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National Culture and Accounting Conservatism: New Evidences from the Banking Sector

Somya M. Eljilany*
Ibrahim R. Hegazy†
Ahmed F. Elbayoumi‡

Abstract

We test whether Hofstede (1980) cultural dimensions (individualism, uncertainty avoidance, power distance, masculinity) affect accounting conservatism in the banking sector. The final sample consists of 3593 bank-year observations from four countries. We find a significant positive impact of uncertainty avoidance and power distance on accounting conservatism and a significant negative impact of individualism and masculinity on accounting conservatism. We robust our findings using cultural dimensions of House et al. (2004). We contribute to the literature on accounting conservatism as follows. First; we focus on the banking sector that many researchers have marginalized. Second; we cover a recent period from 2013 to 2020. Third; we found new pieces of evidence of the significant relationships between the four dimensions of Hofstede (1980) and the banking sector's accounting conservatism. Fourth, this study uses the random effect method for panel data regression to control the fixed years' effect, enabling us to explain the role of culture in accounting conservatism.

Keywords: individualism, uncertainty avoidance, power distance, masculinity, accounting conservatism, the banking sector.

I. INTRODUCTION

Many prior researches in the field of international accounting demonstrated that most of the differences in accounting standards between countries were due to certain environmental factors. National culture has been recognized as one of the environmental factors that significantly influence national accounting systems application and development (Frank, 1979; Gray, 1988; Adhikari & Tondkar, 1992; Robinson & Venieris, 1996; Asiyaban & Abdoli, 2012; and Abousamak & Kamel, 2015).

For decades and from various perspectives, many scholars have tried to explain what culture is. Social scientists defined culture as “a system of thinking, feelings and performance that has been anchored in a group of people's believes and values” (Nakata & Sivakumar, 2001). Also, culture was defined as “the collective programming of the mind that distinguishes the members of one category of people from those of another” (Hofstede & Bond, 1988). Kirkman et al. (2006) concluded that perhaps the most influential cultural classification is that of Hofstede (1980). His model is one of the most significant models of dimensionalising national culture. Hofstede (1980) constructed his model based on questionnaires handed out to 116,000 IBM employees in 70 countries

* Teaching assistant. Department of Accounting, Higher Institute of Management and Accounting, Sohag, Arab Republic of Egypt. E-mail: somya.m.eljilany@hima.edu.eg.

† Professor of accounting. Department of Accounting, Faculty of Commerce, Cairo University, Cairo, Arab Republic of Egypt. E-mail: Ibrahim_raslan_hegazy@foc.cu.edu.eg.

‡ Corresponding author. Associate Professor. Department of Accounting, The American University in Cairo, and Faculty of Commerce, Cairo University, Cairo, Arab Republic of Egypt. E-mail: ahmed.elbayoumi@aucegypt.edu.eg.

assuming that different cultures could be distinguished based on differences in what they value. His model consisted of four dimensions. The four dimensions are individualism (IND), uncertainty avoidance (UNC), power distance (PWD), and masculinity (MASC).

As a response to Hofstede (1980)'s framework, increasing attention was paid to study the effect of national culture on all types of decisions taken by people inside their work environments. The instant and common response was made by Gray (1988) who studied the culture's effect on the accounting system and researchers who followed him? (Sudarwan & Fogarty, 1996; Amat et al., 2000; Douppnik & Richter, 2004; Douppnik & Riccio, 2006; Kwok & Tadesse, 2006; Fang, 2007; Askary et al., 2008; Asiyaban & Abdoli, 2012; Lim et al., 2012; Salehi et al., 2013; Stander et al., 2013; and Young, 2013). Some scholars studied specified aspects in the accounting system such as the effect of culture on accounting standards (Robinson & Venieris, 1996; Ding et al., 2005; Zeghal & Mhedhbi, 2006; Finch, 2010; Skotarczyk, 2011; Lasmin, 2012; Shima & Yang, 2012; Vervaat, 2012; Junior et al., 2018; Ayadi et al., 2020; Edeigba et al., 2020; El-Helaly et al., 2020; and Karunia et al., 2020), accounting information (Batistella et al., 2021), earning management (Nabar & Boonlert-u-Thai, 2007; Han et al., 2010; Desender et al., 2011; Kanagaretnam et al., 2011; Gerecke & House, 2013; Zhang et al., 2013; Dong, 2015; and Viana et al., 2022). Even the effect on national culture on corruption was studied by some scholars such as (Seleim & Bontis, 2009; Yeganeh, 2014; Tahir et al., 2020; and Boateng et al., 2021).

Gray (1988) proposed a theory to link cultural dimensions of Hofstede (1980) with accounting values. He derived four accounting values to provide a model that measures the impact of culture on accounting systems "(professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency). He formulated four hypotheses to examine the impact of cultural dimensions constructed by Hofstede (1980) to accounting values.

Gray (1988) viewed accounting conservatism as an essential attitude of accountants globally. Also, Feleagă et al. (2010) described it as the cornerstone concept that shaped accounting theory and financial reporting. To some degree, the theory and the practice of accounting are affected by accounting conservatism (Khan et al., 2015). Accounting conservatism requires stricter verification criteria for identifying good news than for identifying bad news (Basu, 1997; Nichols et al., 2009; and Kanagaretnam et al., 2014). In this paper, we focus on the effect of the four dimensions of Hofstede (1980) on accounting conservatism which is "the most ancient and probably the most pervasive principle of accounting valuation (Sterling, 1967, p.110).

Confirming the importance of accounting conservatism, scholars still investigate the effect of the determinates of accounting conservatism and try to discover any potential determinates such as the study of (Jin et al., 2020) who investigated the effect of two types of bad time history: banks' undercapitalization and the failures of other banks on the conservatism of accounting policy during financial crises. They found that bad time memory of banks - through CEO tenure and board of directors' tenure- affects bank accounting conservatism. Also, the continuing debate of the application of conservatism in the FASB and IASB conceptual frameworks is still studied. Bloom (2018) found that conservatism is an enduring issue in accounting practice and accounting standard setting in three selected countries: Belgium, Switzerland, and Japan. Moreover, Kimouche (2020) investigated the presence and measured the level of accounting conservatism in Algerian companies and add to the debate that accounting practices in code-law countries tend to be more conservative.

