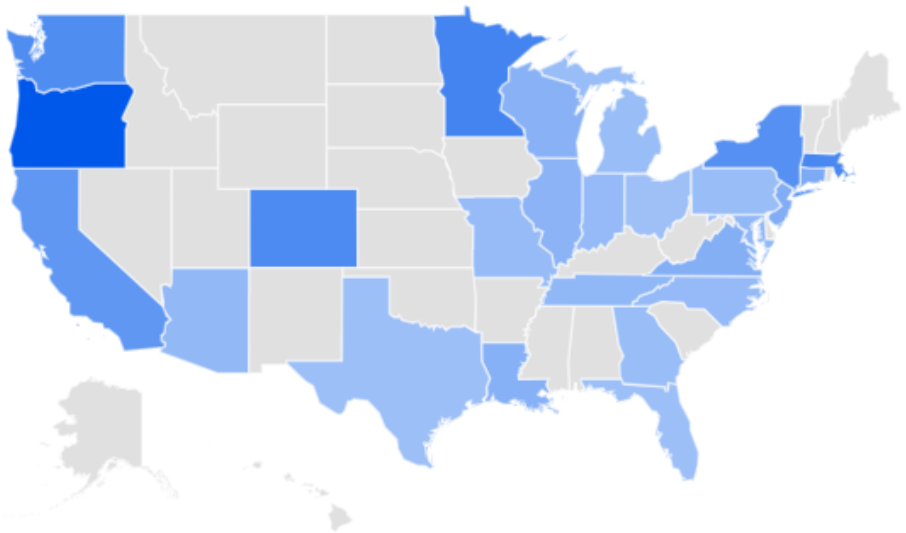
Table 13: Individual Scandals & Deposit Growth

VARIABLES	(1) Total Deposit Growth (Winsor .01)	(2) Total Deposit Growth (Winsor .01)	(3) Total Deposit Growth (Winsor .01)	(4) Total Deposit Growth (Winsor .01)
L. Tax Evasion Start	-0.018*			-0.022**
	(0.010)			(0.011)
L. Corruption Start		0.014		0.016
		(0.011)		(0.012)
L. Environment Start			-0.027***	-0.026***
			(0.010)	(0.010)
L. TA (W.01)	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
L. TE / TA (W.01)	0.005***	0.005***	0.005***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
L. NPLs / TL (W.01)	-0.003***	-0.003***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
L. ROAA (W.01)	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	36,431	36,431	36,431	36,431
Number of Banks	2,110	2,110	2,110	2,110
Country	OECD	OECD	OECD	OECD
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Quarter Num FE	Yes	Yes	Yes	Yes
Years	>2009	>2009	>2009	>2009
Cluster	Bank	Bank	Bank	Bank

Standard errors are in parentheses and clustered at the bank level
*** p<0.01, ** p<0.05, * p<0.1

