THE INFLUENCE OF RELIGION ON FINANCIAL REPORTING

by

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Abstract

This dissertation examines the association between religion and various aspects of the financial reporting process. I group the major world religions into two sub-groups: (1) Western religions, which includes Christianity, Islam, and Judaism, in which teachings and beliefs are more prescribed and explicit, therefore imposing a lower tolerance of ambiguity on its followers and (2) Eastern religions, which includes Buddhism and Hinduism, in which teachings and beliefs are less prescribed and less explicit, and, as a result, impose a higher tolerance of ambiguity on its followers.

In the main analyses, using a sample of foreign registrants and a sample of U.S. and non-U.S. firms listed on exchanges around the world, I find the earnings of firms domiciled in countries where the primary religion is a Western religion (henceforth referred to as Western religious countries) are more conservative than the earnings of firms domiciled in countries where the primary religion is an Eastern religion (henceforth referred to as Eastern religious countries). These results hold for a multitude of sensitivity tests, including controlling for legal origin and controlling for other cultural dimensions.

I also perform three additional analyses. First, I predict and find that firms located in Western religious countries have more timely earnings than firms located in Eastern religious countries. I also predict and find that analyst following is higher for U.S. foreign registrants domiciled in Western religious countries compared to Eastern religious countries, consistent with analysts following firms with more timely and more conservative earnings in Western religious

countries because the costs of following them is lower. In the last additional analysis, I conduct univariate tests that show the frequency of voluntary conference calls is higher for firms in Western religious countries compared to Eastern religious countries. Overall, my thesis contributes to our understanding of how social norms affect the implementation of financial reporting standards**.**

CHAPTER ONE
Introduction

It is well understood in practice and documented in prior literature that the implementation of accounting standards is subject to a high degree of discretion. Although accounting standards serve as a guide from which financial statements are derived, various incentives created by the legal, political, and contractual environments influence implementation choices within accounting standards. Prior research provides evidence consistent with the notion that accounting outcomes are a function of country-level institutional features (for example, Ball, Kothari, and Robin 2000; Ball, Robin, and Wu 2003; Bushman, Piotroski, and Smith 2004; Frost, Gordon, and Hayes 2006). One factor often neglected in the accounting literature is the notion of religion. In this thesis, I posit that religion affects financial reporting choices and implementation of accounting standards culminating in systematic, predictable biases.

It is well documented in psychology research that environmental attributes affect tolerance of ambiguity (Duncan 1971; Downey and Slocum 1975; Starbuck 1976) and that cultures tolerate ambiguity to different degrees (Hofstede 1980, 2001; House et al. 2004). Following prior literature, I group major world religions into two groups: Western and Eastern. In Western religions (i.e., Christianity, Islam, and Judaism), teachings and beliefs are more prescribed and explicit, thus imposing a lower tolerance of ambiguity on their followers. In contrast, the beliefs and teachings of Eastern religions (i.e., Buddhism and Hinduism) are less prescribed and less explicit, therefore imposing a higher tolerance of ambiguity on their followers. I choose to focus on religion because it affects tolerance of ambiguity and because tolerance of ambiguity has a fundamental impact on attributes of accounting information.

The first set of analyses examines whether religion is associated with the variation in the earnings attribute of conservatism. Many statements within the standards that comprise U.S. generally accepted accounting principles (GAAP) can be influenced by tolerance of ambiguity. For example, the multiple probability expressions inherent in U.S. GAAP (FASB ASC 450-10-05) provide firms with discretion in determining whether or not a loss contingency is recognized in the financial statements, thereby influencing the conservatism of earnings. When a loss contingency exists, firms use discretion to determine if the likelihood of the future event(s) "will confirm the loss or impairment of an asset or the incurrence of a liability" (FASB ASC 450-10-05) and whether it is probable, reasonably possible, or remote. Loss contingencies are accrued when it is probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. The interpretation of the probability expressions, such as probable, reasonably possible, remote, and reasonably estimated, is influenced by tolerance of ambiguity.

Prior research indicates that Western religions instill a lower tolerance of ambiguity in their followers and Eastern religions build a higher tolerance of ambiguity in their followers. When in ambiguous situations, psychology research suggests that individuals with a lower tolerance of ambiguity make an early selection of one solution. This suggests that having a lower tolerance of ambiguity results in more conservative earnings, as firms recognize losses more quickly in their financial statements. This, in turn, reduces the ambiguity associated with reporting on uncertain future events. Thus, my first hypothesis predicts that firms domiciled in countries practicing Western religions report more conservative earnings compared to firms domiciled in countries practicing Eastern religions. As in prior research, I define conservatism as

the incremental timeliness of recognizing bad news in current period earnings relative to good news (Basu 1997).