A high level of conservatism necessitates timelier recognizing and recording earning declines than recognizing and recording earning increases. Theoretically, within the same accounting standard, the amount of accounting conservatism at a company level should be the same due to the uniform application of rules. However, this is not the case. It is claimed that culture is a major cause of the existing variety in the IFRS interpretation (Ayadi et al., 2020). Consistency, the history of a country's culture has progressively been perceived as a vital factor in its accounting methods (Dowa et al., 2017). Moreover, Gray (1988) and Vervaat (2012) asserted that the level of accounting conservatism differs between countries, industries and even between individual companies.

The main purpose of our study is to find new evidence supporting the association between cultural dimensions and accounting conservatism. We specifically investigate whether the effect of national culture is significant in a small sample consisting of a few numbers of countries. By following specific criteria, we analysed many countries regarding these criteria and the identical group of countries was Egypt, Turkey, India and the United Kingdom. Our sample represents countries that lie in the biggest world continents in terms of population and space (Africa, Asia and Europe) and countries that embrace the most three widespread religions (Christianity, Islam and Hinduism) where the official languages of these countries occupy three of the top five positions for the most widely spoken languages in the world (English, Arabic and Hindi). Also, the four countries have different scores of Hofstede (1980) cultural dimensions range from low to high. We add to the debate of previous studies that national culture to a large extent shapes the behavior of individuals and groups through programming them inside organizations and among countries. We proved that the effect of the four culture dimensions is significant even if testing a sample of only four countries. As we find new significant evidence confirming the relationships between national culture and accounting conservatism covering the most recent period.

The next part of this study is organized as follows. Section 2 contains an explanation related to the literature and previous studies as a basis for developing hypotheses to be tested. The sample design and data collection and analysis methods are presented in section 3. In section 4, analysis and discussion of the results are presented. The conclusions of this study are reported in section 5.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. National Culture and Accounting Conservatism

Hofstede and Bond (1988) defined culture as “the collective programming of the mind that distinguishes the members of one category of people from those of another”. As mentioned before, we measure national culture by the four dimensions of individualism, uncertainty avoidance, power distance, and masculinity. We reviewed studies that tested the effect of national culture dimensions on accounting conservatism directly and the inconsistencies in the results of prior studies were not the only difference between them. Each study conducted the tests in different circumstances than the other and focused on specific dimensions, industries, country/countries, and time horizons which mainly caused the inconsistencies of results. For example, the studies of (Sudarwan & Fogarty, 1996; Salimi et al., 2012) conducted the tests in a single country (Indonesia and Iran respectively). Tsakumis, (2007) investigated the influence of national culture on accountants' application of financial reporting rules in Greece and the United States. Other studies (Salter & Niswander, 1995; Sudarwan & Fogarty, 1996; Lewis, 2001; Salter & Lewis, 2011; Salter et al., 2013; Kanagaretnam et al., 2014; Zeghal & Lahmar, 2018; Guermazi & Halioui, 2020; and Wronski & Klann, 2020) depended on large number of

countries starting from 14 countries to 70 countries such in (Salter & Lewis, 2011; Kanagaretnam et al., 2014; and Guermazi & Halioui, 2020). Also, the banking industry was excluded from most of the previous studies but was included in a few studies such as (Kanagaretnam et al., 2014).

Table 1
Summary of Previous Studies

Study (year)	Sample	Statistical Methods	Field of Study	Results			
				IND	UNC	PWD	MASC
(Salter & Niswander, 1995)	29 countries (1987-1989)	Ordinary least square regression (OLS)	Non-financial	NS*	+	NS*	-
(Sudarwan & Fogarty, 1996)	Indonesia (1981-1992)	Linear Structural relationships	Non-financial	+	+	+	NS*
(Lewis, 2001)	19 countries (1997-1999)	Regression analysis	Non-financial	-	NS*	NS*	NS*
(Tsakumis, 2007)	Greece vs. U.S. (2002-2003)	Analysis of variance	Non-financial	NS*	NS*	NS*	NS*
(Salter & Lewis, 2011)	14 countries (1998-2004)	Regression analysis	Non-financial	-	NS*	-	NS*
(Salimi et al., 2012)	Iran (1960-1967)	Regression analysis	Non-financial	NS*	NS*	+	NS*
(Salter et al., 2013)	22 countries (1989-2006)	OLS regressions	Non-financial	-	+	NT**	-
(Kanagaretnam et al., 2014)	70 countries (2000-2006)	Regression analysis	Financial	-	+	NS*	NS*
(Zeghal & Lahmar, 2018)	15 countries (2000-2010)	Regression analysis	Non-financial	-	+	+	-
(Guermazi & Halioui, 2020)	14 European countries (2006-2016)	Random effect method for panel data	Non-financial	-	+	NT**	NT**
(Purwa & Setiawan, 2021)	24 countries (2016-2017)	Regression analysis	Financial	NT**	NT**	NT**	-
(Wronski & Klann, 2020)	32 countries (2010-2016)	OLS regressions	Non-financial	-	NS*	NS*	NS*
This Study	(Egypt-Turkey - India-UK) (2013-2020)	Random effect method for panel data	Financial	-	+	+	-

Notes: *) NS means that the coefficient of the dimension is not significant; and **) NT means the dimensions was not tested in the study.

A comparison between prior studies is shown in Table 1 which summarizes previous studies in terms of (sample, statistical methods, field of study and results) and compares the results of literature to this study. It also illustrates the inconsistencies in the results of previous studies in detail by each dimension.

2.1.1. Individualism

The dimension of individualism reflects the extent to which individuals of the community care of themselves and prefers their own interests over the interest of the whole community. In high individualism communities, individuals are integrated into weak relationships. Decisions are taken by those individualistic persons who tend toward self-actualization. These decisions are taken in less conservative precautions to enlarge earnings. The results of previous studies related to individualism were not consistent, i.e., it was found to have a positive, non-significant and even have a negative relationship with the accounting conservatism. Some studies (Lewis, 2001; Salter & Lewis, 2011; Salter et al., 2013; Kanagaretnam et al., 2014; Zeghal & Lahmar, 2018; Guermazi & Halioui, 2020; and Wronski & Klann, 2020) found a significant negative relationship between individualism and accounting conservatism. In contrast; (Sudarwan and Fogarty 1996) found a significant positive relationship between individualism and accounting conservatism. While some studies (Salter & Niswander, 1995; Tsakumis, 2007; and Salimi et al., 2012) did not find any significant relationship between individualism and accounting conservatism. Accordingly, the first hypothesis to be tested is:

H₁: there is a significant association between individualism and accounting conservatism.

