Culture and the capital–performance nexus in dual banking systems

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Abstract

While recent surveys have taken a special interest in culture to explain the failure of existing regulation, empirical evidence on the role of culture in influencing the regulation-performance link is still largely unexplored. In this paper, we ask the following: Should regulators and policy makers make room for culture as an effective tool for a successful bank regulatory environment? We identify three proxies for cultural values derived from Hofstede (1980, 2001) and the World Values Survey and investigate to what extent individualism, masculinity, and trust can enhance or impede the regulation-performance link for conventional and Islamic banks. Analyzing a panel of 729 banks operating in 33 countries from 1999 to 2013, our paper provides empirical evidence that cultural values enhance the regulation-performance link for the two bank types. Our results have important policy implications: our paper represents a first initiative and provides evidence that culture has merits and can be used as an additional tool to implement regulatory guidelines in a successful way.

JEL classification: G21, G28

Keywords: Regulatory capital; regulatory environment; individualism; masculinity; trust; profitability

1. Introduction

Should regulators and policy makers make room for culture as an effective tool for a successful bank regulatory environment? The conventional banking literature has focused on the impact of capital, monitoring, and supervision on bank performance (Barth et al., 2013; Demirguc-Kunt et al., 2013) and risk-taking (Klomp and De Haan, 2012; Li, 2017; Brandao-Marques, 2018). The Islamic banking literature has compared the financial soundness of conventional and Islamic banks (Beck et al., 2013; Abedifar et al., 2013; Bitar et al., 2017a) and has recently shown interest in examining the impact of regulatory environment on bank stability (Weill et al., 2017; Bitar et al., 2017b). However, the question of whether cultural values can influence the association between capital, regulation, and bank performance (i.e., regulation-performance link) is still largely unexplored.[1]

In this paper, we focus on two related issues: First, we investigate whether regulatory capital along with strong regulatory environment have the same effect on the performance of conventional and Islamic banks, and second, we study whether cultural values can influence the regulation-performance link between the two bank types.

Our investigation relates to three streams in the literature. The first stream studies whether formal institutions (measured using bank regulation, supervision, and monitoring) affect bank financial soundness. The banking literature provides abundant yet inconclusive evidence on the impact of regulatory capital, liquidity requirements, and strong formal institutions on bank performance and risk-taking (Klomp and De Haan, 2012; Barth et al., 2013; Demirguc-Kunt et al., 2013; Vazquez and Federico, 2015; Bitar et al., 2018; Brandao-Marques, 2018). However, studying whether regulatory capital along with strong formal institutions can affect the performance of banks in dual banking systems is also an important issue that requires more attention. The second stream of literature is relatively new and investigates whether informal institutions (often measured by cultural values, religion, preferences, and norms) affect bank financial soundness. While Boubakri et al. (2017) show that banks in high uncertainty avoidance, high power distance, and highly collectivist

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[1] In the following sections, we alternate between the uses of two terms: "the association between the use of regulatory capital, regulatory environment, and bank performance" and "the regulation-performance link". Both terms represent the same relationship.

cultures have higher interest margins and return on equity during the 2007–2009 financial crisis, Ashraf et al. (2016) find that banks are less stable in low uncertainty avoidance, low power distance, and highly individualist cultures. More recently, Fongáčová et al. (2017) provide evidence that individuals with higher income, access to television, and religiosity have higher trust in banks. These two streams of literature examine separately the impact of formal and informal institutions on bank financial soundness. Our study combines both streams of research and asks whether cultural values (or informal institutions) can enhance the regulation (or formal institutions)-performance link for banks in dual banking systems. Finally, the third stream of literature is specific to the Islamic banking context. Two studies by Zins and Weill (2017) and Bitar et al. (2017c) show that applying a one-size fits all regulation can be harmful and thus less desirable in an Islamic banking context. Their findings suggest that the implementation of Basel II and the requirements to hold higher capital and liquidity ratios enlarge the risk and efficiency gaps between the two bank types at the expense of Islamic banks. More recently, Bitar et al. (2017b) find that compliance with Basel Core Principles (BCPs) improves the stability of conventional banks while the same effect is only marginal on the stability of Islamic banks. These studies mainly rely on questionnaire-based measures and on what is mentioned by formal institutions' books and the country's assigned laws. This can create biased measures and may underestimate the true variation in what is being executed. A more practical assessment is thus to complement formal institutional factors by controlling for various informal institutional factors such as cultural values.

A prominent conjecture put forth in this paper is that while banking regulation can affect the risk and performance profiles of conventional and Islamic banks differently, we believe that culture can potentially explain some of these differences. Accordingly, finding the appropriate cultural values can also determine whether and how actions should be taken to fix and improve existing regulatory guidelines.

Using data on regulatory capital, regulatory environment, and cultural values for 729 conventional and Islamic banks operating in 33 countries and covering the period from 1999 to 2013, our multivariate regressions and system GMM estimations provide several new insights. We find that regulatory capital and regulatory environment have a positive and significant effect on the

performance of conventional banks, while this effect is either marginal or insignificant on the performance of Islamic banks. In addition, the effect of regulatory capital and regulatory environment on bank performance is reinforced by the presence of the appropriate cultural values. Precisely, we find that the regulation-performance link is stronger on conventional banks in countries with cultural values that are more trustful, less individualistic, and less masculine while the culture effect is inconsistent for Islamic banks. In addition, differences in the effect of capital and regulatory environment on the performance of the two bank types – as expressed in recent studies such as Bitar et al. (2017b) and Bitar et al. (2017c) – can be explained by differences in the effect of cultural values on the performance of these banks. Overall, we show that less individualism, less masculinity, and higher trust cultural values appear to produce a stronger association between regulation and bank performance. This association appears to be stronger on the performance of conventional banks than on the performance of Islamic banks. Our results are robust to alternative estimation techniques, including alternative dependent and independent variables, alternative cultural measures, a system GMM and a Heckman estimation technique to control for endogeneity and selection bias, and a propensity score matching technique (PSM) to reduce any bias in sample size.

This paper has three important contributions. First, it provides robust evidence on the influence of cultural values on the regulation-performance link. While recent literature argues that conventional banking regulation can increase the risk and the performance gaps between the two bank types at the expense of Islamic banks if it does take into consideration some of the Islamic banks' specificities, we find that implementing the appropriate cultural values can reduce these gaps and enhance the regulation-performance link between the two bank types. Second, this investigation shows that performance of a dual banking system can be enhanced with cultural values that are more trustful, less individualistic, and less masculine. Finally, we add to the recent discussions by rating agencies (e.g. Deloitte, 2013; PriceWaterHouseCoopers, 2014; KPMG, 2016) and show that developing the appropriate cultural values can provide regulators and policy makers with an additional tool to create more favorable conditions to implement regulatory guidelines in a successful way. This paper therefore constitutes an empirical response to this discussion.

The remainder of this paper is organized as follows. Section 2 provides a brief literature review on cultural values and derives our hypotheses. Section 3 describes the sample, the econometric design, and the variables involved and provides some descriptive statistics. Section 4 presents the empirical results while section 5 reports the robustness checks. Section 6 concludes.

2. Background and hypotheses development

In this paper, we follow a two-stage approach. In the first stage, we build on the existing literature on bank regulation and supervision (e.g. Klomp and De Haan, 2012; Barth et al., 2013; Li, 2017; Brandao-Marques, 2018) and examine the effect of regulatory capital and regulatory environment on bank performance. We revisit the recent literature on regulation, risk, and performance of conventional and Islamic banks (Weill and Zins, 2017, Bitar et al., 2017b; Bitar et al., 2017c) and pose the following hypothesis:

Hypothesis 1. *The effect of regulatory capital and regulatory environment is more pronounced on the performance of conventional banks than on the performance of Islamic banks.*

In the second stage, we examine whether cultural values can influence the association between regulatory capital, regulatory environment, and bank performance. Recent surveys and reports have taken a special interest in culture to explain the failure of existing regulation and supervision in preventing the occurrence of financial crises (Deloitte, 2013; PriceWaterHouseCoopers, 2014; KPMG, 2016). We argue that if culture can influence the regulation-performance link of conventional banks then it can potentially influence the regulation-performance link of Islamic banks as well. In addition, while the results from previous studies suggest a significant difference in the effect of regulation on the performance of Islamic banks compared to conventional banks, we argue that some of these differences can be explained by culture. Finally, because Islamic banks involve wider ethical and moral issues (Khan, 2010) and because they promote greater economic equity and justice (Gheeraert, 2014), the cultural effect can be even more significant on their regulation-performance link compared to conventional counterparts.

Ahern et al. (2015) argue that cultural values are likely to affect the economic and work preferences of individuals in significant ways. They refer to Guiso et al. (2006) and define culture as

"those customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation". Similarly, Boubakri et al. (2017) explain that culture can affect economic outcomes (i.e. a country's growth, financial systems, and legal institutions). The authors quote from Hofstede (2001) to define culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another". In this work, we define culture as the "shared norms within an organization that are evidenced through behavior." [2] Accordingly, cultural values can be considered as an effective tool to transmit norms within banking institutions and helping new employees assimilate to those norms. What is important to clarify here is that these norms are distinct from regulation and sometimes contradictory. For instance, junior bankers do not typically consult the rules for guidance on a daily basis. As new employees, they learn from their peers and supervisors how to conduct business. Depending on the institution's shared culture (and not necessarily the existing regulation), employees would gauge differences between what is right and what is wrong. Therefore, employees' misconduct (e.g. promoting excessive risk-taking, overconfidence in making decisions, aggressive competition, etc.) can be considered right if it appears to be accepted or ordinary by the banking institution's culture and hence no corrective actions would be required. Under these circumstances, culture can cause trouble for regulators. This was evident during the 2007-2009 financial crisis where large financial institutions used culture as an excuse to break regulation. Cultural excuses can be used to encourage wrong or risky practices as long as they lead to higher performance, bonuses, and higher pay packages at the end of the year.

Regulators explain recent scandals such as LIBOR and Forex manipulation by referring to the dysfunctional culture of financial services (PWC, 2014). According to the general council of the Federal Reserve Bank of New York "everyone should be concerned with culture in financial services" (New York Times, 2017). It is true that regulatory capital and regulatory environment are important but they are not sufficient. In other words, available laws on the books do not necessarily mean that people will follow them and thus gaps in regulatory guidelines are inevitable. Developing the

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[2] From the speech of Michael Held, the Executive Vice President of the Federal Reserve Bank of New York on "Reforming culture and conduct in the financial services industry: How can lawyers help?" (March, 2017).

appropriate culture can fill those gaps and hence provide a better regulatory environment and banking performance.

The particular cultural dimensions in focus in this paper are individualism, masculinity, and trust. These dimensions have not previously received proper attention in the empirical literature on regulation and bank performance. Ang and Fredriksson (2018) refer to individualism as one of the most important dimensions in explaining cultural values. While highly individualistic countries devote special attention to self-reliance, risk-taking, and achievement, less individualistic countries accommodate collaboration and solidarity while emphasizing the importance of the team or the group to which an individual belongs. In the former, the employer-employee relationship is essentially a business relationship where poor performance is a reason for dismissal, while in the latter the relationship is moral and similar to a family link where poor performance is a reason for more training and a second chance. In addition, in highly individualistic countries, work decisions are the product of an individual rather than the group, and these decisions are often driven by overconfidence and over-optimism (Chui et al. 2010). Furthermore, independent decisions can involve higher risky behavior of managers (Morris et al. 1993) since individual decisions are more risk-tolerant than group decisions (Shupp and Williamson, 2008). Furthermore, individualistic countries value equality less; they promote competition and tend to maximize their private benefits and switch jobs when offered higher salaries and benefits (Callero, 2017). They consider the government as a barrier to achievement since it promotes collective actions towards the well-being of society. Less individualistic countries, however, have a more favorable view of the government where collective actions, regulation, and supervision can improve the performance of the banking system and promote equality and balance in the employer-employee relationship. Building on these factors, we derive the following hypothesis:

Hypothesis 2. *In highly individualistic countries, the effect of regulatory capital and regulatory environment is less pronounced on the performance of conventional and Islamic banks than in less individualistic countries.*

Second, we refer to the newly emerged literature on masculinity (Jia et al., 2014) as a second proxy for cultural values. In Hofstede's framework, highly masculine countries are goal-oriented; winning is appreciated and often rewarded and admired regardless of the tools or procedures used to

achieve this goal. Performance is measured by material success in a society where aggressive economic growth is a priority. Similar to individualistic countries, in highly masculine countries, there is no room for failure and some highly qualified administrative positions are reserved for men. The gender wage gap is significant, communication is relatively weak, and conflicts can be solved through force. According to Jia et al. (2014) masculine behavior includes aggression, egocentrism, risk-seeking, and a desire to maintain social status. As a result, being aggressive and risk-tolerant might propel the firm forward and push boundaries to achieve higher performance, regardless of existing regulation. Accordingly, highly masculine countries might consider regulation as a barrier to development, a constraint against taking risk, and an unnecessary cost that can reduce bank efficiency. Banking culture can thus be used as an excuse to go around or break regulation. In contrast, less masculine countries are relationship- and process-oriented; they believe in communication and negotiation to solve conflicts. In addition, failure is considered a part of the learning process, wages are supposed to be equal between genders, and highly qualified positions should be equally divided between men and women. Governmental policies are welcomed and supported in less masculine countries; they provide clear regulatory guidelines to supervise banking institutions to control risk-taking activities, enhance equality between genders, and promote balance in the employer-employee relationship. Building on these factors, we present the following hypothesis:

Hypothesis 3. *In highly masculine countries, the effect of regulatory capital and regulatory environment is less pronounced on the performance of conventional and Islamic banks than in less masculine countries.*

Finally, we refer to the literature on social capital and use a measure of trust as a third proxy for cultural values. According to Fongáčová et al. (2017) trust can be defined as "a remarkably efficient lubricant to economics exchange that reduces complex realities far more quickly than prediction, authority, or bargaining". High trust can therefore lead to better economic performance by reducing transaction costs and the risk of fraud and theft (Lim et al., 2018). Regulation in high-trust countries can be seen as a way to promote information disclosure and reduce adverse selection and moral hazard. Communication between regulators and bankers is built on trust and different channels can be used to report incidents and improve contingency plans in cases of financial distress. High trust can

also play a role in improving the reputation of financial institutions. For instance, a survey by PWC (2014) shows that 59% of the financial services industry believe that lack of trust in their business is a threat to growth. Fongáčová et al. (2017) measure the trust in banks as the combination of the individual trust in the stability of the financial system (e.g. the confidence in the deposit insurance scheme and the regulatory and supervisory authorities) and the trust in the honesty of bankers. Based on the above, we posit the following hypothesis:

Hypothesis 4. *In high-trust countries, the effect of regulatory capital and regulatory environment is more pronounced on the performance of conventional and Islamic banks than in less trustful countries.*

3. Data and Methodology

3.1. Sample

We use Bankscope as a primary source of data for this study. For each bank in the sample, we retrieve annual data from 1999 to 2013. Our data is unbalanced and the number of conventional (Islamic) banks varies between 377 (44) banks (at the lowest) in 1999 and 590 (139) banks in 2012 (at the highest). Macroeconomic data such as the GDP growth rate is obtained from the World Bank's World Development Indicators, whereas regulatory variables are obtained from the World Bank's Banking Regulation and Supervision database. Data on culture is obtained from Hofstede (1980, 2001) and the World Values Surveys (WVS). A bank is excluded from the sample if it does not have at least 3 continuous observations. In addition, we remove countries that have data for fewer than 4 banks. Furthermore, when we investigate the effect of cultural values on the regulation-performance link, we lose countries such as Albania, Bosnia and Herzegovina, Brunei Darussalam, Cayman Islands, and Senegal because they do not have available information on the three measures of cultural values. Finally, while some of the banks have Islamic windows, the bulk of their operations are conventional. Therefore, we expect that the impact of regulatory capital and regulatory environment on profitability ratio will remain identical without the exclusion of these banks.