I use two different samples to test hypothesis one. The first sample I use consists of U.S. foreign registrants reporting U.S. GAAP earnings. By using a sample of U.S. foreign registrants, I hold constant the accounting standards under which earnings are reported, the reliance on equity financing, and regulatory oversight. Consistent with hypothesis one, I find the U.S. GAAP earnings of firms' domiciled in countries that practice predominantly Western religions are more conservative than the U.S. GAAP earnings of firms that reside in countries of Eastern religion influence. The results are robust to a number of sensitivity tests, including using a reduced sample of firms; controlling for other cultural dimensions (e.g., collectivism versus individualism); using a matched sample by year, industry, and firm size; and controlling for legal origin.

The second sample I use consists of U.S. and non-U.S. firms listed on exchanges around the world. The advantage of using this sample is that it allows for a larger sample size and a larger number of countries represented, particularly by Eastern religious countries. The main disadvantage of using this sample over the sample of foreign registrants cross-listed in the U.S. is that firms in the second sample are reporting accounting numbers, particularly net income, using various accounting standards. Therefore, it is difficult to determine whether results are driven by the differences in the accounting standards themselves or their implementation. Regardless, results are consistent with conclusions drawn from the first sample. Firms domiciled in Western religious countries report more conservative earnings under their domestic GAAP than firms domiciled in Eastern religious countries. This is consistent with firms domiciled in Western religious countries with a lower tolerance of ambiguity recognizing losses in the financial

statements more quickly than firms domiciled in Eastern religious countries in order to reduce the ambiguity related to reporting on uncertain future events. Results hold after controlling for legal origin and controlling for various other cultural dimensions.

In additional analyses, I examine other aspects of financial reporting that could be influenced by religion, as well as the implications on other market participants. I first examine another earnings attribute – timeliness – and test whether the variation in timeliness of earnings is related to religion. Timelier accounting income is considered more informative of underlying economic income. If individuals with a lower tolerance of ambiguity take measures to reduce the ambiguities of reporting on future events, then timelier earnings will also be desired by these individuals. Consistent with this prediction, I find that, overall, firms domiciled in countries where the majority of individuals follow Western religions have more timely earnings than firms domiciled in countries following Eastern religions. These results hold when using both the first sample of U.S. foreign registrants and the second sample of U.S. and non-U.S. firms listed on exchanges around the world.

In another additional analysis, I examine the relation between religion and analyst following. Prior research suggests that analysts follow firms that have more disclosures and more transparent earnings, i.e., more informative earnings. Firms domiciled in countries in which Western religions are predominant (i.e., those in which the primary religions instill a lower tolerance of ambiguity) are more conservative and timely in their reporting of earnings, and thus could attract greater analyst coverage. After controlling for factors that prior literature documents as related to analyst following, I find that U.S. foreign registrants domiciled in countries practicing Western religions have greater analyst following compared to U.S. foreign registrants domiciled in countries practicing Eastern religions.

In the final additional analysis, I examine whether the frequency of conference calls held by a firm is related to religion. Corporate conference calls are a form of voluntary disclosure in which managers make presentations to and answer questions from market participants. Prior literature documents that conference calls disseminate material information to the market (Frankel et al. 1999; Bowen et al. 2002; Bushee et al. 2003). If the information disseminated in these voluntary conference calls reduces uncertainties surrounding future events, it suggests that firms in Western religious countries hold more frequent conference calls with market participants than firms in Eastern religious countries. Univariate tests are consistent with this prediction.

My thesis makes several contributions to the literature. First, there is limited research examining the association of religion with accounting choices. Dyreng, Mayew, and Williams (2010) and McGuire, Omer, and Sharp (2011) find a negative relation between religious social norms and accounting restatements and accounting risk, and McGuire et al. (2011) suggest that managers in more religious areas prefer real earnings management over accruals manipulation. Grullon, Kanatas, and Weston (2010) find a negative relation between religiosity and unethical corporate behavior, proxied by the likelihood to backdate options, grant excessive compensation packages to their managers, practice aggressive earnings management, and be the target of class action securities lawsuits.

My study differs from these studies in that my sample consists of a broader range of firms across multiple countries. In addition, rather than examining the association between religiosity and earnings management (that prior literature primarily explores), I document an association between the type of religion practiced and the earnings attributes of conservatism and timeliness. Earnings management is more characteristic of intentional choices, whereas the earnings attributes of conservatism and timeliness encompass a broader range of choices inherent in an

accounting system. I also examine the impact these implementation choices have on other market participants, such as analysts. Finally, I examine a different avenue of information dissemination outside of the financial statements themselves - firms' decisions to provide voluntary disclosure to the market via conference calls.

Second, my study contributes to our understanding of social norms that affect the implementation of financial reporting standards. As capital markets become more integrated, it is important that users are able to compare the performance of firms across countries. In order to do this, users need to understand not only the accounting standards which the firm follows but also the implementation choices that influence the numbers reported in the financial statements. There is a vast literature that examines accounting choices under U.S. GAAP (e.g. see Dechow, Ge and Schrand (2010) for a review) and recent research that examines accounting choices under IFRS [e.g., see Cascino and Gassen (2010) and Liao, Sellhorn and Skaife (2012)]. My study provides evidence that religious social norms influence accounting choices under U.S. GAAP and under various countries' domestic GAAPs.

