Journal of Business Ethics
https://doi.org/10.1007/s10551-018-3971-6

ORIGINAL PAPER

Religion and the Method of Earnings Management: Evidence from China

Guilong Cai[1] · **Wenfei Li**[2] · **Zhenyang Tang**[3]

Received: 30 January 2018 / Accepted: 4 July 2018

Abstract
Previous studies argue that religious firms are more ethical and thus engage less in accrual earnings management. At odds with the ethical view, we use a sample of Chinese listed firms and show that firms in religious regions use more real earnings management. We postulate that besides ethics, religion also proxies for risk aversion, which motivates firms to substitute accrual earnings management with real earnings management. Consistent with this view, we show that the positive (negative) association between religiosity and real (accrual) earnings management is more pronounced for firms with lower litigation risk and for firms with less reputable auditors. In addition, we use a mediation model introduced by Baron and Kenny (J Pers Soc Psychol 51(6):1173–1182, 1986) to show that religiosity affects earnings management through the channel of risk aversion. We conclude that firms choose real earnings management over accrual-based earnings management because of risk aversion, rather than ethical reasons.

Keywords Accrual earnings management · Real earnings management · Religion · Risk aversion · Ethics

Introduction

Empirical studies show that firms in religious areas are less likely to engage in accrual-based earnings management (Du et al. 2015; Kanagaretnam et al. 2015). A widely accepted explanation is that religions, by providing moral guidelines and shaping managerial values, discourage unethical decisions including earnings management (Lehrer 2004; Hilary and Hui 2009; Du 2013; El Ghoul et al. 2012). If this was the case, one would also expect religious firms to use less real activities earnings management, which hurts shareholder value even more (Roychowdhury 2006; Cohen et al. 2008; Ho et al. 2015; Ferentinou and Anagnostopoulou 2016) and is deemed unethical (Healy and Wahlen 1999; Hong and Andersen 2011). However, McGuire et al. (2012) show that religiosity is in fact positively associated with real earnings management in the United States: while religious managers reduce accrual-based earnings management, they strategically substitute it with real earnings management.

Findings in McGuire et al. (2012) lead to important questions that remain unanswered. First, it is not clear whether these findings are attributable to the general personal traits shared by religious managers, or to aspects specific to the predominant religion in the sample country. While the United States is culturally diverse, its religious population is predominantly Christian.[1] Given the substantial impact of different religions on managerial decisions (Grullon et al. 2009; Kumar 2009; Du et al. 2015; Jiang et al. 2015; Adhikari and Agrawal 2016; Schneider and Spalt 2017; Shen and Su 2017), findings based on a Western religion such as Christianity may not hold in other countries such as China, which is influenced by Eastern religions such as Buddhism and Taoism. Second and more importantly, it is not clear

✉ Wenfei Li
liwenfei21@126.com

Guilong Cai
caiglong@mail2.sysu.edu.cn

Zhenyang Tang
ztang@clarku.edu

[1] Business School, Sun Yat-Sen University, Guangzhou 510275, China

[2] School of Economics and Statistics, Guangzhou University, Guangzhou 510006, China

[3] Graduate School of Management, Clark University, Worcester, MA 01610, USA

[1] A 2017 Gallup poll reveals that about three quarters of the US population, or more than 90% of the religious population, identify as Christian. Source: http://news.gallup.com/poll/224642/2017-update-americans-religion.aspx.

Published online: 21 July 2018

whether these findings are solely driven by higher ethical standards of religious managers. In particular, the positive relationship between religion and real earnings management is difficult to reconcile with religious managers being more ethical, and calls for explanations beyond the ethical view.

In this paper, we collect a sample of religious facilities that are locally influential (including churches of Protestantism and Catholicism, mosques of Islam, and temples of Buddhism and Taoism) around corporate headquarters in China, and examine the effects of religion on earnings management using a non-Christian setting. Previous studies suggest that unique aspects of a religion can cause a substantial difference in managerial decisions. For example, Kumar (2009) and Noussair et al. (2013) find that Protestants and Catholics differ in risk-taking behavior. While studies on Eastern religions such as Buddhism and Taoism are still limited, a number of studies show that Eastern religions are non-exclusive and have relatively loose organizational structures (Iannaccone 1995; Miller 2000; Li and Cai 2016). Du et al. (2015) argue that findings based on Western religions may not automatically extend to Eastern religions such as Buddhism and Taoism. Consistent with the view, studies such as Miller (2000), Jiang et al. (2015) and Shen and Su (2017) document vast differences in how Eastern religions shape a manager's risk attitude and corporate decisions. Hence, it is plausible to think that the relationship between religion and earnings management is more nuanced; it may be driven by overall religiosity, or by religion-specific attributes (e.g., a Christian-specific belief versus a Buddhist-specific belief). Our study thus sheds light on whether the relationship between religion and earnings management is attributable to common personal traits shared by managers of different religious beliefs, or to Christianity-specific aspects.

Besides its cultural uniqueness and the presence of Eastern religions, China is also regarded as one of the most religiously diverse countries. Unlike most countries dominated by one religion (e.g. Protestantism in the US and the UK, Catholicism in France and Germany, Islam in the Middle East, etc.), China has several influential religions, and has a high Religious Diversity Index of 7.3.[2] According to a Pew's 2012 report,[3] the population percentages in China who are Buddhists, Taoists, and Christian are 18.2, 21.9, and 5.1%, respectively. Because of the religious diversity in China, we are able to analyze the impact of different religions (i.e., Eastern religions versus Western religions) in one country and thus avoid potential problems caused by country-level unobservable variables.

Furthermore, we examine whether the effects of religion on earnings management stem from risk aversion other than ethics. A large body of literature suggests that religiosity may closely proxy for risk aversion (e.g. Miller and Hoffman 1995; Noussair et al. 2013) and thus influence managerial decisions (Hilary and Hui 2009; Adhikari and Agrawal 2016; Chircop et al. 2017; Gao et al. 2017). Studies also suggest that managers find accrual management more risky than real earnings management. For example, Lo (2008) argues that managers are more willing to engage in real earnings management (even at the cost of shareholders) because such actions are harder to detect: "with the uncertainty inherent in business environments, there is no benchmark to determine what should have been done under any particular situation." The view is consistent with Graham et al. (2005), who find from CFO surveys that "while auditors can second-guess the firm's accounting policies, they cannot readily challenge real economic actions to meet earnings targets that are taken in the ordinary course of business." In contrast, accrual earnings management potentially violates SEC regulations and thus imposes much higher litigation risks on managers (Palmrose and Scholz 2004; Lo 2008), and could thus be shunned by religious managers. Consequently, religious (and risk averse) managers are more likely to choose real earnings management over accrual earnings management, given that the former is a much safer way to manage earnings in the presence of regulators and auditors.

In our view, ethics and risk aversion are fundamentally different. An ethical manager should avoid using either form of earnings management, because earnings management by definition involves misleading (or inaccurate at best) earnings information.[4] For instance, Healy and Wahlen (1999) define earnings management as managerial actions of altering financial reports to "either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers." Such actions are against fair disclosure and violate the moral standards inherent in religions. On the contrary, the risk aversion view can better explain why religious managers are more likely to engage in real earnings management. A body of literature shows that risk-averse managers have incentives of earnings management to smooth income, so as to avoid the risk of personal wealth losses and job insecurity (Ronen and Sadan 1981; Lambert 1984; Dye 1988; Carlson and Bathala 1997; Graham et al. 2006; Grant et al. 2009). Hence, the risk aversion view predicts that religious managers have incentives to engage in real earnings management but to avoid accrual earnings management.

In this paper, we show that firms headquartered in more religious regions use less accrual earnings management and more real earnings management, and that these results are

[2] Source: Pew's Global Religious Diversity (2014); http://www.pewforum.org/2014/04/04/global-religious-diversity/.

[3] Global Religious Landscape (2012); http://www.pewforum.org/2012/12/18/global-religious-landscape-exec/.

[4] For instance, accrual earnings management includes inappropriate revenue recognition and "big bath" charges; real earnings management includes changes in R&D expenses, marketing and advertising expenses, and other SG&A expenses which do not truly reflect a firm's earnings ability.

not limited to any religion. In addition, firms headquartered in more religious regions use more real earnings management even when they face low earnings pressure, and when they face lower litigation risk or auditing risk. We also find that risk is a mediator factor between religion and earnings management, following an approach similar to Baron and Kenny (1986). Overall, our empirical findings support the view that religion affects the method of earnings management through the channel of risk aversion.

Our paper contributes to the literature in the following ways. First, we present findings suggesting that the association between religion and earnings management stems from risk aversion, while the majority of prior religion studies focus on the channel of ethics.[5] Our paper thus connects studies on religion and risk aversion (such as Hilary and Hui 2009; Jiang et al. 2015) to the literature of earnings management. Second, we show that the positive relationship between religiosity and real earnings management is not attributable to aspects unique in Christianity, and is present in countries influenced by Eastern religions as well. Although a number of studies have discussed how different religions influence managerial decisions, the majority of them investigate the differences between Protestantism and Catholicism (Grullon et al. 2009; Kumar 2009; Adhikari and Agrawal 2016; Schneider and Spalt 2017). Our study thus enriches the limited literature on how religion affects managerial decisions in countries influenced by Eastern religions (Du et al. 2015; Jiang et al. 2015; Shen and Su 2017). Third, by highlighting the effect of religiosity on real earnings management, this paper is also an extension of China-based studies such as Chen et al. (2013) and Du et al. (2015) which investigate the effect of religion on accrual earnings management.

The rest of the paper is organized as follows. Section "Literature Review and Hypotheses Development" reviews the research background and develops hypotheses. Section "Data and Variables" describes our data and variables. Section "Empirical Results" reports our empirical findings. Section "Robustness" discusses robustness tests, and Section "Conclusion" concludes.