2.1.2. Uncertainty avoidance

This dimension measures the extent to which individuals behave in events of uncertainty. In high uncertainty situations, individuals feel anxiety which interns controlling them to be more conservative in unknown situations and to avoid taking decisions accompanied by risks. Most of the previous studies (Salter & Niswander, 1995; Sudarwan & Fogarty, 1996; Salter et al., 2013; Kanagaretnam et al., 2014; Zeghal & Lahmar, 2018; and Guermazi & Halioui, 2020) found a significant positive relationship between uncertainty avoidance and accounting conservatism. Some other studies (Lewis, 2001; Tsakumis, 2007; Salter & Lewis, 2011; Salimi et al., 2012; and Wronski & Klann, 2020) did not find any association between uncertainty avoidance and accounting conservatism. As a result of the previous discussion, we test the association between uncertainty avoidance and accounting conservatism through formulating the second hypothesis:

H₂: there is a significant association between uncertainty avoidance and accounting conservatism

2.1.3. Power distance

This dimension measures the extent to which individuals believe and accept unequal distribution of power. Small distances in power enable less powerful individuals inside the community or company to have a share in making decisions. Many previous studies (Salter & Niswander, 1995; Lewis, 2001; Tsakumis, 2007; Kanagaretnam et al., 2014; and Wronski & Klann, 2020) failed to find an association between power distance and accounting conservatism. Nevertheless, some studies (Sudarwan & Fogarty, 1996; Salimi et al., 2012; and Zeghal & Lahmar, 2018) found a positive association between power distance and accounting conservatism. Salter and Lewis (2011) found a negative association between power distance and accounting conservatism. Salter and Lewis (2011) justified their results of power distance dimension as a statistical artifact because of “the existence of several high power distance countries such as Italy and France in the control variable they named European union membership (EU) and that it is this variable

rather than PD that is driving the results". The discussion above leads us to the third hypothesis:

H₃: there is a significant association between power distance and accounting conservatism.

2.1.4. Masculinity

A high score of masculinity reflects the tendency of individuals toward achievements and material success. While low score of masculinity means high score of femininity which reflects the tendency toward setting relationships and improving the quality of life. Notably, gender diversity is so different from Hofstede (1980) cultural dimension (masculinity vs. femininity). Masculinity or femininity can be exhibited by both men and women. In line with, Hofstede (2011) asserted that the dimension of masculinity vs. femininity represents societal characteristics rather than gender characteristics. Consistency, Yousuf and Aldamen (2021) investigated the association between board gender diversity and earnings quality considering cultural dimensions as the moderating effect of. However, their results proved that individualism, power distance and uncertainty avoidance moderate the relation between gender diversity and earning quality. They did not find any differences in the effect of female directors on earning management within masculine and feminine societies

The relationship between masculinity and accounting conservatism was between a negative relationship and non-significant relationship. Some previous (Salter & Niswander, 1995; Salter et al., 2013; Zeghal & Lahmar, 2018; and Purwa & Setiawan, 2021) found evidence of a negative association between masculinity and accounting conservatism. While other studies (Sudarwan & Fogarty, 1996; Lewis, 2001; Tsakumis, 2007; Salter & Lewis, 2011; Salimi et al., 2012; and Kanagaretnam et al., 2014) did not support such relationship. Accordingly, the fourth hypothesis to be tested is:

H₄: there is a significant association between masculinity and accounting conservatism.

III. RESEARCH METHODOLOGY

3.1. Research Model

The model of Basu (1997) is one of the most used models for measuring accounting conservatism. Thus, we measure accounting conservatism by earning management following the models of (Basu, 1997; Ball & Shivakumar, 2005; Nichols et al., 2009; and Kanagaretnam et al., 2014) as follows:

$$\begin{aligned} \Delta NI_t = & \alpha_0 + \alpha_1 \Delta NI_{t-1} + \alpha_2 D \Delta NI_{t-1} + \alpha_3 \Delta NI_{t-1} * D \Delta NI_{t-1} + \alpha_4 CU + \alpha_5 CU * \Delta NI_{t-1} + \\ & \alpha_6 CU * D \Delta NI_{t-1} + \alpha_7 CU * \Delta NI_{t-1} * D \Delta NI_{t-1} + \alpha_8 SIZE_t + \alpha_9 SIZE_t * \Delta NI_{t-1} + \\ & \alpha_{10} SIZE_t * D \Delta NI_{t-1} + \alpha_{11} SIZE_t * \Delta NI_{t-1} * D \Delta NI_{t-1} + CR + LGDP + e_t \dots \quad 1 \end{aligned}$$

Where ΔNI_t is the change in net income from year t-1 to year t, scaled by total assets at the end of t-1. ΔNI_{t-1} is the change in income from fiscal year t-2 to t-1. $D \Delta NI_{t-1}$ is a dummy variable that equals 1 if ΔNI_{t-1} is negative and 0 otherwise. CU is the value (score) of one of the four national culture dimensions¹; individualism (IND), uncertainty avoidance (UNC), power distance (PWD) and masculinity (MASC). $SIZE_t$ is the natural logarithm of total assets at the end of year t. We controlled for the effects of differences of culture dimensions on bank size. CR and LGDP are the control variables that were significant in the model of Kanagaretnam et al. (2014). Creditor rights (CR) denote to several creditor rights represented in an index that ranges from 0 to 4. LGDP is the natural log of gross domestic product per capita in constant 2020 U.S dollars. e_t is the standard error of the regression model; it represents the average distance that the

¹ The most current version of the data is available at <http://www.geert-hofstede.com/>.

observed values fall from the regression model. Table 2 describes the definition of variables used in this study.