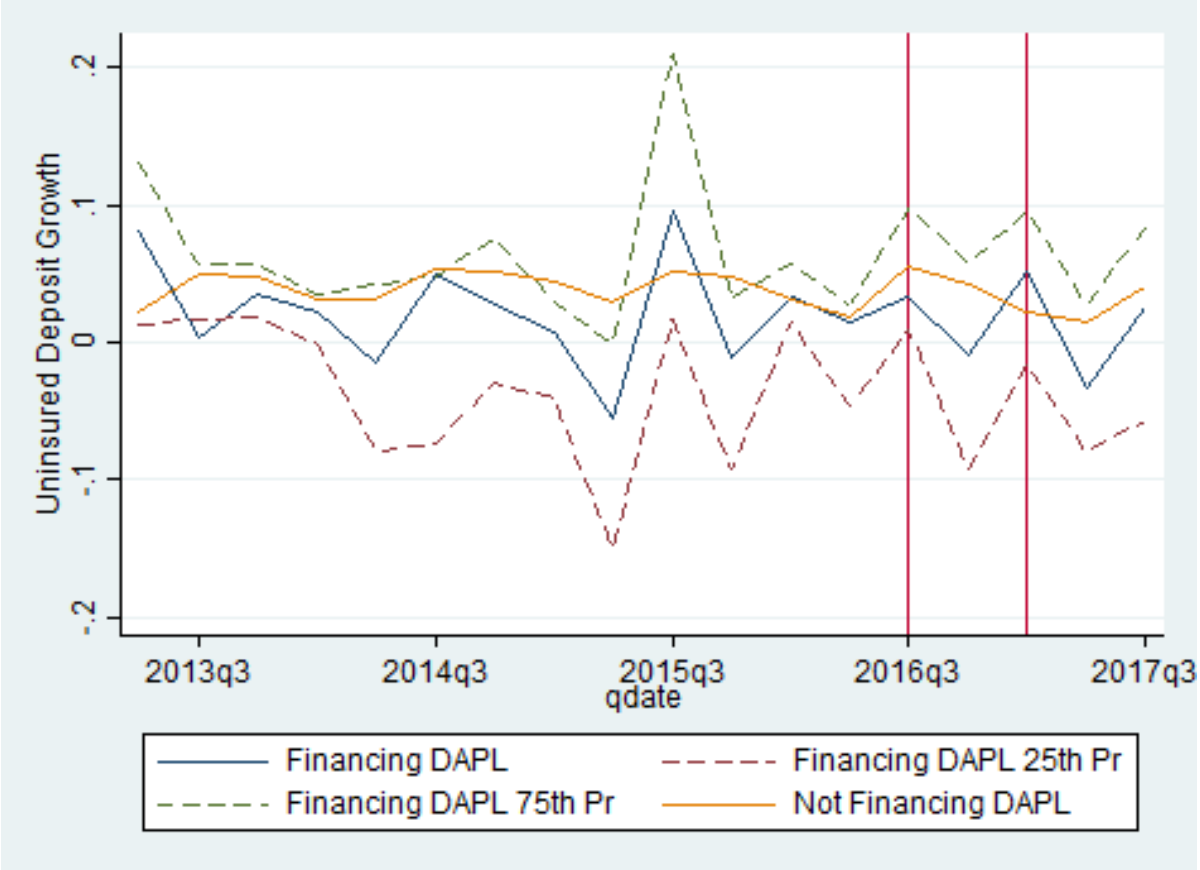
7 Appendix

Figure A1: Google Trends: "Donate to Standing Rock"



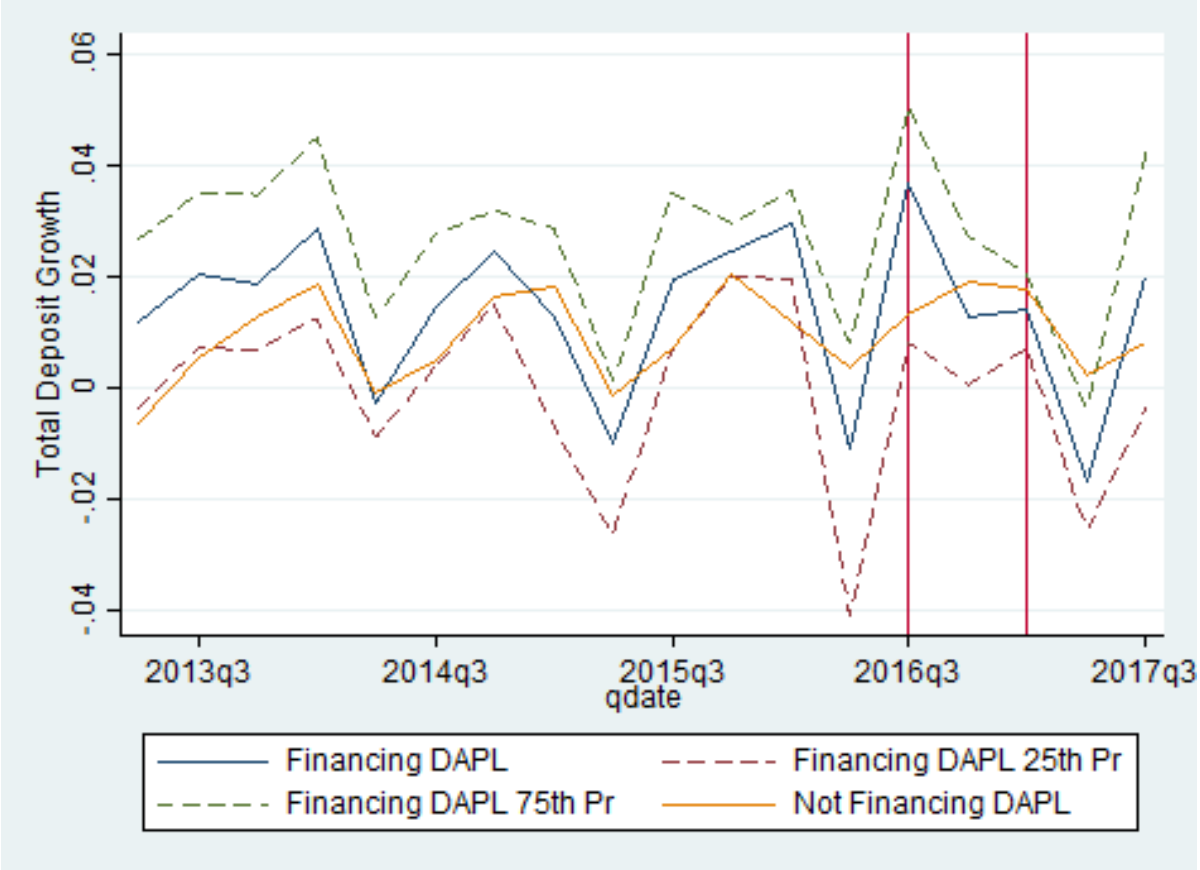
Notes: This figure shows the popularity of the search term "Donate to Standing Rock" across the U.S between 4/4/2016 - 11/9/2017. The darker the color, the more popular the search querie in *Google Search*.