Literature Review and Hypotheses Development

Religions in China

Like other historical countries, China has a long religious history. Buddhism spread into China more than 2000 years ago and has been influential ever since. Taoism, founded in China, has a history of more than 1700 years. Possibly due to the non-exclusive nature of Buddhism and Taoism, the two leading religions in China, other influential religions later emerged in China, and remain influential in different regions. For example, Islam has been the dominant religion in many western provinces ever since it spread into China in the seventh century; Protestantism and Catholicism are popular in many former European enclaves in the eastern part of China and in some northern provinces, after they spread into China in the nineteenth century.

The influence of religions was severely affected by an unforeseeable shock of the Cultural Revolution in the 1970s. All religions in China, including the once-influential Buddhism and Taoism, were suppressed during the decade. As a result, when China finally allowed free religion in 1978, almost none of the population had any religious affiliation. However, religions revitalized afterwards. As of 2012, more than 100 million population were reported as religious (Li 2013), with a large number of corporate executives, directors, and employees (Li and Cai 2016). Anecdotally, we find that many people practice religions or donate to religious facilities, although they are not officially affiliated with a given religion nor formally self-report as religious which is consistent with the view by Miller (2000) that religions in East Asia is more about personal behavior rather than organizational affiliation. We thus argue that religious influence in China is economically significant, even though China is widely believed to be a non-religious country.

Religion, Ethics and Earnings Management

Studies on how religion influences economic activities date back to Weber (1905), but studies on how religion affects managerial decisions are more recent (Gundolf and Filser 2013). Religion has been shown to mitigate agency problems (Du 2013), such as tunneling (Du 2014) and financial reporting irregularities (Riahi-Belkaoui 2004; Dyreng et al. 2012; McGuire et al. 2012). Specifically, a number of studies show that religion is negatively associated with accrual-based earnings management (Chen et al. 2013; Du et al. 2015).

The popular explanation to the negative association between religion and accrual earnings management is that religious managers may be more ethical (Conroy and Emerson 2004; Longenecker et al. 2004; Carlin and Gervais 2009), and thus stay away from unethical actions such as earnings management (Merchant and Rockness 1994; Johnson et al. 2012; McGuire et al. 2012; Du et al. 2015). This view echoes a strand of literature on the ethics of corporate managers. For example, Hong and Andersen (2011) and Kim et al. (2012) show that more socially responsible firms, which are likely more ethical, exhibit significantly less accrual earnings management. Labelle et al. (2010) find that firms with better

[5] McGuire et al. (2012) suggest that risk aversion may be an alternative explanation to the association between earnings management and religiosity, but they do not offer any further investigation and do not attempt to separate ethics from risk aversion.

diversity management, which is a proxy for business ethics, tend to have less accrual earnings management.

However, earnings management is not limited to accrual-based earnings management, but also includes activity-based earnings management (real earnings management). The former only alters the timing of earnings but does not change the magnitude of total cash flows, and thus does not impose a fundamental impact on firm performance (Graham et al. 2005). In contrast, real earnings management changes real decisions made by firms (such as cutting R&D expenses or advertisement expenses), and may undermine long-term firm performance. As such, a number of studies (Roychowdhury 2006; Cohen et al. 2008; Ho et al. 2015; Ferentinou and Anagnostopoulou 2016) argue that real earnings management hurts shareholders more than accruals management does, and therefore is unethical (Healy and Wahlen 1999; Hong and Andersen 2011).

Decisions of accrual and real earnings management are closely related (Zang 2012). Considering the unethical nature of real earnings management, one may anticipate religious managers to engage in less real earnings management; however, McGuire et al. (2012) show that while religiosity negatively correlates with accrual-based earnings management, it positively associates with activity-based earnings management. This suggests that ethical standards alone may not fully explain the impact of religion on earnings management. Specifically, the ethical view does not explain why religious managers use more real earnings management, because the latter potentially hurts shareholder value even more (Roychowdhury 2006) and is considered unethical (Hong and Andersen 2011). This is in sharp contrast to other empirical studies that examine other ethics measures and earnings management. For example, studies like Hong and Andersen (2011) and Kim et al. (2012) find that corporate social responsibility (CSR) is negatively associated with both accruals management and real earnings management.

Religion, Risk Aversion and Earnings Management

McGuire et al. (2012) mention risk aversion as a potential explanation, other than ethics, to the positive association between religiosity and real earnings management. In fact, that religion may proxy for risk aversion has long been discussed. In the famous Pascal's Wager, Blaise Pascal argues that a risk-averse individual should self-select to become religious and always believe in God.[6] In addition, because individual behavior tend to follow the norms and guidelines defined by the group (Kohlberg 1984), the relation between religions and risk aversion may be strengthened within religious communities. A number of studies thus argue that religion can be viewed as a proxy for risk aversion (Miller and Hoffmann 1995; Miller 2000; Dyreng et al. 2012; Noussair et al. 2013). Diaz (2000) show that religious respondents gamble less. Hilary and Hui (2009) find that religious firms tend to have lower risk exposure. Jiang et al. (2015) use a sample of Chinese family firms and find that founders with religious beliefs tend to take significantly less risk.

All these findings suggest that risk aversion may be a valid channel for religions to affect managerial decisions of earnings management. Different from the ethical view which suggests that religious managers should avoid overall earnings management at all times, the risk aversion view predicts that risk-averse managers may actually increase overall earnings management to avoid the risk consequences such as personal wealth losses and job insecurity (Ronen and Sadan 1981; Carlson and Bathala 1997; Grant et al. 2009). In addition, risk-averse managers may also engage in earnings management to increase the perceived firm value (Lambert 1984; Dye 1988; Trueman and Titman 1988; Bartov et al. 2002), or to enhance the credibility of management and lower risk (Graham et al. 2005, 2006). Furthermore, the risk aversion view also predicts that risk-averse managers may prefer real earnings management to accrual earnings management. Accrual earnings management has been documented as a risky option for managers as compared to real earnings management (Graham et al. 2005; Lo 2008), because accrual earnings management potentially violates SEC regulations and thus imposes much higher litigation risks on managers (Palmrose and Scholz 2004). Within a framework of risk aversion, religious firms should use less accrual management and more real earnings management.

Although taking excessive risk can be considered unethical, ethics and risk aversion are distinct in our view. Ethics refers to social norms, moral standards, and values. Other things being equal, an ethical manager is more likely to take actions that are considered "right" or "moral." When it comes to earnings management, both methods of earnings management are considered unethical, so the ethical view has difficulty explaining why religious firms use more real earnings management, unless in circumstances when earnings management is absolutely necessary, i.e., when firms face extreme earnings pressure, as suggested by McGuire et al. (2012). On the other hand, risk aversion refers to the tendency to avoid "the worst situation," which in our case is the scenario that earnings management is detected by regulators and leads to litigation. Because real earnings management cannot be second-guessed by auditors or regulators, it offers an unethical but low-risk option of earnings management. Under the risk aversion hypothesis, a religious manager should increase activity-based earnings management and decrease accrual-based earnings management almost at all times, regardless of the earnings pressure. In contrast, if religiosity influences earnings management through the channel of risk aversion, the decision to manage earnings should depend on factors that

[6] Specifically, the individual will suffer infinite losses if God really exists, but only finite losses (time, leisure, etc.) if God does not exist.

affect the relative risk and return of earnings management, such as litigation risk and monitoring. Based on the risk aversion view, we next develop a number of testable hypotheses.

First, we investigate firms with strong incentives to manage earnings, i.e., when they face external pressure to manage earnings upwards. In China, a firm faces significant earnings pressure when it reports losses because of the special treatment (ST) rule; the pressure is more pronounced when it is already ST tagged.[7] We therefore hypothesize that religiosity is positively (negatively) associated with real earnings management (accrual earnings management) even when firms have good earnings (ROA > 1%) and are not tagged with ST. For robustness, we also examine whether firms increase real earnings management when facing pressure to meet or beat analyst forecasts.

Second, we investigate firms with different litigation risk or auditing risk. Previous literature suggests that the method of earnings management depends on external regulatory environment. For instance, Cohen et al. (2008) find that accruals management steadily increases prior to the SOX, and declines afterwards; on the other hand, real earnings management does exactly the opposite. Ferentinou and Anagnostopoulou (2016) show that Greek firms decrease accruals management and increase real earnings management after the adoption of IFSA in 2005. Further, Francis et al. (2016) use international data to study how legal environment affects the method of earnings management, and find that firms use less accruals management and more real earnings management in countries with better legal institutions. These findings suggest that the selection of earnings management is related to the external monitoring and perceived litigation cost. In addition, monitoring by auditors and financial analysts may also affect the choice of earnings management. Firms may reduce accrual earnings management and increase real earnings management when they use high-quality auditors (Chi et al. 2011; Zang 2012) or are followed by more financial analysts (Irani and Oesch 2016).

Motivated by these studies, we hypothesize that litigation risk and auditing risk affect managers' choices of earnings management, but the effect differs for different managers. Risk aversion encourages managers to pursue choices with less extreme payoffs, even though these choices may lead to lower expected payoffs. Compared to a risk-averse manager, a risk-neutral or risk-seeking manager is more likely to choose accruals management, which represents a high-risk and high-payoff option, over real earnings management[8] in the presence of litigation risk and auditing risk. While a risk-neutral manager chooses more accrual earnings management when risk is low and switches to real earnings management when risk is high, a risk-averse manager is likely to use little accrual earnings management in both low-risk and high-risk scenarios.[9] That is, if religiosity reflects risk aversion, its impact on earnings management should be more pronounced when litigation risk or auditing risk is lower. Therefore, we hypothesize that the positive (negative) association between religiosity and real earnings management (accruals management) should decrease in litigation risk or auditing risk.