We examine the relation between capital ratios and bank profitability by employing the following multivariate regression models:[3]

$$\text{ROAA}_{ijt} = \alpha + \beta_1 \times \text{Reg\_cap}_{ijt} + \beta_3 \times \text{bank}_{\text{control}_{ijt}} + \beta_3 \times \text{country}_{\text{control}_{jt}}$$
$$+ \; C_c + Y_Y \; + \; \varepsilon_{ijt} \tag{1}$$

$$\text{ROAA}_{ijt} = \alpha + \beta_1 \times \text{IBDV} \times \text{Reg\_cap}_{ijt} \times \text{Reg}_{\text{Ins}} + \beta_2 \times \text{CBDV} \times \text{Reg\_cap}_{ijt} \times \text{Reg}_{\text{Ins}}$$
$$+ \; \beta_3 \times \text{bank}_{\text{control}_{ijt}} + \beta_3 \times \text{country}_{\text{control}_{jt}}$$
$$+ \; C_c + Y_Y \; + \; \varepsilon_{ijt} \tag{2}$$

where *i* refers to bank i's performance ratio in country *j* in year *t*. We measure for performance using the ratio of net income to three year average assets (*ROAA*). Reg_cap_{ijt} is the bank regulatory capital ratio, measured as Tier 1 plus Tier 2 divided by risk-weighted assets and off-balance sheet exposures (*regcap*). Tier 1 capital is the sum of shareholders' funds and perpetual, non-cumulative preference shares. Tier 2 capital is the sum of hybrid capital, subordinated debt, loan loss reserves, and valuation reserves.[4]

$\text{Bank}_{\text{control}_{ijt}}$ is a vector which describes bank portfolio characteristics. It includes measures of bank size proxied by the natural logarithm of total assets (*Bank size*) and by the growth rate of total assets (*Growth assets*). In relation to the total assets, we note that this variable may arguably increase or decrease bank stability and risk (Beck et al., 2013; Bitar et al., 2017b). The growth rate measure reflects any expansion of a bank's balance sheet during the current year (compared to the previous year). We also include the ratio of noninterest income to total operating income (*Non-operating income*) to reflect the bank's business model and its tendency towards activity diversification. In

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[3] Our regression methodology differs from Beck et al. (2013) and Abedifar et al. (2013) in two aspects: First, we study the overall effect (and not the marginal effect) of capital ratios on the performance of both commercial (CBDV) and Islamic banks (IBDV). Second, we examine whether the effect of capital and regulation is similar or different for both systems. In addition, interacting IBDV and CBDV with capital ratios allows us to test whether we have the same or different overall effect of capital ratios on the performance of each bank type.

[4] All correlation coefficients are below 0.4. The Pearson correlation matrix is available from the authors upon request.

addition, we control for bank credit risk exposure using the ratio of net loans to assets (*Bank credit exposure*) and the ratio of fixed assets to assets (*Tangibility*) to control for the bank's non-financing activities.

$\text{Country}_{\text{control}_{jt}}$ is a vector of four macroeconomic variables commonly used in the banking literature (Abedifar et al., 2013; Barth et al., 2013; Bitar et al., 2017a, b). It includes the GDP growth rate (*GDP rate*) and the GDP per capita (*GDP per capita)* to reflect any potential cyclical behavior of Basel regulation; the inflation rate (*inflation*) to capture a country's general financial conditions; and the concentration ratio measured by the fraction of total assets of the three largest banks in each country to total banking sector assets (*concentration*). C_C and Y_y represent country (*country control*) and year (*year control*) fixed effect dummy variables. C_C and Y_y are included to mitigate any effect of omitted variables related to each country and year specifications as explained by Anginer and Demirgüç-Kunt (2014). Finally, we follow Bitar et al. (2017b) and cluster at the bank level instead of the country level for two reasons. First, some countries have a much larger number of observations than other countries in the sample. Second, we have thirty three countries. Therefore, clustering at the country level might create biased results.

In Eq. (2), we add Reg_{Ins} to study the effect of regulatory capital along with regulatory environment on the performance of conventional and Islamic banks. Reg_{Ins} includes six variables pertaining to the effect of bank regulation, supervision, and market monitoring on the association between regulatory capital and bank profitability. We use an index of capital stringency (*CS*), which measures the overall compliance of each country's banking system with the Basel capital guidelines. We concentrate on information availability and transparency and use three indicators to examine their impact on the capital-performance relationship. The first measure is information disclosure (*disclosure*), which reflects the transparency and informativeness of bank financial statements. Second, we employ two measures of information transparency. The audit variable examines whether an external audit, i.e. a licensed (*audit*) or certified audit (*certified*), is required by regulatory authorities to examine bank financial statements (Shehzad and De Haan, 2015). In addition, we use a variable to control for entry restrictions in terms of obtaining a banking license (*entry*) and a dummy

variable that takes on a value of 1 if a country has an explicit deposit insurance scheme and 0 otherwise (*insurance*). For all these variables, higher values indicate stronger and more stringent regulatory environment. Finally, we introduce two dummy variables to distinguish between conventional and Islamic banks. IBDV is a dummy variable that takes on a value of 1 for Islamic banks and 0 for conventional banks while CBDV is a dummy variable that takes on a value of 1 for conventional banks and 0 for Islamic banks.

3.3. Empirical measures of cultural values

In this study, we examine whether cultural values can influence the association between regulatory capital, regulatory environment, and bank performance. In addition, we investigate whether cultural values can explain differences in the effect of regulation on the performance of Islamic banks compared to their conventional peers.

Culture is often seen as intangible, complex, and difficult to assess and track (PWC, 2014). While there are various ways to proxy for culture, Karolyi (2016) refers to the Hofstede framework as one of the most comprehensive frameworks of cultural values. The World Values Surveys (WVS) are also important and are validated by their cumulative use and their impact in the recent business and finance literature (Eun et al. 2015; Ahern et al. 2015; Fongáčová et al., 2017; Lim et al., 2018). Karolyi (2016) qualifies the WVS as "a rich and valuable tool" to measure cultural values. In our analysis, we use both the Hofstede and the WVS for our main analysis and the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project proxies in the robustness checks.

Hofstede's proxies for cultural values were created based on the survey of 117,000 IBM employees in 70 countries around the globe between 1967 and 1973. The survey included 60 core questions and 66 recommended questions. After employing a factor analysis to filter the answers into indexes, the Hofstede original framework included four dimensions (i.e. individualism-collectivism, uncertainty avoidance, power distance, and masculinity-femininity). In addition, two more dimensions were included: the short-long term orientation (Hofstede, 1991) and indulgence-self-restraint (Hofstede, 2010).

Despite the popular use of the Hofstede framework, critics have emphasized that there are several drawbacks. For instance, Ailon (2008) argues that Hofstede's dimensions have a political subtext by attributing a greater importance to western values and misrepresent the rest of the world.[5] Karolyi (2016) also criticizes the over-reliance on theoretical (over purely statistical) constructs; he argues that Hofstede's dimensions do not necessarily represent individuals' personalities. Finally, Hofstede's dimensions are often criticized because they are largely time-invariant. To understand the logic behind categorizing culture as time-invariant we refer to Boubakri and Saffar (2016) who distinguish between formal institutions (defined as the political, legal, and regulating structures) and informal institutions (that consist of cultural values, preferences, and norms). North (1991) states "although formal rules may change overnight as the result of political or judicial decisions, informal constraints embodied in customs, traditions and codes of conduct are much more impervious to deliberate policies." In addition, Williamson (2000) argues that values and beliefs of individuals are very slow to change, on the order of 100–1000 years. Hofstede et al. (2010) also confirm that cultural values are as likely to change as a country's weather or geographical position. From Hofstede, we use two cultural dimensions: individualism and masculinity. Both measures have values between 0 and 100, with higher values indicating a more individualistic and more masculine society.

From the WVS, we use a general measure of trust. The WVS were initially developed as exclusively European Values Surveys and grew into a WVS association (Karolyi, 2016). The WVS are engineered based on representative samples of more than 100,000 individuals from 100 countries (in the most recent 2012 survey) to respond to 250 survey questions on life perception, the environment, work, politics and society, security, science, and national identity (Karolyi, 2016). The survey question related to our trust measure is worded as follows: "Generally speaking, would you say that most people can be trusted or that you need to be very careful on dealing with people?" Two answers are provided: (1) "Most people can be trusted" and (0) "You can't be too careful".

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[5] According to Ailon (2008), the **oriental** culture and the rest of the world, or the "rest", are "systemically subjected to representational strategies that devalue them and exclude their voices". In addition, Ailon (2008) quotes from Westwood (2004) to describe Hofstede's cultural methods as "reductionist" and "incorporating simplifying representational strategies that do violence to the inherent complexity of the social systems they pretend to represent".

In a first step, for each of the three cultural measures, we use Eqs. (1)–(2) and run regressions on the full sample without taking into consideration countries' classification according to their cultural values. This first regression enables us to respond to our first and baseline hypothesis (i.e whether the effect of capital and regulatory environment is more pronounced on the performance of conventional banks than on the performance of Islamic banks. Then, in a second step, we breakdown the full sample into various subsamples, depending on country cultural values. We classify countries as follows: (1) highly individualistic, highly masculine, and highly trustful countries (if the countries' proxy for the cultural measure > median of the respective measure) and (2) less individualistic, less masculine, and less trustful countries (if the countries' proxy for the cultural measure <= median of the respective measure). We run the regressions using Eqs. (1)–(2) as well. This enables us to respond to the rest of our hypotheses (whether cultural values can affect the regulation-performance link between the two bank types). Full variable definitions and sources are provided in Appendix A's Table A.1.

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3.4. Descriptive statistics

Table 1 reports descriptive statistics for our samples of conventional and Islamic banks. Panels A and B present the mean, median, and standard deviation for the bank-level dependent and independent variables, while Panels C and D present the summary statistics for our key regulatory environment variables (i.e., capital stringency, information disclosure, licensed and certified auditors, entry requirements, and deposit insurance) and the rest of the macroeconomic control variables. Finally, Panel E presents the summary statistics for the cultural values control variables.

In Panels A and B, we also report the outcomes of a Wilks' lambda test (λ) , a Wilcoxon-Mann-Whitney test (Wilc), and a univariate analysis of variance test (F) for the equality of means for each financial ratio. The results of the statistical tests are presented in the last three columns of each panel and suggest that conventional banks are significantly different from Islamic banks with respect to all the financial ratios (except for the return on average assets and the bank credit exposure). The three

tests demonstrate that the most significant differences between the two bank types relates to the measure of Tier 1 capital, with Islamic banks showing greater capitalization.

The mean of the individualism, masculinity, and trust cultural values are 42.3%, 54.57%, and 2.44 respectively (Panel E). We notice that the United Kingdom has the highest cultural values in term individualism and masculinity while Saudi Arabia has the most trustful culture. In contrast, we find that several countries share the lowest cultural values: Indonesia is the least individualistic with 14%, Iran is the least masculine with 43%, and Philippines is the least trustful with 0.51.

4.   Main findings

In this section, we examine the effect of regulatory capital and regulatory environment on the profitability of conventional and Islamic banks. We also study the effect of culture on the link between capital, regulation, and bank profitability for the two bank types. These results can be useful as an input for both banks and regulators. Specifically, if the main channel through which capital along with a strong regulatory environment improves bank profitability is by forging the most appropriate cultural values, then it makes sense to both banks and regulators to work together to provide an appropriate framework for a successful banking culture. This includes promoting a culture based on team work, collaboration, equality between genders, and trust between employees, immediate supervisors, and upper management. We argue that using culture to fill regulatory and supervisory gaps as a solution to improve bank profitability has merits, given years of repeated failures in trying to find the most accurate regulatory guidelines. We find empirical evidence in support of the role of culture in improving the impact of capital and regulation on the profitability of the two bank types.

Our first set of results are presented in Table 2. The findings in Models 1 and 2 suggest that regulatory capital has a positive impact on the profitability of the two bank types, although the impact is less pronounced on the profitability of Islamic banks compared to conventional banks. As for the impact of the institutional environment, Models 3 to 8 show that the capital-profitability relationship is positive and significant at the five percent level or above for conventional banks operating in countries with more capital stringency, transparency and information disclosures, stronger entry

requirements, and deposit insurance schemes. As for Islamic banks, a strong institutional environment appears to have either a marginal or insignificant effect on the link between capital and profitability. The findings concur with the results of previous literature, which provided empirical evidence on the less effective role of regulatory environment on the performance of Islamic banks (Zins and Weill, 2017; Bitar et al. 2017b; Bitar et al. 2018), thus supporting our first hypothesis.

INSERT TABLE [2] AROUND HERE

Now, we ask whether there are ways for bankers and regulators to improve the effect of regulatory capital and regulatory environment on the profitability of conventional and Islamic banks. Our second and more important set of results provides evidence that the capital, regulatory environment, and bank profitability relationship can be enhanced depending on the existing culture in three ways. Specifically, we show that three types of cultural values display important effects on the capital, regulation, and profitability link. For instance, in countries that are highly individualistic and highly masculine, both regulatory capital and regulatory environment have a less pronounced effect on bank performance, while high-trust countries experience a more pronounced effect. The following paragraphs discuss the quantitative results in greater detail.

First, the empirical results for the effect of individualism on the link between capital, regulation, and bank profitability are reported in Table 3. We find that the effect of capital and regulation on bank profitability is more pronounced in countries with less individualistic cultural values, as reflected in the positive coefficients on the profitability of conventional banks (Islamic banks) at the 1 percent level (5 percent level or higher) for all specifications, thus confirming our second hypothesis. Banks in highly individualistic countries tend to maximize their own benefits through aggressive competition and risk-taking. Individual gain is the key measure of success regardless of the tools used to achieve it. Government and regulation are considered as barriers to success and individual achievement. This can explain the less effective role of capital and regulation in improving bank profitability in countries with cultural values oriented toward individualism. In contrast, we find that cultural values that accommodate collaboration, solidarity, and team effort between employers and employees can indeed enhance the effect of capital and regulation on profitability for both conventional and Islamic banks. Promoting equality and collective action towards society can create a better environment for

regulators to integrate a successful regulatory framework aligning both regulators' and bankers' objectives towards improving bank performance.

INSERT TABLE [3] AROUND HERE

Second, the empirical results for the effect of masculinity on the link between capital, regulation and bank profitability are presented in Table 4. We find that the effect of regulatory capital and regulatory environment on bank profitability is more pronounced in countries with less masculine cultural values, as reflected in the positive coefficients on the profitability of conventional banks (Islamic banks) at the 1 percent level (5 percent level or higher) for all specifications, thus confirming our third hypothesis. As such, similar to the case of highly individualistic countries, cultural values oriented toward masculinity by focusing on profits as the only way to measure success, risk-taking, and the use of force to achieve goals and solve conflicts can be harmful and thus weaken the effect of capital and regulatory environment on the two bank types' profitability. In contrast, we find that cultural values that promote equality between genders and communication and negotiation to solve conflicts can enhance the effect of capital and regulation on profitability for both conventional and Islamic banks. Referring to qualifications to choose the proper individuals for higher administrative positions and accepting failure as a part of the learning process can create a better adapted environment for regulators to integrate a successful regulatory framework aligning both regulators' and bankers' objectives towards improving bank performance.

INSERT TABLE [4] AROUND HERE

Third, the empirical results on the effect of trust on the link between capital, regulation, and bank profitability are displayed in Table 5. We find that the effect of capital and regulatory environment on bank profitability is more pronounced in countries with high-trust cultural values, as indicated by the positive coefficients on the profitability of conventional banks at the one percent level for all specifications, thus confirming our fourth hypothesis. In highly trustful countries, economic and financial transactions are conducted with lower transaction costs, information is transparent and available to the public, and people have more confidence in the work accomplished by the regulatory and supervisory authorities. As such, people might have more confidence in the financial system not

only because they trust the job done by regulators, but also because they believe that high-trust cultural values dominate the internal banking culture between employees and employers and between the bank and its customers.

<div align="center">INSERT TABLE [5] AROUND HERE</div>

Finally, Tables 3 to 5 show that the effect of regulatory capital and regulatory environment on conventional bank profitability is significantly different compared to that of Islamic banks in countries with culture values that are less trustful, more individualistic, and more masculine, as reflected in the highly significant Wald tests. While Zins and Weill (2017), Bitar et al. (2017b), and Bitar et al. (2017c) conclude that regulation enlarges the risk and efficiency gaps between the two bank types at the expense of Islamic banks, our study adds to the debate by showing that cultural values are also important. Precisely, our results show that in less trustful countries with cultural values oriented to individualism and masculinity, regulation can have an even more detrimental effect on the performance of Islamic banks compared to that of conventional ones, as reflected in the negative impact of regulation on their profitability ratios. However, and more importantly, regulation can enhance the profitability of Islamic banks and reduce the performance gap with their conventional counterparts in more trustful countries with cultural values that focus on collective efforts, communication, and equality between genders.

5. Robustness tests

Our results so far indicate that the effect of regulatory capital and regulatory environment is positively associated with the profitability of conventional banks while the same effect appears to be marginal or insignificant on the profitability of Islamic banks. In addition, we show that the capital, regulation, and profitability link is stronger for the two bank types in more trustful countries with cultural values that are less individualistic and less masculine. In this section, we test the robustness of our results using alternative dependent and independent variables, alternative cultural measures, and three other estimation techniques.

5.1. Alternative profitability and capital measures

We now report a robustness analysis of the effect of regulatory capital and regulatory environment on bank profitability. Specifically, we use alternative measures of bank profitability and capital focusing on operating profits and capital of good quality. Operating profits (i.e. the ratio of operating profits divided by total assets, *opata*) compares the efficiency and operational performance of banks as it looks at the operational returns generated from assets (Mollah and Zaman, 2015; Bitar et al. 2017a). Regulatory capital is replaced by Tier 1 capital to risk-weighted assets (*t1r*) because it captures the quality of a bank's capital as represented by its common equity. Arnold et al. (2012) and Anginer et al. (2014) find that Tier 1 capital is more effective in absorbing losses during the financial crisis. As before, we run the regression specified in Eqs. (1)–(2) and include bank and country level control variables and the interactions between Tier 1 capital and regulatory environment. Table 6 reports the results. We only report the interaction terms to save space. The results confirm our previous findings. Regulatory capital and regulatory environment are positively associated with the operating profits of conventional and Islamic banks in countries with cultural values that are more trustful, less individualistic, and less masculine. The effect is more pronounced on the profitability of conventional banks than on Islamic ones. In addition, the effect of regulatory capital and regulatory environment on conventional bank profitability is significantly different compared to that of Islamic banks in countries with cultural values that are less trustful, more individualistic, and more masculine, as reflected in the highly significant Wald tests.