This thesis proceeds as follows. In Chapter 2, I review the related literature relevant to my research. Chapter 3 provides an overview of the major world religions examined in this thesis. Chapter 4 presents my main analyses examining how religion is associated with the earnings attribute of conservatism. I conduct additional analyses surrounding the timeliness of earnings, analyst following, and conference calls in Chapter 5. Finally, Chapter 6 concludes and discusses limitations of this thesis as well as future research that can be conducted in this area.

CHAPTER TWO
Review of Related Literature

This chapter reviews prior literature to highlight findings relevant to my thesis. I begin the literature review with a broad discussion of how recent economic events have triggered an increase in need for international research. I then discuss a stream of literature relevant to the topic of religion – research on culture. Prior accounting literature primarily uses one of three proxies to represent various aspects of culture: 1) a proxy for the primary language of the country in which the firm operates; 2) Hofstede's proxies for individualism, masculinity, uncertainty avoidance, and power distance; and 3) the percentage of religious adherents or organized places of worship at the county level in the United States. Following this discussion, I introduce literature in other disciplines that have begun to examine the relation between the type of religion practiced and various country level factors, such as government quality and regulation. I then discuss how my thesis fits into these various streams of literature and its expected contribution to these streams of literature. I conclude with a discussion of social norm theory – an important theory underlying my thesis and prior literature on religion in accounting and finance.

2.1 Growth in International Accounting Research

In the last few decades, there has been an increase in accounting research in the international setting. Among other things, this is largely attributed to the growing importance of international factors such as growth in international equity and bond markets, the increasing number of cross-listed companies on stock exchanges around the world, the influence of the International Accounting Standards Board (IASB), and foreign direct investment by multinationals (Meek and Thomas 2004). In addition, there has been a rapid increase in the number of countries permitting or requiring firms to report under International Financial

Reporting Standards (IFRS). Barth (2008) discusses some of the potential benefits of global financial reporting as being a decrease in the costs global firms incur in financial statement preparation, a decrease in the costs users of financial statements incur when interpreting financial statements, and a decrease in the cost of capital for global firms, among others.

These recent developments (and better access to international data) have spawned increased interest in international accounting research. For example, one stream of international accounting research compares the quality of accounting information and capital market implications across different accounting standards such as IFRS, U.S. GAAP, and non-U.S. domestic standards (for example, Alford et al. 1993; Ashbaugh and Pincus 2001; Bae et al. 2008; Barth et al. 2008; Daske et al. 2008; Liao, Sellhorn and Skaife 2012). Research also examines environmental and institutional factors that influence accounting standards and the implementation of the accounting standards such as legal system, shareholder protection, creditor protection, and tax reporting (for example, Ball et al. 2000; Ball et al. 2003; Bushman et al. 2004). In addition, with the U.S. having the largest capital market in the world with a multitude of global participants, the cross-listing setting, whereby non-U.S. companies list securities on U.S. exchanges, is one of increasing interest in accounting research as well (for example, Amir et al. 1993; Lang et al. 2003b; Blouin et al. 2009).

2.2 Culture and Accounting

Another environmental feature examined in international research and related to the topic of religion is the influence of cultural factors on accounting choices. The majority of prior literature examining the impact of culture on accounting uses one of three proxies for culture. The first, motivated by psychology research, is based on the work of Geert Hofstede (1980) who

collected data from 116,000 individuals among 72 countries employed by IBM, a large multinational business organization. Based on a survey distributed to experimental subjects, Hofstede developed a quantitative score for five cultural dimensions: individualism, power distance, uncertainty avoidance, masculinity, and long-term orientation (Hofstede 1980, 2001). Accounting research links these cultural dimensions to accounting user behavior across various countries (Gray 1988; Cohen, Pant, and Sharp 1992, 1993; Kachelmeier and Shehata 1997; Schultz and Lopez 2001; Doupnik and Riccio 2006; Tsakumis 2007; Hope, Kang, Thomas and Yoo 2008).

Gray (1988) proposes four hypotheses on the relationship between Hofstede's cultural dimensions and accounting system attributes: professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency. Gray (1988) does not empirically test his hypotheses but a number of other researchers have tested one or all of Gray's hypotheses. In the audit setting, cultural differences in effectiveness and demand of internal based monitoring (Kachelmeier and Shehata 1997), ethical problems in audit practice (Cohen, Pant, and Sharp 1993), and auditor choice (Hope, Kang, Thomas and Yoo 2008) are all examined. In the financial reporting setting, relations between culture and estimation of warranty expense given similar facts and rules (Schultz and Lopez 2001), interpretation of probability expressions (Doupnik and Riccio 2006), and disclosure of contingencies (Tsakumis 2007) are also examined. Collectively, these studies have found mixed evidence supporting Gray's (1988) hypotheses.