Data and Variables

Sample Overview

Our initial sample consists of all public firms listed on the two major stock exchanges in China—Shanghai Stock Exchange and Shenzhen Stock Exchange—from 2001 to 2015. We exclude financial firms and firms with abnormal debt-to-assets ratios (smaller than 0 or greater than 1) from our sample. We also drop firms for which the headquarters location or earnings management cannot be determined, firms headquartered in provinces that are heavily inhabited by minority ethnic groups,[10] and observations with incomplete financial data. Our final sample consists of 16,980 firm-year observations from 2169 unique firms.

[7] ST (or *ST) tags are given to firms which report losses for two (or three) consecutive fiscal years. ST and *ST firms will be delisted if they do not report positive earnings in subsequent years; therefore, they have particularly strong incentives to manage earnings (Cai et al. 2012).

[8] Although real earnings management is relatively safe, it faces a number of limitations and is thus costly. First, real earnings management has to occur during a fiscal year, and is thus less flexible compared to accruals management; second, real earnings management is constrained by a number of factors such as competitiveness, financial health, tax consequences, and so on (Zang 2012). Finally, real earnings management may change the magnitude of future cash flows and thus may affect long-term firm performance (Graham et al. 2005).

[9] To see this, consider a manager who needs to decide the amount of accrual earnings management and real earnings management at the same time. Let w be the portion of accrual earnings management, A be the risk-aversion coefficient, R be the payoff of real earnings management, and R' be the payoff of accrual earnings management. Because accrual earnings management is risky, R' is a random variable with normal distribution $N(a,b)$, where a and b are the expected payoff and standard deviation of R' ($a > 0$ and $b > 0$). Now with a standard CARA utility function $U(z) = -\exp(-Az)$, the manager's problem becomes to maximize $E(-\exp(-A(w(R'-R)+R)))$. The first order condition (FOC) is that the optimal amount of accrual earnings management $w^* = a/Ab$. According to the FOC, when litigation risk or auditing risk increases, accrual earnings management becomes more risky (b increases) which leads to less usage of accrual earnings management; however, the effect is more pronounced for managers who are less risk-averse.

[10] We drop these firms to ensure that cultural differences between provinces do not affect our results, following Chen et al. (2013). Doing so reduces our sample to firms headquartered in the 23 provinces listed in Panel B of Table 1.

Table 1 Sample description

Variable	*N*	Mean	SD	Min	Median	Max
Panel A: Descriptive statistics of variables						
AEM	16,980	0.079	0.079	0.001	0.054	0.420
REM	16,980	0.001	0.206	-0.674	0.007	0.630
RELIGION (#Religious Facilities)	16,980	30.396	20.533	0.000	25.000	95.000
SIZE	16,980	21.836	1.241	19.178	21.709	25.619
LEV	16,980	0.498	0.197	0.073	0.507	0.921
ROA	16,980	0.029	0.060	-0.235	0.029	0.195
BM	16,980	0.564	0.254	0.095	0.548	1.131
BIG4	16,980	0.070	0.255	0.000	0.000	1.000
ANALYST	16,980	1.144	1.142	0.000	0.693	3.638
LOSS	16,980	0.120	0.325	0.000	0.000	1.000
OPRISK	16,980	0.038	0.048	0.002	0.022	0.321
BENCHMARK	16,980	0.150	0.357	0.000	0.000	1.000
INVEST	16,980	0.057	0.070	-0.051	0.036	0.375
ΔGDP	16,980	0.121	0.057	0.007	0.108	0.251

Province	All Religions	Buddhism	Taoism	Islam	Protestantism	Catholicism	Population	GDP
Panel B: Religion, population and GDP by Province								
Beijing	11	7	1	1	1	1	7.27	75,918.29
Tianjin	5	2	0	1	1	1	7.74	69,678.77
Shanghai	9	5	1	1	1	1	8.02	69,303.62
Jiangsu	35	18	4	4	7	2	7.56	56,061.37
Zhejiang	62	34	6	2	15	5	7.45	54,891.35
Guangdong	19	10	3	1	3	2	7.82	44,716.26
Shandong	24	3	2	8	8	3	7.18	40,625.31
Fujian	45	23	8	1	9	4	7.57	40,371.53
Liaoning	12	4	2	2	2	2	7.40	38,227.20
Jilin	14	6	2	2	3	1	7.40	28,136.29
Hubei	18	6	3	2	4	3	7.35	26,921.79
Hebei	22	6	3	6	4	3	7.77	26,450.56
Shaanxi	24	15	2	2	3	2	8.38	26,360.63
Chongqing	7	3	1	1	1	1	7.35	26,038.13
Hunan	29	15	4	2	5	3	7.87	25,129.65
Henan	43	9	5	13	14	2	8.50	24,507.72
Heilongjiang	8	2	0	2	2	1	7.75	24,148.77
Shanxi	25	18	0	2	3	2	7.87	23,869.76
Anhui	43	22	2	6	9	4	7.67	21,860.57
Jiangxi	35	14	5	2	10	4	8.33	21,303.97
Sichuan	23	16	2	1	2	2	7.35	20,203.46
Yunnan	31	18	2	4	6	1	7.65	16,310.88
Guizhou	8	3	0	2	2	1	7.83	14,542.50

AEM is measured as the absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION (#Religious Facilities)* is the number of religious facilities within a 200-km radius from each listed firm's headquarters. See Table 9 in Appendix for the definitions of other variables

All Religions (Buddhism, Taoism, Islam, Protestantism, and Catholicism) is the number of religious (Buddhist, Taoist, Islamic, Protestant, and Catholic) facilities in the province. Population is the log of population per kilometers in the province during our sample period. GDP is the average province-level GDP per capita (RMB) during our sample period

Following Chen et al. (2013) and Li and Cai (2016), we collect location data on 552 churches, temples, mosques and other religious facilities from two official sources. The first source is a list of 148 religious facilities included in a report on nationwide outstanding religious facilities by the State Council of the People's Republic of China. The second source is a list of religious facilities that were awarded by the Chinese State Administration for Religious Affairs as "Outstanding Institutions and Individuals in Establishing Harmonious Religious Facilities" in 2010. Both of the sources have comprehensive coverage of major religious facilities in 23 provinces of China; the sample covers 118 Protestant churches (21.38%), 44 Catholic churches (7.97%), 73 Muslim mosques (13.22%), 259 Buddhist temples (46.92%), 57 Taoist temples (10.33%), and 1 other facility (0.18%). Because all these religious facilities are locally influential, the number of religious facilities around corporate headquarters can reflect the local religious population and religious atmosphere.

Although the number of religious facilities does not directly measure the personal religious beliefs of corporate managers, it affects managerial decisions through the social norms. Kohlberg (1984) predicts that individuals prefer to conform to their social peers; as such, individuals may base their decisions on the perceived social support for such behavior (Cialdini 1993). McGuire et al. (2012) argue that managerial decisions are influenced by the norms of the religious environment they live in, even though the managers may not be religious themselves.

Measures of Earnings Management

Accrual Management

Kothari et al. (2005) state that the performance-matched discretionary accrual approach is both well specified and powerful at estimating discretionary accruals. Therefore, we use the modified Jones model adjusted for performance to calculate discretionary accruals ($AEM_{i,t}$). Specifically, for each year and every two-digit industry, we estimate the model as follows:

$$TA_{i,t} = \alpha_0 + \alpha_1 \frac{1}{Asset_{i,t-1}} + \alpha_2 \Delta Sales_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \quad (1)$$

The coefficient estimates from Eq. (1) are then used to estimate the normal accruals for our sample firms:

$$\mathrm{NA}_{i,t} = \hat{\alpha}_0 + \hat{\alpha}_1 \frac{1}{Asset_{i,t-1}} + \hat{\alpha}_2 \Delta Sales_{i,t} + \hat{\alpha}_3 PPE_{i,t} + \hat{\alpha}_4 ROA_{i,t} \quad (2)$$

where our measure of discretionary accruals is defined as the difference between total accruals and the normal accruals, $AEM_{i,t} = TA_{i,t} - NA_{i,t}$. we multiply *AEM* by negative one when *AEM* is negative so that *AEM* measures the absolute magnitude of accrual earnings management, regardless of the direction of the management.

Real Earnings Management

Following Cohen et al. (2008) and Cohen and Zarowin (2010), we use the abnormal cash flow from operations (*R_CFO*), abnormal discretionary expenses (*R_DISX*) and abnormal production costs (*R_PROD*) to measure the firm-specific real earnings management. We first run the following regressions for each two-digit industry and each year to generate the normal CFO, discretionary expenses and production costs, respectively:

$$CFO_{i,t} = \beta_0 + \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 Sales_{i,t} + \beta_3 \Delta Sales_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$PROD_{i,t} = \beta_0 + \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 Sales_{i,t} + \beta_3 \Delta Sales_{i,t} + \beta_4 \Delta Sales_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

$$DISX_{i,t} = \beta_0 + \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 Sales_{i,t-1} + \varepsilon_{i,t} \quad (5)$$

where the subscript i represents firms and t stands for years. *CFO* is cash flow from operations in the current year divided by total assets at the end of the prior year. *PROD* is the sum of costs of goods sold and the change in inventories in the current year divided by total assets at the end of the prior year. *DISX* is defined as the discretionary expenses in the current year divided by total assets at the end of the prior year, which the discretionary expenses is measured as the SG&A expenses.[11] *SALES* and Δ*SALES* are the sale revenues and change in sales in the current year divided by total assets at the end of the prior year. The abnormal CFO (*R_CFO*), discretionary expenses (*R_DISX*) and production costs (*R_PROD*) are computed as the residuals estimated from Eqs. (3)–(5).

