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Enhancing bank transparency: Financial reporting quality, fraudulent peers and social capital

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Abstract

This study examines the role of social norms in financial markets by relating bank transparency to social capital. Using comprehensive data on commercial banks, we provide empirical evidence that high social capital contributes to more transparent financial reporting, thereby enabling more precise risk assessments and promoting financial stability. We find that the effect of social capital is more pronounced when commercial banks are more complex and disclosure incentives of bank managers are strong. Our results suggest that more opaque reporting by peers explains lower transparency but financial misreporting is less contagious when social capital is high. Our study suggests that social capital can effectively improve reporting transparency when other mechanisms are not effective, thus securing financial system stability.

JEL: G24, G28, M41, L4

Keywords: social capital, bank transparency, accounting misstatements, financial misconduct

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1. Introduction

Bank transparency is central to the existence and efficiency of financial service markets. When banks cover up their risk exposure and obstruct the accurate diagnosis of systematic risk by both regulators and capital markets, they erode the trust in the entire financial system, cause financial instability and increase the burden of bank failures on society at large. Trust among corporations, gatekeepers, and market participants is the foundation of market exchange and production activities. If it disintegrates, capital markets are unable to efficiently allocate resources (Amiram et al., 2018), and successful business ventures do not find support. Lack of trust in financial intermediaries in particular can lead to bank liquidity shortages, a high risk of default, and by extension, financial instability and recession periods.

In this study, we argue that social capital can promote financial stability by assuring bank reporting transparency. Following previous research, we observe different signs of social cooperation, reciprocity and generalized trust that are captured in a social capital index for each U.S. county. Consistent with Costello et al. (2019), we measure bank transparency using catch-up accounting restatements as a proxy.[1] We conjecture that high social capital facilitates the information flows in complex financial institutions, thus creating the conditions to obtain high-quality information inputs for financial reporting purposes. Furthermore, we predict that bank incentives to accurately inform stakeholders are stronger when social norms are based on trust, mutual respect and honesty. Considered together, we expect high social capital to create both conditions and incentives to disclose high-quality financial information to regulators and capital markets.

We conjecture that there are at least two channels through which social capital is likely to increase bank transparency. First, social capital can facilitate the information production and flows needed for the processes of accounting consolidation and high-quality financial reporting. Second, social capital arguably strengthens bank incentives to respect certain standards that are associated with ethical decision making and thereby transparent disclosure of the true risk exposure. To draw conclusions with a representative sample of the U.S. banking sector, we examine quarterly reports of all U.S. commercial banks, thus overcoming the limitations of other studies that focus on bank holdings only and/or on publicly listed banks (e.g., Lins et al., 2017). We relate bank transparency to a county-level proxy for social capital, because the data variables required to construct such a proxy for each commercial bank are not available (e.g., social

[1] Because governance structures facilitate information diffusion in the financial sector, finance research has introduced a distinction between transparency (i.e., the presence of bank-specific governance mechanisms that enable information gathering by stakeholders) and disclosure (i.e., the revelation of bank-specific private information) (e.g., Perotti and von Thadden, 2002). Consistent with Costello et al. (2019), we define bank transparency as disclosure choices that enhance the accuracy and reliability of financial reports.

initiatives by bank employees and the level of trust inside the organization). Using more than 430,000 bank-quarter observations for 8,522 unique commercial banks located in 2,573 distinct counties over the period 2001-2018, we find empirical results consistent with the favourable effect of social capital on bank transparency. Our estimates suggest that the effect of social capital is more pronounced when banks are more organizationally complex. Furthermore, we argue that disclosure incentives are stronger when a larger number of commercial banks produce comparable financial information in regulatory filings. Using the number of peers as a proxy for disclosure incentives, we show that the positive effect of social capital on bank reporting is stronger when disclosure can be compared and likely better scrutinized.

We also examine how different enforcement mechanisms interact when determining the quality of bank reporting. First, we relate social capital (first-party enforcement) to regulatory scrutiny by state authorities (third-party enforcement).[2] By providing conditions and strengthening incentives for transparent disclosure, we expect social capital to reduce the need for regulatory action. Using a regulatory leniency index as a proxy for regulatory enforcement (Agarwal et al., 2014), we find empirical evidence consistent with the expectation that social capital may reduce the demand for regulatory monitoring and enforcement. Second, we study how market discipline (related-party enforcement) affects bank transparency in settings in which social norms encourage mutual trust, collaboration and ethical practices. Our empirical results support the view that the market response (proxied by changes in total deposits) for restating financial information is lower when social capital is high.

We further investigate the peer influence on bank transparency and argue that unethical peer decisions are less likely to affect bank transparency when social capital is high. Our results are consistent with the expectation that peers with restatements and misconduct behaviour are positively associated with low-quality disclosure (i.e., a greater probability of revised accounting information in subsequent quarters). Furthermore, the negative effect of peer (misconduct) decisions is significantly less when social norms are sufficiently strong to promote transparency and ethical choices.

Similar to other studies regarding the role of social capital in financial development, we recognize the presence of endogeneity problems in estimating regression coefficients. To draw causal inferences, we

[2] Consistent with Dupont and Karpoff (2020), we examine the three channels of the trust triangle: (a) first-party enforcement or self-enforcement, a trust channel based on personal, moral, religious, societal, and cultural values that encourage other-regarding behaviour and discourage opportunistic activities, even in the absence of the threat of external legal or market penalties; (b) related-party enforcement, a trust channel related to market forces and reputation as a disciplining mechanism for misconduct (i.e., the reputational capital leg of the trust triangle); and (c) third-party enforcement, a trust channel based on laws and regulations, which impose restrictions and ex post penalties for opportunistic behaviour and can therefore ex ante align the incentives of counterparties (i.e., regulatory requirements and enforcement actions, government monitoring and penalties for misconduct).

instrument social capital with the prevalence of slavery in 1860. Our instrumental variable estimates confirm that banks located in high social capital counties have a significantly lower probability of restating accounting information and that this effect is dominated by positive restatements. Considered together, our results show that social capital affects bank transparency, which in turn is likely to promote financial stability.

The contribution of this study is four-fold. First, we integrate in the empirical analysis three perspectives on business ethics (regulation, reputation, and social norms), following Dupont (2020). We examine how bank transparency relates to county-level social capital ("first-party enforcement"), state-level regulatory scrutiny ("third-party enforcement"), and market-based reputation using the sensitivity of deposit growth to financial opaqueness and peer effects ("related- party enforcement"). We contribute to the debate over the interplay between public enforcement and social norms in reducing financial misreporting. Amiram et al. (2018) demand research on the relationship between enforcement and culture in disciplining unethical financial practices and promoting financial market development. We show that social capital facilitates bank transparency and reduces the demand for regulatory enforcement.

Second, this study contributes to the research on bank transparency and social capital. Empirical studies have found a positive association between social capital and the quality of accounting information (e.g., using discretionary accruals and the readability of financial reports as proxies; Jha, 2019), but the empirical evidence has been limited to non-financial firms. Prior literature also relates social capital to stock price characteristics. Hasan and Habib (2019), for example, show that firms headquartered in high social capital counties exhibit significantly lower idiosyncratic return volatility. Empirical results relate social capital to bank stability in crisis times (Jin et al., 2017); however, the role of social norms on bank transparency in normal times has not been comprehensively examined from multiple perspectives so far. Martin-Flores (2018) finds that banks headquartered in areas with higher social capital are less likely to receive enforcement actions from bank regulators and argues that the result is driven by the lower propensity of these banks to engage in misconduct. In this study, we examine specifically the quality of accounting information of U.S. banks and relate it to the level of social capital. In accounting and finance, empirical studies have typically excluded financial firms because they not only are highly regulated, but also perform bank-specific accounting manipulations with strong exposure to certain accounting matters (e.g., financial instruments and fair-value accounting). Using the universe of U.S. commercial banks, we contribute to the research on the role of social norms in financial markets by relating bank transparency to social capital. Not only the overall financial stability, but also the economic advances of local economies critically depend on the ability of local commercial banks to provide financial services without major disruptions and bank

failures in extreme cases. Our study suggests that high social capital is likely to facilitate economic progress by creating the conditions for more stable, transparent financial systems.

Third, we provide empirical evidence that geography-based social norms influence bank transparency and arguably financial stability across U.S. counties. Parsons et al. (2018) propose that fraudulent firms produce negative externalities for their peers. We find that bank transparency is negatively affected by the county-level opaqueness, but the effect is weaker when social capital is high. We contribute to the debate regarding the efficiency of market and non-market mechanisms in impeding the proliferation of unethical business practices in the banking industry. Considered together, our empirical results show that lack of financial transparency and likely financial misconduct are negatively associated with strong social-capital relations, which are rainmakers in the dark, complex financial sector.[3]

Fourth, our study contributes to the policy debate on how to effectively promote financial stability by allocating efficiently limited resources for regulatory supervision. Regulatory supervision is costly and, therefore, requires critical resource allocation decisions, such as the distribution of supervisory hours, especially when the banking sector is dominated by troubled banks (e.g., Joffe-Walt, 2009; Eisenbach et al., 2016; Hirtle et al., 2020). Additionally, supervisors may increase banks' sensitivity to risk, thus making banks more reluctant to make lending decisions (Peek and Rosengren, 1995). Due to the limitations of regulatory supervision, it is relevant to examine which alternative mechanisms can effectively substitute and/or complement regulatory actions. In practical terms, the role of social capital in promoting financial stability through bank transparency can allow regulators to better allocate resources in bank supervision. When the banking sector is dominated by troubled banks, regulators need to make difficult decisions about which entities deserve more attention in their efforts to reduce the risk of bank failure and distress, including bank runs (Eisenbach et al., 2016). Our results suggest that social capital can facilitate this resource allocation decision due to its positive effect on bank transparency. The consolidation process in the financial industry has led to the dominance of large and more complex institutions that require more resources to supervise and, thus, present a greater threat to financial stability if adversely shocked (Hirtle et al., 2020). We argue that social capital, as a filtering criterion for supervisory attention, can facilitate the decision-making process in bank supervision. Moreover, with the objective to promote social norms based on trust, mutual respect and cooperation in their communities, politicians may want to revise their policy agenda. A relevant part of both electoral campaigns and political debates around federal budget planning is the

[3] Putnam et al. (2000) argue that the rain produced by civic engagement and generalized trust affects not only people who are active and trusting, but also people who are neither active in voluntary associations nor trusting of other people. We extend this argument to financial misconduct and suggest that high social capital is the foundation of more transparent reporting practices.

discussion of how effectively tax incentives can have an enduring effect on the economic behaviour of business leaders and/or regular citizens. Our findings suggest that tax reforms need to consider indirect benefits from nonprofit activities: their beneficial effect on social capital that contributes to bank transparency and, by extension, financial stability.