The second proxy for culture is language origin (Nair and Frank 1980; Stulz and Williamson 2003). Nair and Frank (1980) use discriminant analysis and find that different underlying environmental variables, including the country's official language origin, are

associated with country groupings of disclosure practices and measurement practices. Stulz and Williamson (2003) find that language explains the variation in investor protection across countries, but that religion is a better predictor of investor protection than language. Both of these studies use the country's primary official language as a proxy for culture.

The third proxy for culture is the percentage of religious adherents or organized places of worship at the county level in the United States. Accounting research using this proxy will be discussed in the next section.

2.3 Religiosity and Accounting

To date, there is limited accounting research examining the association of religion with accounting choices [Dyreng, Mayew, and Williams (2010); Grullon, Kanatas, and Weston (2010); and McGuire, Omer, and Sharp (2011)]. Dyreng et al. (2010) and Grullon et al. (2010) use United States data on percentage of religious adherents in the particular county in which the organization is headquartered. Dyreng et al. (2010) find that firms operating in counties with high levels of religious adherence are less likely to meet or beat analyst forecasted quarterly earnings, have higher accrual quality, have lower risks of fraudulent accounting, and are less likely to restate their financial statements. Grullon et al. (2010) examine the association between religiosity and unethical corporate behavior. They find that firms headquartered in highly religious countries are less likely to backdate options, grant excessive compensation packages to their managers, practice aggressive earnings management, and be the target of class action securities lawsuits.

Similar to Dyreng et al. (2010), McGuire et al. (2011) show an inverse relation between religious social norms and accounting restatements and accounting risk. However, McGuire et al.

(2011) differs from Dyreng et al. (2010) in that their measure of religiosity is a Gallup poll-based measure aggregated to the Metropolitan Statistical Area level, the time period examined is shorter, and they also examine real earnings management. McGuire et al. (2011) find a positive relation between religiosity and real earnings management, and they suggest that managers in religious areas prefer real earnings management over accruals manipulation.

Similar to the accounting research described above, Hilary and Hui (2009) use the proportion of religious adherents at the county level in the United States as a proxy for religiosity. Relying on prior research in psychology and anthropology that finds a positive correlation between risk aversion and individual religiosity (Miller and Hoffman 1995; Diaz 2000; Osoba 2003; Dehajia, DeLeire, and Luttmer 2005), Hilary and Hui (2009) predicts that this relation also influences organizational behavior. Hilary and Hui (2009) find that religiosity is negatively related to risk exposure that is proxied by variances in equity returns and returns on assets, investment rate, and growth. In summary, the literature described in this section finds religiosity to be a significant variable in explaining firm-level decisions.

2.4 Religion and Country-Level Characteristics

The literature in other disciplines (such as finance and economics) provides evidence that religion has an impact on government quality (La Porta, Lopez-de-Silanes, Schleifer and Vishny 1999) and creditor rights (Stulz and Williamson 2003) across countries. La Porta et al. (1999) use the percentage of the population in each country belonging to different religious affiliations as a proxy for work ethic, tolerance, trust, and other characteristics of society. La Porta et al. (1999) suggest that as a result of Catholic and Muslim countries having cultures of intolerance, xenophobia, and closed-mindedness during the Protestant Reformation (Landes 1998) and being

more interventionist, hierarchical, and supportive of State power, compared to Protestant countries, this type of culture in Catholic and Muslim countries would have fewer civil rights. Consistent with predictions, La Porta et al. (1999) find that countries with high proportions of Catholics or Muslims exhibit inferior government quality, where government quality is assessed using proxies for interventionism, public sector efficiency, quality of public good provision, government size, and political freedom.

Stulz and Williamson (2003) show that a country's primary religion predicts the variation in creditor rights better than a country's natural openness to international trade, language, income per capita, or legal origin. Particularly, Stulz and Williamson (2003) find that Protestant countries protect the rights of creditors better than Catholic countries. Similar to La Porta et al. (1999), Stulz and Williamson (2003) attribute this finding to the Calvinist Reformation that played a role in the development of capitalism and institutions (Weber 1930) and created sharp differences in creditor rights among Protestant and Catholic countries. Both of these studies (La Porta et al. 1999; Stulz and Williamson 2003) find religion to be a significant variable in explaining country-level characteristics.

2.5 Contribution to Literature

Based on the literature discussion above, it is clear that culture is a significant construct to consider when examining behavior in and across organizations. In the following paragraphs, I first discuss why the primary religion of the country could be an important cultural measure to consider when explaining variation in financial reporting across countries over Hofstede's cultural dimensions and language. I then discuss how my study differs from the existing literature in accounting, examining the relation between religiosity and accounting choices.

Research using Hofstede's cultural dimensions has been criticized for the methodological use of an attitude-survey questionnaire, a non-representative sample of firm-level data that has been used as country-level culture proxies, anomalies found in empirical research that do not support Hofstede's measures, and outdated measures due to slowly changing cultures. My measure of the primary religion practiced in a country in which the firm operates overcomes many of the concerns with Hofstede's measures. First, the identification of the primary religion is obtained from the Central Intelligence Agency's published World Factbook and therefore eliminates the concern of an attitude-survey questionnaire. In addition, the data are obtained from various censuses, surveys, and registration systems which encompass a larger proportion of the countries' inhabitants compared to the firm-level data obtained from IBM. Lastly, the religious data contained in the World Factbook are updated every four years and therefore provide a more up-to-date measure compared to Hofstede's measures.