Because firms manage earnings upwards are likely to have unusually low cash flow from operations and discretionary expenses, and unusually high productions costs, we multiply *R_CFO* and *R_DISX* by negative one so that greater values of *R_CFO* and *R_DISX* reflect more real earnings

[11] Cohen and Zarowin (2010) use the sum of advertising expenses, R&D expenses and SG&A expenses to proxy forthe discretionary expenditures. Because according to the Chinese Accounting Standards, the advertising expensesand R&D expenses are included into the general and administrative expenses in the current period, we use the SG&A expenses to measure the discretionary expenses.

management. Similar to Cohen et al. (2008), we define real earnings management (*REM*) as the sum of *R_CFO, R_DISX* and *R_PROD*.

Measuring Religion

We use the number of religious facilities around each public firm's headquarters to proxy for the influence of religion. Specifically, we follow Du (2013) and Hu et al. (2018) and calculate the number of religious facilities within a 200-km radius from a firm's headquarters. We first use Google Earth to locate all firms and religious facilities in our sample, and obtain their geographical coordinates. We then use the coordinates to compute the distance between each listed firm and each religious facility, using the following formula:

$$\cos\theta_{r,f} = \sin lat_r * \sin lat_f + \cos lat_r * \cos lat_f * \cos(lon_r - lon_f) \tag{6}$$

$$Dist_{r,f} = \frac{40075.04}{2\pi} * \left(\frac{\pi}{2} - \tan^{-1}\left(\cos\theta_{r,f} \Big/ \sqrt{1-\cos\theta_{r,f}^2}\right)\right) \tag{7}$$

where $Dist_{r,f}$ is the geographical distance between Firm f and Religious Facility r. lon_r and lat_r are the longitude and latitude of Religious Facility r; lon_f and lat_f are the longitude and latitude of Firm f, respectively. Finally, we define *RELIGION* as the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. We use the decile numbers so that it is easier to interpret our results. *RELIGION* is thus our key variable of interest in this paper. In robustness tests, we also define *RELIGION* as the decile of number of religious facilities within 100- or 300-km radius, and find similar results. We obtain similar results if we scale *RELIGION* by the region's population.

Baseline Model, Control Variables and Descriptive Statistics

The baseline model we use throughout this paper is as follows:

$$\begin{aligned} EM_{i,t} &= \beta_0 + \beta_1 RELIGION_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} \\ &+ \beta_4 BM_{i,t} + \beta_5 ROA_{i,t} + \beta_6 LOSS_{i,t} \\ &+ \beta_7 BENCHMARK_{i,t} + \beta_8 OPRISK_{i,t} \\ &+ \beta_9 INVEST_{i,t} + \beta_{10} BIG4_{i,t} + \beta_{11} ANALYST_{i,t} \\ &+ \beta_{12} DGDP_{i,t} + e_{i,t} \end{aligned} \tag{8}$$

where *EM* is the earnings management variables. In this paper, we use accrual earnings management (*AEM*) and real earnings management (*REM*), defined in Section "Measures of Earnings Management." *RELIGION* is our key variable of interest, defined in Section "Measuring Religion." Following McGuire et al. (2012), our control variables include: *SIZE* is the natural logarithm of firm's total assets. *LEV* is the financial leverage of the firm; *ROA* is the ratio of return on total assets. *LOSS* is a dummy variable which equals 1 if the firm reports negative earnings, and 0 otherwise. *BENCHMARK* is a dummy variable which equals 1 if (a) ROA is greater than or equal to 0 and less than 0.01 or (b) the change in ROA from the prior year to the current year is greater than or equal to 0 and less than 0.01, and 0 otherwise. *OPRISK* is the operating risk, defined as the standard deviation of ROA over the past 5 years, following Hilary and Hui (2009).[12] *INVEST* is the ratio of capital expenditure to net property, plant and equipment at the beginning of the year, where capital expenditure is calculated as the change in net property, plant and equipment from the prior year to the current year, plus depreciation and amortization in the current year. We control for the annual GDP percentage growth (ΔGDP) because economic development affects earnings management (Cohen et al. 2008). In addition, Chi et al. (2011) and Irani and Oesch (2016) find the analysts and auditors affect earnings management, so we include the number of analysts (*ANALYST*) and whether the firm is audited by the big 4 auditors (*BIG4*) as additional control variables. All the controlling variables are measured at the end of the year. We further include industry and year fixed effects in the model.

We present the description of our sample and key variables in Table 1. In Panel A of Table 1, we report the descriptive statistics of our key variables. We find that the average number of religious facilities within a 200-km radius from corporate headquarters is about 30. Note that this number is higher than the average reported in Du (2013) and Chen et al. (2013) because those studies only include Buddhist and Taoist temples, while our dataset also covers Protestant and Catholic churches and Islamic mosques.

In Panel B of Table 1, we report the number of religious facilities by province, along with the population and GDP of the province. We first note that there is significant variation in religiosity across the provinces. In addition, we find that although Buddhism appears to be the most influential religion in many provinces, Western religions such as Christianity (especially Protestantism) and Islam are also quite influential in some provinces. When we investigate the religiosity, population and GDP of each province, we

[12] Changing the 5-year window to a 3-year window yields similar results in untabulated results.

Table 2 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) *AEM*	1													
(2) *REM*	**0.072**	1												
(3) *RELIGION*	**−0.027**	0.008	1											
(4) *SIZE*	**−0.064**	**0.035**	**0.023**	1										
(5) *LEV*	**0.056**	**0.233**	**−0.028**	**0.284**	1									
(6) *ROA*	**0.033**	**−0.319**	**0.041**	**0.149**	**−0.353**	1								
(7) *ZBM*	**−0.106**	**0.178**	−0.006	**0.479**	**0.348**	**−0.178**	1							
(8) *BIG4*	**−0.059**	**−0.066**	**0.059**	**0.323**	0.003	**0.087**	**0.115**	1						
(9) *ANALYST*	**−0.043**	**−0.234**	0.013	**0.538**	**−0.065**	**0.391**	**−0.031**	**0.182**	1					
(10) *LOSS*	−0.007	**0.128**	**−0.048**	**−0.137**	**0.192**	**−0.684**	0.009	**−0.048**	**−0.212**	1				
(11) *OPRISK*	**0.145**	0.011	**−0.080**	**−0.284**	**0.075**	**−0.206**	**−0.230**	**−0.058**	**−0.186**	**0.254**	1			
(12) *BENCHMARK*	**−0.025**	**0.129**	**−0.022**	−0.013	**0.115**	**−0.141**	**0.138**	**−0.036**	**−0.168**	**−0.155**	**−0.026**	1		
(13) *INVEST*	**0.039**	**−0.160**	**−0.038**	**0.153**	**−0.040**	**0.178**	**0.036**	**0.064**	**0.236**	**−0.120**	**−0.089**	**−0.080**	1	
(14) ΔGDP	0.000	0.009	**−0.129**	**−0.164**	**0.089**	0.000	**0.165**	**−0.042**	**−0.096**	**−0.017**	**0.033**	0.006	**0.098**	1

This table presents the correlation matrix of the main research variables. Bold text indicates significance at the 0.05 level or better (two-tailed). See Table 9 in Appendix for the details of variable definitions

do not find religiosity to have significant correlations with population or GDP.

We report the variable correlation matrix in Table 2. Religion is negatively correlated with accrual earnings management, and positively correlated with real earnings management. Besides, religion exhibits significant correlation with firm characteristics such as size, profitability and leverage, as well as regulatory environment variables such as *BIG4* and *ANALYST*.

Empirical Results

Baseline Results

We first estimate Eq. (7), and present our baseline results in Table 3. In column 1, we use accrual earnings management as the dependent variable; in column 2, we use real earnings management as the dependent variable. Overall, results in Table 3 are consistent with previous findings: the coefficient of *RELIGION* is significantly negative at the 1% level in column 1, while is significantly positive at the 1% level in column 2. The results confirm that religiosity in China reduces accrual earnings management, but increases real earnings management. In addition, the coefficients of *BIG4* and *ANALYST* are both negative, indicating that auditing and external monitoring helps restrict earnings management in general. The ratio of capital investment appears to mitigate real earnings management but strengthen accrual earnings management.

The Effect of Religion and Earnings Pressure

McGuire et al. (2012) argue that ethical managers may consider real earnings management less unethical, and thus increase real earnings management when they face earnings pressure. Although we find it difficult to understand that firms engage more in real earnings management for ethical reasons, we continue to examine whether managers only substitute accrual earnings management with real earnings management when they face earnings pressure. If religious (and thus ethical) managers indeed choose to increase real earnings management as a last resort, the positive association between religiosity and real earnings management should be more pronounced when firms are under extreme earnings pressure.

We define a dummy *HIGH_PRESSURE* which equals 1 (0 otherwise) if (1) when firms suffer losses (ROA < 0); or (2) when firms have slightly positive earnings ($0 \leq$ ROA < 1%) or slightly positive changes in earnings ($0 \leq \Delta$ROA < 1%); or (3) when firms are tagged with special treatment (ST). According to Cai et al. (2012), these firms should suffer the most earnings pressure in the Chinese capital market.

Table 3 Religiosity, accrual earnings management and real earnings management

Variables	(1) *AEM*	(2) *REM*
RELIGION	−0.0053***	0.0104**
	(−2.88)	(2.38)
SIZE	0.0012	0.0191***
	(1.24)	(8.28)
LEV	0.0370***	0.0770***
	(8.95)	(8.18)
ROA	0.1199***	−0.9817***
	(6.61)	(−21.02)
LOSS	0.0007	−0.0665***
	(0.25)	(−10.25)
BM	−0.0336***	0.0415***
	(−8.36)	(4.21)
BIG4	−0.0130***	−0.0371***
	(−6.18)	(−6.16)
ANALYST	−0.0052***	−0.0377***
	(−6.33)	(−18.94)
OPRISK	0.2073***	−0.1027**
	(10.86)	(−2.48)
BENCHMARK	−0.0022	0.0100**
	(−1.24)	(2.53)
INVEST	0.1061***	−0.2331***
	(9.11)	(−9.34)
Δ*GDP*	−0.0091	0.1392***
	(−0.50)	(3.05)
CONSTANT	0.0555***	−0.4574***
	(2.77)	(−9.80)
YEAR	Yes	Yes
INDUSTRY	Yes	Yes
Observations	16,980	16,980
Adjusted R^2	0.070	0.192

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

We then divide our sample into two subsamples by *HIGH_PRESSURE*, and run the same regression (Eq. 7) for each subsample. The estimates of regression coefficients are reported in Table 4.