INSERT TABLE [6] AROUND HERE

We also use higher cutting points for cultural values. Precisely, we break down the sample into two subsamples: (1) highly individualistic, highly masculine, and highly trustful (if the country's proxy for the cultural measure > upper quantile of the respective measure) and (2) less individualistic, less masculine, and less trustful (if the country's proxy for the cultural measure <= upper quantile of the respective measure). We also use Eqs. (1)–(2) and present the results in Table 7. We only report the interaction terms to save space. The results remain unchanged and are not driven by higher cutting points.

INSERT TABLE [7] AROUND HERE

5.2. Alternative cultural measures

In this section, we address concerns in the literature about the validity of our measures of cultural values. Ahern et al. (2015) argue that the use of national survey data could involve biases when studying the culture-finance link in at least three important ways: The first source of potential bias can arise if survey responses are poor proxies for actual cultural values. However, they find that the literature provides evidence that survey-based measures of culture are good predictors of actual values. The second source of potential bias can be related to the fact that cultural values might not be directly related to economic choices. However, the literature also provides robust evidence of a strong association between cultural values and economic preferences. Finally, a third potential source of bias could arise if the registered cultural values did not reflect the actual cultural values of the surveyed individuals. While Ahern et al. (2015) refer to various databases to validate the appropriateness of their proxies, in this study we use alternative proxies. Karolyi (2016) provides a critical assessment of the key databases used to measure cultural values. While Hofstede and the WVS databases have been extensively used in the finance literature, one database that has been underutilized in the finance literature is the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project developed by Professor Robert House (from the Wharton School at the University of Pennsylvania) to understand changes in cultural values. The GLOBE project involves survey questionnaires conducted on more than 17,300 executives in 951 organizations across 62 countries. Similar to Hofstede's measures, the GLOBE project categorizes culture into nine dimensions, but it distinguishes between actual societies' practices "as is" and values as they "should be" for the different cultural values. By referring to the GLOBE project, we use institutional collectivism values (the extent to which organizational and societal institutional values encourage and reward collective actions, regulation, and supervision to promote equality and improve performance) to replace individualism. We also use gender egalitarianism (the extent to which a country seeks to minimize gender inequality and encourage higher education and communication to solve conflicts) to replace masculinity. Finally, we refer to the World Values Surveys and use a measure of confidence in government (the extent to which people have confidence in decisions made by their government) to replace general trust. The

findings are presented in Table 8. We report only the interaction terms to save space. These findings suggest that regulatory capital and regulatory environment have a more pronounced effect on the profitability of conventional and Islamic banks in countries with cultural values oriented to institutional collectivism, gender egalitarianism, and higher level of confidence in governments, thus confirming our previous findings. We also use in-group collectivism practices, gender egalitarianism practices from the GLOBE project, and confidence in major corporations from the World Values Surveys as a second alternative of cultural values. The results remain highly robust and are available upon request.

<center>INSERT TABLE [8] AROUND HERE</center>

5.3. Endogeneity concerns

The results presented in the preceding sections provide evidence that regulatory capital and regulatory environment can positively affect the profitability of conventional banks while the same effect is either marginal or insignificant for Islamic banks. However, one might argue that this effect might be the result of endogeneity. Endogeneity can result from three sources: unobservable heterogeneity, simultaneity, and dynamic endogeneity. First, unobservable heterogeneity is a source of endogeneity if unobservable variables are correlated with bank profitability, capital, and regulatory variables. In other words, the decision to hold higher regulatory capital can be associated with various bank characteristics. Some of these characteristics are unobservable. For example, bank size (e.g. considering a financial institution as too big to fail) can affect bank profitability and may thus affect manager decision to reduce or increase regulatory capital (Schaeck and Cihák, 2013). Second, simultaneity refers to the reverse causality between profitability and bank regulatory capital. While holding higher regulatory capital can influence bank profitability, the literature also suggests that regulators are often more flexible with more profitable and efficient banks in terms of their minimum capital requirements (Fiordelisi et al., 2011). Finally, dynamic endogeneity refers to the lagged reversed causality between performance and bank capital. The bank decision to hold higher capital ratios may indeed be a function of past performance. For instance, in periods of economic growth,

banks may decide to increase their retained earnings to protect against any future distress, which can be reflected in higher capital buffers.

Thus, a simple multivariate regression of the impact of capital and regulatory environment on bank performance may result in biased estimates because of these endogeneity issues. Introducing past performance in the list of exogenous variables only partially resolves the dynamic endogeneity issue while ignoring the unobservable heterogeneity and simultaneity issues. To address unobservable heterogeneity, the literature often includes fixed effects in the regression models. However, there are two main issues with fixed-effect regressions. First, time-invariant binary variables like Islamic and conventional bank dummy variables cannot be estimated with fixed effects (Mollah and Zaman, 2015; Bitar et al. 2017a, b). Second, the regulatory environment variables do not vary much over time and hence applying fixed-effect estimations would generate an important loss of the degrees of freedom (Mollah and Zaman, 2015). As a result, we follow Bennouri et al. (2018) and use a two-step system generalized method of moments (GMM), proposed by Arellano and Bover (1995) and Blundell and Bond (1998), to mitigate endogeneity concerns. [6]

The system GMM approach allows the relationship between regulatory capital and bank performance to be estimated in levels and first differences simultaneously. The level equation presents performance as a function of its past values (lagged values), observable bank characteristics (regulatory capital, regulatory environment, and the rest of the exogenous variables), and the error term, including a fixed-effect component. The difference equation presents year-to-year differences in the level equation. Accordingly, the difference equation presents the changes in year-to-year performance as a function of the year-to-year lagged changes in performance, year-to-year change of the exogenous variables, and the difference in error terms. Note that the fixed-effect error term disappears in the difference equation, since it is by definition time-invariant. By estimating these equations simultaneously, the system GMM approach controls for heterogeneous endogeneity (stemming from time-invariant variables) and includes the dynamic structure of the relationship

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[6] The use of dynamic panel data by employing system GMM as a strong tool to control for endogeneity has been brought to our attention thankfully by one of the referees. In the internet appendix, we also use an instrumental variable (IV) approach based on a two-square least squares regression (2SLS) technique. The findings are very similar to those provided by the system GMM.

between performance and bank capital and regulatory environment. The rationale of using past performance and differences in explanatory variables as instruments is based on the fact that the bank decision to increase regulatory capital can be related to current and past performance in addition to other bank characteristics (e.g. bank size, credit risk exposure, etc.). If current performance is observed, the unanticipated component of performance (i.e. the error term in the regression) can be assumed to be uncorrelated with past observations of the endogenous variables (regulatory capital, regulatory environment, and the rest of the bank characteristics) when observation of lags goes sufficiently far back in time. While both conventional and Islamic banking literature is largely silent about endogeneity concerns, we argue that legal origins, ethnic fractionalization, and durability of the political system can be the candidates for this third factor.[7] Data on legal origins is combined based on collected information from the CIA's world fact-book while data on ethnic fractionalization and durability of the political system is collected from La porta et al. (2006) and the Political Regime Characteristics and Transitions of Polity IV project. The impact of legal origins and political systems on bank profitability and capital has been documented in several recent studies. Banks in a country with a hybrid or a *Sharia'a*-based legal origin tend to be more efficient and more profitable (Bitar et al. 2017). In addition, Islamic banks tend to be more capitalized in countries with more durable political systems (Bitar et al., 2017). Finally, we borrow from Barth et al. (2013) and use ethnic fractionalization as a third instrument.

We carry out two tests to check the identification of the model and to examine the validity of the instruments. First, the Sargan test checks whether the model is overidentified. For our study, the null hypothesis of overidentified model is rejected in all regressions. Second, the Hansen test of exogeneity of the instruments used does not lead to the rejection of the null hypothesis of valid (exogenous) instruments. These tests further confirm the validity of the GMM approach.

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[7] The legal origins index takes a value of zero for countries that rely completely on western legal systems and do not recognise Sharia'a law in their legal systems. The legal origins index takes a value of one for countries that have mixed legal systems that are based on both Sharia'a law and western laws (such as common and civil laws). Finally, the index takes a value of two if Sharia'a law is the only recognised legal system. For example, some countries, such as Iran, Saudi Arabia, and Sudan have adopted a version of a fully Sharia'a-compliant legal system, whereas countries like Indonesia, Malaysia, and Turkey allow both legal systems to co-exist. Ethnic fractionalization is the average of five different indices of ethnolinguistic fractionalization. Durability of the political system is defined as the number of years since the most recent regime change or the end of a transition period defined by the lack of stable political institutions.

The use of the system GMM approach requires testing autocorrelation to detect dynamic specification of the endogenous and dependent variables. For this purpose, we employ the Wooldridge (2002) test, which strongly rejects the null hypothesis of no auto-correlation. Table 9 and appendix Tables A.2 – A.4 present the results of the system GMM estimations and display the Arellano-Bond (1991) auto-correlation tests for all endogenous and exogenous variables. The null hypothesis of no first-order (AR(1)) auto-correlation is always rejected, which confirms the Wooldridge (2002) test results. The Arellano-Bond (1991) test, however, does not reject the null hypothesis of no second-order serial correlation (AR(2)), thus supporting the use of the system GMM to strengthen the robustness of our results. These results provide clear evidence of a positive and significant (at the 1 percent level) association between capital, regulatory environment, and the profitability of conventional banks while the effect is insignificant on the performance of Islamic banks. In addition, regulatory capital and regulatory environment have a more pronounced effect on the profitability of conventional banks in countries with cultural values that are less individualistic, less masculine, and highly trustful while the effect remains absent on the performance of Islamic banks. Finally, the F-test (Wald) for the degree of significance between capital ratios and regulatory environment coefficients on the profitability of conventional and Islamic banks continue to confirm our previous findings.

INSERT TABLE [9] AROUND HERE

5.4. Self-selection bias and matched samples

We follow Bitar et al. (2017) and use a Heckman (1979) selection approach to correct for a potential self-selection bias. This technique helps to control for any bias in sample choice between highly capitalized banks and less capitalized ones. In the first step, we estimate a probit model that regresses a dummy variable – that takes on a value of one if the two bank types' regulatory capital ratios have values greater than or equal to the median, and zero otherwise – on the three instruments used in the previous section (cf. legal origins, ethnic fractionalization, and durability of the political system) in addition to bank- and country-level control variables. In the second stage regression, we use the profitability ratio as the dependent variable and use the capital and regulatory environment proxies as the independent variables completed with the same control variables and a self-selection

parameter (measured as the inverse Mills ratio) estimated from the first-stage regression. The results of the first-stage regressions show that the instruments are positively and significantly associated with bank profitability ratio. The results of the second-stage regressions are reported in Table 10 and continue to suggest that capital and regulatory environment are positively associated with profitability of conventional banks while the results remain insignificant for Islamic banks. The F-test (Wald) for the degree of significance confirms the significant different effect of capital and regulatory environment on the profitability of conventional banks compared to Islamic ones.

<div align="center">INSERT TABLE [10] AROUND HERE</div>

We also employ a propensity score matching (PSM) technique proposed by Rosenbaum and Raubin (1983) to verify the robustness of our results. PSM consists of matching observations of banks based on the probability of increasing the two bank types' capital ratios. The comparison between banks with higher capital ratios and banks with lower capital ratios are then compared for the matched sample.

To implement PSM, we create a regulatory capital dummy variable that takes on a value of one if both bank types' regulatory capital ratios have values greater than or equal to the median, and zero otherwise. We then estimate a logit model where we regress the bank regulatory capital dummy on all control variables in the baseline model and the year and the country fixed effects. We use the estimated scores to produce matched observations between banks with higher and lower capital ratios. Additionally, we employ four different matching methods: K-nearest neighbors with nearest neighbor n=3, n= 7, and n=10; 1-to-1 matching with no replacement; Gaussian Kernel matching; and Radius matching. In the matched samples (presented in Table 11), we continue to find evidence that both conventional and Islamic banks with higher regulatory capital ratios have higher profitability in countries that are less individualistic, less masculine, and more trustful than matched banks in less trustful countries with cultural values oriented to individualism and masculinity. For each matching method, we report T statistics for the differences between the treated banks with higher regulatory capital ratios and banks with lower regulatory capital ratios in the control group. For regulatory capital in countries that are highly individualistic, highly masculine, and highly trustful, the profitability differences between the treated and the control group vary between 0.069 and 1.252 percent. Except

in highly trustful countries, these differences are not statistically significant. For regulatory capital in countries that are less individualistic, less masculine, and less trustful, the profitability differences between the treated and the control group vary between 0.164 and 1.401 percent. These differences are statistically significant at the 1 percent level in almost all models, except for the differences in the sample of banks in less trustful countries, which are only highly significant when using the radius matching method.

<div align="center">INSERT TABLE [11] AROUND HERE</div>

6. Concluding remarks

This paper investigates whether cultural values can influence the regulation-performance link of banks in countries with dual banking systems. The effect of regulatory capital and regulatory environment has been studied extensively in the conventional banking literature with mixed results. However, there are no papers investigating to what extent cultural values can influence the performance of conventional and Islamic banks. Our study aims to fill this gap in the literature using a sample of 729 banks operating in 33 countries and covering the period from 1999 to 2013.

Employing these findings as a benchmark, we include different measures of formal and informal institutions in our empirical approach. We use regulatory capital and regulatory environment to represent formal institutions and different proxies of cultural values to represent informal institutions. The main findings show that regulatory capital and regulatory environment enhance the performance of conventional banks, while the effect is either marginal or insignificant on the performance of Islamic banks. Consistent with previous studies (e.g. Zins and Weill, 2017; Bitar et al., 2017c), our findings support the view that capital adequacy ratio and regulatory environment enlarge the performance gap between the two bank types at the expense of Islamic banks. In addition, we find that the regulation-performance link is reinforced by the presence of the appropriate cultural values. We obtain two main results. First, cultural values that are less individualistic (oriented to collective action, e.g. focusing on team effort and group decisions where governmental regulation and supervision can improve the overall performance of the banking system), less masculine (oriented to egalitarianism, e.g. values related to education, qualification, gender equality, and communication) and highly trustful

(oriented to trust, e.g. focusing on reducing transaction costs and information asymmetries through requirements to disclose information as well as promoting confidence in the financial system by creating a deposit insurance scheme and proper regulation) strengthen the regulation-performance link for the two bank types. Finally, the larger profitability gap resulting from higher regulatory capital and regulatory environment appears to be driven by cultural values oriented to individualism, masculinity, and less trust.

Our results have important policy implications. First, we show that applying a one size fits all regulation enlarges the performance gap between conventional and Islamic banks—a situation that could hamper the overall performance of banks in countries with dual banking systems. Second, cultural values can influence the regulation-performance link of the two bank types via three main channels: Individualism, masculinity, and trust. We argue that using culture to enhance the effect of regulation to improve bank performance has merits, given years of repeated failures in determining the most accurate regulatory guidelines. Finally, we find that cultural values can play an important role in reducing the performance gap between the two bank types. This paper is a first initiative to provide empirical evidence on the importance of cultural values as an additional tool to implement regulatory guidelines in a successful way.

It is worth noting that the overall significance and interpretation of our results depend largely on the validity of the measures used to proxy for formal and informal institutions as well as bank performance. We attempt to overcome potential limitations related to measurement errors by employing alternative measures of cultural values and bank performance as well as using various econometric approaches (system GMM, Heckman estimation, propensity score matching techniques, etc.). However, more research is required to draw definitive conclusions about the appropriate cultural values that should be implemented in banking institutions to improve the regulation-performance link. An extension of our analysis that would add to our understanding of cultural values and the regulation-performance link is to consider bank internal corporate culture along with informal institutions. Bennouri et al. (2018) point out that gender diversity and the presence of female directors significantly increase firm performance. It will be interesting to explore to what extent informal cultural values can influence the internal corporate culture-performance link not only for banks in dual

banking systems but also for banks at the international level. For instance, how do the attributes of board members (i.e. gender diversity factors such as members' nationalities, fraction of women on boards, women in the CEO position, etc.) change across different cultural values? Which cultural values are more adequate for banks to enhance the internal corporate governance and performance link? The current literature is generally interested in studying either the effect of internal corporate governance or the effect of informal institutions on bank performance. At this stage, constraints in finding the appropriate measures of cultural values as well as a representative sample to proxy for the attributes of bank board members makes these research questions important candidates for future research avenues.