The second cultural dimension often used in the literature is language. Although similar language origin may facilitate the transfer of ideas, unlike religion it has no direct influence on individuals' value systems which influence financial reporting objectives. Religion impacts an individual's beliefs and actions, which in turn impact corporate and capital market decisions (Stulz and Williamson 2003; Hilary and Hui 2009; Dyreng, Mayew, and Williams 2010).

My study differs from research in accounting examining the relation between religiosity and accounting choices (Dyreng, Mayew, and Williams 2010; McGuire, Omer, and Sharp 2011; Grullon, Kanatas, and Weston 2010) in that my sample consists of a broad range of firms across multiple countries rather than firms headquartered only in the United States. Also, I examine the type of religion practiced rather than the level of religiosity regardless of the type of religion practiced and link the type of religion practiced to a factor inherent in a religion (tolerance of

ambiguity) that relate to accounting choices. Lastly, prior literature examines the association between religiosity and earnings management. Earnings management is often characteristic of intentional choices. I examine an association between the type of religion practiced and a broader range of choices inherent in an accounting system.

2.6 Social Norm Theory

The prior literature (Hilary and Hui 2009; Dyreng, Mayew, and Williams 2010; McGuire, Omer, and Sharp 2011; Grullon, Kanatas, and Weston 2010) and this thesis rely on social norm theory in which religion operates as a social norm. In these studies, a "social norm" arises from "rules that a group uses to define appropriate and inappropriate values, beliefs, attitudes, and behaviors" (Dyreng, Mayew, and Williams 2010). Sunder (2002) describes social norms as being "indistinguishable from the culture of the group" and "motivation to conform to social norms is rooted in the anticipation, or fear, of others' disapproval of deviations for the norms" (Sunder 2005). One of the assumptions in this theory is that social norms are enforced through social interactions within a group. Because data relating to managers' religious affiliation is unavailable, I argue that although the manager may not belong to that specific religious affiliation, the primary religion of the country in which the firm operates is a reasonable measure of the social environment in which the manager operates and therefore influences financial reporting decisions.

2.7 Summary

In summary, I begin this section by discussing the increase over the past 20-30 years in international accounting research due to multiple factors, including the globalization of the capital markets and the increasing use of IFRS (among other things). I then discuss a line of

accounting literature closely aligned with this thesis, culture and accounting choices, and I highlight that prior literature often uses two proxies for culture: language and/or Hofstede's cultural dimensions. I posit that that the influence of religion on accounting choices is another aspect of culture that is important to understand. Psychology and sociology research has demonstrated that religion influences human behavior, and accounting research has recently begun to examine the association between religiosity and firm behavior. My thesis differs from the recent research in that I examine the type of religion practiced across the major world religions rather than the level of religiosity across a primarily Christian sample. I conclude this section by introducing social norm theory, which underlies this thesis. Social norm theory suggests that religion is one type of social norm that influences behavior. In the next section, I discuss how differences across the major world religions influence behavior.

CHAPTER THREE
Overview of World Religions

Religious beliefs provide a framework from which an individual's values are formed, which in turn guides his/her behavior, including behavior within an organization. Therefore, in order to understand how religion impacts managers' financial reporting decisions across different religions, I must first identify differences in religious beliefs across the major religions. I group the major world religions into two sub-groups based on major beliefs relating to ultimate realities within each faith. "Ultimate realities" refers to "what is most sought" and "that which is most important to religious life because of the nature of reality" within each religion (Neville 2000). These realities encompass topics such as god(s), salvation, enlightenment, and release from suffering.[1] In the following paragraphs, I argue that compared to Hinduism and Buddhism, Christianity, Islam, and Judaism are more specific and directed in terms of ultimate realities. [2]

Christianity, Islam, and Judaism are commonly referred to as "Abrahamic religions" by theologians. This is because they trace their history to the covenant god made with Abraham in the Hebrew Bible and all three religions recognize Abraham as their first prophet. These are also the three main monotheistic religions of the world (Oxtoby 1996; Sedgwick 2006). In Greek, "mono" means "one" and "theos" means god; therefore, these religions believe there is only one god. On the other hand, Buddhism and Hinduism have been referred to as both polytheistic and

[1] The definition of "ultimate realities" is obtained from Neville (2000). Neville (2000) consists of three volumes published as part of the Comparative Religious Ideas Project from 1995-1999 at Boston University. The purpose of this project was to "develop and test a theory concerning the comparison of religious ideas, and to make some important comparisons about religious ideas of the human condition, ultimate realities, and religious truth." Comparisons and ideas present within each volume are based on discussions by experts of each of the major world religions and core texts and motifs.