Table 2

Definition of Variables

National Culture variables	
IND	Measure of individualism from Hofstede (1980).
UNC	Measure of uncertainty avoidance from Hofstede (1980).
PWD	Measure of power distance from Hofstede (1980).
MASC	Measure of masculinity from Hofstede (1980).
GRC	Measure of in-group collectivism from House et al. (2004)
UA	Measure of uncertainty avoidance from House et al. (2004).
POW	Measure of power distance from House et al. (2004).
ASR	Measure of assertiveness from House et al. (2004).
Variables used in accounting conservatism	
ΔNI_t	Change in net income from year t-1 to year t scaled by total assets at the end of year t-1.
ΔNI_{t-1}	Change in net income from year t-2 to year t-1 scaled by total assets at the end of year t-2.
$D\Delta NI_{t-1}$	1 if ΔNI_{t-1} is negative, 0 otherwise.
$SIZE_t$	Natural logarithm of total assets at the end of year t.
Country-level control variables	
CR	An index aggregating four creditor rights ranges from 0 to 4. A score of one is assigned to the country that recognizes each of the following secured lenders' rights in its laws and regulations. The four creditor rights as illustrated by Djankov et al. (2007, p.29) are: "First, the existence of restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors can seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze." Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers. Finally, if management does not retain administration of its property pending the resolution of the reorganization". Data originally from La Porta et al. (1998) and updated in Djankov et al. (2007).
LGDP	Log of GDP per capita, in constant 2020 US dollars. Data from world development indicators and global development finance database.

Table 3 reports measures of institutional characteristics by country. The first four rows report the scores of national culture dimensions for each country and the last two rows report control variables per country used in the accounting conservatism model.

Table 3

National Culture Dimensions Scores and Control Variables Measures by Country

Country	Egypt	Turkey	India	United Kingdom
IND	25	37	48	89
UNC	80	85	40	35
PWD	70	66	77	35
MASC	45	45	56	66
CR	2	2	2	4
LGDP	7.88	9.37	7.28	10.58

3.2. Research Sample

The main purpose of this study is to find new evidence to support the association between cultural dimensions and accounting conservatism. Most of the previous studies (Salter & Niswander, 1995; Lewis, 2001; Salter & Lewis, 2011; Salter et al., 2013;

Kanagaretnam et al., 2014; Zeghal & Lahmar, 2018; Guermazi & Halioui, 2020; Wronski & Klann, 2020; and Purwa & Setiawan, 2021) investigated the relationships between national culture dimensions and accounting conservatism using a sample of thousands of firms and/or banks in a large number of countries. Thus, would the effect of national culture be significant in a small sample from a few numbers of countries? We considered specific criteria when we chose the countries for our study. Diversity on scores of Hofstede (1980)'s cultural dimensions, variety in geographical locations and differences in religions and languages; i.e., countries with high, moderate and low scores of the four dimensions of Hofstede (1980), countries lies in the biggest world continents in terms of population and space (Africa, Asia and Europe) and countries that embrace the most three widespread religions (Christianity, Islam and Hinduism) where the official languages of these countries occupy three of the top five positions for the most widely spoken languages in the world (English, Arabic and Hindi). Hofstede (2001) asserted that geographical position is a fundamental fact that strongly affects the culture which is shaped culture generations. We analysed many countries regarding these criteria and the identical group of countries was Egypt, Turkey, India and the United Kingdom.

Egypt scores low in individualism (25), high in both avoiding uncertainty and power distance (80 and 70 respectively) and intermediate low (45). Egypt is a collectivistic and relatively feminine society in which centralization is popular, individuals accept a hierarchical order and have a high preference for avoiding uncertainty. Egypt lies on the northeast corner of Africa. Also, it is a Mediterranean country where Islam is the state religion and Arabic is the official language. Turkey scores low in individualism (37), high in both avoiding uncertainty (85) and power distance (66) and moderately low in masculinity (45). Turkey is a collectivistic and relatively feminine society in which employees expect to be told what to do and managers rely on their bosses and on rules. The huge need for laws and rules also reflects the high score of uncertainty avoidance of the Turkish society. Turkey is a transcontinental country in Eurasia. Turkey is a secular state with no official state religion and the official language is Turkish. India scores low in uncertainty avoidance (40), high in power distance (77), intermediate score of individualism (48) and moderately high for masculinity (56). India is a masculine society with both collectivistic and individualist traits. The Indian society has a medium low preference for avoiding uncertainty. India lies in Asia; the official state religion is Hinduism and the official language is Hindi. United Kingdom scores high in individualism (89), low in avoiding uncertainty and power distance (35 and 35 respectively). The score of masculinity is moderately high (66). United Kingdom is a masculine society and is considered a very high individualistic society. The British value equality with belief that they can influence decisions through the readily interaction with the authority figures, they do not feel threatened by ambiguous or unknown situations and they are not trying to avoid uncertainty. The official state religion is Christianity and the official language is English. Figure 1 shows the national culture dimensions' scores for each country.

Insert Figure 1 here.

We focused on the banking sector for two reasons. First, the banking sector was excluded from most of the prior studies that examined the effect of national culture on accounting conservatism except for (Kanagaretnam et al., 2014; Purwa & Setiawan, 2021). Second, the application of accounting conservatism in banks' financial statements can be easily verified as, banks follow rigid rules. We collect financial statements of 535 banks from the four countries from Refinitiv (Thomson Reuters) Eikon and DataStream

databases for the recent time series from 2013 to 2020², the final number of observations was 3593³ observations. Table 4 reports the details of final sample and the final total of observations per year and per country.

Figure 1

National Culture Dimensions' Scores by Country

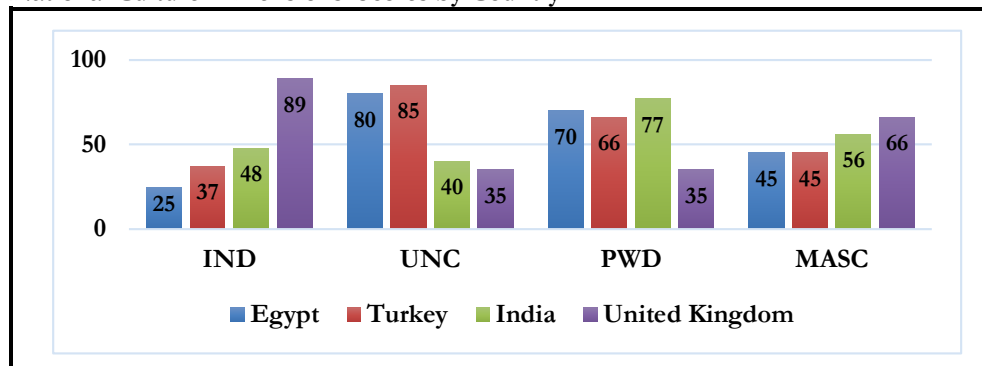


Table 4

Sample and the Final Total of Observations per Year and per Country

	Egypt	Turkey	India	United Kingdom	Total
Population	46	148	123	314	631
Initial sample	46	148	123	314	631
Final sample	33	87	121	294	535
Percentage	72%	59%	98%	94%	-
Observations per Year					
2013	30	62	63	225	380
2014	32	73	74	233	412
2015	32	80	91	250	453
2016	32	83	101	269	485
2017	32	81	107	276	496
2018	32	81	117	284	514
2019	31	81	121	283	516
2020	23	55	120	139	337
Total Observations per Country	244	596	794	1959	3593