2. **Literature review and hypothesis development**

2.1. Literature review

2.1.1. Social capital and the economy

Over the past decades, academic research at the cross-section of various social science disciplines has related different dimensions of social capital to economic outputs (e.g., Guiso et al., 2004; Alesina and Giuliano, 2015). Although the literature on social capital has been expanding over the past decades, it remains difficult to find a unique definition of social capital.[4]

According to the sociological view, social capital is represented in features of social organizations, such as trust, norms, and networks, which can improve the efficiency of society by facilitating coordinated actions (Putnam, 1993). Portes (1995) defines social capital as the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structures. This capacity is viewed as a product of social relationships, as opposed to that of individuals (Coleman, 1990).[5] Social capital differs from organizational capital, which leverages on social resources to bring about lasting improvement in productivity, worker well-being, or social performance through changes in the functioning of the organization (Tomer, 1987). In contrast to organizational capital, social capital, which recognizes the inherently social nature of economic processes, is facilitated by social features such as: (a) obligations and expectations; (b) norms and effective sanctions; (c) authority relationships; (d) family and friendship bonds; and (e) voluntary social organizations (Coleman, 1990). Coleman (1988) states that social capital enables economic entities, such as individuals, social groups, business and government, as well as the national or regional economics of which they are part, to accomplish more than would be possible in the absence of these capital endowments.

[4] Alesina and Giuliano (2015) argue that most definitions of social capital do not satisfy the conditions required to be qualified as 'capital'. According to Solow (1995), behind social capital there must be an identifiable process of 'investment' that adds to the stock and possibly a process of 'depreciation' that subtracts from it.

[5] Portes (1998) discusses the difference between social capital and other forms of capital. Accordingly, the main distinction is that "whereas economic capital is in people's bank accounts and human capital is inside their heads, social capital inheres in the structure of their relationships."

In economic research, considerable attention has been paid to the more celebratory versions of social capital. A large number of studies have associated social capital accumulation with economic development, including economic growth (Knack and Keefer, 1997), the size and characteristics of firms (Porta et al., 1997; Bloom et al., 2012), institutional design and performance (Djankov et al., 2003), financial development (Guiso et al., 2004), crime (Glaeser et al., 1996), the power of the family (Alesina and Giuliano, 2010) and innovation (Laursen et al., 2012; Gupta et al., 2020). Social capital has been associated with economic growth due to early adoption of technology (i.e., the Solow-Swan model of economic growth, Solow, 1956), improved access to capital (e.g., well- functioning capital markets, Guiso et al., 2004), and lower transaction and monitoring costs (e.g., in labour and multi-division relationships, Ichino and Maggi, 2000; Bloom et al., 2012).

Although most research has emphasized the positive consequences of social capital, several studies have identified socially undesirable patterns in the presence of high social capital. Portes (1998) suggests that negative social outcomes are observable when there is exclusion of outsiders, excess claims on group members, restrictions on individual freedoms, and downward levelling norms. Waldinger (1995), for example, argues that the same social relationships that enhance the ease and efficiency of economic exchanges among community members implicitly restrict outsiders. Portes (1998) notes that cosy intergroup relations in high-solidary communities can give rise to free-riding problems, when less diligent members enforce on the more successful all types of demands backed by a shared normative structure and thereby destroy successful group members. Moreover, when the level of social control restricts personal freedom and imposes downward levelling norms, bounded solidarity and trust, which are sources for socioeconomic ascent and entrepreneurial development among some groups, can generate exactly the opposite effects in other groups. According to Portes (1998), examples of how embeddedness in social structures can be turned towards less than socially desirable ends are mafia families, prostitution and gambling rings, and youth gangs.

2.1.2. Financial stability, bank transparency, and financial misconduct

While sociologists, political scientists and economists have debated the desirable properties of social capital for the development of stable institutions, finance and accounting scholars have focused on another relevant aspect of institutional stability, namely, the role of bank transparency in enhancing financial stability (e.g., Morgan, 2002; Bushman and Williams, 2015; Acharya et al., 2016). A particular concern of bank regulators is that excessive risk taking by individual banks is likely to contribute to the risk of the entire financial system. For this reason, a topic of discussion is the extent to which the availability of transparent bank-

specific financial information can mitigate or exacerbate such risk concerns. Because financial reports are a relevant source of bank-specific information to regulators, policy makers, borrowers and other counterparties, the role of accounting regulation and bank-specific accounting policy choices in building trust in the financial system and enhancing financial stability has received considerable attention in academic research and policy papers (e.g., fair-value recognition of financial instruments and procyclical loan loss provisions, Laux and Leuz, 2010; Badertscher et al., 2011; Bushman and Williams, 2015; Bhat et al., 2019).

Overall, this literature has shown that both supervisory efficiency and financial stability without bank runs are strongly determined by bank transparency (Chen et al., 2020; Gallemore, 2020) and that credible public information about individual banks can enhance the ability of regulators and market participants to monitor and exert discipline on banks' behaviour (e.g., on credit policy and transparency, Ertan et al., 2017). Among the most controversial topics in this literature is the demand for transparency regarding regulatory assessments. Stress tests, which form an integral part of regulatory assessment, are an essential element of effective risk management, allowing supervisors to assess not only whether banks hold sufficient capital but also whether banks are able to rapidly and accurately determine their risk exposures.[6]

Proponents of higher transparency through the disclosure of stress-test results link the severity of the recent financial crisis to bank opacity. The argument is that many banks took on excessive risks that were not adequately disclosed such that these risks could not be properly priced by the market (Tarullo, 2010; Bernanke, 2013). According to this view, stress-test results inform outsiders whether banks are sufficiently capitalized to absorb negative shocks, thus enhancing market discipline, preventing bank insiders from engaging in excessive ex ante risk-taking behaviour, reducing the spread of financial instability across the financial system and avoiding financial crises and recessions. Moreover, greater transparency arguably allows banking regulators to better monitor the banks and intervene sufficiently early to undertake corrective actions by recapitalizing weak or insolvent banks.[7]

In this discussion, opponents have advanced the view that the disclosure of stress tests can actually create more panic if they are not properly designed, thereby lowering confidence in the banking sector and exacerbating negative externalities on the real sector. Prescott and Slivinski (2009), for example, suggest that regulatory reviews depend on the quality of 'hard' but also 'soft' information (i.e., internal bank

[6] Regulators collect information from on-site visits and other financial filings to assess bank conditions and assign a ranking (i.e., CAMELS ranking combining information about *C*apital adequacy, *A*sset quality, *M*anagement and administrative ability, *E*arnings level and quality, *L*iquidity level and *S*ensitivity to market risk).

[7] See, e.g., Goldstein and Sapra (2014) and Gigler et al. (2014) for theoretical models of the costs and benefits of greater transparency.

assessments and management private information). In their view, the public disclosure of regulatory assessments can raise the costs to the bank of cooperating with the supervisor and thereby lower the quality of information used by regulators for supervision purposes. Acharya et al. (2016) further suggest that many financial reporting approaches intend to enhance stability by suppressing banks' transparency regarding the effects of changing economic conditions across the cycle. Although this suppression likely enables banks to survive and prosper over normal business cycles, it also reduces the ability of financial reporting to provide early warnings of changing economic conditions, thus reducing the efficiency of regulatory oversight and intervention. Berger et al. (2000) suggest that banks can gain market power as a result of regulatory restrictions and/or information opacity. They show that banks with a large share of products with high proprietary information (e.g., core deposits or small business loans) or organizational complexity (i.e., part of a multi-bank holding company) are more likely to persistently hold a leading market position (i.e., top performers based on realized returns) and that this outcome on the product market is not driven by technological advances in data collection and processing. Hence, among the costs associated with the lack of transparency is the ability of opaque banks to maintain their dominant competitive position in the market for financial products.

At the macroeconomic level, there have been divergent views about how much information about the financial conditions of banks should be made public without threatening financial stability. At the microeconomic level, however, most studies have agreed supervision and regulation are critical tools for the promotion of stability and soundness in the financial sector. For example, Hirtle et al. (2020) show that more supervision adds value over and above that brought about by the effects of regulation. In particular, banks that receive more supervisory attention have less risky loan portfolios, are less volatile, and are less sensitive to industry downturns but do not exhibit lower growth or profitability.

Although the benefits of regulatory actions can be significant, there are drawbacks and/or limitations of regulatory supervision and possible interventions. For this reason, it is important for policy makers to know which alternative mechanisms and under what conditions are effective in enhancing bank transparency and financial stability. If social capital can effectively reduce the demand for regulatory interventions, policy makers can more effectively allocate limited resources to guarantee financial stability.

There are at least four limitations related to regulatory interventions. First, regulatory supervision is costly and, therefore, requires critical resource allocation decisions (e.g., supervisory hours), especially when the banking sector is dominated by troubled banks. The more supervisory hours that are dedicated to a specific case, the more likely regulatory supervision is to be effective. According to Hirtle et al. (2020), a 20% increase in supervisory hours is associated with a 9% to 10% decrease in risk, as measured by the

volatility of earnings, a reduction in distance to default equivalent to 150 to 200 bps of additional capital. This increase in supervisory hours increases the demand for higher operating budgets, but such hours may not be available when most needed. For example, during the 2007-09 crisis, resource constraints prevented regulators from intervening in troubled banks, even if they wanted to do so (Eisenbach et al., 2016).

Second, it is plausible to encounter economic conditions when regulators find it optimal and therefore undesirable to intervene, despite the demand to do so (for example, when financial transparency is low and may suggest excessive risk taking and/or hence high default probability). For example, regulators are tasked with intervening in troubled banks but may instead forgo or postpone such intervention (i.e., forbearance) for various reasons, such as (a) lack of resources and/or (b) high resolution costs, such as lower asset values due to fire sales and bankruptcy fees. The constraints on the resources available to regulators are especially pronounced in the case of financial or banking crisis, when regulators need to allocate limited resources, including labour, that are difficult to scale up over short periods (e.g., large teams of agents were required to close even small banks: during the financial crisis in 2009, the Federal Deposit Insurance Corporation (FDIC) had to allocate 80 agents to close a bank with 100 employees, Joffe-Walt, 2009). Moreover, regulators may be concerned that publicly intervening will cause a chain reaction in the banking sector and the economy at large, thus exacerbating the financial problems of troubled banks and increasing the likelihood of a more severe intervention, including closure. Therefore, regulators strategically intervene only when the resolution costs are affordable in accordance with their internal estimations (Brinkmann et al., 1996).

Third, regulatory supervision is not always associated with desirable effects on risk-taking behaviour in the financial sector. For instance, Barth et al. (2013) showed, in a cross-country analysis, that supervision can reduce bank efficiency. Additionally, supervisory concerns about risk management can result in banks making technology investments with large up-front costs, thereby depressing their near-term profits (Hirtle et al., 2020). Moreover, supervisors may increase banks' sensitivity to risk, thus making banks more reluctant to make lending decisions. Consistent with this view, Peek and Rosengren (1995) found that tougher supervisory standards are associated with slower loan growth.

Fourth, both regulation and supervision are significantly determined by political considerations. According to the theory of regulatory capture (Stigler, 1971), regulators may be laxer in their enforcement decisions because they may be manipulated by the banks they supervise. Consistent with this argument, Lambert (2019) showed that regulators are 44.7% less likely to initiate enforcement actions against lobbying banks. Moreover, the decision to initiate enforcement actions can be largely driven by agency costs. Beck et al. (2006) argued that if bank supervisory agencies have the power to discipline noncompliant

banks, then supervisors may use this power to induce or force banks to allocate credit to generate private or political benefits.