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Tables

Table 1

Summary statistics for variables

Variables	Conventional banks (CBs)				Islamic banks (IBs)				Test statistics		
	N	Mean	Median	SD	N	Mean	Median	SD	Wilks-λ	Wilc	F
Panel A. Dependent variables											
Return on average assets (ROAA)	6,951	1.12	1.12	1.98	1,371	1.21	1.1	4.17	0.9998	-1.388	1.46
Operating profits (OPATA)	5,627	1.48	1.40	2.3	1,090	1.88	1.47	3.43	0.9967***	-2.264***	22.36***
Panel B. Bank control variables											
Regulatory capital	4,130	20.2	16.79	10.06	858	26.23	18.2	20.2	0.9674***	-4.755***	167.86***
Tier 1 capital	2,930	16.81	14.26	8.81	753	24.31	16.64	19.01	0.9367***	-9.116***	249.26***
Bank size	7,024	13.99	13.86	2.07	1,375	13.75	13.76	1.76	0.9979***	3.373***	17.3***
Bank credit exposure	6,952	48.86	50.62	22.61	1,328	47.78	51.82	24.66	0.9997	0.665	2.46
Tangibility	6,799	1.85	1.15	2.24	1,340	2.75	1.77	3.16	0.9815***	-10.53***	153.79***
Non-operating income	6,850	64	66.82	21.77	1,343	58.34	66.35	29.82	0.9919***	3.423***	66.53***
Growth assets	6,430	16.59	11.9	28.36	1,217	27.05	19.85	36.6	0.9838	-12.305***	125.67***

Panel C. Regulatory environment control variables (full sample)				
	N	Mean	Median	SD
Capital stringency (stringent)	33	5.83	6	1.26
Information disclosure (disclosure)	33	2.06	2	0.55
Licensed audit (audit)	33	1.93	2	0.29
Certified audit (certified)	33	0.99	1	0.09
Entry requirements (entry)	33	7.74	8	0.59
Deposit insurance (insurance)	33	0.75	1	0.43

Panel D. Macroeconomic control variables (full sample				
GDP rate	33	4.14	4.3	3.96
GDP per capita	33	8.47	8.35	1.51
Inflation	33	7.77	3.99	14.38
Concentration	33	73.62	72.56	15.56

Panel E. Cultural values across countries

Country	Individualism	Masculinity	Trust	Country	Individualism	Masculinity	Trust
Albania	.	.	.	Malaysia	26	50	0.87
Algeria	38	53	3.35	Mauritania	38	53	.
Bahrain	38	53	.	Pakistan	14	50	2.51
Bangladesh	20	55	2.33	Palestinian territories	38	53	1.58
Bosnia and Herzegovina	.	.	.	Philippines	32	64	0.51
Brunei Darussalam	.	.	.	Qatar	38	53	5.05
Cayman Islands	.	.	.	Saudi Arabia	38	53	5.05
Egypt	38	53	2.69	Senegal	.	.	.
Gambia	.	.	.	South Africa	20	48	2.41
Indonesia	14	46	4.08	Sudan	38	53	.
Iraq	38	53	.	Syria Arab Republic	38	53	.
Iran	41	43	.	Tunisia	38	53	.
Jordan	38	53	2.23	Turkey	37	45	0.99
Kenya	27	49	.	United Arab Emirates	38	53	.
Kuwait	38	53	2.85	United Kingdom	89	66	3.27
Lebanon	38	53	0.98	Yemen	38	53	.
				Mean (total)	42.3	54.57	2.44

Notes: The sample consists of 729 banks in 33 countries for the 1999 – 2013 period.

Table 2
The effect of regulatory capital and regulatory environment on bank performance

	Regulatory capital		Regulatory capital and regulatory environment					
	All banks	Separate	Separate					
	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA
Model #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank size	0.132***	0.131***	0.137***	0.201***	0.138***	0.145***	0.149***	0.119***
	(0.041)	(0.041)	(0.043)	(0.053)	(0.043)	(0.042)	(0.043)	(0.043)
Bank credit exposure	0.011**	0.013**	0.014**	0.018**	0.014**	0.015***	0.015***	0.013**
	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)	(0.005)	(0.005)	(0.006)
Tangibility	-0.155***	-0.154***	-0.161***	-0.220**	-0.176***	-0.175***	-0.177***	-0.169***
	(0.052)	(0.050)	(0.08)	(0.088)	(0.056)	(0.056)	(0.056)	(0.055)
Non-operating income	-0.007	-0.007	-0.008*	-0.016**	-0.008	-0.008*	-0.009*	-0.009*
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
Growth assets	0.007**	0.008***	0.009***	0.012***	0.009***	0.009***	0.009***	0.009***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Regulatory capital	0.042***							
	(0.009)							
Regulatory capital × Islamic		0.029**						
		(0.013)						
Regulatory capital × Conventional		0.053***						
		(0.007)						
Regulatory capital × Islamic × Capital stringency (CS)			0.004*					
			(0.002)					
Regulatory capital × conventional × Capital stringency (CS)			0.008***					
			(0.001)					
Regulatory capital × Islamic × Disclosure				0.01				
				(0.009)				
Regulatory capital × conventional × Disclosure				0.027***				
				(0.005)				
Regulatory capital × Islamic × Audit					0.012*			
					(0.007)			
Regulatory capital × conventional × Audit					0.024***			
					(0.004)			
Regulatory capital × Islamic × Certified						0.025*		
						(0.015)		
Regulatory capital × conventional × Certified						0.051***		
						(0.008)		
Regulatory capital × Islamic × Entry							0.004*	
							(0.002)	
Regulatory capital × conventional × Entry							0.007***	
							(0.001)	
Regulatory capital × Islamic × insurance								0.019
								(0.018)
Regulatory capital × conventional × insurance								0.049***
								(0.008)
GDP rate	0.022*	0.021*	0.044***	0.007	0.037**	0.036**	0.036**	0.039**
	(0.011)	(0.012)	(0.016)	(0.018)	(0.015)	(0.015)	(0.015)	(0.016)
GDP per capita	1.057***	0.995***	0.873**	0.740	0.905**	1.063***	0.908**	0.928**
	(0.275)	(0.278)	(0.378)	(0.456)	(0.369)	(0.372)	(0.369)	(0.373)
Inflation	-0.015	-0.014	-0.032	-0.032	-0.032*	-0.036*	-0.038**	-0.036*
	(0.015)	(0.015)	(0.020)	(0.021)	(0.019)	(0.019)	(0.019)	(0.019)
Concentration	-0.021***	-0.021***	-0.028***	-0.048***	-0.025***	-0.029***	-0.029***	-0.034***
	(0.007)	(0.007)	(0.009)	(0.012)	(0.009)	(0.009)	(0.008)	(0.009)
Constant	-5.711**	-5.822**	-6.812	-5.443	-8.796***	-9.955***	-7.09*	-7.388**
	(2.401)	(2.399)	(4.433)	(5.350)	(3.293)	(3.339)	(4.279)	(3.305)
Observations	3,371	3,371	2,708	1,973	2,756	2,756	2,754	2,756
Country control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H0: $\beta_1 = \beta_2$		4.63**	2.74*	4.73**	3.75*	4.41**	4.29**	3.62*
R2	0.203	0.211	0.192	0.199	0.192	0.197	0.198	0.193
Adjusted R2	0.136	0.144	0.121	0.127	0.121	0.126	0.127	0.121

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 3
The effect of regulatory capital and regulatory environment on bank performance: High vs. low individualism

	Baseline and individualism				Institutional environment and individualism (High vs. low individualism)											
	All banks		Separate		Separate											
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Model #	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Bank size	-0.074	0.186***	-0.028	0.185***	-0.026	0.215***	-0.03	0.255***	-0.03	0.22***	-0.028	0.233***	-0.027	0.236***	-0.043	0.191***
	(0.053)	(0.055)	(0.039)	(0.055)	(0.041)	(0.059)	(0.039)	(0.061)	(0.039)	(0.059)	(0.039)	(0.059)	(0.038)	(0.060)	(0.039)	(0.059)
Bank credit exposure	0.009	0.013**	0.003	0.015**	0.003	0.015**	0.003	0.016**	0.003	0.015**	0.003	0.016**	0.003	0.017**	0.003	0.014**
	(0.008)	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.006)	(0.005)	(0.007)	(0.005)	(0.006)	(0.005)	(0.007)
Tangibility	-0.113	-0.158**	0.085	-0.155**	0.1	-0.18**	0.0627	-0.203***	0.083	-0.193***	0.085	-0.192***	0.085	-0.193***	0.016	-0.184***
	(0.230)	(0.062)	(0.166)	(0.061)	(0.167)	(0.073)	(0.164)	(0.073)	(0.166)	(0.069)	(0.166)	(0.069)	(0.166)	(0.069)	(0.168)	(0.069)
Non-operating income	-0.016**	-0.005	-0.013**	-0.006	-0.012**	-0.007	-0.013**	-0.008	-0.013**	-0.006	-0.013**	-0.006	-0.013**	-0.007	-0.015**	-0.007
	(0.008)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Growth assets	0.011***	0.007**	0.012***	0.007**	0.012***	0.01**	0.012***	0.009**	0.012***	0.009**	0.012***	0.009**	0.012***	0.009**	0.012***	0.009**
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)
Regulatory capital	-0.013	0.049***														
	(0.026)	(0.009)														
Regulatory capital × Islamic			-0.072***	0.039***												
			(0.023)	(0.013)												
Regulatory capital × Conventional			0.034***	0.057***												
			(0.010)	(0.008)												
Regulatory capital × Islamic × stringency					-0.011***	0.006**										
					(0.004)	(0.003)										
Regulatory capital × conventional × stringency					0.006***	0.008***										
					(0.002)	(0.002)										
Regulatory capital × Islamic × Disclosure							-0.025***	0.021***								
							(0.008)	(0.008)								
Regulatory capital × conventional × Disclosure							0.012***	0.029***								
							(0.004)	(0.005)								
Regulatory capital × Islamic × Audit									-0.036***	0.018**						
									(0.012)	(0.008)						
Regulatory capital × conventional × Audit									0.016***	0.026***						
									(0.005)	(0.004)						
Regulatory capital × Islamic × Certified											-0.07***	0.038**				
											(0.023)	(0.015)				
Regulatory capital × conventional × Certified											0.034***	0.057***				
											(0.010)	(0.009)				
Regulatory capital × Islamic × Entry requirements													-0.009***	0.005**		
													(0.003)	(0.002)		
Regulatory capital × conventional × Entry													0.004***	0.007***		
													(0.001)	(0.001)		
Regulatory capital × Islamic × insurance															-0.078***	0.033*
															(0.022)	(0.019)
Regulatory capital × conventional × insurance															0.025**	0.054***
															(0.009)	(0.009)
GDP rate	0.265	0.018	0.274	0.017	0.251	0.041**	0.336	0.032*	0.261	0.034*	0.274	0.033*	0.261	0.034*	0.325	0.043**
	(0.308)	(0.012)	(0.290)	(0.012)	(0.291)	(0.018)	(0.293)	(0.018)	(0.292)	(0.017)	(0.290)	(0.017)	(0.288)	(0.018)	(0.291)	(0.018)
GDP per capita	1.875	1.306***	2.024	1.246***	1.870	1.35**	2.168	1.579***	2.178	1.33**	2.024	1.62***	1.982	1.381***	2.613	1.477***
	(2.201)	(0.324)	(1.975)	(0.327)	(1.964)	(0.550)	(1.994)	(0.527)	(1.992)	(0.533)	(1.975)	(0.533)	(1.968)	(0.531)	(2.068)	(0.542)
Inflation	0.147	-0.014	0.162	-0.013	0.158	-0.032	0.15	-0.042**	0.177*	-0.033*	0.162	-0.036*	0.163	-0.038*	2.613	1.477***
	(0.114)	(0.016)	(0.100)	(0.016)	(0.010)	(0.020)	(0.101)	(0.019)	(0.103)	(0.019)	(0.100)	(0.019)	(0.100)	(0.019)	(2.068)	(0.542)
Concentration	-0.005	-0.015*	0.013	-0.015*	0.01	-0.023**	0.011	-0.023**	0.018	-0.019*	0.013	-0.023**	0.013	-0.023**	0.024	-0.033***
	(0.047)	(0.008)	(0.045)	(0.008)	(0.045)	(0.010)	(0.045)	(0.010)	(0.045)	(0.009)	(0.045)	(0.001)	(0.045)	(0.010)	(0.045)	(0.010)
Constant	-17.20	-9.04***	-22.66	-9.079***	-20.84	-13.62***	-24.17	-15.5***	-24.62	-8.187**	-22.66	-9.761**	-22.26	-14.15***	-29.28	-7.355*
	(27.33)	(2.888)	(24.84)	(2.890)	(24.79)	(4.714)	(25.01)	(4.558)	(25.07)	(3.954)	(24.84)	(4.000)	(24.76)	(5.969)	(25.80)	(4.036)
Observations	333	2,900	333	2,900	333	2,271	333	2,204	333	2,319	333	2,319	333	2,317	333	2,319
H0: $\beta_1 = \beta_2$			22.63***	2.8*	19.48***	1.01	24.31***	1.79	22.21***	1.69	22.63***	2.23	22.91***	2.13	22.89***	1.59
Country	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.327	0.196	0.517	0.201	0.514	0.184	0.514	0.201	0.515	0.186	0.517	0.193	0.518	0.194	0.505	0.186
Adjusted R2	0.112	0.123	0.356	0.127	0.352	0.102	0.352	0.118	0.354	0.105	0.356	0.112	0.357	0.113	0.339	0.104

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In models (1)-(16), we breakdown the sample into two subsamples: (1) highly individualistic (if the countries' proxy for individualism > median value of the Hofstede's index on individualism) and (2) less individualistic (if the countries' proxy for individualism <= median of the Hofstede's index on individualism). For Models (1)-(2), we use Eq. (1) and for the remaining models we use Eq. (2). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 4

The effect of regulatory capital and regulatory environment on bank performance: High vs. low masculinity

	Regulatory capital and masculinity				Regulatory environment and masculinity (High vs. low masculinity)											
	All banks		Separate		Separate											
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA
Model #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Bank size	-0.039	0.198***	-0.027	0.198***	-0.022	0.222***	-0.015	0.248***	-0.029	0.226***	-0.034	0.242***	-0.028	0.246***	-0.034	0.198***
	(0.050)	(0.057)	(0.048)	(0.057)	(0.049)	(0.062)	(0.045)	(0.062)	(0.047)	(0.061)	(0.047)	(0.061)	(0.048)	(0.062)	(0.046)	(0.062)
Bank credit exposure	0.011*	0.013**	0.009*	0.014**	0.011**	0.014**	0.007	0.016**	0.011**	0.014**	0.011**	0.016**	0.01**	0.016**	0.011**	0.013*
	(0.006)	(0.006)	(0.005)	(0.006)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)
Tangibility	-0.249	-0.14**	-0.204	-0.137**	-0.206	-0.161**	-0.336	-0.173***	-0.214	-0.177***	-0.214	-0.175***	-0.211	-0.175***	-0.229	-0.164***
	(0.231)	(0.057)	(0.214)	(0.056)	(0.223)	(0.068)	(0.309)	(0.064)	(0.216)	(0.064)	(0.216)	(0.064)	(0.220)	(0.064)	(0.214)	(0.063)
Non-operating income	-0.011	-0.007	-0.008	-0.007	-0.0112	-0.007	-0.012	-0.007	-0.011	-0.006	-0.011*	-0.007	-0.012	-0.007	-0.013*	-0.007
	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
Growth assets	0.016***	0.005	0.018***	0.005*	0.02***	0.007*	0.019***	0.007*	0.019***	0.007*	0.02***	0.007*	0.02***	0.008*	0.019***	0.007*
	(0.005)	(0.003)	(0.005)	(0.003)	(0.005)	(0.004)	(0.006)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)
Regulatory capital	0.001	0.049***														
	(0.023)	(0.010)														
Regulatory capital × Islamic			-0.059***	0.041***												
			(0.019)	(0.013)												
Regulatory capital × Conventional			0.033**	0.057***												
			(0.015)	(0.009)												
Regulatory capital × Islamic × stringency					-0.009***	0.006**										
					(0.003)	(0.003)										
Regulatory capital × conventional × stringency					0.007***	0.008***										
					(0.002)	(0.001)										
Regulatory capital × Islamic × Disclosure							-0.021***	0.021***								
							(0.006)	(0.008)								
Regulatory capital × conventional × Disclosure							0.014***	0.029***								
							(0.005)	(0.004)								
Regulatory capital × Islamic × Audit									-0.028***	0.019**						
									(0.009)	(0.008)						
Regulatory capital × conventional × Audit									0.019***	0.025***						
									(0.007)	(0.004)						
Regulatory capital × Islamic × Certified											-0.06***	0.04**				
											(0.018)	(0.016)				
Regulatory capital × conventional × Certified											0.035**	0.056***				
											(0.015)	(0.009)				
Regulatory capital × Islamic × Entry													-0.01***	0.005***		
													(0.002)	(0.002)		
Regulatory capital × conventional × Entry													0.01***	0.007***		
													(0.002)	(0.001)		
Regulatory capital × Islamic × insurance															-0.061***	0.035*
															(0.017)	(0.019)
Regulatory capital × conventional × insurance															0.038**	0.051***
															(0.016)	(0.009)
GDP rate	0.006	0.019	0.011	0.017	0.022	0.045**	0.014	0.035*	0.02	0.039**	0.02	0.037**	0.021	0.0378**	0.021	0.046**
	(0.046)	(0.012)	(0.044)	(0.012)	(0.042)	(0.019)	(0.066)	(0.018)	(0.043)	(0.018)	(0.043)	(0.018)	(0.0428)	(0.018)	(0.043)	(0.019)
GDP per capita	1.02	1.267***	0.761	1.211***	0.663	1.408***	1.385	1.509***	0.611	1.39***	0.544	1.661***	0.57	1.409***	0.776	1.47***
	(0.680)	(0.319)	(0.714)	(0.322)	(0.724)	(0.535)	(0.838)	(0.515)	(0.717)	(0.521)	(0.754)	(0.518)	(0.752)	(0.518)	(0.666)	(0.531)
Inflation	-0.019	-0.016	-0.022	-0.015	-0.011	-0.034	0.121*	-0.044**	-0.012	-0.036*	-0.021	-0.038**	-0.017	-0.041**	0.002	-0.034
	(0.070)	(0.016)	(0.073)	(0.016)	(0.069)	(0.021)	(0.067)	(0.020)	(0.068)	(0.020)	(0.071)	(0.020)	(0.071)	(0.020)	(0.065)	(0.021)
Concentration	-0.027*	-0.013	-0.025*	-0.013	-0.031*	-0.019	-0.026	-0.02*	-0.033**	-0.014	-0.036**	-0.019	-0.034*	-0.02	-0.031**	-0.033***
	(0.014)	(0.009)	(0.014)	(0.009)	(0.016)	(0.013)	(0.020)	(0.012)	(0.0162)	(0.012)	(0.017)	(0.012)	(0.017)	(0.012)	(0.015)	(0.013)
Constant	-6.613	-8.75***	-5.343	-8.713***	-1.892	-14.48**	-12.63	-16.58***	-1.644	-15.45**	-0.950	-18.17***	-1.25	-8.614**	-2.642	-12.67**
	(7.590)	(3.028)	(7.887)	(3.029)	(4.993)	(6.338)	(9.523)	(5.924)	(4.910)	(5.992)	(5.308)	(6.005)	(5.281)	(4.108)	(4.448)	(6.010)
Observations	758	2,475	758	2,475	703	1,901	588	1,949	703	1,949	703	1,949	703	1,947	703	1,949
H0: $\beta_1 = \beta_2$			19.53***	2.11	25.53***	3.86*	38.15***	5.63**	23.46***	4.32**	79.61***	4.05**	29.25***	5.71**	11.88***	5.66**
Country	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.237	0.208	0.324	0.212	0.34	0.222	0.378	0.239	0.341	0.229	0.338	0.203	0.34	0.238	0.342	0.192
Adjusted R2	0.093	0.129	0.191	0.147	0.21	0.10	0.236	0.116	0.211	0.105	0.208	0.114	0.21	0.114	0.212	0.102