Figure A2: Quarterly Uninsured Deposit Growth



The graph includes uninsured deposit growth for banks who financed the DAPL and those who did not. The left red vertical line indicates the date at which banks were being targeted as a result of the DAPL scandal. The second vertical line indicates the date at which the 700,000 collective petition had come public. Uninsured deposit growth rates are winsorized at the 1% and 99% level.

Figure A3: Quarterly Deposit Growth



The graph includes deposit growth for banks who financed the DAPL and those who did not. Data for institutions that financed the DAPL include all institutions with $1 billion or more in total deposits and institutions that are associated with the majority of FDIC branches (e.g. the analysis excludes all cases where for example a Wells Fargo entity had only one branch). The left red vertical line indicates the date at which banks were being targeted as a result of the DAPL scandal. The second vertical line indicates the date at which the 700,000 collective petition had come public. Deposit growth rates are winsorized at the 1% and 99% level.

Table A1: Treatment group times year interactions

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2016	0.020***	0.019***	0.019***	0.014***	0.015***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Financed DAPL * 2015	0.023***	0.017***	0.022***	0.015***	0.014***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Financed DAPL * 2014	0.009***	0.009***	0.018***	0.009**	0.008**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Financed DAPL * 2013	0.026***	0.025***	0.036***	0.023***	0.022***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Financed DAPL	-0.041***	-0.040***			
	(0.002)	(0.002)			
Observations	416,594	416,594	416,513	412,557	411,930
Controls	No	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes	Yes
Bank FE	No	No	Yes	No	No
State FE	Yes	No	No	No	No
Year FE	Yes	No	No	No	No
State*Year	No	No	Yes	Yes	No
County*Year	No	No	No	No	Yes
Years	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A2: DAPL & No Wells Fargo

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017	-0.024***	-0.023***	-0.031***	-0.022***	-0.021***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Financed DAPL	-0.006**	-0.006**			
	(0.002)	(0.002)			
Observations	387,056	387,056	386,975	383,094	382,411
Controls	Yes	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes	Yes
Bank FE	No	No	Yes	No	No
State FE	Yes	No	No	No	No
Year FE	Yes	No	No	No	No
State*Year	No	Yes	Yes	Yes	No
County*Year	No	No	No	No	Yes
Years	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A3: DAPL, Savings Banks & Credit Unions - Full Sample Analysis