In columns 1 and 2, we examine the coefficient estimates when accrual earnings management is the dependent variable. In columns 3 and 4, we report the coefficient estimates when real earnings management is the dependent variable. We find that *RELIGION* is insignificant in column 2 when firms report good earnings (and face low earnings pressure). However, we find that *RELIGION* still positively associates with real earnings management even when firms face low earnings pressure. The coefficient estimate of 0.0097 in column 4 is statistically significant at the 10% level, and is not statistically different from the coefficient of 0.0163 in column 3.

In untabulated results, we also consider earnings pressure from meeting or beating analyst forecasts as a robustness test. That is, we extend the definition of high earnings pressure firms to include those that just meet or beat analyst forecasts.[13] We obtain similar results. Our findings show that firms in religious regions consistently use more real earnings management. Overall, our findings are inconsistent with the ethical view and are more consistent with the risk aversion story.

Litigation Risk and Auditing Risk

If religion indeed affects the selection of earnings management through the channel of risk aversion, we should find stronger associations between religiosity and earnings management when firms face lower litigation risk or auditing risk, as discussed in Section "Religion, Risk Aversion and Earnings Management." To measure the litigation risk, we follow Fan et al. (2013) and use the legal environment index as the measure of litigation risk.[14] We first divide our sample by high litigation risk (*HIGH_LR = 1*) or low litigation risk (*HIGH_LR = 0*), and report the coefficient estimates of Eq. (7) for both subsamples in Table 5. Similarly, columns 1 and 2 report coefficient estimates when accrual earnings management is the dependent variable, and columns 3 and 4 report coefficient estimates when real earnings management is the dependent variable.

Table 5 shows some interesting comparison between two subsamples. We find that the positive (negative) association between religiosity and real (accrual) earnings management essentially only exists in the low litigation risk subsample, and largely disappears when firms face high litigation risk. The economic intuition behind the results is straightforward. If religiosity proxies for risk aversion, its impact on the choice of earnings management should be stronger when the expected payoff of accrual earnings management is high, i.e., when accrual earnings management is less likely to get

[13] We first calculate the difference between reported earnings and analyst forecast. If the difference is equal to or larger than 0 but no larger than 0.01, then we say the earnings just meet or beat the analyst forecast. We use the most recent earnings forecast before earnings announcement as our analyst forecast following Ayers et al. (2011).

[14] In untabulated results, we also use the marketization index as the measure of litigation risk, and obtain similar results.

Table 4 Earnings pressure, religion and earnings management

Variables	*AEM*		*REM*	
	HIGH_PRESSURE = 1	*HIGH_PRESSURE* = 0	*HIGH_PRESSURE* = 1	*HIGH_PRESSURE* = 0
	(1)	(2)	(3)	(4)
RELIGION	−0.0095***	−0.0034	0.0163**	0.0097*
	(−2.73)	(−1.57)	(2.23)	(1.85)
SIZE	0.0016	0.0012	0.0084**	0.0288***
	(0.82)	(1.02)	(2.00)	(10.50)
LEV	0.0273***	0.0433***	0.0601***	0.0392***
	(4.09)	(7.89)	(4.31)	(3.11)
ROA	0.1025***	0.1556***	−0.1578***	−2.0011***
	(5.09)	(5.73)	(−3.54)	(−29.71)
BM	−0.0447***	−0.0328***	0.0257	−0.0175
	(−5.52)	(−6.64)	(1.43)	(−1.44)
BIG4	−0.0139***	−0.0124***	−0.0206*	−0.0426***
	(−3.22)	(−5.17)	(−1.82)	(−6.13)
ANALYST	−0.0025	−0.0064***	−0.0204***	−0.0287***
	(−1.40)	(−6.55)	(−5.07)	(−12.18)
OPRISK	0.1672***	0.2346***	−0.2400***	0.2876***
	(6.25)	(8.09)	(−4.10)	(4.99)
INVEST	0.1161***	0.1099***	−0.2929***	−0.2497***
	(4.25)	(8.50)	(−5.18)	(−9.03)
Δ*GDP*	−0.0115	−0.0021	0.0699	0.1737***
	(−0.34)	(−0.10)	(0.91)	(3.15)
CONSTANT	0.0557	0.0522**	−0.2298***	−0.5838***
	(1.42)	(2.20)	(−2.82)	(−10.43)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
Observations	5108	11,872	5108	11,872
Adjusted R^2	0.064	0.077	0.067	0.234

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. *HIGH_PRESSURE* equals 1 if (a) when firms suffer losses (ROA < 0); or (b) when firms have slightly positive earnings (0 ≤ ROA < 1%) or slightly positive changes in earnings (0 ≤ ΔROA < 1%); or (c) when firms are tagged with special treatment (ST), and 0 otherwise. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

detected and disciplined. On the contrary, when the litigation risk is high, the low expected payoff of accrual earnings management makes managers switch to real earnings management regardless of their risk aversion. Our results thus support the risk aversion story; under the ethical framework, it becomes difficult to understand why our results are stronger for the low litigation risk group.

Similar to the litigation risk, we also consider the scenario when firms face low auditing risk, i.e., when they use less reputable auditors. In this study, we measure a dummy variable *BIG4*, which equals 1 if the firm is audited by a big 4 auditor and 0 otherwise, as a proxy for auditing risk. We then divide the sample by *BIG4* and report the coefficient estimates in Table 6. Again, columns 1 and 2 report coefficient estimates when accrual earnings management is the dependent variable, and columns 3 and 4 report coefficient estimates when real earnings management is the dependent variable.

The results reported in Table 6 are largely consistent with those in Table 5. Specifically, we find statistically significant coefficients of *RELIGION* in columns 2 and 4 (when firms use non-big 4 auditors), but insignificant coefficients in columns 1 and 3 when firms use big 4 auditors. We interpret the findings that auditing works in a similar way as the legal institutions. Overall, our results indicate that the trade-off between accruals management and real earnings management depends on their relative costs to different types of managers. A risk-averse manager, characterized by being

Table 5 Litigation risk, religiosity and earnings management

Variables	*AEM*		*REM*	
	HIGH_LR = 1	*HIGH_LR* = 0	*HIGH_LR* = 1	*HIGH_LR* = 0
	(1)	(2)	(3)	(4)
RELIGION	−0.0025	−0.0100***	0.0063	0.0228***
	(−1.01)	(−3.14)	(1.02)	(3.10)
SIZE	0.0000	0.0019	0.0208***	0.0160***
	(0.01)	(1.32)	(6.37)	(4.82)
LEV	0.0416***	0.0336***	0.0851***	0.0728***
	(7.16)	(5.62)	(6.33)	(5.48)
ROA	0.1377***	0.1018***	−1.1109***	−0.8557***
	(5.44)	(3.92)	(−16.38)	(−13.42)
LOSS	0.0015	−0.0002	−0.0756***	−0.0582***
	(0.39)	(−0.05)	(−7.82)	(−6.68)
BM	−0.0329***	−0.0356***	0.0164	0.0697***
	(−5.78)	(−6.07)	(1.16)	(5.01)
BIG4	−0.0117***	−0.0132***	−0.0272***	−0.0538***
	(−4.31)	(−3.89)	(−3.46)	(−5.87)
ANALYST	−0.0047***	−0.0058***	−0.0375***	−0.0375***
	(−4.15)	(−4.68)	(−13.27)	(−13.28)
OPRISK	0.2137***	0.2042***	−0.1069*	−0.1170**
	(7.55)	(7.88)	(−1.68)	(−2.15)
BENCHMARK	−0.0029	−0.0011	0.0107*	0.0058
	(−1.14)	(−0.43)	(1.82)	(1.09)
INVEST	0.0889***	0.1253***	−0.1908***	−0.2610***
	(5.49)	(7.45)	(−5.51)	(−7.27)
Δ*GDP*	−0.0027	−0.0325	0.3491***	−0.0473
	(−0.09)	(−1.03)	(4.71)	(−0.61)
CONSTANT	0.0737**	0.0436	−0.4891***	−0.3862***
	(2.48)	(1.50)	(−7.16)	(−5.88)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
Observations	8826	8154	8826	8154
Adjusted R^2	0.071	0.073	0.191	0.210

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. *HIGH_LR* equals 1 if the legal environment index where one firm locates is larger than the sample median, and 0 otherwise. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

religious, prefers real earnings management to accrual earnings management even in the presence of low litigation risk or auditing risk. In contrast, a non-religious manager may prefer accruals management when the perceived litigation risk and auditing risk are low. Consistent with our hypothesis, we show that the positive (negative) relation between religion and real earnings management (accrual earnings management) is significantly stronger when litigation risk and auditing risk are lower.