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In models (1)-(16), we breakdown the sample into two subsamples: (1) highly masculine (if the countries' proxy for masculinity > median value of the Hofstede's index on masculinity) and (2) less masculine (if the countries' proxy for masculinity <= median of the Hofstede's index on masculinity). For Models (1)-(2), we use Eq. (1) and for the remaining models we use Eq. (2). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 5

The effect of regulatory capital and regulatory environment on bank performance: High vs. low trust

	Regulatory capital and Trust				Regulatory environment and Trust (High vs. low trust)											
	All banks		Separate		Separate											
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA
Model #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Bank size	0.132**	0.059	0.135**	0.049	0.122**	0.033	0.124**	0.069*	0.115**	0.054	0.133**	0.052	0.13**	0.054	0.125**	0.026
	(0.053)	(0.048)	(0.053)	(0.047)	(0.057)	(0.041)	(0.05()	(0.041)	(0.055)	(0.042)	(0.055)	(0.042)	(0.055)	(0.042)	(0.058)	(0.040)
Bank credit exposure	0.011	0.002	0.014*	0.003	0.006	0.006	0.007	0.007	0.006	0.008*	0.008	0.008	0.008	0.008	0.007	0.006
	(0.008)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.004)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.006)	(0.005)
Tangibility	-0.242**	-0.120	-0.207**	-0.123	-0.208*	-0.177	-0.197*	-0.214	-0.209*	-0.178	-0.198*	-0.177	-0.201*	-0.178	-0.216**	-0.176
	(0.104)	(0.119)	(0.097)	(0.119)	(0.109)	(0.131)	(0.109)	(0.149)	(0.109)	(0.130)	(0.108)	(0.130)	(0.108)	(0.130)	(0.107)	(0.129)
Non-operating income	-0.002	-0.007	-0.002	-0.006	-0.007	-0.003	-0.007	-0.004	-0.007	-0.003	-0.007	-0.003	-0.007	-0.004	-0.007	-0.003
	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)
Growth assets	0.004	0.001	0.004	0.002	0.003	0.004					0.003	0.004	0.003	0.004	0.003	0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)					(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)
Regulatory capital	0.044***	0.0227**														
	(0.013)	(0.0100)														
Regulatory capital × Islamic			0.019	0.003												
			(0.018)	(0.012)												
Regulatory capital × Conventional			0.062***	0.026***												
			(0.011)	(0.010)												
Regulatory capital × Islamic × stringency					0.002	-0.002										
					(0.003)	(0.002)										
Regulatory capital × conventional × stringency					0.008***	0.003*										
					(0.002)	(0.002)										
Regulatory capital × Islamic × Disclosure							0.003	-0.003								
							(0.007)	(0.005)								
Regulatory capital × conventional × Disclosure							0.025***	0.013***								
							(0.005)	(0.004)								
Regulatory capital × Islamic × Audit									0.006	-0.005						
									(0.010)	(0.005)						
Regulatory capital × conventional × Audit									0.025***	0.013***						
									(0.005)	(0.005)						
Regulatory capital × Islamic × Certified											0.014	-0.01				
											(0.019)	(0.009)				
Regulatory capital × conventional × Certified											0.058***	0.025***				
											(0.012)	(0.009)				
Regulatory capital × Islamic × Entry													0.002	-0.001		
													(0.002)	(0.001)		
Regulatory capital × conventional × Entry													0.007***	0.003***		
													(0.001)	(0.001)		
Regulatory capital × Islamic × insurance															-0.004	-0.025***
															(0.025)	(0.009)
Regulatory capital × conventional × insurance															0.059***	0.021**
															(0.012)	(0.008)
GDP rate	-0.011	0.017	-0.009	0.016	-0.034	0.042*	0.004	0.003	-0.032	0.039	-0.038	0.038	-0.038	0.039*	-0.044*	0.042*
	(0.024)	(0.017)	(0.023)	(0.018)	(0.027)	(0.024)	(0.003)	(0.005)	(0.025)	(0.024)	(0.025)	(0.024)	(0.025)	(0.024)	(0.026)	(0.023)
GDP per capita	-0.0727	1.454***	-0.075	1.448***	-0.304	0.662	-0.039	0.955*	-0.443	0.701	-0.362	0.704	-0.418	0.632	-0.529	0.382
	(0.501)	(0.518)	(0.504)	(0.523)	(0.532)	(0.557)	(0.026)	(0.571)	(0.526)	(0.547)	(0.529)	(0.548)	(0.528)	(0.544)	(0.524)	(0.527)
Inflation	-0.065*	-0.014	-0.057	-0.015	-0.086**	-0.039	-0.084**	-0.044	-0.087**	-0.042	-0.091**	-0.043	-0.093**	-0.042	-0.109***	-0.041
	(0.037)	(0.022)	(0.037)	(0.022)	(0.042)	(0.028)	(0.041)	(0.028)	(0.042)	(0.028)	(0.041)	(0.028)	(0.041)	(0.028)	(0.040)	(0.028)
Concentration	-0.04***	-0.003	-0.041**	-0.003	-0.061***	-0.001	-0.082***	0.005	-0.061***	-0.001	-0.07***	-0.001	-0.067***	-0.001	-0.069***	-0.002
	(0.016)	(0.008)	(0.016)	(0.008)	(0.020)	(0.009)	(0.020)	(0.009)	(0.020)	(0.009)	(0.019)	(0.010)	(0.020)	(0.010)	(0.020)	(0.009)
Constant	0.222	-13.35**	0.297	-13.28**	6.423	-5.013	9.512	-5.768	7.648	-3.848	6.865	-3.755	7.452	-5.150	11.88*	-1.188
	(3.878)	(5.887)	(5.805)	(5.882)	(6.472)	(6.157)	(6.372)	(3.564)	(6.375)	(3.553)	(6.389)	(3.593)	(6.373)	(6.085)	(6.194)	(3.386)
Observations	1,120	1,541	1,120	1,541	1,002	1,272	1,007	1,159	1,007	1,274	1,007	1,274	1,007	1,274	1,007	1,274
H0: $\beta_1 = \beta_2$			5.82**	3.8*	4.26**	7.49***	7.71***	10.85***	4.3**	10.16***	6.17**	10.05***	5.74**	12.08***	5.41**	14.7***
Country	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.244	0.207	0.27	0.215	0.288	0.156	0.296	0.184	0.282	0.168	0.299	0.167	0.295	0.167	0.31	0.168
Adjusted R2	0.126	0.112	0.148	0.118	0.168	0.04	0.182	0.064	0.163	0.054	0.182	0.052	0.182	0.053	0.199	0.053

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance).). In models (1)-(16), we breakdown the sample into two subsamples: (1) high trust (if the countries' proxy for general trust > median value of the WVS's proxy on general trust) and (2) low trust (if the countries' proxy for general trust <= median of the WVS's proxy on general trust). For Models (1)-(2), we use Eq. (1) and for the remaining models we use Eq. (2). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 6

Alternative profitability and capital measures

Variables	High individualsim				Low individualsim			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Panel A. The impact of individualism								
Regulatory capital	0.007 (0.032)	276		0.389/0.186	0.053*** (0.014)	1,621		0.279/0.192
Regulatory capital × Islamic	-0.072*** (0.014)	276	65.71***	0.505/0.324	0.051*** (0.017)	1,621	0.35	0.279/0.191
Regulatory capital × conventional	0.049** (0.019)				0.059*** (0.013)			
Regulatory capital × Islamic × stringent	-0.011*** (0.003)	276	38.83***	0.502/0.32	0.009*** (0.003)	1,238	0.02	0.287/0.184
Regulatory capital × conventional × stringent	0.008** (0.003)				0.009*** (0.002)			
Regulatory capital × Islamic × disclosure	-0.025*** (0.004)	276	90.64***	0.504/0.322	0.028*** (0.009)	1,166	0.17	0.302/0.198
Regulatory capital × conventional × disclosure	0.017** (0.007)				0.031*** (0.007)			
Regulatory capital × Islamic × audit	-0.036*** (0.007)	276	65.91***	0.505/0.332	0.027*** (0.009)	1,272	0.09	0.284/0.182
Regulatory capital × conventional × audit	0.025** (0.009)				0.029*** (0.007)			
Regulatory capital × Islamic × certified	-0.072*** (0.014)	276	65.71***	0.505/0.324	0.054*** (0.019)	1,272	0.15	0.286/0.185
Regulatory capital × conventional × certified	0.049** (0.019)				0.06*** (0.014)			
Regulatory capital × Islamic × entry	-0.009*** (0.002)	276	65.61***	0.506/0.324	0.007*** (0.002)	1,270	0.27	0.29/0.189
Regulatory capital × conventional × entry	0.006** (0.002)				0.008*** (0.002)			
Regulatory capital × Islamic × insurance	-0.079*** (0.012)	276	95.92***	0.488/0.318	0.069*** (0.025)	1,272	0.1	0.297/0.198
Regulatory capital × conventional × insurance	0.037* (0.019)				0.075*** (0.015)			

Panel B. The impact of masculinity

Variables	Highly masculine				Less masculine			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.016 (0.028)	399		0.414/0.275	0.054*** (0.014)	1,498		0.281/0.191
Regulatory capital × Islamic	-0.065*** (0.014)	399	56.95***	0.498/0.368	0.052*** (0.017)	1,498	0.28	0.282/0.189
Regulatory capital × conventional	0.048*** (0.016)				0.059*** (0.013)			
Regulatory capital × Islamic × stringent	-0.01*** (0.003)	399	29.51***	0.496/0.366	0.01*** (0.003)	1,115	0.05	0.295/0.185
Regulatory capital × conventional × stringent	0.007*** (0.003)				0.009*** (0.00257)			
Regulatory capital × Islamic × disclosure	-0.024*** (0.004)	293	86.38***	0.558/0.423	0.028*** (0.009)	1,149	0.16	0.295/0.188
Regulatory capital × conventional × disclosure	0.017** (0.007)				0.031*** (0.007)			
Regulatory capital × Islamic × audit	-0.032*** (0.007)	399	57.1***	0.498/0.369	0.027*** (0.009)	1,149	0.04	0.291/0.183
Regulatory capital × conventional × audit	0.024*** (0.008)				0.029*** (0.007)			
Regulatory capital × Islamic × certified	-0.065*** (0.014)	399	56.95***	0.498/0.368	0.056*** (0.0188)	1,149	0.09	0.293/0.186
Regulatory capital × conventional × certified	0.048*** (0.016)				0.061*** (0.015)			

Notes: The dependent variable is bank operating profits (OPATA). Regulatory capital is bank Tier1 ratio scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Tables 6

Alternative profitability and capital measures – *(Continued)*

Variables	Highly masculine				Less masculine			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Panel B. The impact of masculinity								
Regulatory capital × Islamic × entry	-0.008*** (0.002)	399	58.7***	0.498/0.369	0.007*** (0.002)	1,147	0.19	0.298/0.19
Regulatory capital × conventional × entry	0.006*** (0.002)				0.008*** (0.002)			
Regulatory capital × Islamic × insurance	-0.074*** (0.010)	399	123.98***	0.487/0.36	0.07*** (0.0254)	1,149	0.06	0.305/0.199
Regulatory capital × conventional × insurance	0.038** (0.015)				0.076*** (0.016)			

Panel C. The impact of trust

Variables	Highly trustful				Less trustful			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.044** (0.020)	751		0.332/0.205	0.024 (0.017)	701		0.402/0.291
Regulatory capital × Islamic	0.025 (0.017)	751	7.03***	0.359/0.233	0.043 (0.029)	701	0.8	0.405/0.29
Regulatory capital × conventional	0.075*** (0.018)				0.024 (0.017)			
Regulatory capital × Islamic × stringent	0.003 (0.003)	728	6.57**	0.371/0.246	-0.004 (0.004)	515	2.19	0.374/0.234
Regulatory capital × conventional × stringent	0.011*** (0.003)				0.001 (0.003)			
Regulatory capital × Islamic × disclosure	0.006 (0.008)	728	8.02***	0.368/0.242	-0.01 (0.010)	411	4.55**	0.423/0.278
Regulatory capital × conventional × disclosure	0.029*** (0.007)				0.004 (0.009)			
Regulatory capital × Islamic × audit	0.01 (0.008)	728	6.4**	0.367/0.242	-0.011 (0.012)	517	3.11*	0.376/0.236
Regulatory capital × conventional × audit	0.034*** (0.009)				0.004 (0.009)			
Regulatory capital × Islamic × certified	0.02 (0.017)	728	6.59**	0.368/0.243	-0.021 (0.024)	517	3.11*	0.378/0.236
Regulatory capital × conventional × certified	0.069*** (0.018)				0.008 (0.019)			
Regulatory capital × Islamic × entry	0.002 (0.002)	728	6.59**	0.368/0.243	-0.002 (0.003)	515	3.13*	0.377/0.238
Regulatory capital × conventional × entry	0.008*** (0.002)				0.002 (0.002)			
Regulatory capital × Islamic × insurance	-0.008 (0.015)	728	25.22***	0.384/0.261	-0.038** (0.017)	517	12.18***	0.383/0.245
Regulatory capital × conventional × insurance	0.071*** (0.019)				0.017 (0.012)			

(Continued)

Notes: The dependent variable is bank-operating profits (OPATA). Regulatory capital is bank Tier1 ratio scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 7
Higher cut-off point