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)
	With Credit Unions		Without Credit Unions	
Savings Bank * 2017 * Proportion of DAPL Banks	0.111***	0.124***	0.122**	0.147***
	(0.022)	(0.024)	(0.048)	(0.052)
Savings Bank * 2017	-0.008***	-0.003	-0.003	-0.010*
	(0.003)	(0.003)	(0.005)	(0.006)
Savings Bank * Proportion of DAPL Banks	0.018	0.222***	0.018	0.260***
	(0.031)	(0.068)	(0.033)	(0.078)
Observations	446,483	442,521	415,896	411,935
Controls	Yes	Yes	Yes	Yes
Branch FE	No	Yes	No	Yes
Bank FE	Yes	No	Yes	No
Year*County	Yes	Yes	Yes	Yes
Years	All	All	All	All
Cluster	Branch	Branch	Branch	Branch
States	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Summary Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max	(6) p25	(7) p50	(8) p75
Total Deposit Growth (Winsor .01)	36,431	0.0139	0.0672	-0.196	0.486	-0.0156	0.00753	0.0339
Total Assets (Winsor .01)	36,431	2.102e+07	7.271e+07	36,885	4.717e+08	301,862	856,106	4.824e+06
Total Equity / Total Assets (Winsor .01)	36,431	10.12	3.865	2.510	35.14	8.029	9.805	11.76
NPLS / Total Loans (Winsor .01)	36,431	3.500	3.648	0	17.62	1.106	2.334	4.470
ROAA (Winsor .01)	36,431	0.469	1.176	-6.183	3.897	0.261	0.633	0.963

Table A5: Correlation Table

	(1)				
	Total Deposit Growth	Total Assets	Total Equity / Total Assets	NPLS / Total Loans	ROAA
Total Deposit Growth	1				
Total Assets	-0.0385***	1			
Total Equity / Total Assets	0.141***	-0.203***	1		
NPLS / Total Loans	-0.155***	0.0149**	-0.144***	1	
ROAA	0.0868***	0.00963	0.208***	-0.391***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A6: Corruption Scandals & Deposit Growth

VARIABLES	(1) Total Deposit Growth (Winsor .01)	(2) Total Deposit Growth (Winsor .01)	(3) Total Deposit Growth (Winsor .01)	(4) Total Deposit Growth (Winsor .01)
Corruption Peak	-0.007			-0.001
	(0.008)			(0.012)
L. Corruption Peak		0.003		-0.008
		(0.010)		(0.009)
L2. Corruption Peak			-0.030**	-0.031**
			(0.014)	(0.015)
L. TA (W.01)	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
L. TE / TA (W.01)	0.005***	0.005***	0.005***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
L. NPLs / TL (W.01)	-0.003***	-0.003***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
L. ROAA (W.01)	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	36,431	36,431	36,087	36,087
Number of Banks	2,110	2,110	2,102	2,102
Country	OECD	OECD	OECD	OECD
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Quarter Num FE	Yes	Yes	Yes	Yes
Years	>2009	>2009	>2009	>2009
Cluster	Bank	Bank	Bank	Bank

Standard errors are in parentheses and clustered at the bank level
*** p<0.01, ** p<0.05, * p<0.1

Table A7: Competitor Deposits

VARIABLES	(1) Total Deposit Growth (Winsor .01)	(2) Total Deposit Growth (Winsor .01)	(3) Total Deposit Growth (Winsor .01)	(4) Total Deposit t Growth (Winsor .01)
Largest Non-Scandalous Bank	0.031***	0.025***		
	(0.009)	(0.009)		
Largest Non-Scandalous Bank (not SIB)			0.028***	0.022**
			(0.009)	(0.009)
L. TA (W.01)	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
L. TE / TA (W.01)	0.005***	0.005***	0.005***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
L. NPLs / TL (W.01)	-0.003***	-0.002***	-0.003***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
L. ROAA (W.01)	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	36,431	36,431	36,431	36,431
Number of Banks	2,110	2,110	2,110	2,110
Country	OECD	OECD	OECD	OECD
Bank FE	Yes	Yes	Yes	Yes
Country FE	No	No	No	No
Year FE	Yes	No	Yes	No
Country x Year	No	Yes	No	Yes
Quarter Num FE	Yes	Yes	Yes	Yes
Years	year > 2009	year > 2009	year > 2009	year > 2009
Cluster	Bank	Bank	Bank	Bank

Standard errors are in parentheses and clustered at the bank level
*** p<0.01, ** p<0.05, * p<0.1