Mediating Effect: Risk Aversion View

Finally, we investigate in a more direct manner whether risk aversion is a channel through which religiosity affects earnings management. We follow Baron and Kenny (1986) and consider a mediation model as follows:

$$EM_{i,t} = \alpha_0 + \alpha_1 RELIGION_{i,t} + \alpha_i Control\ Variables_{i,t} + e_{i,t} \quad (9)$$

$$OPRISK_{i,t} = \beta_0 + \beta_1 RELIGION_{i,t} + \beta_i Control\ Variables_{i,t} + e_{i,t} \quad (10)$$

$$EM_{i,t} = \gamma_0 + \gamma_1 RELIGION_{i,t} + \gamma_2 OPRISK_{i,t} + \gamma_i Control\ Variables_{i,t} + e_{i,t} \quad (11)$$

Specifically, we consider operating risk (*OPRISK*) as a mediator factor through which religion affects earnings management. That is, we hypothesize that religion first affects *OPRISK*, which in turn affects earnings management. If that is the case (i.e., religiosity affects earnings management through the mediator factor of *OPRISK*), in Eqs. (9) and (10) we should observe significant estimates of both α_1 and β_1. In addition, when *OPRISK* is controlled for in Eq. (11), we should find a reduced association between religion and earnings management. According to Sobel (1982), the mediator effect is $\beta_1\gamma_2$, and the key step in testing the mediating effect is to test the null hypothesis $\beta_1 \times \gamma_2 = 0$. The test statistic $Z = \beta_1\gamma_2 / s_{\beta_1\gamma_2}$, where $s_{\beta_1\gamma_2} = \sqrt{\beta_1^2 s_{\gamma_2}^2 + \gamma_2^2 s_{\beta_1}^2}$ is the standard error of $\beta_1\gamma_2$, and s_{β_1} and s_{γ_2} are the standard errors of β_1 and γ_2, respectively. If the null hypothesis is rejected, then there is an intermediary effect.

We report the coefficient estimates of Eqs. (8)–(10) in Table 7. In column (1), we report the estimates of Eq. (9). In columns 2 and 4, we report the estimates of Eq. (8) without the mediator factor of *OPRISK*. In columns 3 and 5, we report the estimates of Eq. (10) including *OPRISK* as the mediator factor. In column 1, we see that religion does reduce the amount of operating risk. This is consistent with findings in Hilary and Hui (2009) that religious firms are less willing to take risk in business-related activities. Columns 2 and 3 show that the mediator factor of *OPRISK* reduces the coefficient of *RELIGIOSITY* from −0.0071 to −0.0053, and the reduction is statistically significant at the 1% level in a Sobel *Z*-score test (with a *Z* score of −6.69). Similarly, columns 4 and 5 show similar results: the coefficient of *RELIGION* reduces from 0.0113 to 0.0104 when *OPRISK* is included, and the reduction is statistically significant at the 1% level with a Sobel *Z* score of 2.38. The mediation model suggests that risk is indeed a channel through which religiosity affects either accrual earnings management or real earnings management.

Table 6 Auditing risk, religiosity and earnings management

Variables	*AEM*		*REM*	
	BIG4 = 1	*BIG4* = 0	*BIG4* = 1	*BIG4* = 0
	(1)	(2)	(3)	(4)
RELIGION	0.0062	−0.0061***	−0.0160	0.0108**
	(1.03)	(−3.17)	(−0.93)	(2.40)
SIZE	−0.0001	0.0014	0.0011	0.0201***
	(−0.03)	(1.34)	(0.17)	(8.10)
LEV	0.0303**	0.0382***	0.0373	0.0809***
	(2.31)	(8.86)	(1.02)	(8.36)
ROA	0.1579***	0.1194***	−1.3724***	−0.9566***
	(2.78)	(6.28)	(−8.29)	(−19.70)
LOSS	0.0087	0.0004	−0.0547**	−0.0655***
	(1.01)	(0.16)	(−2.17)	(−9.75)
BM	−0.0147	−0.0357***	0.1229***	0.0371***
	(−1.16)	(−8.31)	(3.82)	(3.53)
ANALYST	−0.0046	−0.0053***	−0.0181**	−0.0382***
	(−1.43)	(−6.22)	(−2.50)	(−18.47)
OPRISK	0.2223***	0.2057***	−0.258	−0.0961**
	(2.79)	(10.50)	(−1.20)	(−2.28)
BENCHMARK	0.0013	−0.0023	0.0171	0.0104**
	(0.23)	(−1.24)	(1.04)	(2.53)
INVEST	0.0505	0.1105***	−0.3140***	−0.2232***
	(1.63)	(8.99)	(−4.59)	(−8.49)
Δ*GDP*	0.0679	−0.0140	−0.0365	0.1500***
	(1.29)	(−0.73)	(−0.27)	(3.14)
CONSTANT	0.0290	0.0518**	−0.0380	−0.4789***
	(0.48)	(2.41)	(−0.26)	(−9.62)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
Observations	1184	15,796	1184	15,796
Adjusted R^2	0.069	0.068	0.415	0.181

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. *BIG4* equals 1 if one firm is audited by the BIG4 audit firms, and 0 otherwise. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

Eastern Religions Versus Western Religions

A number of studies have documented how Eastern religions could influence managerial behavior differently (Du et al. 2015; Jiang et al. 2015; Shen and Su 2017). Motivated by these studies, we further investigate whether our results reside in one religion only. In Table 8, we calculate the number of religious facilities for Eastern religions (Buddhism and Taoism) and for Western religions (Protestantism, Catholicism and Islam) separately, and then regress *AEM* and *REM*—our dependent variables of earnings management—on each religion index. Interestingly, we find that our results hold for both Eastern and Western religions, suggesting that the relationship between religion and earnings management comes from the similar personal traits shared by managers of different religions, and is not limited to any

Table 7 The mediation mechanism: risk aversion

Variables	*OPRISK*	*AEM*		*REM*	
	(1)	(2)	(3)	(4)	(5)
RELIGION	−0.0085***	−0.0071***	−0.0053***	0.0113***	0.0104**
	(−8.50)	(−3.83)	(−2.88)	(2.59)	(2.38)
OPRISK			0.2073***		−0.1027**
			(10.86)		(−2.48)
SIZE	−0.0060***	−0.0000	0.0012	0.0197***	0.0191***
	(−10.26)	(−0.05)	(1.24)	(8.55)	(8.28)
LEV	0.0421***	0.0457***	0.0370***	0.0726***	0.0770***
	(13.78)	(10.74)	(8.95)	(7.71)	(8.18)
ROA	−0.0417***	0.1113***	0.1199***	−0.9774***	−0.9817***
	(−2.68)	(5.96)	(6.61)	(−20.92)	(−21.02)
LOSS	0.0216***	0.0051*	0.0007	−0.0687***	−0.0665***
	(12.43)	(1.93)	(0.25)	(−10.56)	(−10.25)
BM	−0.0550***	−0.0450***	−0.0336***	0.0471***	0.0415***
	(−24.44)	(−11.22)	(−8.36)	(4.86)	(4.21)
BIG4	0.0084***	−0.0112***	−0.0130***	−0.0379***	−0.0371***
	(7.53)	(−5.33)	(−6.18)	(−6.30)	(−6.16)
ANALYST	−0.0030***	−0.0058***	−0.0052***	−0.0374***	−0.0377***
	(−6.48)	(−6.95)	(−6.33)	(−18.72)	(−18.94)
BENCHMARK	−0.0009	−0.0024	−0.0022	0.0101**	0.0100**
	(−0.94)	(−1.35)	(−1.24)	(2.56)	(2.53)
INVEST	−0.0185***	0.1023***	0.1061***	−0.2312***	−0.2331***
	(−3.06)	(8.69)	(9.11)	(−9.28)	(−9.34)
Δ*GDP*	−0.0033	−0.0098	−0.0091	0.1395***	0.1392***
	(−0.31)	(−0.54)	(−0.50)	(3.06)	(3.05)
CONSTANT	0.1772***	0.0923***	0.0555***	−0.4756***	−0.4574***
	(15.36)	(4.60)	(2.77)	(−10.23)	(−9.80)
YEAR	Yes	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes	Yes
Observations	16,980	16,980	16,980	16,980	16,980
Adjusted R^2	0.200	0.058	0.070	0.192	0.192

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. *OPRISK* is the 5-year rolling standard deviation of ROA, computed from current year and prior 4 fiscal years. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

particular religion. In untabulated results, we also analyze each religion and obtain similar results.

Robustness

We include a number of robustness tests to ensure our results are not driven by outliers, measurement errors, or model specification issues. We report the main robustness tests in this section.

We first consider the possibility that our *RELIGION* index may proxy for population density rather than religiosity. Although we do not find any significant correlation between *RELIGION* and population, we concede that densely-populated areas may have more influential religious facilities. Considering such regions tend to be big cities and may also have better monitoring and higher litigation costs, a spurious relationship may arise. To address the concern, we include the log of population in our regression, and report

Table 8 Primary religions and earnings management

Variables	(1) *AEM*	(2) *REM*	(3) *AEM*	(4) *REM*
RELIGION_EASTERN	−0.0047**	0.0130***		
	(−2.50)	(2.90)		
RELIGION_WESTERN			−0.0049***	0.0090**
			(−2.66)	(2.06)
SIZE	0.0012	0.0192***	0.0012	0.0190***
	(1.21)	(8.32)	(1.29)	(8.24)
LEV	0.0370***	0.0770***	0.0370***	0.0770***
	(8.95)	(8.18)	(8.95)	(8.19)
ROA	0.120***	−0.9815***	0.1204***	−0.9827***
	(6.62)	(−21.01)	(6.64)	(−21.03)
LOSS	0.0007	−0.0664***	0.0008	−0.0667***
	(0.26)	(−10.24)	(0.28)	(−10.28)
BM	−0.0337***	0.0417***	−0.0336***	0.0414***
	(−8.38)	(4.23)	(−8.35)	(4.20)
BIG4	−0.0130***	−0.0372***	−0.0130***	−0.0370***
	(−6.19)	(−6.18)	(−6.20)	(−6.14)
ANALYST	−0.0052***	−0.0377***	−0.0052***	−0.0377***
	(−6.35)	(−18.92)	(−6.34)	(−18.94)
OPRISK	0.2079***	−0.1023**	0.2077***	−0.1036**
	(10.89)	(−2.47)	(10.88)	(−2.50)
BENCHMARK	−0.0021	0.0100**	−0.0022	0.0100**
	(−1.22)	(2.54)	(−1.25)	(2.54)
INVEST	0.1060***	−0.2326***	0.1063***	−0.2335***
	(9.11)	(−9.32)	(9.13)	(−9.36)
Δ*GDP*	−0.0079	0.1419***	−0.0080	0.1362***
	(−0.44)	(3.11)	(−0.44)	(2.99)
CONSTANT	0.0559***	−0.4610***	0.0541***	−0.4544***
	(2.78)	(−9.86)	(2.70)	(−9.74)
YEAR/INDUSTRY	Yes	Yes	Yes	Yes
Observations	16,980	16,980	16,980	16,980
Adjusted R^2	0.070	0.192	0.070	0.192

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION_EASTERN* and *RELIGION_WESTERN* are the decile of number of facilities of Eastern and Western religions within a 200-km radius from each listed firm's headquarters. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

the coefficient estimates in Table 10 in Appendix. We find that our results are not affected.