Variables	High individualsim				Low individualsim			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Panel A. The impact of masculinity								
Regulatory capital	-0.024 (0.024)	371		0.317/0.111	0.049*** (0.009)	2,862	0.203	0.198/0.124
Regulatory capital × Islamic	-0.079*** (0.023)	371	20.88***	0.487/0.325	0.039*** (0.013)	2,862	2.89*	0.203/0.128
Regulatory capital × conventional	0.025** (0.010)				0.057*** (0.008)			
Regulatory capital × Islamic × stringent	-0.013*** (0.004)	371	21.43***	0.488/0.326	0.006** (0.003)	2,233	1.04	0.186/0.104
Regulatory capital × conventional × stringent	0.004** (0.002)				0.008*** (0.001)			
Regulatory capital × Islamic × disclosure	-0.026*** (0.008)	256	19.81***	0.493/0.311	0.02** (0.00772)	2,281	1.95	0.196/0.114
Regulatory capital × conventional × disclosure	0.009* (0.004)				0.028*** (0.004)			
Regulatory capital × Islamic × audit	-0.039*** (0.012)	371	21.47***	0.488/0.326	0.018** (0.008)	2,281	1.71	0.188/0.105
Regulatory capital × conventional × audit	0.013** (0.005)				0.026*** (0.004)			
Regulatory capital × Islamic × certified	-0.079*** (0.023)	371	20.88***	0.487/0.325	0.037** (0.015)	2,281	2.34	0.195/0.114
Regulatory capital × conventional × certified	0.025** (0.010)				0.056*** (0.009)			
Regulatory capital × Islamic × entry	-0.01*** (0.003)	371	21.03***	0.487/0.325	0.005** (0.002)	2,279	2.23	0.196/0.114
Regulatory capital × conventional × entry	0.003** (0.001)				0.007*** (0.001)			
Regulatory capital × Islamic × insurance	-0.078*** (0.023)	371	22.02***	0.489/0.328	0.031 (0.019)	2,281	1.56	0.184/0.102
Regulatory capital × conventional × insurance	0.027*** (0.010)				0.051*** (0.009)			

Panel A. The impact of trust

Variables	Highly trustful				Less trustful			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.038* (0.019)	503		0.286/0.136	0.033*** (0.008)	2,158		0.201/0.128
Regulatory capital × Islamic	0.009 (0.017)	503	8.44***	0.327/0.18	0.016 (0.017)	2,158	2.19	0.209/0.135
Regulatory capital × conventional	0.072*** (0.019)				0.037*** (0.008)			
Regulatory capital × Islamic × stringent	-0.001 (0.002)	392	8.98***	0.334/0.184	0.002 (0.003)	1,882	2.15	0.174/0.09
Regulatory capital × conventional × stringent	0.01*** (0.003)				0.003*** (0.001)			
Regulatory capital × Islamic × disclosure	-0.000 (0.007)	392	10.02***	0.346/0.199	0.003 (0.010)	1,774	3.03*	0.191/0.107
Regulatory capital × conventional × disclosure	0.031*** (0.010)				0.017*** (0.004)			
Regulatory capital × Islamic × audit	-0.001 (0.008)	392	5.68**	0.32/0.168	0.005 (0.009)	1,889	3.01*	0.183/0.101
Regulatory capital × conventional × audit	0.028** (0.011)				0.019*** (0.004)			
Regulatory capital × Islamic × certified	0.004 (0.017)	392	8.08***	0.347/0.201	0.01 (0.018)	1,889	2.91*	0.182/0.099
Regulatory capital × conventional × certified	0.072*** (0.023)				0.037*** (0.008)			
Regulatory capital × Islamic × entry	0.001 (0.002)	392	7.67***	0.341/0.193	0.001 (0.002)	1,887	2.96*	0.183/0.101
Regulatory capital × conventional × entry	0.009*** (0.003)				0.005*** (0.001)			
Regulatory capital × Islamic × insurance	-0.031* (0.017)	392	29.85***	0.386/0.248	0.001 (0.021)	1,889	3.1*	0.178/0.096
Regulatory capital × conventional × insurance	0.08*** (0.026)				0.034*** (0.007)			

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 8
Alternative cultural mesures

Panel A. Institutional collectivism values

Variables	Highly collectivist				Less collectivist			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.055*** (0.010)	1,312		0.224/0.121	-0.025 (0.018)	521		0.242/0.071
Regulatory capital × Islamic	0.044*** (0.014)	1,312	1.29	0.226/0.12	-0.058*** (0.016)	521	23.79***	0.383/0.238
Regulatory capital × conventional	0.058*** (0.010)				0.024** (0.010)			
Regulatory capital × Islamic × stringent	0.005** (0.002)	989	2.99*	0.204/0.076	-0.009*** (0.003)	492	29.05***	0.412/0.268
Regulatory capital × conventional × stringent	0.008*** (0.002)				0.005*** (0.002)			
Regulatory capital × Islamic × disclosure	0.017** (0.008)	989	4.24**	0.221/0.096	-0.024*** (0.006)	379	37.49***	0.467/0.308
Regulatory capital × conventional × disclosure	0.029*** (0.005)				0.01*** (0.004)			
Regulatory capital × Islamic × audit	0.015* (0.008)	989	2.6	0.203/0.076	-0.028*** (0.007)	494	28.88***	0.41/0.266
Regulatory capital × conventional × audit	0.026*** (0.005)				0.014*** (0.005)			
Regulatory capital × Islamic × certified	0.033** (0.016)	989	4.25**	0.221/0.096	-0.057*** (0.015)	494	27.04***	0.408/0.264
Regulatory capital × conventional × certified	0.059*** (0.010)				0.026*** (0.009)			
Regulatory capital × Islamic × entry	0.004** (0.002)	989	4.09**	0.217/0.091	-0.007*** (0.002)	492	27.83***	0.409/0.264
Regulatory capital × conventional × entry	0.007*** (0.001)				0.003*** (0.001)			
Regulatory capital × Islamic × insurance	0.02 (0.018)	989	4.31**	0.2/0.072	-0.059*** (0.015)	494	26.42***	0.402/0.257
Regulatory capital × conventional × insurance	0.05*** (0.011)				0.024** (0.009)			

Panel B. Gender egalitarianism values

Variables	High gender egalitarianism values				Low gender egalitarianism values			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.075*** (0.022)	636		0.353/0.184	0.013* (0.008)	521		0.334/0.15
Regulatory capital × Islamic	0.074*** (0.023)	636	0.04	0.353/0.177	0.013 (0.009)	521	0.01	0.334/0.144
Regulatory capital × conventional	0.077*** (0.020)				0.014 (0.009)			
Regulatory capital × Islamic × stringent	0.011*** (0.003)	422	0.2	0.436/0.255	0.002* (0.001)	428	2.53	0.301/0.065
Regulatory capital × conventional × stringent	0.013*** (0.003)				0.003** (0.001)			
Regulatory capital × Islamic × disclosure	0.036*** (0.012)	422	0.05	0.433/0.25	0.000 (0.003)	474	5.08**	0.246/0.019
Regulatory capital × conventional × disclosure	0.038*** (0.01)				0.006* (0.003)			
Regulatory capital × Islamic × audit	0.033*** (0.011)	422	0.05	0.423/0.238	-0.001 (0.003)	474	2.78*	0.244/0.016
Regulatory capital × conventional × audit	0.031*** (0.010)				0.005 (0.004)			
Regulatory capital × Islamic × certified	0.067*** (0.023)	422	0.02	0.425/0.24	-0.000 (0.006)	474	2.78*	0.244/0.016
Regulatory capital × conventional × certified	0.064*** (0.020)				0.011 (0.008)			

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In different models, we breakdown the sample into various subsamples: (1) higher institutional collectivism values, higher gender egalitarianism values, and higher trust in government (if the countries' proxy for the cultural measure > median of the respective measure) and (2) : (1) higher institutional collectivism values, higher gender egalitarianism values (if the countries' proxy for the cultural measure <= median of the respective measure). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 8

Alternative cultural measures – *(Continued)*

Panel B. Gender egalitarianism values

Variables	High gender egalitarianism values				Low gender egalitarianism values			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital × Islamic × entry	0.009*** (0.003)	422	0.1	0.433/0.251	-0.000 (0.001)	474	3.12*	0.244/0.017
Regulatory capital × conventional × entry	0.01*** (0.003)				0.001 (0.001)			
Regulatory capital × Islamic × insurance	0.081*** (0.028)	422	0.06	0.432/0.249	0.006 (0.007)	474	4.3**	0.255/0.031
Regulatory capital × conventional × insurance	0.086*** (0.026)				0.021** (0.008)			

Panel C. Trust in the government

Variables	High trust in the government				Low trust in the government			
	Coef.	N	Wald-test	R2/Adjusted R2	Coef.	N	Wald-test	R2/Adjusted R2
Regulatory capital	0.034*** (0.011)	1,580		0.194/0.096	0.025* (0.014)	877		0.168/0.065
Regulatory capital × Islamic	0.016 (0.016)	1,580	4.17**	0.211/0.112	-0.039 (0.030)	877	6.15***	0.208/0.106
Regulatory capital × conventional	0.043*** (0.009)				0.037*** (0.013)			
Regulatory capital × Islamic × stringent	0.002 (0.003)	1,313	5.06**	0.187/0.073	-0.011** (0.005)	759	7.19***	0.203/0.10
Regulatory capital × conventional × stringent	0.007*** (0.001)				0.003 (0.002)			
Regulatory capital × Islamic × disclosure	0.006 (0.008)	1,282	5.65**	0.2/0.082	-0.023*** (0.008)	680	15.27***	0.228/0.12
Regulatory capital × conventional × disclosure	0.022*** (0.004)				0.013** (0.006)			
Regulatory capital × Islamic × audit	0.005 (0.008)	1,318	6.38**	0.196/0.084	-0.034** (0.013)	759	8.97***	0.204/0.101
Regulatory capital × conventional × audit	0.023*** (0.004)				0.009 (0.006)			
Regulatory capital × Islamic × certified	0.011 (0.017)	1,318	6.33**	0.197/0.085	-0.068** (0.027)	759	10.41***	0.219/0.117
Regulatory capital × conventional × certified	0.046*** (0.008)				0.027** (0.013)			
Regulatory capital × Islamic × entry	0.001 (0.002)	1,318	6.37**	0.197/0.084	-0.008** (0.003)	759	11.28***	0.218/0.116
Regulatory capital × conventional × entry	0.006*** (0.001)				0.003** (0.002)			
Regulatory capital × Islamic × insurance	-0.001 (0.018)	1,318	5.07**	0.176/0.061	-0.07*** (0.025)	759	20.07***	0.252/0.155
Regulatory capital × conventional × insurance	0.035*** (0.008)				0.051*** (0.014)			

(Continued)

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In different models, we breakdown the sample into various subsamples: (1) higher institutional collectivism values, higher gender egalitarianism values, and higher trust in government (if the countries' proxy for the cultural measure > median of the respective measure) and (2) : (1) higher institutional collectivism values, higher gender egalitarianism values (if the countries' proxy for the cultural measure <= median of the respective measure). The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 9

System GMM regression of profitability on bank capital-regulation link

Model #	Baseline		Institutional environment					
	All banks	Separate	Separate					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag ROAA	0.197***	0.314***	0.378***	0.387***	0.377***	0.380***	0.375***	0.381***
	(0.054)	(0.050)	(0.058)	(0.062)	(0.059)	(0.059)	(0.059)	(0.063)
Bank size	0.166*	0.174**	0.107	0.041	0.088	0.111	0.099	0.007
	(0.090)	(0.069)	(0.068)	(0.072)	(0.074)	(0.073)	(0.071)	(0.061)
Bank credit exposure	0.011***	0.014***	0.009***	0.009***	0.009***	0.01***	0.01***	0.008***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Tangibility	0.066	0.122	0.031	0.039	0.041	0.039	0.032	0.05
	(0.087)	(0.077)	(0.086)	(0.093)	(0.088)	(0.088)	(0.088)	(0.077)
Non-operating income	-0.003	-0.004	-0.008	-0.004	-0.005	-0.006	-0.007	-0.003
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Growth assets	0.007***	0.009**	0.003	0.004	0.005	0.005	0.004	0.004
	(0.002)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Regulatory capital	0.028**							
	(0.011)							
Regulatory capital × Islamic		-0.008						
		(0.013)						
Regulatory capital × conventional		0.049***						
		(0.0104)						
Regulatory capital × Islamic × stringent			-0.002					
			(0.002)					
Regulatory capital × conventional × stringent			0.005***					
			(0.001)					
Regulatory capital × Islamic × disclosure				-0.01*				
				(0.006)				
Regulatory capital × conventional × disclosure				0.011***				
				(0.004)				
Regulatory capital × Islamic × audit					-0.008			
					(0.006)			
Regulatory capital × conventional × audit					0.015***			
					(0.005)			
Regulatory capital × Islamic × certified						-0.011		
						(0.012)		
Regulatory capital × conventional × certified						0.035***		
						(0.010)		
Regulatory capital × Islamic × entry							-0.002	
							(0.001)	
Regulatory capital × conventional × entry							0.004***	
							(0.001)	
Regulatory capital × Islamic × insurance								-0.038***
								(0.012)
Regulatory capital × conventional × insurance								0.012**
								(0.005)
GDP rate	0.062***	0.062***	0.093***	0.101***	0.096***	0.096***	0.096***	0.098***
	(0.011)	(0.012)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)
GDP per capita	0.058	0.071	0.102*	0.074	0.08	0.092*	0.098*	0.014
	(0.065)	(0.054)	(0.052)	(0.063)	(0.053)	(0.055)	(0.053)	(0.044)
Inflation	0.008	-0.003	-0.004	-0.003	-0.005	-0.004	-0.005	-0.006
	(0.015)	(0.016)	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)	(0.018)
Concentration	-0.002	0.001	0.002	0.003	0.003	0.002	0.002	0.005
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	-2.21*	-3.057***	-1.081	-0.638	-1.335	-1.596	-1.298	-0.565
	(1.149)	(0.909)	(0.963)	(0.946)	(1.088)	(1.076)	(1.015)	(0.970)
Observations	2,363	2,363	1,903	1,797	1,909	1,909	1,908	1,909
Fisher (Prob>F, p-value)	11.85***	22.37***	23.32***	24.43***	23.29***	24.47***	24.87***	24.08***
Arellano-Bond AR(1) (z, p-value)	-3.94***	-4.2***	-3.34***	-3.24***	-3.33***	-3.32***	-3.33***	-3.37***
Arellano-Bond AR(2) (z, p-value)	-1.10	-0.75	-0.91	-0.84	-0.87	-0.9	-0.91	-0.77
Sargan test (Chi-square, p-value)	2575.98***	1005.2***	969.59***	925.12***	968.76***	958.9***	966.22***	955.76***
Hansen test (Chi-square, p-value)	400.74	369.84	331.59	325.52	334.44	336.32	337.58	343.97
H0: $\beta_1 = \beta_2$	29.23***	29.23***	16.73***	19.73***	18.2***	19.02***	20.34***	16.27***

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on 2SLS regressions with country and year fixed effects. Instrumental variables for bank regulatory capital include legal origins, ethnic fractionalization, and durability of the political system. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 10

Heckman estimation technique

Model #	Baseline		Institutional environment					
	All banks	Separate	Separate					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank size	0.215***	0.187***	0.227***	0.256***	0.28***	0.281***	0.281***	0.227***
	(0.062)	(0.057)	(0.075)	(0.076)	(0.076)	(0.074)	(0.074)	(0.074)
Bank credit exposure	0.023***	0.024***	0.028***	0.035***	0.032***	0.033***	0.033***	0.032***
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Tangibility	-0.108	-0.099	-0.203**	-0.214*	-0.201**	-0.197**	-0.194**	-0.206**
	(0.077)	(0.074)	(0.102)	(0.110)	(0.100)	(0.099)	(0.099)	(0.095)
Non-operating income	-0.01**	-0.008*	-0.011*	-0.01*	-0.01*	-0.011*	-0.011*	-0.011*
	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Growth assets	0.005*	0.006**	0.006*	0.007**	0.007**	0.007**	0.007**	0.006*
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Regulatory capital	0.04***							
	(0.010)							
Regulatory capital × Islamic		0.006						
		(0.016)						
Regulatory capital × conventional		0.05***						
		(0.008)						
Regulatory capital × Islamic × stringent			0.003					
			(0.003)					
Regulatory capital × conventional × stringent			0.008***					
			(0.002)					
Regulatory capital × Islamic × disclosure				0.004				
				(0.008)				
Regulatory capital × conventional × disclosure				0.023***				
				(0.005)				
Regulatory capital × Islamic × audit					0.008			
					(0.009)			
Regulatory capital × conventional × audit					0.029***			
					(0.005)			
Regulatory capital × Islamic × certified						0.018		
						(0.018)		
Regulatory capital × conventional × certified						0.059***		
						(0.011)		
Regulatory capital × Islamic × entry							0.002	
							(0.002)	
Regulatory capital × conventional × entry							0.007***	
							(0.001)	
Regulatory capital × Islamic × insurance								-0.006
								(0.019)
Regulatory capital × conventional × insurance								0.038***
								(0.009)
GDP rate	0.085***	0.083***	0.143***	0.177***	0.148***	0.156***	0.154***	0.157***
	(0.013)	(0.013)	(0.020)	(0.021)	(0.019)	(0.020)	(0.019)	(0.019)
GDP per capita	0.122	0.085	0.351***	0.37***	0.382***	0.349***	0.361***	0.316***
	(0.085)	(0.076)	(0.097)	(0.100)	(0.094)	(0.095)	(0.095)	(0.097)
Inflation rate	0.009	0.006	0.001	0.004	-0.001	-0.000	-0.000	0.001
	(0.014)	(0.014)	(0.015)	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)
Concentration	-0.011***	-0.008**	-0.007	-0.009*	-0.006	-0.008	-0.007	-0.003
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Inverse Mills	-0.57**	-0.431*	-0.626*	-0.857**	-0.848**	-0.822**	-0.809**	-0.844**
	(0.263)	(0.227)	(0.355)	(0.355)	(0.346)	(0.341)	(0.347)	(0.348)
Constant	-1.315	-1.772**	0.0342	-0.362	-0.725	-0.974	-0.953	-0.179
	(0.855)	(0.790)	(1.205)	(1.306)	(1.266)	(1.264)	(1.258)	(1.218)
Observations	2,455	2,455	1,546	1,441	1,553	1,553	1,551	1,553
F-test (p-value)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
R-squared	0.095	0.125	0.189	0.19	0.195	0.196	0.198	0.18
H0: $\beta_1 = \beta_2$		10.89***	5.58**	8.02***	6.96***	6.84***	7.07***	5.39***