Table A8: Climate Change Beliefs Using 2014 YPCC Values

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)
Happening 70 * Financed DAPL * 2017	-0.004	-0.017**	-0.019***			
	(0.007)	(0.007)	(0.007)			
Happening 70 * 2017	-0.008***	-0.010***	-0.012***			
	(0.003)	(0.003)	(0.004)			
Happening 70 * Financed DAPL	0.013***	-0.050	-0.062			
	(0.004)	(0.051)	(0.051)			
Financed DAPL * 2017	-0.023***	-0.014***	-0.012***			
	(0.003)	(0.003)	(0.003)			
Happening 70	-0.002	0.021	0.028			
	(0.002)	(0.042)	(0.043)			
Human 55 * Financed DAPL * 2017				-0.001	-0.015**	-0.016**
				(0.006)	(0.007)	(0.007)
Human 55 * 2017				-0.012***	-0.016***	-0.016***
				(0.003)	(0.003)	(0.004)
Human 55 * Financed DAPL				0.004**	-0.045	-0.054
				(0.002)	(0.043)	(0.042)
Financed DAPL * 2017				-0.024***	-0.013***	-0.012***
				(0.003)	(0.003)	(0.003)
Human 55				-0.000	0.007	0.011
				(0.002)	(0.042)	(0.043)
Percent of Adults With a Bachelor's Degree or Higher	0.002***	0.001	0.000	0.002***	0.001	0.000
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Percent of Votes for Obama	0.000	0.002	0.002	0.000	0.002*	0.002
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Population 2014	0.000***	-0.000	-0.000	0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	400,026	396,187	396,187	398,980	395,158	395,158
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fe	Yes	No	No	Yes	No	No
Branch FE	No	Yes	Yes	No	Yes	Yes
State FE	No	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
State*Year	No	No	Yes	No	No	Yes
Years	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A9: DAPL States Full Sample Analysis and Extended Treatment Group

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)
Financed DAPL * 2017 * DAPL State	-0.027***	-0.032***	-0.030***	-0.041***
	(0.007)	(0.007)	(0.007)	(0.009)
Financed DAPL * 2016 * DAPL State	-0.030***	-0.031***	-0.027***	-0.035***
	(0.007)	(0.007)	(0.007)	(0.009)
Financed DAPL * 2017	-0.013***	-0.011***	-0.015***	-0.001
	(0.002)	(0.002)	(0.003)	(0.003)
Financed DAPL * 2016	-0.013***	-0.015***	-0.017***	-0.013***
	(0.002)	(0.002)	(0.002)	(0.003)
Finance DAPL * DAPL State	0.034***	0.036***	0.013**	-0.019
	(0.005)	(0.005)	(0.006)	(0.016)
Financed DAPL	-0.001	-0.001		
	(0.002)	(0.002)		
Observations	416,594	416,594	416,513	411,930
Controls	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes
Bank FE	No	No	Yes	No
State FE	Yes	No	No	No
Year FE	Yes	No	No	No
State*Year	No	Yes	Yes	No
County*Year	No	No	No	Yes
Years	All	All	All	All
Cluster	Branch	Branch	Branch	Branch
States	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A10: Climate Change Beliefs and Extended Treatment Group

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)
Happening 70 * Financed DAPL * 2017	-0.003	-0.002	-0.001			
	(0.004)	(0.004)	(0.004)			
Happening 70 * 2017	-0.003	-0.007***	-0.006**			
	(0.002)	(0.003)	(0.003)			
Happening 70 * Financed DAPL	-0.006**	-0.048***	-0.046**			
	(0.002)	(0.018)	(0.018)			
Financed DAPL * 2017	-0.008***	0.001	0.001			
	(0.003)	(0.003)	(0.003)			
Happening 70	0.004**	-0.013	-0.013			
	(0.002)	(0.027)	(0.027)			
Human 55 * Financed DAPL * 2017				-0.003	-0.004	-0.004
				(0.004)	(0.004)	(0.004)
Human 55 * 2017				-0.004	-0.010***	-0.009**
				(0.003)	(0.003)	(0.003)
Human 55 * Financed DAPL				-0.001	-0.054**	-0.052**
				(0.002)	(0.021)	(0.021)
Financed DAPL * 2017				-0.008***	0.002	0.003
				(0.003)	(0.003)	(0.003)
Human 55				0.005**	-0.013	-0.012
				(0.002)	(0.032)	(0.032)
Percent of Adults With a Bachelor's Degree or Higher	0.002***	0.001	0.001	0.002***	0.001	0.001
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Percent of Votes for Obama	0.000	0.002*	0.002*	-0.000	0.002*	0.002*
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Population 2014	0.000***	-0.000	-0.000	0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	398,980	395,158	395,158	398,980	395,158	395,158
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fe	Yes	No	No	Yes	No	No
Branch FE	No	Yes	Yes	No	Yes	Yes
State FE	No	No	No	No	No	No
Year FE	Yes	Yes	No	Yes	Yes	No
State*Year	No	No	Yes	No	No	Yes
Years	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A11: Charitable Behavior and Extended Treatment Group