Prior studies also examine whether full transparency and extended disclosure are effective remedies to mitigate conflicts of interest, which are widely spread in the financial industry. For instance, a conflict of interest, which arises from the joint offering of advisory and trading services, explains the tendency of financial analysts to optimistically bias their reports, thus generating investment banking and trading revenues. Several studies have argued that retail investors suffer most from biased information because institutional clients are typically serviced differently by advisory firms (i.e., access to private information and analyst expertise on demand; see Pacelli, 2019). Following the Global Analyst Research Settlement of 2003, the perimeter of regulatory oversight over advisory activities has been extended, and financial advisors are currently required to comply with specific disclosure requirements (e.g., disclosure of analyst ownership stakes, percentage of income generated from covered stocks, etc.).[8] The preferential treatment of certain segments, similar to other fraudulent actions (e.g., trading on private information, overcharging for financial services, etc.), is a reflection of the abundant misconduct in the financial sector.[9] Egan et al. (2019) suggest that some firms specifically target unsophisticated investors and specialize in the market for financial misconduct by hiring advisors with misconduct records. Dimmock et al. (2018) show that financial misconduct is contagious because co-workers with fraudulent behaviours affect the acceptance and adoption of misconduct practices among newcomers at work. They interpret empirical results as consistent with social learning and conformity with organizational culture or social norms.

2.2. Hypothesis development

[8] See Chen and Marquez (2009) and Chan et al. (2018) on the effects of regulatory reforms following the Global Settlement on the quality of investment advice services.

[9] In the advisory segment, Egan et al. (2019) show that approximately one-third of financial advisors with misconduct records have been accused of malpractice more than once. In general, the banking sector has attracted significant attention with its leading role in several large manipulations, justifying the intervention of international authorities. The following events are emblematic of the scale of financial market manipulations: (a) in 2013, seven banks (Barclays, Crédit Agricole, Deutsche Bank, HSBC, JPMorgan Chase, RBS and Société Générale) were sanctioned by the European Commission for colluding on euro interest rate derivative pricing elements and exchanging sensitive information, in breach of E.U. antitrust rules; (b) in 2016, three banks (HSBC, JP Morgan and Crédit Agricole) were sanctioned by the European Commission for manipulating Euribor euro interest rate derivatives; (c) in 2019, five banks (Barclays, the Royal Bank of Scotland, Citigroup, JPMorgan and Japan's MUFG Bank) were sanctioned by the European Commission for collusion in the massive foreign exchange currency market; and (d) in 2019, EU antitrust authorities accused eight banks (unnamed) in collusion to game the Eurozone government bond market.

Due to the limitations of regulatory supervision, it is relevant to examine which alternative mechanisms can effectively substitute and/or complement regulatory actions. Both supervisory efficiency and financial stability without bank runs are strongly determined by bank transparency (Chen et al., 2020; Gallemore, 2020). Anecdotal evidence from the 2007–2008 crisis shows that the combination of an opaque balance sheet with funding constraints led to the demise of systemically important banks (BIS, 2015). In general, financial intermediaries, including banks and insurance firms, are inherently more opaque than other types of firms, and there is a high level of uncertainty regarding banks' assets, which are difficult to observe and easy to change (Morgan, 2002).[10] This opacity of bank reporting is among the arguments calling for tight bank regulation and more stringent regulatory scrutiny.[11]

Since 1933, government programmes, such as FDIC insurance and other implicit government subsidies, have been introduced as policy instruments to support and maintain financial stability. It has been suggested, however, that such programmes encourage increased risk taking, thereby causing banks to hold too little capital. As a result, capital requirements based on accounting information were imposed under Basel regulations. Although bank regulation departs from accounting standards, the use of accounting-based inputs to measure capital adequacy and other indicators of bank-specific risk has introduced strong incentives to manage financial information and avoid regulatory corrective actions, including government intervention.[12] Costello et al. (2019) show that all of the catch-up restatements have an impact on Tier 1 capital, and approximately 30% of the restatements lower Tier 1 capital by more than 12 basis points. Their analysis also shows that negative restatements, i.e., restatements that reduce the level of capital and retained earnings, are economically significant; 60% of negative restatements have an impact that amounts to more than 10% of the quarterly earnings.

We conjecture that there are at least two channels through which social capital influences bank transparency: (1) information flows; and (2) disclosure incentives.

[10] According to Morgan (2002), the opaqueness of financial intermediaries explains the disagreement of Moody's and S&P's bank bond ratings.

[11] An open debate in finance is whether non-market solutions are needed to reduce information asymmetries and reinforce strong governance practices in the financial industry. Berger et al. (2000), for instance, find empirical support that regulators (non-market mechanism) and equity holders (market mechanism) are both effective in predicting banks' future performance. They claim that regulators and equity holders have different interests, explaining their incremental disciplinary role in reducing agency costs in the financial industry. Regulators, similar to bond rating agencies, are primarily concerned with bankruptcy risk; in contrast, equity holders evaluate wealth creation channels.

[12] Regulatory capital needs not be equal to financial reporting capital because bank regulators apply so-called 'prudential filters' (e.g., specific adjustments when calculating regulatory capital) to meet their objectives of prudential supervision. In addition, regulators can adjust the risk weights that they assign to specific assets when determining required levels of capital (Barth and Landsman, 2010).

First, social capital can facilitate the information flows required to collect and aggregate accurate financial information (information flows). Coleman (1988) argues that social capital arises because of dense interactions between social actors, creating an intricate web of relational networks. Koka and Prescott (2002) extend this argument to the properties of information exchanges inside and outside the organization. They conjecture that such interactions facilitate the exchange of information, create obligations or expectations, and impose sanctions on those who fail to meet their obligations. Thereby, the dense interactions between members who usually possess similar information enable the validation of information, thus enhancing its reliability. Burt (1992) further suggests that social capital reduces search costs because it makes information available early.

Building on this literature, we predict that improved information flows in high social capital environments present the conditions needed to prepare timely and accurate financial reports. Bank reporting is inherently complex, and reliable information flows on a timely basis can guarantee the inputs that are required to aggregate accounting information and prepare high-quality finan- cial reports in inherently opaque bank organizations. This prediction is consistent with Bratten et al. (2019), in which auditors accumulated information expertise over time, explaining the trend towards lower audit costs as auditor tenure increases.[13]

Second, social capital is likely to affect the extent to which banks consider it important to achieve a certain level of reporting transparency. There are a significant number of discretionary accounting choices that banks must make in their financial reporting. The financial crisis of 2007 shows that the financial stability of the entire banking system is influenced by such choices (e.g., Laux and Leuz, 2010). Acharya et al. (2016) argue that banks' financial reporting choices reflect: (a) their characteristics, such as capitalization, risk, and balance sheet composition; (b) economic conditions, such as cycle phase and uncertainty about financial asset values; and (c) other factors, such as contracts and regulation.

We argue that financial reporting choices and, by extension, bank transparency are significantly determined by social capital (*disclosure incentives*). If there is a general consensus at the community level that the lack of financial transparency (e.g., inflating performance indicators and/or misleading regulators regarding risk exposure) is undesirable, social norms are likely to encourage bank managers to make financial reporting choices associated with transparency. It is plausible to find such social values in groups

[13] Jha and Chen (2014) show that non-financial firms headquartered in states with high social capital face lower audit fees. They explain this finding with the high level of trust in the client-audit relationship. Although we advance the argument that social capital facilitates the information flows that are required to prepare high-quality financial reports, we also recognize that the level of trust in the organization is a relevant factor in obtaining and aggregating accounting information.

characterized by high social capital, in which trust, mutual respect and cooperation are predominant in social life. In such group settings, the deliberate omission of relevant information used in regulatory supervision (e.g., understatement of loan loss provisions and/or material accounting errors) is likely to be viewed as financial misconduct that a community should not promote (see Parsons et al., 2018, for the role of social and cultural factors as an impediment to financial misconduct).[14] Hence, we predict that high social capital, in which trust and cooperation form the foundation of economic interactions, is associated with stronger incentives for banks to reduce with their financial reporting choices the level of information asymmetries in their inherently opaque financial reports.

We combine the effects of the above channels and predict that high social capital provides both information inputs and incentives to disclose more transparent bank accounts. On these grounds, we formulate the following hypothesis.

> *Hypothesis 1*: High social capital is associated with greater bank transparency, as proxied by the quality of financial information.

We recognize that the effect of social capital on bank transparency might also be negative when a cooperative attitude is required to agree about accounting manipulations. For just as proximity facilitates the spread of disease, the spillover of ideas and social norms can permit the diffusion of unethical behaviour. It is possible that highly collaborative social norms permit the creation of cosy intergroup relations that restrain any attempt by more ethical members to penalize misconduct practices (Portes, 1998). Furthermore, it could be that bank management views regulatory intervention as undesirable for the community at large, and more collaborative social practices in high social-capital groups permit group members to agree about successful practices in hiding risk exposure, such as disclosing as little as possible to external stakeholders.

If social capital affects bank transparency, we expect its effect to be differently defined when law enforcement is weak. Aghion et al. (2010) show that there is a substitution effect between social capital and regulation. They model investment in social capital as a function of regulation and show analytically that there are two equilibria: (a) heavy regulation and uncivil communities; or (b) no regulation and a large number of civic individuals. Using the World Values Survey, they further show empirically that distrust fuels support for government control over the economy even when government is perceived as corrupt and

[14] Using the share price data, empirical research on the reputational losses for financial misconduct has shown a sharp decline upon news of financial misconduct and has suggested that only a portion of such losses are related to direct penalties (e.g., Beneish, 1999; Karpoff et al., 2008). Consistent with the proposed channel (i.e., disclosure incentives), we view reputation loss as a function of social capital and expect the indirect costs (e.g., violation of social norms and expectations), as opposed to direct regulatory costs (e.g., regulatory scrutiny and imposed penalties), to drive the disclosure policy in the banking sector.

ineffective. Guiso et al. (2004) predict that financial transactions are possible in weak legal environments only if moral sanctions can be imposed, and social norms effectively substitute legal enforcement. Using cross-sectional differences in legal enforcement across Italian provinces, they find that social capital has a significant effect on financial development only when legal enforcement is slow or inefficient. Consistent with the above studies, we make the following prediction regarding the effects of legal enforcement and social norms on bank transparency.

> *Hypothesis 2*: The effect of social capital on bank transparency is more pronounced when legal enforcement is weak.

3. Sample selection and variable measurement

To draw conclusions with a representative sample of the U.S. banking sector, we use quarterly data covering the universe of commercial banks operating in the United States between 2001 and 2018. Because we examined the universe of all U.S. commercial banks and the quality of their financial information, we were able to draw conclusions about the relation between financial transparency and social capital that could be generalized to the entire banking sector.[15] By doing so, we could overcome the limitations of other studies that focus on a subsample of financial institutions, such as bank holdings only and/or publicly listed banks (e.g., Lins et al., 2017). Similar to Costello et al. (2019), we exclude savings banks and credit unions from the sample because these banks submit different types of regulatory reports (Thrift Financial Reports (TFRs) and Credit Union Call reports, respectively), and they classify accounting restatements following different guidelines. Our sample period starts in 2001 due to the availability of data on regulatory call report restatements. We were able to extend the social capital score up to 2018, which is the end of our sample period.