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). The estimation is based on 2SLS regressions with country and year fixed effects. Instrumental variables for bank regulatory capital includes legal origins, ethnic fractionalization, and durability of the political systems. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 11

A propensity score matching technique

	All sample			High			Low		
	Treated	Control	Diff. (T stat)	Treated	Control	Diff. (T stat)	Treated	Control	Diff. (T stat)
K-Nearest neighbors (n = 3)									
All sample	1.641	0.546	1.095 (0.123)***						
Masculinity				0.799	0.571	0.228 (0.209)	1.813	0.528	1.285*** (0.147)
Individualism				0.58	0.333	0.246 (0.267)	1.793	0.655	1.138*** (0.140)
Trust				1.662	0.665	0.997*** (0.199)	1.405	1.24	0.164 (0.133)
K-Nearest neighbors (n = 7)									
All sample	1.641	0.601	1.04*** (0.116)						
Masculinity				0.799	0.669	0.13 (0.195)	1.813	0.412	1.401*** (0.138)
Individualism				0.58	0.318	0.262 (0.270)	1.793	0.491	1.302*** (0.131)
Trust				1.662	0.72	0.942*** (0.187)	1.405	1.221	0.184 (0.132)
K-Nearest neighbors (n = 10)									
All sample	1.641	0.597	1.044*** (0.114)						
Masculinity				0.799	0.702	0.097 (0.192)	1.813	0.465	1.348*** (0.135)
Individualism				0.58	0.416	0.164 (0.261)	1.793	0.564	0.229*** (0.129)
Trust				1.662		0.997*** (0.181)	1.405	1.175	0.23* (0.128)
1-to-1 matching with no replacement									
All sample	1.746	0.933	0.813*** (0.076)						
Masculinity				0.799	0.62	0.179 (0.156)	1.813	1.019	0.861*** (0.095)
Individualism				0.58	0.405	0.174 (0.199)	1.793	0.82	0.82*** (0.089)
Trust				1.872	0.619	1.252*** (0.130)	1.405	1.125	0.28*** (0.103)
Kernel matching									
All sample	1.641	0.617	1.024*** (0.107)						
Masculinity				0.799	0.613	0.186 (0.198)	1.813	0.686	1.127*** (0.131)
Individualism				0.58	0.264	0.316 (0.266)	1.793	0.698	1.095*** (0.124)
Trust				1.662	0.683	0.979*** (0.177)	1.405	1.197	0.208* (0.125)
Radius matching									
All sample	1.641	0.933	0.708*** (0.060)						
Masculinity				0.799	0.73	0.069 (0.134)	1.813	1.019	0.794*** (0.068)
Individualism				0.58	0.492	0.088 (0.176)	1.793	1.041	0.752*** (0.066)
Trust				1.662	0.619	1.043*** (0.082)	1.405	1.132	0.273*** (0.085)

Notes: This table presents the results from regressing the proxy of bank performance (measured as the return on average assets) on the regulatory capital and other control variables over the 1999–2013 period for a matched sample using a Propensity Score Matching (PSM) approach. The propensity scores are computed using logistic regression. The dependent variable is a dummy variable that takes the value of one if both bank types' regulatory capital ratios have values greater than or equal to the median, and zero otherwise. The independent variables are the rest of control variables from our main regression model. We employ four propensity matching methods: K-Nearest neighbors with nearest neighbor (n = 5), with nearest neighbor (n = 7), and with nearest neighbor (n = 10), 1-to-1 matching with no replacement, Kernel matching, and Radius matching. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Appendix A

Table A.1.
Variable definitions and data sources

Variable	Definition	Data Sources
Dependent variables – performance		
Net income to average assets (ROAA)	Bank net income divided as a percentage of three-year average assets.	Bankscope
Operating profits (OPATA)	Bank operating profits as a percentage of total assets.	Authors' calculations based on Bankscope
Independent variables		
1. Capital ratios		
Regulatory capital ratio	This ratio is the capital adequacy ratio. It is the sum of bank Tier 1 plus Tier 2 capital as a percentage of risk-weighted assets. This ratio must be maintained at a level of at least 8% under the Basel II rules.	Bankscope
Tier 1 capital ratio	This measure of capital adequacy measures Tier 1 capital divided by risk-weighted assets computed under the Basel rules. Banks must maintain minimum Tier 1 capital of at least 4%.	As above
2. Bank control variables		
Bank size	The natural logarithm of total assets.	Authors' calculations based on Bankscope
Growth assets ratio	The current year growth rate of bank total assets compared with the previous year's total assets.	Bankscope
Non-operating income ratio	Total non-interest operating income as a percentage of total assets.	Authors' calculations based on Bankscope
Credit exposure ratio	The share of net loans as a percentage of total assets.	As above
Tangibility	Bank fixed assets as a percentage of total assets.	As above
Islamic bank dummy variable (IBDV)	A dummy variable that equals 1 for Islamic banks and 0 otherwise.	As above
Conventional bank dummy variable (CBDV)	A dummy variable that equals 1 for conventional banks and 0 otherwise.	As above
3. Country control variables		
GDP rate	The annual percentage growth rate of a country's GDP.	As above
GDP per capita	Logarithm of the annual gross domestic product per capita	As above
Inflation	The Inflation rate, based on changes in the consumer price index	As above
Concentration	The fraction of total assets of the three largest banks in each country as a percentage of the country's total banking sector assets	As above
4. Regulatory and institutional control variables		
Capital stringency (CS)	This variable is based on surveys by Barth et al. (2000, 2003, 2008, see details therein). The variable increases by 1 if the answer is yes to questions 1–6 of their survey with no increase if the answer is no. The opposite occurs for questions 7 and 8. It is an indicator based on the following questions: (1) Is the minimum required capital asset ratio (risk weighted) in line with the Basel guidelines? (2) Does the ratio vary with market risk? (3–5) Before determining minimum capital adequacy, are any of the following deducted from the book value of capital: (a) the market value of loan losses not realized on the financial statements, (b) unrealized losses on securities portfolios, and (c) unrealized foreign exchange losses? (6) Have regulatory/supervisory authorities verified the sources of funds to be used as capital? (7) Can assets other than cash or government securities provide the initial or subsequent injections of capital? (8) Can borrowed funds provide the initial disbursement of capital?	Banking regulation and supervision database, World Bank; Barth et al. (2000, 2003, 2008)
Information disclosure (Disclosure)	This variable is based on surveys by Barth et al. (2000, 2003, 2008, see details therein). The variable increases by 1 if the answer is yes to the three following questions: (1) Does the income statement includes accrued or unpaid interest or principal in non-performing loans? (2) Are banks required to produce consolidated financial statements? (3) Are bank directors legally liable if information disclosed is erroneous or misleading? The variable thus ranges between 1 and 3 with higher values indicating more informative bank account.	As above
Audit	This variable is based on surveys by Barth et al. (2000, 2003, 2008, see details therein). It indicates whether there are specific requirements for external auditor to examine bank financial statements. The variable thus ranges between 0 and 2 with higher values indicating more requirements.	As above
Certified	This variable is based on surveys by Barth et al. (2000, 2003, 2008, see details therein). It indicates whether the required external auditor is licensed or certified.	As above
Entry requirements (entry)	This variable is based on surveys by Barth et al. (2000, 2003, 2008, see details therein). The variable increases by 1 if the answer is yes to questions 1–8 of their survey with no increase if the answer is no. The variable addresses 8 questions with higher values indicating stricter entry requirements: Regarding the legal submissions required for banking license: (1) is the legal submission drafted by-laws? (2) Does the legal submission require an intended organization chart? (3) Does the legal submission require first 3-year financial projections? (4) Does the legal submission require financial information on shareholders? (5) Does the legal submission require background/experience of future directors? (6) Does the legal submission require background/experience of future managers? (7) Does the legal	As above

Variable	Definition	Data Sources
	submission require sources of funds in capitalization of new bank? (8) Does the legal submission require information on the intended market differentiation of new bank?	
Deposit insurance (insurance)	A dummy variable that equals 1 if a country has an explicit deposit insurance and 0 otherwise.	As above
5. Culture values control variables		
Individualism	Hofstede's cultural index on individualism	Hofstede (2001)
Masculinity	Hofstede's cultural index on masculinity	As above
Trust	A general trust measure based on the following question: ""Generally speaking, would you say that most people can be trusted or that you need to be very careful on dealing with people?"	World Values Surveys
Institutional collectivism values	House (2004)'s cultural index on institutional collectivism	The GLOBE project
Gender egalitarianism values	House (2004)'s cultural index on gender egalitarianism	As above
Confident in the government	The extent to which people have confidence in decisions made by their government ((Yes = 1; No = 0).	World Values Surveys

Table 12

System GMM regression of profitability on bank capital-regulation link: High vs. low individualism

Model #	Baseline and individualism				Institutional environment and individualism (High vs. low individualism)											
	All banks		Separate		Separate											
	High ROAA (1)	Low ROAA (2)	High ROAA (3)	Low ROAA (4)	High ROAA (5)	Low ROAA (6)	High ROAA (7)	Low ROAA (8)	High ROAA (9)	Low ROAA (10)	High ROAA (11)	Low ROAA (12)	High ROAA (13)	Low ROAA (14)	High ROAA (15)	Low ROAA (16)
Lagged ROAA	0.438***	0.134**	0.296***	0.017	0.269***	0.13**	0.239**	0.156***	0.271***	0.123*	0.296***	0.138**	0.237	0.132**	0.243**	0.133**
	(0.077)	(0.060)	(0.0999)	(0.058)	(0.090)	(0.058)	(0.102)	(0.058)	(0.096)	(0.063)	(0.099)	(0.059)	(1.006)	(0.061)	(0.103)	(0.061)
Bank size	-0.025	0.134	-0.034	0.142	-0.041	0.304*	-0.044	0.322*	-0.043	0.257	-0.034	0.305**	-0.023	0.28*	-0.027	0.086
	(0.054)	(0.116)	(0.055)	(0.131)	(0.051)	(0.156)	(0.043)	(0.170)	(0.051)	(0.163)	(0.055)	(0.154)	(0.627)	(0.153)	(0.068)	(0.127)
Bank credit exposure	-0.000	0.011**	0.003	0.02***	0.001	0.013***	0.004	0.015***	0.002	0.013***	0.003	0.015***	0.013	0.0148***	0.005	0.0115**
	(0.006)	(0.004)	(0.006)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.004)	(0.097)	(0.004)	(0.007)	(0.005)
Tangibility	-0.204	0.000	-0.021	-0.022	0.063	-0.039	0.025	0.002	0.031	0.0136	-0.021	0.012	0.25	0.008	0.027	-0.012
	(0.246)	(0.098)	(0.235)	(0.126)	(0.214)	(0.136)	(0.216)	(0.134)	(0.226)	(0.128)	(0.235)	(0.134)	(2.579)	(0.131)	(0.178)	(0.127)
Non-operating income	-0.013*	-0.005	-0.01	-0.009	-0.012	-0.005	-0.013*	-0.006	-0.012*	-0.001	-0.01	-0.003	-0.012	-0.004	-0.014	-0.001
	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.063)	(0.007)	(0.009)	(0.006)
Growth assets	0.007	0.005*	0.007*	0.007**	0.008**	0.008*	0.009**	0.007**	0.008**	0.007**	0.007*	0.006**	0.003	0.006**	0.009*	0.005*
	(0.005)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.064)	(0.003)	(0.005)	(0.003)
Regulatory capital	0.006	0.032**														
	(0.008)	(0.013)														
Regulatory capital × Islamic			-0.043	-0.011												
			(0.038)	(0.020)												
Regulatory capital × Conventional			0.028*	0.064***												
			(0.014)	(0.016)												
Regulatory capital × Islamic × stringency					-0.007	0.000										
					(0.00447)	(0.003)										
Regulatory capital × conventional × stringency					0.005**	0.008***										
					(0.002)	(0.002)										
Regulatory capital × Islamic × Disclosure							-0.015	0.000								
							(0.009)	(0.009)								
Regulatory capital × conventional × Disclosure							0.011**	0.025***								
							(0.005)	(0.006)								
Regulatory capital × Islamic × Audit									-0.022	-0.003						
									(0.014)	(0.010)						
Regulatory capital × conventional × Audit									0.015***	0.024***						
									(0.005)	(0.007)						
Regulatory capital × Islamic × Certified											-0.043	-0.001				
											(0.038)	(0.019)				
Regulatory capital × conventional × Certified											0.028*	0.055***				
											(0.014)	(0.014)				
Regulatory capital × Islamic × Entry													-0.005	-0.000		
													(0.016)	(0.002)		
Regulatory capital × conventional × Entry													0.007	0.007***		
													(0.021)	(0.002)		
Regulatory capital × Islamic × insurance															-0.056**	-0.041**
															(0.024)	(0.018)
Regulatory capital × conventional × insurance															0.023	0.024***
															(0.015)	(0.008)
GDP rate	0.061**	0.038***	0.065***	0.024*	0.057**	0.054***	0.056**	0.066***	0.063***	0.062***	0.065***	0.061***	0.056	0.062***	0.058**	0.056***
	(0.028)	(0.012)	(0.024)	(0.013)	(0.022)	(0.017)	(0.022)	(0.018)	(0.023)	(0.019)	(0.024)	(0.016)	(0.150)	(0.017)	(0.025)	(0.016)
GDP per capita	-0.415**	0.084	-0.331**	0.117	-0.438***	-0.179	-0.535***	-0.129	-0.384**	-0.098	-0.331**	-0.111	-0.098	-0.113	-0.562***	0.088
	(0.192)	(0.099)	(0.147)	(0.104)	(0.157)	(0.116)	(0.163)	(0.122)	(0.159)	(0.119)	(0.147)	(0.110)	(0.119)	(0.115)	(0.157)	(0.092)
Inflation	0.007	0.006	0.015	0.002	0.043	0.001	0.036	0.002	0.023	-0.003	0.015	0.000	0.038	-0.001	0.026	-0.005
	(0.038)	(0.016)	(0.045)	(0.018)	(0.048)	(0.018)	(0.049)	(0.018)	(0.043)	(0.017)	(0.045)	(0.017)	(0.784)	(0.018)	(0.057)	(0.018)
Concentration	-0.008	-0.011**	-0.004	-0.011*	-0.012*	-0.004	-0.015**	-0.009	-0.008	-0.004	-0.004	-0.006	-0.008	-0.005	-0.009	-0.005
	(0.008)	(0.005)	(0.008)	(0.006)	(0.007)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.008)	(0.005)	(0.041)	(0.005)	(0.008)	(0.005)
Constant	6.121***	-1.879	4.366**	-2.697	6.122***	-3.116	7.377***	-3.727*	5.336***	-3.384	4.366**	-4.079**	-3.384	-3.551*	7.257***	-1.679
	(2.278)	(1.461)	(2.061)	(1.644)	(1.884)	(1.930)	(1.604)	(1.855)	(1.940)	(2.109)	(2.061)	(1.982)	(2.109)	(1.902)	(1.943)	(1.657)
Observations	304	2059	304	2059	304	1599	304	1493	304	1605	304	1605	304	1604	304	1605
Fisher (Prob>F, p-value)	23.29***	8.3***	8.15***	6.49***	11.88***	5.71***	12.53***	6.91***	9.38***	5.53***	8.15***	6.2***	23.01***	6.21***	7.89***	6.68***
Arellano-Bond AR(1) (z, p-value)	-2.49**	-3.32***	-2.48**	-2.9***	-2.37**	-2.39**	-2.29**	-2.36**	-2.4**	-2.31**	-2.48**	-2.37**	-0.57	-2.38***	-2.32**	-2.5**
Arellano-Bond AR(2) (z, p-value)	0.46	-1.5	0.49	-2.06	0.48	-1.57	0.41	-1.52	0.48	-1.56	0.49	-1.58	0.1	-1.56	0.46	-1.43
Sargan test (Chi-square, p-value)	251.5***	2325.6**	279.1***	2134.1***	277.8***	2242.3***	279.04***	2105.4***	278.8***	2231.7***	279.1***	2207.5***	279.1***	2225.4***	282.59***	2216.4***
Hansen test (Chi-square, p-value)	48.48	338.71	48.4	286;67	48.61	271.79	52.07	263.64	49;18	274.44	48.4	274.24	46.12	275;12	51.01	278.58
H0: $\beta_1 = \beta_2$			3.51*	20.48***	6.27**	13.36***	7.89***	13.66***	6.31**	13.67***	3.51*	16.09***	1.29	14.9***	8.43***	13.73***

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In models (1)-(16), we breakdown the sample into two subsamples: (1) highly individualistic (if the countries' proxy for individualism > median value of the Hofstede's index on individualism) and (2) less individualistic (if the countries' proxy for individualism <= median of the Hofstede's

index on individualism) and we run regressions using Eqs. (1)–(2) as well. The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.