[2] These religions are often considered to be part of the major world religions (Nigosian 2000, Sedgwick 2006).

pantheistic religions of the East.[3] In Greek, "poly" means multiple, "pan" means all, and "theos" means god. These religions either equate god with the universe or tolerate worship of more than one or all gods.[4] Given Abrahamic religions' belief in only one god and Buddhism's and Hinduism's belief in multiple gods, it follows that Abrahamic religions are more specific and directed about which god(s) (if any) religious adherents of that faith are to worship.

In addition to god(s), ultimate realities may also refer to salvation, enlightenment, release from suffering, liberation, etc. (Neville 2000). For the Abrahamic religions, salvation is an important aspect of ultimate realities. These religions vary vastly in the way in which one can be saved, but are similar in what it means to be saved. Christianity, Islam, and Judaism all believe that salvation is "entering a state of eternal communion with God, which means that personhood will not be abolished but perfected" (Valea 2010) and where individuals are set free from sin. Judaism believes that performing good deeds and following the moral law will allow an individual to attain salvation (Valea 2010). The law is defined in the Torah and summarized in the Ten Commandments (Nigosian 2000).[5,6] The Ten Commandments list explicit actions

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[3] Christianity, Islam, and Judaism are referred to as the "revelation" religions by Hofstede (1980) and also often referred to as "Western" religions. Hindu, Jain, Buddhist, Chinese, and Japanese traditions make up the "Eastern" religions (Oxtoby 1996). Oxtoby (1996) states that "scholars today regard Islam a religion of the West, even though the numerical majority of Muslims today live east of that world…Some have contended that the Western religions are united by the notion of prophetic and scriptural revelation from their one God, while the Eastern religions share a focus on the achievement of reflective human insight by a wise teacher or sage." Islam, Judaism, and Christianity also share historical and theological roots (Oxtoby 1996).

[4] When describing Hinduism, Nigosian (2000) states "Hindus can choose to be monotheists, polytheists, pantheists, atheists, agnostics, dualists, monists, or pluralists. They may or may not follow strict standards of moral conduct, spend time on everyday religious rituals, or attend a temple…Consequently, Hinduism represents an astonishingly complex conglomeration of doctrines, cults, rituals, practices, observances, and institutions." When describing Buddhism, Nigosian (2000) states "Homage and worship are given to a whole hierarchy of spiritual beings – gods, Buddhas, deified persons, and animals…Undoubtedly, in discussions of Buddhism, it is incorrect to use the term "God," with its Christian, Jewish, and Islamic connotations."

[5] The primary source of Jewish religion is the Hebrew Bible, consisting of twenty-four books divided into three sections: *Torah, Neviim,* and *Ketuvim* (Hinnells 1984).

individuals shall or shall not do, including remembering the Sabbath by not laboring on the Sabbath, not taking the Lord's name in vain, among eight others. Teachings and Jewish sacred texts specify specific diets, eating rituals, and obligatory prayer for followers of Judaism.[7]

Unlike Judaism, Christianity believes that salvation is also attained through Jesus Christ and believes that Jesus Christ is the son of God. For Christianity, salvation is attained by performing good deeds, following the moral law, and belief that Jesus Christ is the only way to God (Valea 2010).[8] The law is defined in the Bible, encompassing the Old Testament (which includes the first five books of Judaism's Hebrew Bible, or the Torah) and the New Testament (Hinnells 1984). The Old Testament includes the Ten Commandments discussed above.

Islam teaches that salvation can be attained through observation of the Five Pillars of Islamic practice which are: 1) the belief that Allah is the only god and that Muhammad is his messenger; 2) performing the five daily prayers; 3) fasting throughout the month of Ramadan; 4) charity, giving to the poor; and 5) the pilgrimage to Mecca at least once in a lifetime, if one can

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[6] The Ten Commandments are: 1. I am the Lord your God, who brought you out of the land of Egypt, out of the house of bondage. You shall have no other gods besides me. 2. You shall not make yourself a graven image, or any likeness of anything that is in heaven above, or that is in the earth beneath, or that is in the water under the earth; you shall not bow to them or serve them; for I the Lord your God am a jealous God, visiting the iniquity of the fathers upon the children to the third and fourth generation of those who hate me, but showing steadfast love to thousands of those who love me and keep my commandments. 3. You shall not take the name of the Lord your God in vain… 4. Remember the Sabbath day, to keep it holy. Six days you shall labor, and do all your work; but the seventh day is a Sabbath to the Lord your God; in it you shall not do any work, you, or your son, or your daughter, your manservant, or your maidservant, or your cattle, or the sojourner who is within your gates…5. Honor your father and your mother, that your days may be long in the land which the Lord your God gives you. 6. You shall not kill. 7. You shall not commit adultery. 8. You shall not steal. 9. You shall not bear false witness against your neighbor. 10. You shall not covet your neighbor's house; you shall not covet your neighbor's wife, or his manservant, or his maidservant or his ox, or his ass, or anything that is your neighbor's.