For the empirical analysis, we merge the following databases: (a) Call Reports submitted by commercial banks (Source: Federal Financial Institutions Examination Council, FFIEC); (b) county-level social capital indices (Source: Northeast Regional Center for Rural Development, NR- CRD); (c) county-level socio-demographic characteristics (Source: Decennial Census and American Community Surveys); (d) a state-level measure of regulatory strictness (Source: Acharya et al., 2016); and (e) cases of misconduct by registered financial advisors (Source: Egan et al. (2019), FINRA register). For the baseline empirical

[15] Commercial banks are financial institutions that are owned by stockholders, operate for a profit, and engage in various lending activities, as defined by the Federal Financial Institutions Examination Council.

tests, the merged dataset contains financial information of 8,522 unique commercial banks with registered headquarters in 2,573 distinct counties.

a. Call reports

To construct our proxies for bank transparency and control variables, we retrieve the Consolidated Reports of Condition and Income (Call Reports) of U.S. registered commercial banks. The Call reports are the primary source of information used by regulators to evaluate the risk profiles of financial institutions (e.g., bank holding companies, commercial banks, and credit unions). The Call Reports are standardized forms disseminated publicly by the Federal Financial Institutions Examination Council (FFIEC).[16]

Supervisors oversee the operations of financial institutions by engaging in both off-site and on- site monitoring activities. During the examination process, banking regulators review submitted regulatory reports and collect private information in search of early-warning signals of deteriorating financial conditions of the financial institutions under supervision. When needed, corrective actions are prescribed to restore the stability of financial institutions and restrain possible spillover effects on the entire financial system. The regulatory supervision of banking regulators can result in the detection of a mistake or irregularity in the presented reports. In these cases, the financial institution is required to file an amended call report with corrected accounting information, restate prior data, or cumulatively adjust the financial information (i.e., "catch-up" adjustments).

Similar to other papers, we define transparency in the banking sector as financial disclosures that improve the reliability of the public signals used to gauge banks' financial conditions (e.g., Goldstein and Sapra, 2014; Acharya et al., 2016; Costello et al., 2019). These signals are less reliable when there are revisions in the financial information. Consistent with Costello et al. (2019), we focus on catch-up restatements to measure financial reporting transparency because both private and public banks must disclose such restatements in their quarterly call reports. In contrast to catch-up adjustments, restatements of prior years are less frequent and visible mainly for publicly listed banks, usually organized as a bank

[16] FFIEC is a formal interagency body empowered to prescribe uniform principles, standards, and report forms for the federal examination of financial institutions by the Board of Governors of the Federal Reserve System (FRB), the Federal Deposit Insurance Corporation (FDIC), the National Credit Union Administration (NCUA), the Office of the Comptroller of the Currency (OCC), and the Consumer Financial Protection Bureau (CFPB). The FFIEC enables the bulk download of Call Reports and Uniform Bank Performance Reports used for benchmark purposes by regulators. The data are available for each reporting quarter since 2001.

holding company, such as JPMorgan Chase & Co., Bank of America Corporation or Wells Fargo.[17] Using the FFIEC data, we identify when commercial banks report accounting adjustments in their quarterly call reports and classify them by type (positive or negative restatements) and topic (for example, tax restatements or loan loss accounting restatements).

We argue that the Call data are the best source to measure reporting transparency for several reasons. First, the Call data are provided to the regulators, and for this reason, we are not concerned with sample selection bias in our empirical analysis. Second, capital market dynamics are likely to strongly influence disclosure choices by banks. For this reason, it is beneficial to have settings in which capital market factors are not present. In our sample, commercial banks are not publicly traded; hence, capital market concerns are unlikely to affect the decision to restate or not financial information. Third, the Call Data are used for regulatory supervision, suggesting that banks are most likely to increase financial transparency, thus building a good reputation before regulators and other stakeholders, including depositors and local communities.

b. Social capital indices

To proxy for social capital, we use the county-level indices provided by the Northeast Regional Center for Rural Development (NRCRD) at Pennsylvania State University. Although an organization-level proxy for social capital is preferable to a county-level proxy, an empirical construct for each commercial bank is difficult to construct as a valid measure of social capital, due to the lack of data at the bank level (e.g., those on social initiatives by bank employees and the level of trust inside the organization). Lins et al. (2017) use corporate social responsibility (CSR) indicators as a bank-specific proxy for social capital, which they further relate to stock returns. Because commercial banks are not publicly listed and quarterly reports do not contain non-financial information, CSR indicators for each commercial banks are not available and therefore we could not construct a proxy for social capital at the organizational level for our representative sample of the U.S. banking sector. Although some commercial banks are part of a publicly-listed bank holding, it is hard to infer that the organizational culture in each domestic entity can be reliably proxied by the presence of CSR activities at the headquarter level.[18]

[17] According to the FDIC's call report instructions, these catch-up adjustments reflect "corrections resulting from material accounting errors that were made in prior years' Reports of Condition and Income and not corrected by the filing of an amended report for the period in which the error was made".

[18] Lins et al. (2017) show that their results hold when a regional-level proxy for social capital is used instead of a bank-specific CSR score. For this reason, we conjecture that other proxies for social capital, such as those based on CSR indicators, are likely to be highly correlated with geography-based proxies for social capital.

Over the past years, the county-level indices of social capital have become popular in empirical research on the economic consequences of social capital (e.g., Jha, 2019).[19] The empirical constructs of social capital intend to capture visible signs of social cooperation, reciprocity and generalized trust, which facilitate collective action. For example, Putnam (1993) suggests that associations instill in their members habits of economic cooperation, solidarity, and public spiritedness. For this reason, social capital proxies measure activities by associations that are suggested to be conducive to facilitating information sharing through repeated interactions, promoting reciprocity and facilitating social capital production. To improve the precision of this proxy for social capital, a distinction is introduced between an association membership, which promotes trust and cooperation, from one that is largely associated with rent seeking, such as lobbying groups.

Although a single indicator variable for social capital is attractive for its simplicity, there are certain limitations. For example, it could be that other activities capture the social involvement of community members. To comprehensively recognize different mechanisms in the process of social capital creation, Rupasingha et al. (2006) complement the data on social activities (association membership and the number of not-for-profit organizations) with data on political participation (Ferrara and Alesina, 2000) and census response rates (Knack, 2002). Similar to association membership, both voting behaviour and census participation capture some forms of social engagement with the local community. Using the first principal component, Rupasingha et al. (2006) combine into a social capital index four dimensions of general reciprocity and cooperation, namely: (1) voter turnout in presidential elections; (2) response rates in U.S. census surveys; (3) the total number of nonprofit organizations; and (4) the total numbers of 10 types of social organizations for all U.S. counties. Data on social capital are available for 1990, 1997, 2005, 2009, and 2014. To extend the sample period, we conducted principle component analysis using updated information about voter turnout in presidential elections, response rates in census surveys and the total number of nonprofit organizations.[20] Similar to Rupasingha et al. (2006), we obtained the first principle component as a proxy for social capital in 2018.

[19] A comprehensive proxy for social capital, as opposed to individual indicators, is currently preferred in the empirical accounting and finance research. For example, empirical studies have associated high social capital with low levels of tax avoidance (Hasan et al., 2017a) and more favourable debt-contracting terms (Hasan et al., 2017b). Jha (2019) shows that firms in regions with high social capital have lower levels of discretionary accruals and much more readable annual reports.

[20] We were not able to find updated information about the number of 10 types of social organizations at the county level. Although this dimension is not included in the principle component analysis, the third dimension, namely the number of nonprofit organizations, captures social activities at the county level.

c. Other variables

To disentangle the role of social capital from other community characteristics, we include several social and demographic variables. In our empirical analysis, these variables capture the county-specific variation in the composition of social groups across the U.S. We obtain socio-demographic characteristics from the following editions of national U.S. census and surveys: (a) Decennial Census for 2000 and 2010; (b) American Community Surveys 3-year Detailed Tables (ACS) for the period of 2007 to 2009; (c) American Community Surveys 5-year Detailed Tables (ACS) for the period of 2010 to 2015; and (d) Election Administration and Voting Surveys. The main criterion in the selection of data sources is the frequency of county-level updates. When data series are not available for a certain year, we use a linear interpolation to create a balanced panel. Following prior research, our empirical tests include population, median household income, race, education and employment rates at the county level (see Appendix for variable definitions). To capture more comprehensively racial diversity across U.S. counties, we calculate Simpson's diversity index. This measure is the probability that two randomly selected individuals from the county population represent different racial groups.[21] We include the percentage of the population with high school diplomas as a proxy for educational attainment at the county level. Following Acharya et al. (2016), we instrument social capital with slavery. A proxy for the prevalence of slavery is the proportion of the population that was enslaved in 1860 using the 1860 U.S. Census dataset. The 1860 data on enslaved people represent the last record before chattel slavery was abolished in 1865.

4. Model specification and descriptive statistics

4.1. Model specification

Consistent with Costello et al. (2019), we model the likelihood of a catch-up restatement of bank *i* in quarter *t* using the following linear probability model:

$$\Pr(Restatement)_{itc} = \beta Social\ Capital_c + \Theta X_{it} + \Gamma Z_{ct} + \varphi_t + \zeta_i + \epsilon_{itc}$$

where *i* indicates the bank, *t* indicates the quarter, and *c* indicates the county. We use a linear probability model to obtain the estimates using bank fixed effects. Our results are similar when using a logit specification. Our main variable of interest is Social Capital, a continuous variable that we normalize [0,1]

[21] Simpson's diversity index is calculated as the complement of the frequency with which a racial group appears in the population, $R_i = 1 - p_i$ The diversity index is obtained as follows: *Racial diversity* $=\sum_{i=1}^{k} p_i\ (1 - p_i)$.

to facilitate the interpretation of cross-sectional empirical results.[22] U.S. counties with the highest (lowest) social capital receive a value of 1 (0). X*it* is a vector of time-varying characteristics of commercial banks, including the total assets, total deposits, percentage of residential loans, fraction of non-performing loans, liquidity ratio, and capitalization ratio. Z*ct* is a vector of time-varying characteristics of U.S. counties, including population, median household income, educational attainment, employment rates and racial diversity. In all of the regressions, we calculate cross-sectional heteroscedastic errors.

4.2. Descriptive statistics

Table 1 tabulates descriptive statistics for the main variables (Panel A), restatements by type (Panel B) and a correlation table (Panel C). Similar to Costello et al. (2019), 4.5% of bank-quarterly observations are restated. We find that the share of negative restatement is higher compared to that of positive restatements. As expected, the 2007-2009 financial crisis includes the largest share of restated financial data: approximately 12.8% of commercial banks recorded catch-up restatements in 2008. Commercial banks in our sample report, on average, $1.8 billion in total assets. The variance of total assets is significant ($34.9 billion), suggesting significant differences in size and likely business models in the universe of U.S. commercial banks. We find that, on average, 1.1% of the loans are non-performing and that most commercial banks are well capitalized.