Table 13

System GMM regression of profitability on bank capital-regulation link: High vs. low masculinity

Model #	Baseline and masculinity				Institutional environment and masculinity (High vs. low masculinity)											
	All banks		Separate		Separate											
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
	ROAA (1)	ROAA (2)	ROAA (3)	ROAA (4)	ROAA (5)	ROAA (6)	ROAA (7)	ROAA (8)	ROAA (9)	ROAA (10)	ROAA (11)	ROAA (12)	ROAA (13)	ROAA (14)	ROAA (15)	ROAA (16)
Lagged ROAA	0.333***	0.082	0.217***	0.062	0.183**	0.194***	0.197**	0.196***	0.181**	0.189***	0.186**	0.205***	0.179**	0.197***	0.197**	0.199***
	(0.09)	(0.068)	(0.079)	(0.063)	(0.084)	(0.057)	(0.090)	(0.058)	(0.089)	(0.060)	(0.082)	(0.057)	(0.087)	(0.058)	(0.095)	(0.062)
Bank size	0.074	0.285*	0.0540	0.265*	0.054	0.313	-0.016	0.351*	0.061	0.288	0.053	0.351*	0.055	0.33*	0.008	0.09
	(0.062)	(0.150)	(0.0565)	(0.135)	(0.058)	(0.200)	(0.066)	(0.197)	(0.052)	(0.218)	(0.047)	(0.200)	(0.054)	(0.199)	(0.057)	(0.16)
Bank credit exposure	0.008	0.016***	0.011*	0.02***	0.014*	0.011**	0.018**	0.013***	0.014*	0.012**	0.013*	0.013***	0.015*	0.012**	0.009	0.01*
	(0.007)	(0.005)	(0.006)	(0.005)	(0.007)	(0.005)	(0.007)	(0.004)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.010)	(0.005)
Tangibility	-0.05	0.001	-0.025	0.007	0.017	-0.049	-0.067	0.007	0.03	-0.001	0.018	0.02	0.026	0.014	-0.003	-0.041
	(0.161)	(0.139)	(0.144)	(0.135)	(0.163)	(0.158)	(0.201)	(0.160)	(0.153)	(0.155)	(0.139)	(0.158)	(0.153)	(0.159)	(0.199)	(0.145)
Non-operating income	0.002	-0.011	0.004	-0.008	0.001	-0.006	-0.001	-0.005	0.002	-0.003	0.002	-0.003	0.001	-0.003	0.003	-0.003
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.009)	(0.007)	(0.008)	(0.007)	(0.010)	(0.008)
Growth assets	0.009***	0.004	0.011***	0.006*	0.013***	0.004	0.015***	0.005*	0.013***	0.005	0.013***	0.005*	0.013***	0.005*	0.012***	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Regulatory capital	0.014	0.049***														
	(0.020)	(0.016)														
Regulatory capital × Islamic			-0.041	0.005												
			(0.027)	(0.020)												
Regulatory capital × Conventional			0.031**	0.074***												
			(0.012)	(0.017)												
Regulatory capital × Islamic × stringency					-0.007	0.001										
					(0.004)	(0.003)										
Regulatory capital × conventional × stringency					0.008***	0.007***										
					(0.002)	(0.002)										
Regulatory capital × Islamic × Disclosure							-0.017**	0.004								
							(0.008)	(0.010)								
Regulatory capital × conventional × Disclosure							0.011**	0.03***								
							(0.005)	(0.008)								
Regulatory capital × Islamic × Audit									-0.024**	0.000						
									(0.012)	(0.011)						
Regulatory capital × conventional × Audit									0.02***	0.024***						
									(0.006)	(0.009)						
Regulatory capital × Islamic × Certified											-0.048*	0.007				
											(0.025)	(0.020)				
Regulatory capital × conventional × Certified											0.038***	0.06***				
											(0.013)	(0.016)				
Regulatory capital × Islamic × Entry													-0.006*	0.001		
													(0.003)	(0.003)		
Regulatory capital × conventional × Entry													0.005***	0.007***		
													(0.001)	(0.002)		
Regulatory capital × Islamic × insurance															-0.066***	0.036*
															(0.024)	(0.019)
Regulatory capital × conventional × insurance															0.011	0.022***
															(0.014)	(0.008)
GDP rate	0.064**	0.044***	0.064***	0.031**	0.053***	0.06***	0.067**	0.062***	0.055***	0.068***	0.055***	0.067***	0.053***	0.065***	0.063***	0.063***
	(0.025)	(0.013)	(0.022)	(0.013)	(0.020)	(0.016)	(0.025)	(0.016)	(0.021)	(0.016)	(0.021)	(0.016)	(0.020)	(0.016)	(0.022)	(0.016)
GDP per capita	-0.147**	-0.015	-0.146*	0.055	-0.207**	-0.223*	-0.055	-0.14	-0.177**	-0.157	-0.178**	-0.165	-0.193**	-0.168	-0.133	0.019
	(0.067)	(0.135)	(0.079)	(0.119)	(0.093)	(0.125)	(0.095)	(0.117)	(0.084)	(0.130)	(0.072)	(0.119)	(0.090)	(0.123)	(0.084)	(0.094)
Inflation	-0.032	0.014	-0.014	0.008	-0.036	0.006	0.014	0.004	-0.026	0.002	-0.026	0.005	-0.025	0.003	-0.026	0.000
	(0.030)	(0.018)	(0.030)	(0.018)	(0.033)	(0.019)	(0.042)	(0.018)	(0.032)	(0.018)	(0.032)	(0.018)	(0.032)	(0.018)	(0.035)	(0.018)
Concentration	-0.001	-0.013**	-0.002	-0.007	-0.007	0.001	-0.004	-0.008	-0.001	-0.001	-0.001	-0.003	-0.003	-0.001	0.002	-0.002
	(0.005)	(0.006)	(0.005)	(0.006)	(0.008)	(0.005)	(0.006)	(0.007)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)	(0.005)
Constant	-0.197	-3.359*	-0.368	-4.753**	0.407	-3.331	-0.113	-4.327*	-0.363	-3.546	-0.155	-4.573*	-0.025	-4.302*	0.508	-1.261
	(0.901)	(1.996)	(0.873)	(1.833)	(0.899)	(2.436)	(0.974)	(2.452)	(1.098)	(2.772)	(0.919)	(2.496)	(1.050)	(2.497)	(1.399)	(2.015)
Observations	660	1,703	660	1,703	605	1,298	493	1,304	605	1,304	605	1,304	605	1,303	605	1,304
Fisher (Prob>F, p-value)	13.91***	7.54***	9.39***	8.39***	11.73***	7.27***	13.32***	7.94***	10.85***	7.08***	12.21***	7.83***	12.32***	7.89***	11.2***	8.08***
Arellano-Bond AR(1) (z, p-value)	-2.23***	-2.9***	-2.28***	-2.83***	-2.94***	-2.3***	-2.63***	-2.27***	-2.94***	-2.24**	-3.01***	-2.25**	-2.92***	-2.26**	-2.94***	-2.4***
Arellano-Bond AR(2) (z, p-value)	0.96	-1.88*	1.05	-1.95*	601.62***	-1.46	0.7	-1.47	0.58	-1.46	0.59	-1.49	0.56	-1.47	0.64	-1.32
Sargan test (Chi-square, p-value)	582.4***	1915.8***	614.75***	1886.7***	115.73	2023.4***	486.3***	2010.8***	606.9***	2031.0***	606.9***	1994.2***	607.1***	2000.5***	619.59***	2004.4***
Hansen test (Chi-square, p-value)	96.92	260.86	100.51	270.0***	90.12	242.9	80.02	249.03	90.57	247.08	87.6	248.4	89.9***	242.74	87.2	249.06
H0: $\beta_1 = \beta_2$			7.79***	19.13***	13.67***	16.5***	14.67***	18.44***	15.17***	15.19***	14.92***	19.09***	16.31***	19.62***	10.23***	14.49***

Table 14
System GMM regression of profitability on bank capital-regulation link: High vs. low trust

	Baseline and trust				Institutional environment and trust (High vs. low trust)											
	All banks		Separate		Separate											
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Model #	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA	ROAA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Lagged ROAA	0.353***	0.362***	0.186***	0.162**	0.281***	0.162**	0.281***	0.201***	0.279***	0.159**	0.276***	0.156**	0.281***	0.156**	0.262***	0.142**
	(0.062)	(0.081)	(0.062)	(0.071)	(0.074)	(0.071)	(0.072)	(0.068)	(0.074)	(0.072)	(0.074)	(0.072)	(0.071)	(0.071)	(0.077)	(0.070)
Bank size	0.194***	0.008	0.272**	-0.058	0.327**	-0.04	0.26**	-0.028	0.311**	-0.017	0.333**	-0.019	0.326**	-0.031	0.305**	-0.077
	(0.062)	(0.069)	(0.113)	(0.095)	(0.146)	(0.091)	(0.129)	(0.084)	(0.154)	(0.085)	(0.147)	(0.089)	(0.142)	(0.091)	(0.126)	(0.087)
Bank credit exposure	0.005	0.007	0.009	0.009**	-0.005	0.006	-0.003	0.009**	-0.004	0.007	-0.001	0.007	-0.002	0.008*	0.001	0.007
	(0.005)	(0.005)	(0.008)	(0.005)	(0.009)	(0.005)	(0.008)	(0.005)	(0.009)	(0.006)	(0.008)	(0.005)	(0.008)	(0.005)	(0.012)	(0.005)
Tangibility	-0.133	0.07	-0.118	0.057	-0.139	-0.086	-0.129	-0.123	-0.119	-0.054	-0.115	-0.052	-0.12	-0.058	-0.151	-0.128
	(0.106)	(0.144)	(0.138)	(0.127)	(0.147)	(0.127)	(0.166)	(0.153)	(0.150)	(0.131)	(0.151)	(0.127)	(0.153)	(0.113)	(0.148)	(0.121)
Non-operating income	0.007	-0.016	0.007	-0.007	-0.001	-0.001	0.000	-0.002	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.002	0.001
	(0.006)	(0.012)	(0.007)	(0.009)	(0.008)	(0.009)	(0.008)	(0.008)	(0.007)	(0.009)	(0.007)	(0.009)	(0.007)	(0.008)	(0.007)	(0.009)
Growth assets	0.004	0.001	0.008**	0.005*	0.007*	0.004	0.007**	0.004	0.007**	0.004	0.007**	0.004	0.007**	0.004	0.007*	0.005
	(0.005)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)
Regulatory capital × Islamic	0.025*	0.024*														
	(0.013)	(0.014)														
Regulatory capital × conventional			-0.006	-0.008												
			(0.019)	(0.018)												
Regulatory capital × Islamic × stringent			0.046***	0.039***												
			(0.017)	(0.012)												
Regulatory capital × conventional × stringent					0.000	-0.003										
					(0.003)	(0.003)										
Regulatory capital × Islamic × disclosure					0.007**	0.003										
					(0.003)	(0.002)										
Regulatory capital × conventional × disclosure							-0.006	-0.006								
							(0.008)	(0.007)								
Regulatory capital × Islamic × audit							0.014**	0.009*								
							(0.006)	(0.005)								
Regulatory capital × conventional × audit									-0.003	-0.008						
									(0.011)	(0.008)						
Regulatory capital × Islamic × certified									0.019**	0.012**						
									(0.009)	(0.006)						
Regulatory capital × conventional × certified											-0.004	-0.016				
											(0.019)	(0.017)				
Regulatory capital × Islamic × entry											0.048***	0.023**				
											(0.016)	(0.011)				
Regulatory capital × conventional × entry													-0.001	-0.002		
													(0.002)	(0.002)		
Regulatory capital × Islamic × insurance													0.006***	0.003**		
													(0.002)	(0.001)		
Regulatory capital × conventional × insurance															-0.019	-0.033**
															(0.018)	(0.014)
Regulatory capital × Islamic															0.027**	0.023**
															(0.011)	(0.009)
GDP rate	0.089***	0.013	0.108***	-0.001	0.108***	0.043**	0.133***	0.053**	0.119***	0.043**	0.119***	0.043**	0.12***	0.044**	0.153***	0.033
	(0.017)	(0.019)	(0.020)	(0.017)	(0.018)	(0.021)	(0.022)	(0.023)	(0.019)	(0.021)	(0.020)	(0.021)	(0.019)	(0.020)	(0.034)	(0.021)
GDP per capita	-0.26***	0.185*	-0.238***	0.198*	-0.322***	-0.011	-0.259***	-0.003	-0.294***	-0.001	-0.27***	0.006	-0.283***	-0.005	-0.137	-0.096
	(0.088)	(0.071)	(0.071)	(0.120)	(0.088)	(0.131)	(0.085)	(0.118)	(0.085)	(0.115)	(0.078)	(0.118)	(0.078)	(0.121)	(0.092)	(0.127)
Inflation	-0.023	-0.003	0.008	-0.013	-0.021	-0.014	0.006	-0.006	-0.008	-0.015	0.003	-0.015	-0.002	-0.015	0.033	-0.019
	(0.032)	(0.025)	(0.034)	(0.020)	(0.028)	(0.020)	(0.029)	(0.021)	(0.028)	(0.019)	(0.031)	(0.019)	(0.029)	(0.019)	(0.038)	(0.019)
Concentration	0.002	-0.006	0.003	-0.009**	-0.001	-0.002	-0.003	-0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001	0.004
	(0.005)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.007)	(0.004)	(0.006)	(0.006)	(0.007)	(0.005)
Constant	-1.428	-0.362	-3.632*	0.167	-2.093	1.069	-1.625	0.515	-2.167	0.485	-3.006	0.456	-2.675	0.701	-4.114*	721
	(1.466)	(0.787)	(2.010)	(0.968)	(2.079)	(0.952)	(2.018)	(0.938)	(2.322)	(1.145)	(2.292)	(1.080)	(2.181)	(0.935)	(2.307)	(0.931)
Observations	877	1170	877	1170	766	965	771	854	771	966	771	966	771	965	771	966
Fisher (Prob>F, p-value)	20.1***	7.14***	12.85***	4.6***	11.38***	4.15***	12.82***	6.37***	11.79***	4.72***	12.73***	4.57***	13.32***	4.5***	7.87***	4.84***
Arellano-Bond AR(1) (z, p-value)	-2.69***	-2.68***	-2.65***	-2.5***	-2.15***	-2.86***	-2.16**	-2.84***	-2.15***	-2.83***	-2.11**	-2.82***	-2.13**	-2.84***	-2.21**	-2.87***
Arellano-Bond AR(2) (z, p-value)	-0.55	-0.67	-0.94	-1.06	-0.73***	-1.16	-0.72	-1.12	-0.7	-1.21	-0.71	-1.22	-0.71	-1.21	-0.82	-1.15
Sargan test (Chi-square, p-value)	372.85*** *	850.09** *	944.75***	1344.93** **	1141.56***	1209.61** *	1122***	1090.3***	1145;04** *	1213.28** *	1126.84** **	1212.43** *	1131.59* **	1213;87** *	1109.16** *	1197.62** *
Hansen test (Chi-square, p-value)	120.21	210.9	121.48	215.3	98.82	196.05	97.86	130.4	104.83	198.15	102.7	197.96	102.54	195.71	93.07	199.92
H0: $\beta_1 = \beta_2$			9.29***	8.0***	9.13***	6.54**	10.99***	6.21**	8.19***	6.81***	13.42***	6.96***	12.9***	6.88***	10.15***	9.12***

Notes: The dependent variable is bank return on average assets (ROAA). Regulatory capital is bank capital adequacy ratio measured as the sum of Tier1+Tier2 scaled by risk-weighted assets. Regulatory environment is proxied using capital stringency (stringent), information disclosure (disclosure), licensed audit (audit), certified audit (certified), entry requirements (entry), and deposit insurance scheme (insurance). In models (1)-(16), we breakdown the sample into two subsamples: (1) highly individualistic (if the countries' proxy for individualism > median value of the Hofstede's index on individualism) and (2) less individualistic (if the countries' proxy for individualism <= median of the Hofstede's index on individualism) and we run regressions using Eqs. (1)–(2) as well. The estimation is based on multivariate regressions with country and year fixed effects. Standard errors are clustered at the bank level and are reported in parentheses below their coefficient estimates. *, **, *** denotes statistical significance at 10%, 5% and 1%, respectively.