For statistical tests we used Stata program version 14 and analysed data using the descriptive analysis, correlation and the random effect method for panel data to control fixed years' effect. Panel data explain the human behavior more accurately. Also, Hsiao (2007) asserted that panel data are more capable than single cross-sections or time series data in capturing the complex behavior of individuals.

² We obtain data from 2011-2020. We used the period 2011-2012 as the base of calculating ΔNI_{t-1} for year 2013. As to compute the change in net income from year t-2 to year t-1 (ΔNI_{t-1}), and total assets at the end of year t-2, the data of the previous year should be available. For example, ΔNI_t for year 2013 requires ΔNI_{t-1} for year 2012 and to compute (ΔNI_{2012}), we need values of change in net income from year 2011 to year 2012 and total assets at the end of year 2011 should be obtained.

³ The number of observations represents banks years= 535*8= 4280 however, the final observations are 3593 due to availability of data problem for some bank years. Kindly see table 4 that reports the final sample.

IV. RESULTS AND DISCUSSIONS

4.1. Descriptive Analysis

Table 5 reports descriptive statistics of bank-level data and country-level data for accounting conservatism test. The descriptive statistics of panel data describe all variables employed in this study in terms of the mean (Mean) to measure the center of the distribution of the data, the standard deviation (SD) to explain how the data is spread out from the mean, the minimum (Min), and the maximum (Max) for each variable. It also presents the final number of observations (N) and the final number of banks (n).

Table 5

Descriptive Statistics for All Variables in the Accounting Conservatism Test

Variable	Mean	SD	Min	Max	Observations
ΔNI_t	0.006	0.12	-2.16	2.76	N = 3593, n = 535
ΔNI_{t-1}	0.003	0.13	-1.93	2.76	N = 3593, n = 535
$D\Delta NI_{t-1}$	0.45	0.50	0.00	1.00	N = 3593, n = 535
SIZE_t	7.70	2.52	0.03	14.91	N = 3593, n = 535
IND	66.36	25.34	25	89	N = 3593, n = 535
UNC	49.93	21.71	35	85	N = 3593, n = 535
PWD	51.19	18.06	35	77	N = 3593, n = 535
MASC	58.27	9.18	45	66	N = 3593, n = 535
CR	3.09	1.00	2.00	4.00	N = 3593, n = 535
LGDP	9.58	1.26	7.58	10.57	N = 3593, n = 535

The mean of change in income for year t (ΔNI_t) is 0.6% of total assets and the mean of change in for year t-1 (ΔNI_{t-1}) is 0.3% of total assets. It also confirms that the center of the distribution of the data is approximately close to zero. The mean of $D\Delta NI_{t-1}$ is 0.45, which indicates that approximately 45% of the firms included in the sample report a decline in earnings. The final number of observations (N) for all variables is 3593 observations which represent the total number of every single year for each individual bank in the four countries. The final number of banks from the four countries (n) is 535 banks.

4.2. Correlation

In The correlation matrix for bank-level variables used in the conservatism model is presented in panel A of Table 6. Panels A and B report correlations between the bank-level variables used in the conservatism and the country-level variables.

Results reported in panel A indicate that the correlation between ΔNI_t and ΔNI_{t-1} is positive (0.0383) and significant at the 0.05 level of significance. ΔNI_t is negatively correlated to $D\Delta NI_{t-1}$ (-0.248) and significant at the 0.01 level of significance. The correlation between ΔNI_{t-1} and $D\Delta NI_{t-1}$ is positive and significant (0.068) at the 0.01 level of significance. These significant results of correlations confirm the strength of our model. Panel B reports correlations between country-level variables. The four dimensions of national culture are significantly and highly correlated. The strong significant correlations between the four dimensions of national culture would be a serious multicollinearity problem if we included the four dimensions together in the model of tests. Thus, we tested the effect of each cultural dimension on accounting conservatism separately from the other dimensions in two models for each dimension.

Table 6

Correlation Matrices

Panel A: Correlation matrix for bank-level variables used in the conservatism test				
	ΔNI_t	ΔNI_{t-1}	$D\Delta NI_{t-1}$	$SIZE_t$
ΔNI_t	1			
ΔNI_{t-1}	0.0383**	1		
$D\Delta NI_{t-1}$	-0.248***	0.0680***	1	
$SIZE_t$	-0.0168	-0.0088	-0.0165	1

Panel B: Correlation matrix between country-level variables						
	IND	UNC	PWD	MASC	CR	LGDP
IND	1					
UNC	-0.847***	1				
PWD	-0.934***	0.619***	1			
MASC	0.970***	-0.949***	-0.835***	1		
CR	0.978***	-0.753***	-0.982***	0.921***	1	
LGDP	0.923***	-0.982***	-0.751***	0.989***	0.861***	1

Notes: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

4.3. Regression Analysis

We regressed the change in earning for individual banks with each of the four national culture dimensions, bank-level control variables and country-level control variables. We controlled fixed-years effects by using the random effect methods for panel data following Guermazi and Halioui (2020) and report the results in Table 7.

The coefficient α_1 of ΔNI_{t-1} is positive and significant at 0.01 level of confidence for models 1, 2, 7 and 8 (individualism and masculinity) where it is negative and significant at 0.05 level of models 5 and 6 (power distance). The coefficient (α_1) of ΔNI_{t-1} of models 3 and 4 (uncertainty avoidance) is not significant.