[7] "Sustaining life, which is a gift from God, involves two matters: first, what Israelites are to eat or refrain from eating, and second, how they are to eat… Prayer in Judaism is obligatory three times a day and may be votive as well. The community and its members pray upon rising, at dusk, and after dark" (Neusner 2010).

[8] The belief that Jesus Christ is the only way to God is portrayed in John 14.6 when Jesus Christ states "I am the way and the truth and the life. No one comes to the Father except through me" and also portrayed in John 1.29 which presents Jesus Christ as "the Lamb of God, who takes away the sin of the world".

afford it. The Five Pillars of Islam often give specific guidance on how to follow each pillar. For example, the second pillar claims that Muslims are to pray five times a day in a state of purity turned towards Mecca; the third pillar of giving alms has been described as "the rules for calculating the amount a Muslim should give in alms are as precise as those for calculating ones income tax" (Sedgwick 2006). "The regular performance of these obligations in sincere faith and obedience to God assures the pious of salvation and the bliss of paradise on the Day of Resurrection. Neglecting them is an act of rebellion against God and is therefore a cause for eternal perdition" (Oxtoby 1996). A number of other sources give guidance and direction to Muslims in their daily lives: *hadith,* Koran (also referred to as the Qur'an), and Sharia (Nigosian 2000; Sedgwick 2006; Neusner 2010). [9,10] "Islam proclaims a religious faith and sets forth certain rituals, but it also prescribes patterns of order for society in such matters as family life, civil and criminal law, business, etiquette, food, dress and even personal hygiene" (Hinnells 1984).

When comparing and describing the Abrahamic religions, Nigosian (2000) states that "not only does each religion have a distinctive ultimate path and a distinctive ultimate destination but also a distinctive conception of God and humanity." Thus far we have seen that for the Abrahamic religions ultimate realities are often described in terms of their belief in a single god and attainment of salvation, where limited and directed ways of reaching salvation are offered.

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[9] The text of the Koran incorporates what was heard or revealed to the prophet Muhammad (Neusner 2010, Nigosian 2000). "The Koran underlines the importance of prayer, but nowhere does it specify exactly when or how to pray. For those essential details, the Muslim has recourse to the *hadith*…The Koran occasionally gives specific instructions too, but more frequently it just gives general exhortations. In general, the big ideas come from the Koran, and the detailed rules come from the *hadith"* (Sedgwick 2006). Similarly, Neusner (2010) describes "the Qur'an is the fundamental guide for Muslims who strive to live in accordance with God's revelation…Yes many aspects of the faith are not explicitly described in the Qur'an, and so Muslims have turned to their second essential source for additional religious knowledge, the accounts of Muhammad's life known as the prophetic *hadith*."

[10] The Sharia are the "rules and perspectives that guide Muslims through life" and includes five categories for any act - forbidden (haram), required (fard), recommended (Mustahabb), discouraged (makruh), and allowed (mubah). "The Sharia remains the standard which all Muslims live by in their daily lives" (Sedgwick 2006). "In Islam, Shari'a is not simply a set of teachings but a guide to human action that encompasses every facet of human life" (Nigosian 2000).

For most Eastern religions, including Buddhism and Hinduism, ultimate realities are often described more broadly. Buddhism and Hinduism reject the need to accept one single common god, and instead offer various ways to attain ultimate realities, including rituals, sacrifices, morality, meditation, etc.

For Hindus, "the major spiritual paths for attaining liberation in Hinduism are karma yoga (the way of good deeds and fulfillment of social duties), bhakti yoga (the way of devotion toward a personal deity in order to accumulate merits), raja yoga (the way of controlling the mind, as the ascetic technique of Patanjali requires) and jnana yoga (the way of acquiring spiritual knowledge)…all are based on human effort and capacity for attaining liberation" (Valea 2010). When comparing Hinduism to the Abrahamic religions, Nigosian (2000) states:

> A person's ultimate destination in Hinduism is the realization of the identity of Brahman-Atman, the One and the All. The highest bliss, says Hinduism, is the realization that the individual self (Atman) is the Universal Self (Brahman). The Ultimate – the One, Brahman – is all that exists, including human beings. There is no hierarchy of God, humans, and universe; there is no Creator above and creatures below; no duality; only One. To attain the ultimate goal of bliss, Hinduism, unlike the Western religions does not prescribe an exclusive path. Through the centuries, it developed numerous paths and various systems, all designed to capitalize on the nature, temperament, interests, and aptitudes of the individual. Hinduism, therefore, recommends different paths for different people.