In Panel B, we present the descriptive statistics of catch-up restatements by type. In our settings, all types of restatements are associated with revised estimates and hence low-quality disclosure. In further empirical analysis, we distinguish negative from positive restatements with the argument that the restatement effects on the level of capital and retained earnings is likely explained with different disclosure incentives. Costello et al. (2019), for instance, argue that negative restatements, i.e., restatements that reduce the level of capital and retained earnings, can be caused by strict regulators and explain the larger share of negative restatements with regulatory scrutiny over the financial reports of commercial banks. In Panel C, we show the correlation coefficients between restatements, social capital and other variables. Consistent with our expectations, we find that social capital is negatively correlated with our proxy for bank transparency, restatements.

Following Costello et al. (2019), we use a short description of the nature of the restatement available in the call reports to identify five main categories of restatements. For each category, we show the frequency

[22] Similar to control variables, we use a linear interpolation to create a balanced panel. Empirical results are similar when we extrapolate the values.

of restatements, the share of the restatements by type, and the respective magnitude of the restatements for each type as a proportion of risk-weighted assets. We find that restatements related to changes in accounting principles and restatements related to taxes make up a large proportion of the sample (approximately 42% of all restatements). However, the largest category of restatements relates to "other" accrual accounting estimates, representing 39% of the sample. We tabulate the most typical other restatements, with non-current item restatement comprising the largest identifiable group.

5. Empirical results: Bank transparency, social capital and other enforcement mechanisms

5.1. The effect of social capital on bank transparency

In Table 2, we tabulate our baseline regression results. We explain the likelihood of accounting restatements with the level of social capital, after controlling for known determinants of reporting quality. The empirical results confirm the prediction that social capital is associated with more transparent reporting by commercial banks, as proxied by the restatement of financial information in Call Reports. This finding is robust to the inclusion of bank-level (Columns (4) to (6)) and county-level characteristics (Columns (7) to (9)). We find that the effect of social capital on bank transparency is not conditional on the restatement type and that the probability of both negative and positive restatements is lower when the level of social capital is high.

Accounting research has proposed that restatements not only reduce the quality of financial information but could signal possible financial misconduct. To identify financial misconduct, accounting restatements have certain limitations. Karpoff et al. (2017), for instance, compare popular databases, which are often employed to study financial misconduct and fraud, for several quality dimensions: late initial revelation dates, scope limitations, potentially extraneous events, and complete or partial data omissions. Although the Call Data, which are specific to bank-related research, were not specifically examined by Karpoff et al. (2017), an equivalent dataset with non-financial firms was analysed: the GAO (U.S. Government Accountability Office) Financial Restatement Database. Similar to the Call Data, the GAO data cover accounting restatements. Karpoff et al. (2017) suggest that the GAO data include restatement events on a timely basis, but such events might not always qualify for financial fraud.

It is important to emphasize that, for the purposes of our empirical analysis, we do not need to prove intent or define the misreporting as fraud. In our settings, bank transparency is impaired by both intentional misreporting irregularities and likely unintentional simple accounting errors. The presence of accounting errors and associated restatements, independent of their intent, is the most visible side of opaque

financial reporting. Across different types of business organizations, internal accounting systems are commonly introduced with the objective of reducing the likelihood of accounting restatements and thereby the dissemination of misleading financial disclosure. Consistent with prior research, we view accounting restatements as a manifestation of weak internal control procedures, resulting in low-quality financial reporting.[23]

5.2. Social capital and bank transparency: Channels

In Table 2, we present empirical evidence consistent with the favourable effects of social capital on bank transparency. To examine more comprehensively the association between social capital and the reporting quality of commercial banks, we next conduct cross-sectional analysis. We conjecture that social capital influences bank transparency: (1) by improving information flows; and/or (2) by strengthening disclosure incentives for high-quality reporting.

To test empirically the information-flow explanation, we first estimate the effect of social capital on bank transparency conditional on organizational complexity. It is reasonable to assume that information flows, including those related to financial performance, are more difficult to manage when organizations are more complex. Accounting and finance research has usually measured organizational complexity by observing the number of business and/or geographic segments. Although banks can organize their business activities around different products and services offered to clients, this information is not publicly disclosed in Call reports. A detailed description of business activities at the segment level is available for publicly listed banks when such disclosures are deemed relevant to the capital market and, as a result, are included in regulatory filings to the Securities and Exchange Commission (SEC). Because our sample comprises privately held commercial banks, information about products or services organized by segments and offered at different geographic levels, including the number of branches at different locations, is not available.

Bank-specific research has suggested that the organizational complexity of financial firms: (a) is reflected in the legal structure (legal proxy for organizational complexity); and (b) can be inferred from the balance sheet structure (a financial proxy for organizational complexity). Because our sample comprises only commercial banks, we proxy for organizational complexity using financial indicators, namely: (a) goodwill to total assets; (b) number of bank accounts; (c) intangible assets to total assets; and (d) available-

[23] In the accounting literature, restatements have been associated with low quality of financial information. Although an argument can be made that such restatements effectively improve the quality of current reporting data, uncertainty regarding the quality of any disclosures provided by the organization explains the negative reaction to accounting restatements on the capital market.

for-sale financial assets.[24] Financial indicators are employed by regulators in their efforts to identify systematically important banks. The Basel Committee on Banking Supervision (BIS, 2011), for instance, uses several groups of indicators, including bank complexity, to assess the relative importance of certain banks to financial system stability. Consistent with the regulator approach, we use financial indicators that are likely to involve more complex accounting systems (i.e., number of client accounts) and decision-making processes (i.e., valuation and management of both identifiable and non-identifiable intangibles, as well as financial instruments).

Using the financial indicators that suggest organizational complexity, we conduct principal component analysis to extract a proxy for further empirical analysis. Eigenvalue in principal component analysis represents the amount of variance in the observed variables that each principal component explains. Using principal component analysis, we extract the first component from the financial indicators with the objective of capturing organizational complexity (Panel A of Table 3). The estimated principle-component model suggests that the first principle explains approximately 48% of the variable co-variance, and it is strongly correlated with financial indicators related to identifiable and non-identifiable (goodwill) intangible assets.

In Panel B of Table 3, we present regression coefficients obtained from cross-sectional analysis. Similar to the baseline model, we estimate the marginal effect of social capital using catch-up restatements as an explanatory variable, in total and by type. We predict that organizational complexity is associated with less transparent reporting, if not for other reasons, then because the information flows required to accurately aggregate accounting information in complex bank structures are likely to be more difficult to manage. To facilitate the interpretation of regression coefficients, we create an indicator variable for organizational complexity equal to 1 for commercial banks with principle component scores above the sample median. Empirical results are similar when using the first principle component scores instead.

In Columns (1) to (3), we first estimate the probability of accounting restatements (a proxy for bank transparency) with social capital and organizational complexity without interaction terms. Our results suggest that organizational complexity is associated with a higher probability of accounting restatements. Intangibles and goodwill, primarily captured in the first principle component, not only require bank management to make subjective valuation assumptions for reporting purposes, but they also demand

[24] To capture bank complexity by their legal structures, bank holding corporations (BHCs) are contrasted with commercial banks. In contrast to commercial banks, BHCs have large product offerings of financial services, including investment advice, real estate and insurance, organized across different fully or partially owned companies.

strategic decision making, including acquisitions and divestures of product offerings.[25] The estimated effect of social capital on bank transparency, conditional on organizational complexity, is tabulated in Columns (4) to (6) of Panel B (Table 3). We find that the role of social capital in accounting restatements is more pronounced for more complex bank structures. Costello et al. (2019) show that negative restatements have negative consequences for the level of required capital and document an asymmetric response to regulatory scrutiny, thereby explaining the large share of negative restatements. We find that the magnifying effect of organizational complexity on social capital is driven by negative restatements.

We next condition the effect of social capital on disclosure incentives with the argument that high social capital is likely to strengthen bank incentives to fairly represent their financial position in Call reports. Similar to organizational complexity, we must identify disclosure incentives, which are applicable to the top management of commercial banks. For publicly listed banks, capital market users determine reporting quality by quickly adjusting prices when disclosure choices are unexpectedly different from a benchmark group (i.e., peers or pre-determined standards). Using the information feedback implied in stock prices, executives would adjust reporting quality to levels at which the benefits outweigh the costs of required changes. Consistent with Shroff et al. (2017), we conjecture that commercial banks in the same state are affected by similar economic forces (e.g., common demand/supply shocks). As a result, peer disclosures are likely to provide strong incentives to meet certain standards of financial disclosure.

In Panel C of Table 3, we test whether the effect of social capital on bank transparency varies with disclosure incentives. In further empirical cross-sectional analysis, we include the number of disclosing peers as a proxy for information production by peers and thereby for disclosure pressure. The marginal effect of peers on the likelihood of restatements is negative and statistically significant across different specifications and restatement types. This result is consistent with the expectation that peers enable more accurate benchmark analysis. The higher that the number of disclosing peers is, the lower that the probability is that a bank restates financial information. We recognize that information production by competing banks might discourage managers to record catch-up restatements and thereby avoid greater scrutiny over their disclosure choices. Accounting research has typically associated competitive pressure with earnings-increasing manipulations, which are likely to be captured with negative restatements by commercial banks. We find that the effect of peers is symmetric across restatement types, and we interpret this result as consistent with the idea that peer pressure leads to greater reporting transparency. Furthermore, our results suggest that the effect of social capital on bank transparency is more pronounced when disclosure

[25] Examples of intangible assets on the balance sheet of commercial banks include purchased mortgage servicing rights, core depositor relationships, and credit card portfolios

incentives are strong. We argue that this finding is supportive of social capital as a rainmaker of transparent reporting practices in commercial banks.

5.3. Bank transparency and enforcement mechanisms: Social capital, regulation and market discipline

After providing empirical evidence for the channel, we examine how bank transparency is affected by the interplay among social capital, regulatory scrutiny and market-based enforcement mechanisms. Table 4 presents the estimated effects of social capital and regulation scrutiny, as alternative enforcement mechanisms, on accounting restatements. Following Costello et al. (2019), we build on Agarwal et al. (2014) and include a proxy for regulatory strictness. Agarwal et al. (2014) construct a state-level index, which reflects the average difference between the confidential regulatory ratings assigned by state regulators and the rating assigned to the same bank by federal regulators. According to Agarwal et al. (2014), a softer stance of state regulators relative to their federal counterparts is associated with negative outcomes, such as higher bank failure rates and a lower likelihood of repayment of funds borrowed under the Troubled Asset Relief Program (TARP). Prior studies suggest that financial institutions have to cope with contradicting market and regulatory demands (Lim et al., 2016). Power et al. (2013) argue, for example, that the pressure from regulators to improve risk culture may have unintended consequences in the financial sector (e.g., procedures and practices that create the illusion of good risk culture).