The coefficient α_7 of $CU * \Delta NI_{t-1} * D\Delta NI_{t-1}$ is positive and significant at 0.01 level of confidence for models 1, 2, 7, and 8 (individualism and masculinity), which indicate that banks in high individualistic and masculine countries report earnings declines less timely than gains. The coefficient α_7 of $CU * \Delta NI_{t-1} * D\Delta NI_{t-1}$ is negative and significant at 0.01 level of confidence in models 3, 4, 5 and 6 (uncertainty avoidance and power distance), which indicate that banks in countries of high uncertainty avoidance and large power distance scores report earnings declines timelier than gains. Hence, higher levels of conservatism are associated with lower levels of earnings management (Wijayana & Gray, 2019). Thus, our results support the results of previous studies that individualism is negatively and uncertainty avoidance is positively related to accounting conservatism. Moreover, the results provide new evidence that power distance and masculinity are significantly related to accounting conservatism. Specifically, power distance is positively and masculinity is negatively related to accounting conservatism. Moreover, the results show that the increase in total assets of year t has a negative significant effect on bank profits at 0.01 level of significance in all models. For institutional variables, creditor rights have negative effect on bank profits in individualistic and masculine societies. Where, banks are more profitable where economic well-being (LGDP) is high in individualistic and large power distance societies.

Insert Table 7 here.

Table 7 reports three different values of R^2 for each model of the eight models. R^2 -within measures how much of the variation in the dependent variable is captured within each bank over the time period. For example, R^2 -within of model 2 is 11 which indicates that 11% of the variation captured in net income for each bank over the period

(2013-2020) is explained by the explanatory variables (IND, SIZE_{it}, CR and LGDP). R²-between measures how much of the variation in the dependent variable is explained by the explanatory variables between banks. For example, R²-between of model 2 is 28 which indicates that 28% of the variation in net income between the 535 banks of the four countries is explained by the explanatory variables (IND, SIZE_{it}, CR and LGDP) after controlling for year fixed effects. In all models, R²-between explains more variance between banks more than the variance within banks. R²-overall is the weighted average of both R²-within and R²-between.

Most notably, when comparing previous studies, Kanagaretnam et al. (2014) was the closest to our study. As, we followed the same model of Basu (1997) for measuring accounting conservatism and the banking sector to test Basu (1997)'s model. The differences were in the time period and sample size. Nevertheless, the R²-between in our regression results is approximately in the same range of the R² of Kanagaretnam et al. (2014). Moreover, we find new significant evidence of the effect of both power distance and masculinity on accounting conservatism.

4.4. Robustness Test

We checked the robustness of our main results by using alternate cultural dimensions from House et al. (2004)'s framework of national culture. House et al. (2004) investigated the influence of cultural differences on leadership processes for data collected over 1994-1997 from middle-level managers from food-processing, financial services and telecommunication services industries in 62 countries. Their investigation was called the global leadership and organizational behavior effectiveness (GLOBE). House et al. (2004) extended the framework of Hofstede (1980). They set nine dimensions of which two of Hofstede (1980) dimensions were split into four dimensions. Masculinity turns it into gender egalitarianism and assertiveness, whereas individualism, turns it into two types of collectivism (the opposite label of individualism), institutional and in-group. House et al. (2004) did not change the dimensions' names of power distance and uncertainty avoidance, but they adjusted the way of measuring, particularly uncertainty avoidance (Hadwick, 2011). The last three dimensions are humane, performance orientation and future orientation.

The study of House et al. (2004) is the closest one to Hofstede (1980)'s model, even though they are conceptually unmatched in addition to the differences in methodology (Hofstede, 2006; Zhao et al., 2016). Also, Hadwick (2011) argued that the cultural model of House et al. (2004) is the genuine alternative of Hofstede that acquired the interest of a broad range of management and cross-cultural scholars. Considering the above and following Ashraf et al. (2016), we replaced the four dimensions of Hofstede (1980) with the four dimensions of House et al. (2004): in-group collectivism (GRC) which conceptually is the opposite of IND, uncertainty avoidance (UA), power distance (POW) and assertiveness (ASR).

Table 8 reports the results of the regression of accounting conservatism using cultural dimensions of House et al. (2004). In models 9 and 10, the coefficient of α_7 for GRC is negative and significant. This result is consistent with the results of models 1 and 2 of Table 7. Thus, H₁ is accepted. The coefficient α_7 for UA in models 11 and 12 is negative and significant which is consistent with the results of models 3 and 4 of Table 7. Consequently, H₂ is accepted. The coefficient of α_7 for ASR in models 15 and 16 is positive and significant which is consistent with hypothesis H₄ and the results of models 7 and 8 of Table 7. The coefficient α_7 for POW is positive and significant, as reported

for models 13 and 14 which is not consistent in sign with the results of models 5 and 6 in Table 7.

Insert Table 8 here.

Why power distance dimension (PD) of Hofstede (1980) is significantly positively related to accounting conservatism while power distance (POW) of House et al. (2004) is significantly negatively related? The result of the correlation between the scores of power distance dimension (PWD) of Hofstede (1980) and the scores of power distance (POW) of House et al. (2004) are negative but insignificant. In this regard, Zhao et al. (2016) found a significant negative correlation between the original Hofstede (1980) scores and the original globe scores (House et al., 2004). As mentioned before, (House et al., 2004) adjusted the manner of measuring the dimensions of power distance and uncertainty avoidance, where these two dimensions of House et al. (2004) become dissimilar -in the concept and in the methodology- from the same two dimensions of Hofstede (1980).

Notably, the R-squares in the regression model in Table 8 are higher than the R-squares in the regression model in Table 7, which means that the cultural model of House et al. (2004) affects accounting conservatism better than the cultural model of (Hofstede, 1980). Thus, some coefficients that were not significant in Table 7 are significant in Table 8. For example, the coefficient of $CU*\Delta NI_{t-1}$ was not significant at model 3 and 4 that represent uncertainty avoidance in Table 7. However, it is significant at level of 0.01 of confidence in models 11 and 12 that represent uncertainty avoidance in Table 8. The coefficient of LGDP was not significant in models 7 and 8 that represent masculinity in Table 7, while it is significant at level of 0.01 confidence in models 15 and 16 that represent assertiveness in Table 8. Moreover, in the model of (Hofstede, 1980) results show that creditor rights have a significant negative effect on bank profits in individualistic and masculine societies. Also, banks are more profitable where economic well-being (LGDP) is high in individualistic and large power distance societies. Where in the model of House et al. (2004) we can generalize the results that creditor rights have negative effect on bank profits and banks are more profitable in countries with high economic well-being (LGDP). As the coefficient of CR is significantly negative and the coefficient of LGDP is significantly positive to bank profits at 0.01 level of confidence in all models of culture dimensions. In sum, these results confirm our hypotheses. Additionally, the regression model using the cultural dimensions of House et al. (2004) interpret accounting conservatism better than the regression model using cultural dimensions of Hofstede (1980).