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)	(5) Branch Total Deposit Growth (Wnsor. 01)	(6) Branch Total Deposit Growth (Wnsor. 01)	(7) Branch Total Deposit Growth (Wnsor. 01)
Ln(Number of Non-Profits) * Financed DAPL * 2017	-0.003***	-0.002*	-0.001	-0.003**	-0.003**	-0.001	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Ln(Number of Non-Profits) * 2017	-0.001	-0.000	0.001	-0.003***	0.000	-0.003***	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ln(Number of Non-Profits) * Financed DAPL	-0.001	-0.001	-0.004***	-0.007***	-0.004***	-0.006***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Financed DAPL * 2017	0.016*	0.007	0.001	0.023**	0.011	0.011	
	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)	(0.010)	
Ln(Number of Non-Profits)	0.010***	0.008***	0.009***	0.029*	0.010***	0.029*	0.009***
	(0.001)	(0.001)	(0.001)	(0.016)	(0.001)	(0.016)	(0.001)
Financed DAPL	-0.000	0.001					
	(0.006)	(0.006)					
Percent of Adults With a Bachelor's Degree or Higher	0.001***	0.001***	0.001***	-0.001	0.001***	-0.001	0.001***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Percent of Votes for Obama	-0.000***	-0.000***	-0.000	0.001	-0.000***	0.001	-0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Population 2014	0.000	0.000	-0.000	-0.000**	0.000***	-0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	400,110	400,110	400,026	396,187	400,026	396,187	392,560
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fe	No	No	Yes	No	Yes	No	No
Branch FE	No	No	No	Yes	No	Yes	No
State FE	No	No	No	No	No	No	No
Year FE	Yes	No	No	Yes	Yes	No	No
State*Year	No	Yes	Yes	No	No	Yes	Yes
Bank*Year	No	No	No	No	No	No	Yes
Years	All	All	All	All	All	All	All
Cluster	Branch	Branch	Branch	Branch	Branch	Branch	Branch
States	All	All	All	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1

Table A12: Savings Banks and Extended Treatment Group

VARIABLES	(1) Branch Total Deposit Growth (Wnsor. 01)	(2) Branch Total Deposit Growth (Wnsor. 01)	(3) Branch Total Deposit Growth (Wnsor. 01)	(4) Branch Total Deposit Growth (Wnsor. 01)
Savings Bank * 2017 * Proportion of DAPL Banks	0.058***	0.054***	0.038*	0.078***
	(0.020)	(0.020)	(0.021)	(0.026)
Savings Bank * 2017	-0.012**	-0.009	-0.005	-0.020***
	(0.006)	(0.006)	(0.006)	(0.007)
Savings Bank * Proportion of DAPL Banks	-0.054***	-0.053***	0.009	0.104***
	(0.013)	(0.013)	(0.016)	(0.023)
Proportion of DAPL Banks * 2017	-0.028***	-0.025***	-0.014**	
	(0.004)	(0.006)	(0.007)	
Savings Bank	-0.001	-0.001	0.016*	
	(0.004)	(0.004)	(0.009)	
Proportion of DAPL Banks	0.088***	0.087***	0.072***	
	(0.004)	(0.004)	(0.004)	
Observations	416,594	416,594	416,513	411,930
Controls	Yes	Yes	Yes	Yes
Branch FE	No	No	No	Yes
Bank FE	No	No	Yes	No
State FE	Yes	No	No	No
Year FE	Yes	No	No	No
State*Year	No	Yes	Yes	No
Year*County	No	No	No	Yes
Years	All	All	All	All
Cluster	Branch	Branch	Branch	Branch
States	All	All	All	All

Notes: Standard errors are in parentheses and clustered at the branch level. *** p<0.01, ** p<0.05, * p<0.1