Agarwal et al. (2014) obtain the average difference in ranking over the period from 2001 to 2010. To be consistent, we limit our analysis to this sample period. It is not clear how regulatory strictness is expected to affect bank transparency. Costello et al. (2019) argue that strong regulators are associated with a larger number of restatements, particularly earnings-reducing negative restatements. However, it could be that strict regulators might not need to enforce the recording of accounting deficiencies if efficient governance systems in place effectively prevent them. Furthermore, it is difficult to ignore the idea that disclosure choices are affected by expectations, and bank managers might want to avoid the recognition of accounting restatements, thus signalling high quality to regulators and other stakeholders. Our empirical results are partially consistent with Costello et al. (2019); in contrast to their study, we find that weak state regulators are associated not only with negative but also with positive restatements (Column (3) of Table 4).

Contrary to the effect of regulatory leniency, prior studies have clearly predicted the interplay between regulatory enforcement and social capital: social norms have more pronounced effects when regulation is inefficient. Consistent with Costello et al. (2019), we conjecture that it is not desirable to have a lenient regulator who is not demanding report amendments. We find that the probability of accounting

restatements is higher for commercial banks located in high social capital counties with lenient regulators. This finding implies that the demand for regulatory strictness complements social capital in promoting reporting transparency, as reflected in high-quality call reports without catch-up restatements.

We further investigate the role of market discipline (related-party enforcement) in bank transparency, conditional on the level of social capital (first-party enforcement). In Table 5, we explain the changes in total deposits with social capital and accounting restatements recorded by the commercial bank. We argue that the level of trust in general determines not only how confident depositors feel in using bank services but also their perception of the reliability of accounting information in measuring financial system stability. Existing literature provides evidence consistent with the expectation that bank depositors are aware – at least partially – of the quality of information provided by banks, which affects their behaviour on a relatively timely basis (i.e., including "bank runs" and the closure of troubled banks). For example, Calomiris and Kahn (1991) show that sensitive uninsured depositors vote with their feet when unsatisfied with banks' actions and/or performance, thus emerging as the main monitoring mechanism through which to contain agency problems. Chen et al. (2020) find that deposit flows respond to reported earnings, consistent with the argument that depositors update their views about default risk upon the release of new financial information.

To facilitate the interpretation of empirical findings, we tabulate regression coefficients obtained using a continuous index and an indicator variable for social capital (Columns (1) to (3)). Our results show that, after controlling for other determinants of total deposits: (a) commercial banks record a significant reduction in total deposits following accounting restatements (i.e., a significant negative coefficient of Restatement); (b) the reduction in total deposits is larger for negative restatements (i.e., income-increasing manipulations in the past quarters); and (c) commercial banks in U.S. counties with high levels of social capital are less sensitive to accounting restatements (i.e., a significant positive coefficient of the interaction term between social capital and accounting restatements).

5.4. Peer influence on bank transparency: Accounting restatements, social capital and financial misconduct

We next evaluate the role of peer influence in bank incentives to provide transparent reporting. In Panel A of Table 6, we estimate how the overall level of transparency in the banking sector affects bank incentives to provide high-quality financial information without catch-up restatements. Our results suggest that the likelihood of accounting restatements, both positive and negative, is higher when other banks record catch-

up accounting adjustments. Consistent with the expectation that social capital promotes more transparent reports, we find that the peer effect is weaker for negative restatements in the presence of strong social norms.

To provide further empirical evidence for the peer effect, we relate social capital to the level of financial misconduct in the finance industry (Panel B of Table 6). We obtain misconduct disclosure cases by financial advisors and calculate the percentage of registered advisors accused of financial misconduct at the state level as a proxy for overall tolerance towards financial malpractices. In Columns (1) to (3), we relate accounting restatements and social capital to the aggregate state level of new misconduct cases in a given year (financial misconduct - a flow variable). Columns (4) to (6) present regression results when misconduct cases against financial advisors are accumulated over time, aggregated for each state (financial misconduct - a stock variable).

Empirical findings using the flow proxy are consistent with the expectation that bad corporate practices are associated with less transparent reporting. When the level of social capital is high, the proliferation of financial misconduct practices is less likely to influence less transparent reporting choices. Interestingly, there seems to be a critical level of misconduct cases at which social trust does not serve as a disciplining mechanism. If misconduct practices extend over time, then arguably the social penalty for such behaviour is likely to be weakly imposed. This finding is consistent with the dark side of social practices, according to which cosy relationships and high levels of trust, which characterize high social capital groups, can promote unethical behaviour at both the individual and organizational levels.

5.5. Bank transparency and social capital: Instrumental variable estimates

Our empirical findings suggest that social capital is a significant determinant of bank transparency and thereby arguably of financial stability. A concern could be raised that causal inferences are difficult to draw. Endogeneity problems are always present in research on social capital, which is accumulated gradually over decades with the support or despite the efforts of certain institutions and organizations. For a causal analysis, an instrument for social capital is required but difficult to find. Socio-economic factors, which are likely to explain variances in social trust and collaboration, can be reasonably expected to affect bank transparency, not least because of their impacts on information flows and disclosure incentives.

To take a step towards causal inferences, we estimate the role of social capital in bank transparency using an instrumental variable approach. Although instrumental variable estimates are often demanded in empirical economic research, a perfect instrument is impossible to find. An instrument is good if there are

well-grounded theoretical reasons to be so and not when the results of the endogeneity test are not significant. We believe that the only instrument that satisfies the above requirements for our empirical settings is the proportion of slaves in 1860. Acharya et al. (2016) argue that contemporary differences in political attitudes across counties in the American South in part trace their origins to slavery's prevalence more than 150 years ago. The areas that were more reliant on slavery in the Southern U.S. states are also characterized by relatively low social capital. Perhaps racial hostility and income inequality across racial groups contributed to the lower level of trust, mutual respect and cooperation among community members.[26]

In Table 7, we tabulate our instrumental variable estimates of the causal relationship between social capital and accounting restatements as a proxy for bank transparency. Similar to Acharya et al. (2016), the percentage of enslaved individuals at the county level is obtained from the last available records in Census surveys prior to the abolition of slavery in 1865. In Column (1), we explain the level of social capital (over the period from 2001 to 2018) with the slavery prevalence in 1860. Consistent with prior research on the economic consequences of slavery, we find that social capital is lower for U.S. counties where slavery was prevalent. In Columns (2) to (4), we tabulate the regression coefficient with instrumented social capital. We have a single instrument, and F-statistics (greater 20) are the only available tool to infer its relevance. Our review suggests that slavery as an instrument for social capital is not only theoretically but also statistically, relevant (F(18, 431842)= 45767.69). Instrumental variable estimates show that commercial banks in U.S.

[26] There is large empirical support for an association between slavery and the development of social norms in different geographic regions and, by extension, regional economic growth rates (e.g., with a historical account of the economic developments in the U.S. with the rise and fall of African slavery, Wright, 2006). Nunn (2008) uses data from shipping records and historical documents reporting slave ethnicities to construct estimates of the number of slaves exported from each country during Africa's slave trades; his results show that there was a robust negative relationship between the number of slaves exported from a country and current economic performance, suggesting that slave trades had an adverse effect on economic development. Using historical data on slave ownership, Bertocchi and Dimico (2014) show that the current level of income inequality across U.S. counties is determined by slavery rates. More recently, Akcigit et al. (2017) relate historical U.S. patents to state- and county-level aggregates to inventors to Federal Censuses between 1880 and 1940, with the objective of identifying the drivers of U.S. innovation and long-term economic growth. They argue that the openness of a society to innovation and economic growth could be seen from its approach to slavery for the following reasons: (a) the southern economy of the U.S. was constrained by a lack of technological innovation in agriculture and manufacturing because of slavery (Wright et al., 1986), and (b) slavery could undermine trust, having a persistent effect on beliefs and behaviour (Nunn and Wantchekon, 2011), and the lack of cultural freedom to deviate from established norms could strongly inhibit innovation. Using comprehensive historical data on patented innovation, Akcigit et al. (2017) find that states associated with high levels of slave ownership before the Civil War were less inventive, consistent with the view that the slave ownership rate reflected a society's openness to change, as an inductor of innovation and technological progress. Bazzi et al. (2020) use the prevalence of slavery in their empirical analysis and showed that U.S. counties with longer historical exposure to frontier conditions exhibited greater individualism and opposition to redistribution and regulation.

counties with high social capital have a significantly lower probability of catch-up restatements. This interpretation is consistent with the prior literature reporting that social capital might have undesirable features, but its effect on economic development, which is facilitated by more transparent disclosure in our empirical settings, is beneficial.

6. Conclusions and implications

It is critical for the financial stability to have a timely and precise public signal about the financial conditions and risk exposures of commercial banks. In this study, we examine how social capital affects the quality of this signal by focusing on bank transparency and using catch-up accounting adjustments as a proxy. We conjecture that social capital creates both conditions and incentives for bank managers to disclose transparently their true financial position, enabling accurate regulatory assessments or capital market scrutiny and thereby indirectly promoting financial stability. The positive effect of social capital on bank transparency has relevant policy implications. Because regulatory supervision is not always effective, social capital, as an alternative mechanism through which to promote financial stability, can promote stability and soundness in the financial sector. When supervisory attention is needed, social capital can also serve as a filtering criterion for regulatory intensity, thus improving resource allocation decisions in bank supervision, especially in the presence of resource constraints (e.g., financial crisis).

We propose that high social capital facilitates information flows in inherently opaque bank organizations and provides strong incentives to make financial reporting choices associated with transparency. We find strong empirical support for the prediction that social capital has a positive effect on bank transparency. Our findings suggest that commercial banks are less likely to record accounting restatements when social capital is high and that this effect is more pronounced when commercial banks are organizationally complex or face strong disclosure incentives.

We also examine the interplay among social capital ("first-party enforcement"), regulatory scrutiny ("third-party enforcement"), and market-based enforcement mechanisms ("related-party enforcement"). Our results show that social capital can not only reduce the demand for regulatory intervention but also soften a market-based penalty (using changes in total deposits as a proxy for market reaction). We also show that financial malpractices are likely to spread across peers and that social capital can reduce the spread of unethical reporting practices, thus serving a disciplining role on the market for corporate misconduct.

Considered together, our results suggest that social capital plays a relevant role in promoting financial system stability. It can effectively improve reporting transparency when other mechanisms – market-based or regulatory – are either ineffective or not applicable. Our findings show that high social capital can promote economic developments by making high-quality financial information available for assessments by bank stakeholders.

Appendix: Variable definitions

Main Dependent Variables (Catch-up accounting restatements)

- **Restatement** is an indicator variable that takes the value of one if the bank makes a restatement on its prior years' Reports of Condition and Income due to corrections of material accounting errors and changes in accounting principles.
- **Negative Restatement** is an indicator variable that takes the value of one if the bank makes a *negative* restatement on its prior years' Reports of Condition and Income due to corrections of material accounting errors and changes in accounting principles.
- **Positive Restatement** is an indicator variable that takes the value of one if the bank makes a *positive* restatement on its prior years' Reports of Condition and Income due to corrections of material accounting errors and changes in accounting principles.