V. CONCLUSION

Theoretically, within the same accounting standard, the level of accounting conservatism at a company level should be the same due to the uniform application of rules. However, this is not the case. We aim to test the existence and validity of the relationship between Hofstede (1980)'s cultural dimensions and accounting conservatism using a small number of countries. Our sample consists of 535 banks in four countries (Egypt, Turkey, India and the United Kingdom) and we covered the most recent period from 2013 to 2020. We focused on the banking sector which has been excluded from most of prior studies and with regarding that banks follow rigid rules; so, the applying of accounting conservatism in bank's financial statements can be easily verified.

We applied statistical methods specified for testing panel data where all the coefficients of culture dimensions in the eight models were significant. Our robustness test led us to accept hypotheses 1, 2 and 4 that individualism, and masculinity are

negatively related to accounting conservatism, uncertainty avoidance is positively related to accounting conservatism. While for power distance dimension, power dimension of Hofstede (1980) is significantly positive related to accounting conservatism while, while power distance of House et al. (2004) is significantly negative to accounting conservatism.

We generally add to the debate that national culture is one of the environmental factors founded to have a vital role in explaining the differences between accounting values among countries. Specifically, we add to previous studies by finding new evidence of the significant relationships of power distance and masculinity with accounting conservatism. Also, we found the cultural dimensions of House et al. (2004), interpret accounting conservatism better than the cultural dimensions of Hofstede (1980) using (Basu, 1997) model of testing accounting conservatism. In addition, by comparing our results to results of previous studies we proved that the effect of the four culture dimensions is significant even if on testing a sample of only four countries.

Our study is subject to several limitations. First, we conducted our tests focusing on the banking sector; sectors rather than the banking sector can be conducted in future research. Second, we test accounting conservatism using change in net income, future research could consider several specific measurements of earning management in banks industry such as loss avoidance and loan loss provision or loan charge off for testing the accounting conservatism. Third, we used the four dimensions of the original framework of Hofstede (1980); individualism, uncertainty avoidance, power distance and masculinity. Future research could investigate the effect of the fifth dimension long term orientation added later in 1991 on accounting conservatism along with the original four dimensions.

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Table 7
Regression Analysis using (Hofstede, 1980) Cultural Dimensions

Variable	Culture = IND			Culture = UNC			Culture = PWD			Culture = MASC		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	
Constant	0.10*** (9.27)	0.05 (1.38)	0.13*** (12.66)	0.40 (0.99)	0.07*** (6.80)	0.56 (1.54)	0.07*** (6.80)	0.07*** (6.80)	0.56 (1.54)	0.07*** (6.80)	0.07*** (6.80)	-0.01 (-0.18)
ΔNI_{t-1}	0.36*** (2.88)	0.39*** (3.11)	-0.06 (-0.59)	-0.07 (-0.59)	-0.2*** (-2.64)	-0.19*** (-2.58)	-0.2*** (-2.64)	-0.19*** (-2.58)	-0.19*** (-2.58)	0.71*** (2.77)	0.71*** (2.77)	0.76*** (2.81)
$D\Delta NI_{t-1}$	-0.17*** (-10.14)	-0.17*** (-10.24)	-0.24*** (-16.42)	-0.24*** (-16.45)	-0.17*** (-10.38)	-0.18*** (-10.89)	-0.17*** (-10.38)	-0.18*** (-10.89)	-0.17*** (-10.38)	-0.10*** (-3.44)	-0.10*** (-3.44)	-0.10*** (-3.54)
$\Delta NI_{t-1} * \Delta NI_{t-1}$	-1.16*** (-7.15)	-1.22*** (-7.53)	0.38** (2.50)	0.40*** (2.66)	0.54*** (5.73)	0.56*** (5.90)	0.54*** (5.73)	0.56*** (5.90)	0.56*** (5.90)	-2.34*** (-6.69)	-2.34*** (-6.69)	-2.48*** (-7.09)
CU	0.00 (-0.36)	0.00 (1.44)	0.00*** (-4.57)	0.00 (-1.12)	0.00*** (3.85)	0.01 (1.47)	0.00*** (3.85)	0.01 (1.47)	0.01 (1.47)	0.00* (1.78)	0.00* (1.78)	0.00 (1.25)
$CU * \Delta NI_{t-1}$	0.00*** (-3.58)	-0.01*** (-3.76)	0.00 (0.53)	0.00 (0.58)	0.01*** (4.26)	0.01*** (4.36)	0.01*** (4.26)	0.01*** (4.36)	0.01*** (4.36)	-0.01*** (-2.77)	-0.01*** (-2.77)	-0.01*** (-2.95)
$CU * D\Delta NI_{t-1}$	0.00* (-1.91)	0.00 (-1.85)	0.00*** (5.91)	0.00*** (5.79)	0.00 (-1.05)	0.00 (-1.02)	0.00 (-1.05)	0.00 (-1.02)	0.00 (-1.02)	0.00*** (-3.65)	0.00*** (-3.65)	0.00*** (-3.58)
$CU * \Delta NI_{t-1} * \Delta NI_{t-1}$	0.01*** (8.50)	0.01*** (8.95)	-0.01*** (-2.68)	-0.01*** (-2.82)	-0.02*** (9.57)	-0.02*** (-9.86)	-0.02*** (9.57)	-0.02*** (-9.86)	-0.02*** (-9.86)	0.04*** (7.00)	0.04*** (7.00)	0.04*** (7.42)
SIZE _t	-0.01*** (-8.49)	-0.01*** (-8.19)	-0.01*** (-8.04)	-0.01*** (-7.99)	-0.01*** (-8.73)	-0.01*** (-8.37)	-0.01*** (-8.73)	-0.01*** (-8.37)	-0.01*** (-8.37)	-0.01*** (-8.27)	-0.01*** (-8.27)	-0.01*** (-8.06)
$SIZE * \Delta NI_{t-1}$	-0.01 (-0.92)	-0.01 (-1.13)	0.00 (0.33)	0.00 (0.23)	-0.02 (-1.56)	-0.02* (-1.70)	-0.02 (-1.56)	-0.02* (-1.70)	-0.02* (-1.70)	-0.00 (-0.30)	-0.00 (-0.30)	-0.01 (-0.48)
$SIZE * D\Delta NI_{t-1}$	0.02*** (10.75)	0.02*** (10.86)	0.02*** (10.64)	0.02*** (10.81)	0.02*** (10.90)	0.02*** (10.93)	0.02*** (10.90)	0.02*** (10.93)	0.02*** (10.93)	0.01*** (10.67)	0.01*** (10.67)	0.02*** (10.82)
$SIZE * \Delta NI_{t-1}$	0.05*** (3.65)	0.06*** (3.66)	0.01 (0.64)	0.01 (0.47)	0.08*** (4.92)	0.08*** (4.92)	0.08*** (4.92)	0.08*** (4.92)	0.08*** (4.92)	0.03*** (2.26)	0.03*** (2.26)	0.03*** (2.17)
* ΔNI_{t-1}	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.22)	-0.03*** (-3.26)
CR	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.01** (2.35)	0.05*** (2.07)	0.05*** (2.07)	0.05*** (2.07)
LGDP	0.11 (0.11)	0.11 (0.11)	0.10 (0.10)	0.10 (0.10)	0.12 (0.12)	0.12 (0.12)	0.12 (0.12)	0.12 (0.12)	0.12 (0.12)	0.11 (0.11)	0.11 (0.11)	0.11 (0.11)
R ² within	0.11	0.11	0.10	0.10	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11
R ² between	0.23	0.23	0.16	0.16	0.26	0.26	0.26	0.26	0.26	0.21	0.21	0.25
R ² overall	0.13	0.13	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.13