Table 11 in Appendix, we consider an alternative measure of religion at the province level. This is because several control variables, such as GDP and population, are only available at the province level. To avoid giving greater weights to provinces with more firm headquarters, we aggregate earnings management at the province level, i.e., use the equal-weighted average *AEM* and *REM* as our dependent variables. Other control variables are aggregated in a similar way.[15] Our findings are virtually the same in Table 11 in Appendix.

We next consider further robustness tests of the key variable in this study—religion. We use a radius of 100 or 300 km to calculate the number of religious facilities around corporate headquarters, and find similar results in untabulated results. To address the concern that the number of religious

[15] Running regressions at the firm-year level does not affect our results.

facilities around a firm's headquarters is highly affected by a number of firm-specific variables, we further consider an alternative measure that is related to the CEOs. Specifically, we collect the birthplaces of CEOs for a subsample of 4,408 CEO-year observations, and define *RELIGION* as the number of religious facilities around each CEO's birthplace. We obtain qualitatively similar results with this alternative measure of *RELIGION*.

Furthermore, we show that our dependent variables of accrual or real earnings management are robust across various measures of earnings management. More specifically, our results hold when we use the modified Jones model to estimate accrual earnings management or when we use each of the two real earnings management measures (the sum of abnormal discretionary expenditures and the abnormal production costs, or the sum of abnormal discretionary expenditures and abnormal cash flows) in Cohen and Zarowin (2010).

Finally, we consider a number of measures for litigation risk and auditing risk. We follow Du et al. (2015) and define "high litigation risk" firms as firms that are in three major cities—Beijing, Shanghai and Shenzhen. Firms in these cities are closer to the regulatory agencies in China, and are thus more likely to be closely monitored (and disciplined if accounting irregularities are discovered). We find that consistent with our results reported in Table 5, the religiosity-earnings management relations are still more pronounced for firms with lower litigation risk. We observe similar results as those in Table 6 when we define reputable auditors as the big 6 or big 8 auditors in China.

Conclusion

In this paper, we use the Chinese data to document a positive association between religion and real earnings management, in addition to a negative association between religion and accrual earnings management. Our results suggest that firms located in more religious regions do not necessarily reduce earnings management—instead, they substitute accrual earnings management with real earnings management, which is potentially more costly to shareholders. This paper extends the findings in McGuire et al. (2012), showing that the positive association between religiosity and real earnings management also exists in an economy which is heavily influenced by Eastern religions. Our findings thus suggest that the relationship between earnings management and religion stems from the common personal traits shared by managers of different religions, rather than aspects unique in Christianity.

In addition, we argue these associations are not easy to interpret within a framework of ethics. Instead, we postulate that religion may affect earnings management through the channel of risk aversion. Consistent with the risk aversion story, we find that the religion-earnings management associations are more pronounced when firms face lower litigation risk or when firms use less reputable auditors. We also employ a mediation model used by Baron and Kenny (1986) and show that religiosity affects earnings management through the channel of risk aversion.

The findings in our paper have a number of implications to both policy makers and researchers. First, our results shed light on how religion should be viewed in corporate governance. While the previous studies assume that religiosity reflects ethics, we argue that actions taken by religious managers may base on risk aversion rather than ethics. Second, this study exemplifies how managers can substitute accrual earnings management with real earnings management. We show that policy makers and researchers should look at both types of earnings management when they assess the impact of a particular variable on financial reporting quality; examining only accrual earnings management may lead to biased conclusions. Finally, we highlight the importance of legal environment and auditing quality. Policies that affect the litigation risk and auditing quality are potentially more effective in curbing earnings management when firm decision makers are religious.

Acknowledgements We thank Dhvani Badwaik, the section editor (Dr. Steven Dellaportas), and three anonymous reviewers for their insightful suggestions and valuable comments. Li Wenfei thanks the National Natural Science Foundation of China (Project No. 71702038) and the Start-up Research Grant to Talented Scholars of Guangzhou University (Project No. 69-18ZX10203); Cai Guilong thanks the National Natural Science Foundation of China (Project Nos. 71790603, 71772181).

Appendix

See Tables 9, 10, 11.

Table 9 Variables and definitions

Variables	Definitions
AEM	Accrue-based earnings management activities, measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach (Kothari et al. 2005)
REM	Real earnings management activities, measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs (Cohen et al. 2008)
RELIGION	The number of religious temples around 200 km where the company locates. We rank the value into 10 portfolios each year and transform the value between 0 and 1
SIZE	Natural log of total assets
LEV	Financial leverage, measured as total debt divided by total assets
ROA	Return on total assets
BM	The ratio of book value to market value
BIG4	Indicator variable that equals 1 if the firm is audited by a Big 4 audit firm, and 0 otherwise
ANALYST	Natural log of the number of analyst following plus 1
LOSS	Indicator variable that equals 1 if ROA is negative and 0 otherwise
BENCHMARK	Indicator variable that equals 1 if (a) ROA is greater than or equal to 0 and less than 0.01 or (b) the change in ROA from the prior year to the current year is greater than or equal to 0 and less than 0.01
OPRISK	Firm operating risk, calculated as the 5-year rolling standard deviation of ROA, computed from current year and prior 4 fiscal years
INVEST	The ratio of capital expenditure to net property, plant and equipment at the beginning of the year, where capital expenditure is calculated as the change in net property, plant and equipment from the prior year to the current year, plus depreciation and amortization in the current year
ΔGDP	The annual percentage change in regional GDP

Table 10 Robustness test: controlling for population

Variables	(1) *AEM*	(2) *REM*
RELIGION	−0.0053***	0.0103**
	(−2.83)	(2.29)
SIZE	0.0015	0.0197***
	(1.56)	(8.34)
LEV	0.0361***	0.0779***
	(8.66)	(8.06)
ROA	0.123***	−1.011***
	(6.70)	(−21.18)
LOSS	0.0007	−0.0681***
	(0.28)	(−10.32)
BM	−0.0337***	0.0406***
	(−8.27)	(4.06)
BIG4	−0.0134***	−0.0378***
	(−6.34)	(−6.17)
ANALYST	−0.0054***	−0.0372***
	(−6.51)	(−18.42)
OPRISK	0.205***	−0.0874**
	(10.66)	(−2.08)
BENCHMARK	−0.0020	0.0099**
	(−1.11)	(2.45)
INVEST	0.106***	−0.233***
	(8.95)	(−9.07)
Δ*GDP*	−0.0068	0.137***
	(−0.37)	(2.98)
POPULATION	−0.0015	−0.0003
	(−1.04)	(−0.07)
CONSTANT	0.0554**	−0.473***
	(2.55)	(−9.24)
YEAR	Yes	Yes
INDUSTRY	Yes	Yes
Observations	16,368	16,368
Adjusted R^2	0.071	0.197

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities within a 200-km radius from each listed firm's headquarters. *POPULATION* is the log of population in the headquarters province. See Table 9 in Appendix for the definitions of other variables. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

Table 11 Robustness test: province-level religion

Variables	(1) *AEM*	(3) *REM*
RELIGION	−0.0064**	0.0163**
	(−2.39)	(2.11)
SIZE	−0.0089	0.0360*
	(−1.50)	(1.89)
LEV	0.0322	0.3147***
	(1.17)	(4.49)
ROA	0.0455	−0.3188
	(0.39)	(−0.91)
LOSS	−0.0041	−0.0393
	(−0.20)	(−0.64)
BM	−0.0201	−0.0373
	(−0.85)	(−0.56)
BIG4	0.0110	−0.0672
	(0.55)	(−1.21)
ANALYST	−0.0021	−0.0502***
	(−0.43)	(−3.56)
OPRISK	0.3146***	0.1939
	(2.95)	(0.73)
BENCHMARK	0.0020	0.0098
	(0.13)	(0.26)
INVEST	−0.0031	−0.2617
	(−0.04)	(−1.41)
Δ*GDP*	−0.0037	−0.0044
	(−0.14)	(−0.07)
CONSTANT	0.2534**	−0.8725**
	(2.20)	(−2.33)
Year	Yes	Yes
Observations	345	345
Adjusted R^2	0.170	0.208

The dependent variables are proxies for accrual and real earnings management, respectively. *AEM* is measured as absolute abnormal accruals estimated using the performance-matched discretionary accrual approach. *REM* is measured as the sum of the abnormal cash flow from operations, abnormal discretionary expenses and abnormal production costs. *RELIGION* is the decile of number of religious facilities in each provinces where the listed firm locates. See Table 9 in Appendix for the definitions of other variables. All the regression variables are aggregated at the province level, i.e., mean values at the province level. ***, **, and * denote statistical significance at the 1, 5, and 10% level or better, respectively (two-tailed)

References

Adhikari, B. K., & Agrawal, A. (2016). Does local religiosity matter for bank risk-taking? *Journal of Corporate Finance, 38*, 272–293.