Other Variables

Social capital

Social capital is an index that represents the first principal component obtained using four dimensions of general reciprocity and cooperation, namely (1) voter turnouts in presidential elections, (2) response rates in U.S. census surveys, (3) the total numbers of nonprofit organizations, and (4) the total numbers of 10 types of social organizations for all U.S. counties (Rupasingha et al., 2006).

Social capital$_{0/1}$ is equal to one for commercial banks based in counties with social capital scores above the sample median and zero otherwise.

Bank-specific controls

- **Total Assets** is the natural logarithm of total assets of a bank in $000s.
- **Total Deposits** is the natural logarithm of total deposits held by a bank in $000s.
- **Residential loans** is the ratio of residential real estate loans to total loans.
- **Non-performing Loans** is the ratio of non-performing loans (non-accrual) and loans 90 days or more past due to total loans.
- **Real estate** is the ratio of other real estate owned and acquired in the process of obtaining possession of collateral to total assets.
- **Unused Commitment** is the ratio of unused commitments to total unused commitments and total loans.
- **Well Capitalized** is an indicator variable if the Tier 1 Capital Ratio of the bank is above the well-capitalized threshold as defined by the FDIC.
- **Complex** is an index that represents the first principal component obtained using four dimensions of organizational complexity, namely (1) goodwill to total assets, (2) number of bank accounts, (3) intangible assets to total assets, and (4) available-for-sale securities to total assets.

State- or county-level controls

- **Median income** is the median household income in a given county.
- **Employment** is the employment rate in a given county.
- **High school** is the percentage of population with high school diplomas in a given county.
- **Racial diversity** is the probability that two randomly selected individuals from the county population represent different racial groups (i.e., Simpson's diversity index).

- **Number peers** is the number of commercial banks that are located in the given state and file a Call Report in a given quarter.
- **Leniency Index** is a measure derived by Agarwal et al. (2014) that captures the average difference between the federal regulator and each state regulator in the bank regulatory ratings assigned to the same bank.
- **% Restat peers** is the proportion of commercial banks that are located in the given state and record a catch-up accounting adjustment in a Call Report in a given quarter.
- **% Misconduct** is the proportion of financial advisors who are located in a given state and record a disclosure event (misconduct case) in a regulatory filing to FINRA.
- **% Slave1860** is the proportion of the population in a given state that was enslaved in 1860 according to 1860 U.S. Census data.

Accounting restatements by area

- **Error Restatements** are restatements of prior years' Reports of Condition and Income that are associated with mathematical or rounding errors.
- **Principle Restatements** are restatements of prior years' Reports of Condition and Income that are associated with changes in accounting principles.
- **Audit Restatements** are restatements of prior years' Reports of Condition and Income that are associated with the action of auditors.
- **Tax Restatements** are restatements of prior years' Reports of Condition and Income that are associated with tax-related issues.
- **Other Accrual Accounting Restatements** are restatements of prior years' Reports of Condition and Income that are associated with errors in accrual accounting. This category includes the following types:

  - *Loan Loss Accounting Restatements* are restatements of prior years' Reports of Condition and Income that are associated with loan loss accounting errors.

  - *Securities Portfolio Restatements* are restatements of prior years' Reports of Condition and Income that are associated with accounting errors in the securities and investment portfolio of the bank.

  - *Non-current Items Restatements* are restatements of prior years' Reports of Condition and Income that are associated with accounting errors in the valuation of non-current balance sheet items.

  - *Consolidation Accounting Restatements* are restatements of prior years' Reports of Condition and Income that are associated with accounting errors related to consolidation accounting.

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Table 1: Descriptive statistics

Panel A: Main variables

	Count	Mean	St.Dev.	p25	p50	p75
Restatements	432,769	0.045	0.208	0.000	0.000	0.000
Negative restatements	432,769	0.026	0.160	0.000	0.000	0.000
Positive restatements	432,769	0.019	0.136	0.000	0.000	0.000
Social capital	432,769	0.209	0.085	0.146	0.193	0.256
Total assets (in thousand)	432,769	1,886.81	34,891.45	63.34	136.85	328.38
Total deposits (in thousand)	432,769	1,250.07	21,445.16	53.30	114.08	269.69
Residential loans	432,769	0.304	0.202	0.158	0.267	0.404
Non-performing loans	432,769	0.011	0.022	0.001	0.005	0.013
Real estate	432,769	0.003	0.009	0.000	0.001	0.003
Unused commitment	432,769	0.075	0.085	0.000	0.056	0.129
Well capitalized	432,769	0.996	0.060	1.000	1.000	1.000
Median income	432,769	46,024	12,491	37,491	44,091	52,140
Employment	432,769	47.77	17.86	36.81	53.70	61.40
High school	432,769	26.55	11.72	17.85	28.00	35.90
Racial diversity	432,769	0.25	0.18	0.09	0.21	0.40

Panel B: Restatements by Type

	% Restatements	Share Negative Restat.	Average Amount
Error Restatements	1.66	38.51	-0.02
Principle Restatements	16.48	79.96	-0.16
Audit Restatements	9.13	44.75	-0.19
Tax Restatements	25.61	46.72	-0.16
Other Accrual Accounting Restatements:	38.64	55.01	-0.18
- *Loan Loss Accounting Restatements*	0.83	55.56	-0.48
- *Securities Portfolio Restatements*	2.88	52.68	-0.25
- *Non-current Items Restatements*	5.64	48.49	-0.17
- *Consolidation Accounting Restatements*	1.95	44.85	-0.14

Notes: The table presents descriptive statistics for the entire sample. Panel A tabulates descriptive statistics of our main variables. Panel B presents the distribution of restatements by type. The baseline sample comprises 8,522 unique U.S. commercial banks with headquarters in 2,573 distinct counties over the over the period 2001-2018. Variables are defined in the Appendix.

Panel C: Correlation coefficients

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Restatements	1.000												
Social capital	-0.012*	1.000											
Total assets	0.024*	-0.198*	1.000										
Total deposits	0.029*	-0.195*	0.983*	1.000									
Residential loans	0.013*	-0.133*	0.012*	0.011*	1.000								
Non-performing loans	0.021*	-0.143*	0.049*	0.047*	0.016*	1.000							
Real estate	0.001	-0.167*	0.004*	0.028*	-0.014*	0.418*	1.000						
Unused commitment	0.040*	0.109*	0.133*	0.132*	-0.178*	-0.103*	-0.133*	1.000					
Well capitalized	-0.009*	0.043*	-0.001	-0.004*	-0.006*	-0.190*	-0.247*	0.039*	1.000				
Median income	-0.004*	0.033*	0.305*	0.296*	0.088*	0.052*	0.048*	-0.072*	-0.019*	1.000			
Population	0.029*	-0.313*	0.476*	0.457*	0.159*	0.072*	0.070*	0.145*	-0.035*	0.491*	1.000		
Employment	0.005*	-0.197*	0.239*	0.235*	-0.002	0.122*	0.120*	-0.206*	-0.018*	0.565*	0.224*	1.000	
High school	-0.002	-0.210*	-0.010*	-0.004*	0.078*	0.118*	0.099*	-0.362*	-0.004*	0.047*	-0.279*	0.646*	1.000
Racial diversity	0.037*	-0.373*	0.309*	0.301*	-0.043*	0.091*	0.087*	0.088*	-0.036*	0.067*	0.581*	0.045*	-0.205*

* $p<0.01$

Table 2: Does social capital affect bank transparency? (1)

	Likelihood of Accounting Restatement								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dep. Variable	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat
Social capital	-0.0401***	-0.0185**	-0.0215***	-0.0415***	-0.0186**	-0.0229***	-0.0371***	-0.0178**	-0.0193***
	(0.009)	(0.007)	(0.006)	(0.009)	(0.007)	(0.006)	(0.010)	(0.008)	(0.007)
Total assets				-0.0141***	-0.0065***	-0.0076***	-0.0134***	-0.0060**	-0.0074***
				(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Total deposits				0.0158***	0.0108***	0.0050***	0.0151***	0.0103***	0.0048***
				(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Residential loans				-0.0141***	-0.0144***	0.0003	-0.0123**	-0.0138***	0.0014
				(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)
Non-performing loans				0.0703***	0.0176	0.0528***	0.0593***	0.0125	0.0468***
				(0.021)	(0.015)	(0.016)	(0.021)	(0.015)	(0.016)
Real estate				0.0105	0.0372	-0.0267	0.0081	0.0403	-0.0322
				(0.049)	(0.038)	(0.032)	(0.049)	(0.038)	(0.032)
Unused commitment				0.0113	0.0083	0.0030	0.0167**	0.0111*	0.0056
				(0.008)	(0.007)	(0.006)	(0.008)	(0.007)	(0.006)
Well capitalized				-0.0134*	-0.0116**	-0.0018	-0.0138**	-0.0119**	-0.0019
				(0.007)	(0.006)	(0.005)	(0.007)	(0.006)	(0.005)
Median income							0.0555***	0.0420***	0.0134***
							(0.006)	(0.005)	(0.004)
Population							-0.0080***	-0.0052***	-0.0028***
							(0.001)	(0.001)	(0.001)
Employment							-0.0004***	-0.0003***	-0.0001***
							(0.000)	(0.000)	(0.000)
High school							-0.0002*	-0.0000	-0.0002**
							(0.000)	(0.000)	(0.000)
Racial diversity							0.0841***	0.0414***	0.0427***
							(0.012)	(0.009)	(0.008)
Observations	432,769	432,769	432,769	432,769	432,769	432,769	432,769	432,769	432,769
R^2	0.173	0.129	0.124	0.173	0.130	0.124	0.174	0.130	0.124
Quarter Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents regression results on the relationship between social capital and bank transparency (using accounting restatements as a proxy). Negative (positive) restatements reduce (increase) the level of capital and retained earnings. All variables are defined in the Appendix.

Table 3: Which are the channels through which social capital affects reporting transparency?

Panel A: Organizational complexity - principal component analysis

A.1. Principal components/correlation

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	1.941	.941	0.485	0.485
PC2	.999	.012	0.250	0.735
PC3	.987	.914	0.247	0.982
PC4	.073	.	0.018	1.000

A.2. Principal components (eigenvectors)

Variable	PC1	PC2	PC3	PC4
Goodwill	0.7017	0.0558	-0.0701	0.7068
Number accounts	0.1120	-0.3086	0.9445	0.0068
Intangible	0.7023	0.0512	-0.0614	-0.7074
Available-for-sale	-0.0427	0.9482	0.3149	-0.0012

Panel B: Social capital, information flows and bank transparency: Does social capital effect reporting transparency of more complex commercial banks?

First principle components // Likelihood of Accounting Restatement						
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat
Social capital	-0.0541**	-0.0183	-0.0358**	-0.0605**	-0.0252	-0.0353**
	(0.024)	(0.020)	(0.016)	(0.025)	(0.020)	(0.016)
$Complex_{0/1}$	0.0067***	0.0028***	0.0039***	0.0164***	0.0132***	0.0032***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)
Social capital×$Complex_{0/1}$				-0.0496***	-0.0533***	0.0037
				(0.009)	(0.007)	(0.005)
Observations	266,548	266,548	266,548	266,548	266,548	266,548
R^2	0.222	0.167	0.172	0.222	0.167	0.172
Control variables (Table 1)	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel C: Social capital, disclosure incentives and bank transparency: Does social capital affect reporting transparency of commercial banks with strong disclosure incentives?