Notes: *p<0.10, **p<0.05, and ***p<0.01

Table 8
Regression Analysis using (House et al., 2004)

Variable	Culture= GRC			Culture= U.A.			Culture= POW			Culture= ASR		
	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16				
Constant	-0.73*** (-7.20)	-0.15 (-7.20)	0.10*** (3.25)	0.14* (1.84)	0.31*** (9.26)	0.17*** (3.39)	0.21*** (13.01)	-0.03 (-0.37)				
ANI _{t-1}	-5.07*** (-4.13)	-5.27*** (-4.13)	-1.41*** (-3.72)	-1.47*** (-3.90)	1.83*** (4.39)	1.90*** (4.56)	0.82*** (3.92)	0.85*** (4.08)				
DANI _{t-1}	1.01*** (6.36)	0.99*** (6.36)	-0.28*** (-6.00)	-0.27*** (-5.82)	-0.40*** (-7.31)	-0.41*** (-7.53)	-0.34*** (-14.13)	-0.34*** (-14.11)				
ANI _{t-1} *DANI _{t-1}	13.95*** (8.20)	14.55*** (8.20)	4.36*** (8.74)	4.59*** (9.22)	-5.41*** (-9.65)	-5.56*** (-9.99)	-2.30*** (-7.95)	-2.39*** (-8.28)				
CU	0.15*** (8.24)	0.01 (8.24)	0.01 (0.13)	-0.02 (-1.72)	-0.08*** (-6.51)	-0.05*** (-3.55)	-0.09*** (-7.76)	-0.01 (-0.75)				
CU*ANI _{t-1}	0.93*** (4.13)	0.97*** (4.13)	0.34*** (3.70)	0.36*** (3.91)	-0.65*** (-4.50)	-0.67*** (-4.65)	-0.2*** (-4.15)	-0.21*** (-4.32)				
CU*DANI _{t-1}	-0.22*** (-7.88)	-0.21*** (-7.88)	0.02 (2.02)	0.02 (1.82)	0.08*** (4.01)	0.08*** (4.23)	0.04*** (7.39)	0.04*** (7.32)				
CU*ANI _{t-1} *DANI _{t-1}	-2.56*** (-8.21)	-2.77*** (-8.21)	-1.06*** (-8.76)	-1.11*** (-9.24)	1.90*** (9.80)	1.95*** (10.08)	0.55*** (8.28)	0.57*** (8.64)				
SIZE _t	-0.01*** (-8.24)	-0.01*** (-8.24)	-0.01*** (-8.47)	-0.01*** (-8.20)	-0.01*** (-8.22)	-0.01*** (-8.25)	-0.01*** (-8.38)	-0.01*** (-8.32)				
SIZE*ANI _{t-1}	-0.03** (-2.15)	-0.03** (-2.15)	-0.01 (-1.06)	-0.15 (-1.28)	-0.02* (-1.88)	-0.03** (-2.04)	-0.03** (-2.15)	-0.03** (-2.28)				
SIZE*DANI _{t-1}	0.01*** (10.37)	0.02*** (10.37)	0.02*** (10.69)	0.02*** (10.82)	0.02*** (10.51)	0.02*** (10.60)	0.02*** (10.49)	0.02*** (10.57)				
SIZE*ANI _{t-1} *DANI _{t-1}	0.11*** (6.04)	0.11*** (6.04)	0.06*** (4.00)	0.06*** (4.03)	0.09*** (5.63)	0.10*** (5.71)	0.11*** (6.06)	0.11*** (6.19)				
CR	(6.04)	(6.04)	(4.00)	(4.03)	(5.63)	(5.71)	(6.06)	(6.19)				
LGDP	(-3.17)	(-3.17)	(-5.21)	(-5.21)	(-4.15)	(-4.15)	(-3.93)	(-3.93)				
R ² within	0.13	0.13	0.11	0.12	0.12	0.12	0.12	0.12				
R ² between	0.25	0.27	0.24	0.28	0.27	0.29	0.25	0.27				
R ² overall	0.14	0.15	0.13	0.14	0.14	0.14	0.14	0.14				

Notes: *p<0.10, **p<0.05, and ***p<0.01