Ayers, B. C., Li, O. Z., & Yeung, P. E. (2011). Investor trading and the post-earnings-announcement drift. *The Accounting Review, 86*(2), 385–416.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182.

Bartov, E., Givoly, D., & Hayn, C. (2002). The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics, 33*(2), 173–204.

Cai, C., Zhu, R., He, H., & Xie, L. (2012). The Choice of earnings management methods hidden behavior and the improvement of condition for the dying firms—empirical evidence from ST listed companies in A-stock market. Accounting Research (in Chinese), *9*, 31–39.

Carlin, B. I., & Gervais, S. (2009). Work ethic, employment contracts, and firm value. *Journal of Finance, 64*(2), 785–821.

Carlson, S. J., & Bathala, C. T. (1997). Ownership differences and firms' income smoothing behavior. *Journal of Business Finance and Accounting, 24*(2), 179–196.

Chen, D., Hu, X., Liang, S., & Xin, F. (2013). Religion tradition and corporate governance. *Economic Research Journal (in Chinese), 59*(10), 71–84.

Chi, W., Lisic, L. L., & Pevzner, M. (2011). Is enhanced audit quality associated with greater real earnings management? *Accounting Horizons, 25*(2), 315–335.

Chircop, J., Fabrizi, M., Ipino, E., & Parbonetti, A. (2017). Does branch religiosity influence bank risk-taking? *Journal of Business Finance and Accounting, 44*, 271–294.

Cialdini, R. B. (1993). Influence: The psychology of persuasion. New York: Harper Collins e-Books.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. *The Accounting Review, 83*(3), 757–787.

Cohen, D. A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics, 50*(1), 2–19.

Conroy, S. J., & Emerson, T. L. (2004). Business ethics and religion: Religiosity as a predictor of ethical awareness among students. *Journal of Business Ethics, 50*(4), 383–396.

Diaz, J. D. (2000). Religion and gambling in sin-city: A statistical analysis of the relationship between religion and gambling patterns in Las Vegas residents. *The Social Science Journal, 37*(3), 453–458.

Du, X. (2013). Does religion matter to owner-manager agency costs? Evidence from China. *Journal of Business Ethics, 118*(2), 319–347.

Du, X. (2014). Does religion mitigate tunneling? Evidence from Chinese Buddhism. *Journal of Business Ethics, 125*(2), 299–327.

Du, X., Jian, W., Lai, S., Du, Y., & Pei, H. (2015). Does religion mitigate earnings management? Evidence from China. *Journal of Business Ethics, 131*(3), 699–749.

Dye, R. A. (1988). Earnings management in an overlapping generations model. *Journal of Accounting Research, 26*(2), 195–235.

Dyreng, S. D., Mayew, W. J., & Williams, C. D. (2012). Religious social norms and corporate financial reporting. *Journal of Business Finance and Accounting, 39*(7-8), 845–875.

El Ghoul, S., Guedhami, O., Ni, Y., Pittman, J., & Saadi, S. (2012). Does religion matter to equity pricing? *Journal of Business Ethics, 111*(4), 491–518.

Fan, J. P. H., Wong, T. J., & Zhang, T. (2013). Institutions and organizational structure: The case of state-owned corporate pyramids. *Journal of Law Economics and Organization, 29*(6), 1217–1252.

Ferentinou, A. C., & Anagnostopoulou, S. C. (2016). Accrual-based and real earnings management before and after IFRS adoption: The case of Greece. *Journal of Applied Accounting Research, 17*(1), 2–23.

Francis, B., Hasan, I., & Li, L. (2016). A cross-country study of legal-system strength and real earnings management. *Journal of Accounting and Public Policy, 35*(5), 477–512.

Gao, L., Wang, Y., & Zhao, Y. (2017). Does local religiosity affect organizational risk-taking? Evidence from the hedge fund industry. *Journal of Corporate Finance, 47*, 1–22.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics, 40*(1), 3–73.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2006). Value destruction and financial reporting decisions. *Financial Analyst Journal, 62*(6), 27–39.

Grant, J., Markarian, G., & Parbonetti, A. (2009). CEO risk-related incentives and income smoothing. *Contemporary Accounting Research, 26*(4), 1029–1065.

Grullon, G., Kanatas, G., & Weston, J. (2009). Religion and corporate (mis)behavior. Working Paper.

Gundolf, K., & Filser, M. (2013). Management research and religion: A citation analysis. *Journal of Business Ethics, 112*(1), 177–185.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons, 13*(4), 365–383.

Hilary, G., & Hui, K. W. (2009). Does religion matter in corporate decision making in America? *Journal of Financial Economics, 93*(3), 455–473.

Ho, L. C. J., Liao, Q., & Taylor, M. (2015). Real and accrual-based earnings management in the pre-and post-IFRS periods: Evidence from China. *Journal of International Financial Management & Accounting, 26*(3), 294–335.

Hong, Y., & Andersen, M. L. (2011). The relationship between corporate social responsibility and earnings management: An exploratory study. *Journal of Business Ethics, 104*(4), 461–471.

Hu, N., Chen, H., & Liu, M. (2018). Religious atmosphere and the cost of equity capital: Evidence from China. *China Journal of Accounting Research, 11*(2), 151–169.

Iannaccone, L. R. (1995). Risk, rationality, and religious portfolios. *Economic Inquiry, 33*(2), 285–295.

Irani, R. M., & Oesch, D. (2016). Analyst coverage and real earnings management: Quasi-experimental evidence. *Journal of Financial and Quantitative Analysis, 51*(2), 589–627.

Jiang, F., Jiang, Z., Kim, K. A., & Zhang, M. (2015). Family-firm risk-taking: Does religion matter? *Journal of Corporate Finance, 33*, 260–278.

Johnson, E. N., Fleischman, G. M., Valentine, S., & Walker, K. B. (2012). Managers' ethical evaluations of earnings management and its consequences. *Contemporary Accounting Research, 29*(3), 910–927.

Kanagaretnam, K., Lobo, G. J., & Wang, C. (2015). Religiosity and earnings management: International evidence from the banking industry. *Journal of Business Ethics, 132*(2), 277–296.

Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review, 87*(3), 761–796.

Kohlberg, L. (1984). *The psychology of moral development: The nature and validity of moral stages*. San Francisco: Harper & Row.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39*(1), 163–197.

Kumar, A. (2009). Who gambles in the stock market? *Journal of Finance, 64*(4), 1889–1933.

Labelle, R., Gargouri, R. M., & Francoeur, C. (2010). Ethics, diversity management, and financial reporting quality. *Journal of Business Ethics, 93*(2), 335–353.

Lambert, R. A. (1984). Income smoothing as rational equilibrium behavior. *The Accounting Review, 59*(4), 604–618.

Lehrer, E. L. (2004). Religion as a determinant of economic and demographic behavior in the United States. *Population and Development Review, 30*(4), 707–726.

Li, F. (2013). A preliminary study on the trust of religious organizations based on data from Shanghai. *Chinese Journal of Sociology, 33*(2), 85–110. (in Chinese).

Li, W., & Cai, G. (2016). Religion and stock price crash risk: Evidence from China. *China Journal of Accounting Research, 9*(3), 235–250.

Lo, K. (2008). Earnings management and earnings quality. *Journal of Accounting and Economics, 45*, 350–357.

Longenecker, J. G., McKinney, J. A., & Moore, C. W. (2004). Religious intensity, evangelical Christianity, and business ethics: An empirical study. *Journal of Business Ethics, 55*(4), 371–384.

McGuire, S. T., Omer, T. C., & Sharp, N. Y. (2012). The impact of religion on financial reporting irregularities. *The Accounting Review, 87*(2), 645–673.

Merchant, K. A., & Rockness, J. (1994). The ethics of managing earnings: An empirical investigation. *Journal of Accounting and Public Policy, 13*(1), 79–94.

Miller, A. S. (2000). Going to hell in Asia: The relationship between risk and religion in a cross-cultural setting. *Review of Religious Research, 42*(1), 5–18.

Miller, A. S., & Hoffmann, J. P. (1995). Risk and religion: An explanation of gender differences in religiosity. *Journal for the Scientific Study of Religion, 34*(1), 63–75.

Noussair, C. N., Trautmann, S. T., van de Kuilen, G., & Vellekoop, N. (2013). Risk aversion and religion. *Journal of Risk and Uncertainty, 47*(2), 165–183.

Palmrose, Z., & Scholz, S. (2004). The circumstances and legal consequences of Non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research, 21*(1), 139–180.

Riahi-Belkaoui, A. (2004). Law, religiosity and earnings opacity internationally. *International Journal of Accounting, Auditing and Performance Evaluation, 1*(4), 493–502.

Ronen, J., & Sadan, S. (1981). *Smoothing income numbers: Objectives, means, and implications*. Reading: Addison-Wesley.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics, 42*(3), 335–370.

Schneider, C., & Spalt, O. (2017). Acquisitions as lotteries? The selection of target-firm risk and its impact on merger outcomes. *Critical Finance Review, 6*(1), 77–132.

Shen, N., & Su, J. (2017). Religion and succession intention—Evidence from Chinese family firms. *Journal of Corporate Finance, 45*, 150–161.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290–312.

Trueman, B., & Titman, S. (1988). An explanation for accounting income smoothing. *Journal of Accounting Research, 26*, 127–139.

Weber, M. (1905). *The protestant ethic and the spirit of capitalism*. London: Allen & Unwin.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review, 87*(2), 675–703.