Likelihood of Accounting Restatement						
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat
Social capital	-0.0290**	-0.0135	-0.0156*	0.0614*	-0.0088	0.0702***
	(0.013)	(0.010)	(0.009)	(0.034)	(0.024)	(0.025)
Number peers	-0.0137***	-0.0089***	-0.0048***	-0.0106***	-0.0088***	-0.0018
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)
Social capital × Number peers				-0.0173***	-0.0009	-0.0164***
				(0.006)	(0.004)	(0.004)
Observations	432,769	432,769	432,769	432,769	432,769	432,769
R^2	0.174	0.130	0.124	0.174	0.130	0.124
Control variables (Table 1)	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents regression results on the expected channels thought which social capital affects bank transparency. Panel A tabulates the results of the principle component analysis. Panel B shows the empirical results on the effect of social capital when banks are relatively more complex. *Complex* $_{0/1}$ is an indicator variable equal to one for commercial banks with complexity scores above the sample median, and zero - otherwise. Panel C tabulates the empirical results on the effect of

social capital when the disclosure incentives are relatively strong. *Number peers* is equal to the number of commercial banks in the same state that are presenting Call reports in a given quarter. Other variables are defined in the Appendix.

Table 4: Does social capital affect bank transparency when state regulators are lenient?

	Likelihood of Accounting Restatement					
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat
Social capital	-0.0371	0.0034	-0.0406**	-0.1464***	-0.0236	-0.1228***
	(0.024)	(0.019)	(0.016)	(0.040)	(0.031)	(0.028)
Reg. Leniency Index$_{0/1}$	-0.0193***	-0.0129**	-0.0064**	-0.0370***	-0.0173***	-0.0197***
	(0.006)	(0.005)	(0.003)	(0.008)	(0.006)	(0.005)
Social capital×Reg. Leniency Index$_{0/1}$				0.0785***	0.0194	0.0591***
				(0.023)	(0.018)	(0.015)
Observations	261,865	261,865	261,865	261,865	261,865	261,865
R^2	0.223	0.168	0.175	0.224	0.168	0.175
Control variables (Table 2)	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents regression results on the effect of social capital and regulatory leniency on bank transparency. *Reg. Leniency Index* $_{0/1}$ is equal to 1 for state regulators that have leniency score above the sample median, and zero - otherwise. A high leniency score suggests that state regulators are not strict in their enforcement activities as compared to federal regulators. Other variables are defined in the Appendix. Because of data availability, the regression coefficients in this table are estimated using sample observations over the period 2001-2014.

Table 5: Does social capital affect the market response to restated financial data?

	Market reaction to restatements					
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable	ΔDeposits/Total assets					
Social capital$_{0/1}$	-0.0065	-0.0044	0.0041			
	(0.028)	(0.028)	(0.028)			
Social capital				-0.5225*	-0.5077*	-0.4765*
				(0.288)	(0.287)	(0.287)
Restat$_{year-1}$	-0.2372***			-0.3538***		
	(0.045)			(0.090)		
Neg Restat$_{year-1}$		-0.2738***			-0.4603***	
		(0.057)			(0.119)	
Pos Restat$_{year-1}$			-0.1448**			-0.1782
			(0.070)			(0.130)
Social capital$_{0/1}$×Restat$_{year-1}$	0.2554***					
	(0.067)					
Social capital$_{0/1}$×Neg Restat$_{year-1}$		0.3648***				
		(0.086)				
Social capital$_{0/1}$×Pos Restat$_{year-1}$			0.0601			
			(0.102)			
Social capital×Restat$_{year-1}$				1.1947***		
				(0.420)		
Social capital×Neg Restat$_{year-1}$					1.8183***	
					(0.564)	
Social capital×Pos Restat$_{year-1}$						0.3086
						(0.597)
Total assets	1.4602***	1.4606***	1.4591***	1.4606***	1.4612***	1.4595***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Residential loans	0.0268	0.0238	0.0265	0.0268	0.0264	0.0282
	(0.128)	(0.128)	(0.128)	(0.128)	(0.128)	(0.128)
Non-performing loans	-16.2420***	-16.2398***	-16.2468***	-16.2111***	-16.2097***	-16.2205***
	(0.570)	(0.570)	(0.570)	(0.570)	(0.570)	(0.570)
Real estate	-29.9376***	-29.9248***	-29.9346***	-29.8729***	-29.8708***	-29.8805***
	(1.105)	(1.105)	(1.105)	(1.105)	(1.105)	(1.105)
Unused commitment	1.7765***	1.7724***	1.7779***	1.7807***	1.7781***	1.7800***
	(0.210)	(0.210)	(0.210)	(0.210)	(0.210)	(0.210)
Well capitalized	0.7719***	0.7721***	0.7720***	0.7707***	0.7700***	0.7709***
	(0.135)	(0.135)	(0.135)	(0.135)	(0.135)	(0.135)
Median income	-1.0532***	-1.0557***	-1.0621***	-1.0641***	-1.0649***	-1.0738***
	(0.144)	(0.144)	(0.144)	(0.144)	(0.144)	(0.144)
Population	-0.1518***	-0.1512***	-0.1504***	-0.1515***	-0.1509***	-0.1499***
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Employment	0.0022	0.0022	0.0023	0.0018	0.0018	0.0018
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
High school	0.0163***	0.0163***	0.0163***	0.0161***	0.0161***	0.0161***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Racial diversity	1.1187***	1.1117***	1.1018***	1.0682***	1.0644***	1.0562***
	(0.289)	(0.288)	(0.289)	(0.290)	(0.290)	(0.290)
Observations	399,055	399,055	399,055	399,055	399,055	399,055
R^2	0.098	0.098	0.098	0.098	0.098	0.098
Quarter, Regulator, Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents regression results on the market response to accounting restatements. The dependent variable is changes in total deposits scaled by total assets. The lagged response to accounting restatements recorded in the prior year5is1captured in the coefficient of $Restat_{year-1}$ for all restatements, $Pos\ Restat_{year-1}$ - for positive restatements, and $Neg\ Restat_{year-1}$ for negative restatements. *Social capital* $_{0/1}$ is an indicator variable equal to 1 for counties with social capital index score above the sample median. Other variables are defined in the Appendix.

Table 6: Does social capital mitigate the bad influence of peers?

Panel A: Bank transparency, social capital and peer influence

Dep.variable	(1) Restat	(2) Neg Restat	(3) Pos Restat
Social capital	0.0162	0.0142	0.0061
	(0.014)	(0.011)	(0.010)
% Restat peers$_{restat}$	1.0169***		
	(0.041)		
Social capital× % Restat peers$_{restat}$	-0.1376		
	(0.190)		
% Restat peers$_{negrestat}$		1.0870***	
		(0.052)	
Social capital× % Restat peers$_{negrestat}$		-0.4882*	
		(0.259)	
% Restat peers$_{posrestat}$			0.9535***
			(0.061)
Social capital× % Restat peers$_{posrestat}$			0.0762
			(0.262)
Number of peers	-0.0025*	-0.0018	-0.0005
	(0.001)	(0.001)	(0.001)
Observations	432,769	432,769	432,769
R^2	0.190	0.148	0.135
Controls	Yes	Yes	Yes
Quarter Fixed-Effects	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B: Bank transparency, social capital and financial misconduct

	(1)	(2)	(3)	(4)	(5)	(6)
Dep.variable	Restat	Neg Restat	Pos Restat	Restat	Neg Restat	Pos Restat
Social capital	-0.2223***	-0.2374***	0.0151	-1.4244***	-1.1110***	-0.3134***
	(0.049)	(0.041)	(0.029)	(0.116)	(0.098)	(0.071)
% Misconduct$_{year}$	2.3876***	1.1960**	1.1916***			
	(0.597)	(0.523)	(0.330)			
Social capital×% Misconduct$_{year}$	-11.0556***	-2.4807	-8.5749***			
	(2.545)	(2.227)	(1.407)			
% Misconduct$_{accum}$				-3.0765***	-2.2095***	-0.8670***
				(0.300)	(0.250)	(0.188)
Social capital×% Misconduct$_{accum}$				15.0747***	11.6511***	3.4236***
				(1.412)	(1.185)	(0.882)
Observations	141,227	141,227	141,227	141,227	141,227	141,227
R^2	0.241	0.200	0.174	0.242	0.201	0.174
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Regulator Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents the estimated peer effect on bank transparency. In Panel A, the share of restatements by peers located in the same state is included as an proxy of peer effect. In Panel B, the share of financial advisors with misconduct cases is calculated at the state level and used to proxy financial misconduct in the financial industry. Because of data availability, the regression coefficients in Panel B are estimated using sample observations over the period 2007-2015. Other variables are defined in the Appendix.

Table 7: Does social capital affects bank transparency? (2) Instrumental variable estimates

Likelihood of Accounting Restatement				
	(1)	(2)	(3)	(4)
Dep.variable	Social Capital	Restat	Pos Restat	Neg Restat
% Slave1860	-0.1376***			
	(0.001)			
Predicted Social Capital		-0.8434***	-0.4827***	-0.3607***
		(0.117)	(0.079)	(0.090)
Total deposits		0.0237***	0.0087***	0.0150***
		(0.002)	(0.001)	(0.001)
Total assets		-0.0216***	-0.0082***	-0.0134***
		(0.002)	(0.001)	(0.001)
Residential loans		0.0177***	0.0075***	0.0102***
		(0.002)	(0.002)	(0.002)
Non-performing loans		0.1372***	0.0877***	0.0495***
		(0.019)	(0.014)	(0.014)
Real estate		0.0289	0.0022	0.0267
		(0.040)	(0.026)	(0.032)
Unused commitment		0.0104	0.0141***	-0.0037
		(0.007)	(0.005)	(0.006)
Well capitalized		-0.0214***	-0.0014	-0.0200***
		(0.007)	(0.004)	(0.006)
Median income		0.0646***	0.0200***	0.0446***
		(0.007)	(0.005)	(0.005)
Population		-0.0372***	-0.0234***	-0.0138**
		(0.008)	(0.005)	(0.006)
Employment		-0.0003***	-0.0001*	-0.0002***
		(0.000)	(0.000)	(0.000)
High school		-0.0005***	-0.0003***	-0.0002**
		(0.000)	(0.000)	(0.000)
Racial diversity		0.0985***	0.0475***	0.0510***
		(0.014)	(0.010)	(0.010)
Observations	431,861	431,861	431,861	431,861
R^2	0.667	0.073	0.046	0.058
Year Fixed-Effects	Yes	Yes	Yes	Yes
Quarter Fixed-Effects		Yes	Yes	Yes
Regulator Fixed-Effects		Yes	Yes	Yes
County Fixed-Effects		Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The table presents the instrumental variable estimates. At the first stage (Column (1)), social capital is explained with the proportion of enslaved population at the state level in 1860. Column (2) to (4) present the estimated effect of the instrumented social capital on bank transparency. Variables are defined in the Appendix.