Buddhism takes its name from the title Buddha ("Enlightened One"), by which the Buddhist leader, Siddhartha Gautama was known. "Buddhism does not require orthodoxy of belief. Consequently, although Buddhist texts include canonical treatises, there is no closed canon of sacred writings. The bulk of Buddhist sacred books is truly enormous, amounting to hundreds of volumes" (Nigosian 2000). Buddhists "dedicate themselves to following the path of the Buddha towards enlightenment" (Oxtoby 1996). This is done by following the essentials of

Buddha's teachings: denial of the existence of a creator god, denial of the individual soul, the Four Noble Truths, the Middle Way, the Noble Eightfold Path, and nirvana (Nigosian 2000). According to the Buddha, one must accept and follow the Four Noble Truths. The four noble truths are: the nature of existence is suffering; suffering is caused by desire or thirst to experience existence; the complete cessation of desire leads to the cessation of suffering; and in order to escape from suffering and attain enlightenment, one has to follow the Noble Eightfold Path (Valea 2010). The Noble Eightfold Path can be classified into three categories: morality, meditation, and wisdom. [11] "Buddha taught that those who follow the Noble Eightfold Path will ultimately break the bonds that tie them to life and to their craving for existence. They alone will achieve release from the cycle of rebirth (nirvana)" (Nigosian 2000).

In summary, when comparing the five major religions discussed above, theologians often categorize the major world religions into two sub-groups: (1) Christianity, Islam, and Judaism, and (2) Buddhism and Hinduism. Sedgwick (2006) sums it up nicely by stating:

> Muslims, Christians, and Jews are all in full agreement on most of the basics… They agree there is a single Creator who created the world and all that is in it, including human beings, starting with Adam. They agree that human beings have immortal souls, live only once, and should live their lives as their Creator wishes them to, as indicated in sacred scripture. After death, it is agreed, human beings will be judged by their Creator, but judged with mercy, and will ultimately be rewarded or punished for their intentions, acts, and omissions (though some Jews might differ here)….A Buddhist or a Hindu, however, would disagree with almost all of it.[12]

[11] The Noble Eightfold Path consists of right understanding, right intention, right speech, right conduct, right occupation, right endeavor, right contemplation, and right concentration.

[12] The author also recognizes many of the differences across the Abrahamic religions. See Sedgwick (2006) for more information on this.

Similarly, Valea (2010) states, “The Eastern religions are not so exclusivist in terms of attaining liberation. They emphasize the role of one's own efforts, by the use of rituals, sacrifices, morality, asceticism, meditation, etc.”

Overall, relying on prior literature discussed above, Eastern faiths of Buddhism and Hinduism are less prescribed and more tolerant in what constitutes ultimate realities compared to the Western religions of Christianity, Islam, and Judaism. Western religions are more likely to claim absolute truths and impose stronger certainties on their religious adherents. This is evident in the belief in only one God and more explicit guidance as to how to obtain ultimate realities. On the other hand, Eastern faiths do not impose such strong certainties on their followers and are generally more tolerant (Hofstede 1980). This is evident in their belief in many gods and the various ways to obtain liberation or obtain ultimate realities. Relying on this prior literature, I maintain that because Western religions are more prescriptive, Western Religions instill a lower tolerance of ambiguity on their followers, whereas the Eastern religions are less prescribed and more tolerant in what constitutes ultimate outcomes leading to a higher tolerance of ambiguity (Hassan and Khalique 1981; Hassan and Khalique 1987; Schwartz and Huismans 1995; Morreall 1999; Saroglou and Dupuis 2006).

Prior literature examines the concept of tolerance of ambiguity. [13,14] A long line of psychology literature examines the concept of tolerance of ambiguity, beginning with Frenkel-Brunswik (1948). Psychology research studies the concept of tolerance of ambiguity as a personality trait (Budner 1962), property of organizations (Harlow 1973; Keenan and McBain 1979; Frone 1990; Furnham and Gunter 1993), and property of cultures (Hofstede 1980). Several cultural theorists suggest that environmental attributes, such as religion, affect individuals' tolerance of ambiguity and perceptions of uncertainty (Duncan 1971, Downey and Slocum 1975, Starbuck 1976) and cultures perceive and tolerate ambiguity differently (Hofstede, 1980, 2001; House et al., 2004). Overall, this line of research supports the notion that the social norm of religion influences an individual's tolerance of ambiguity.

[13] Some researchers consider tolerance of ambiguity and uncertainty avoidance to be synonymous (Hofstede 1980), while others claim it only to be highly correlated (Furnham and Ribchester 1995). In this study, I do not enter this debate on whether the terms are synonymous and instead consider the terms to be, at the very least, related to each other.

[14] Bochner (1965) develops ten primary characteristics of lower tolerance of ambiguity: (a) rigid dichotomizing into fixed categories, that is, "need for categorization"; (b) seeking for certainty and avoiding ambiguity, that is, "need for certainty"; (c) inability to allow for the coexistence of positive and negative features in the same object, for example, "good" and "bad" traits in the same person; (d) acceptance of attitude statements representing a rigid white-black view of life; (e) preference for the familiar over the unfamiliar; (f) positive rejection of the different or unusual; (g) resistance to reversal of apparent fluctuating stimuli; (h) early selection and maintenance of one solution in a perceptually ambiguous situation; and (i) premature closure.

CHAPTER FOUR
Main Analyses

As discussed in Chapter Three, I maintain that firms domiciled in a Western religious country (W_Religion = 1) have a lower tolerance of ambiguity, and firms domiciled in an Eastern religious country (W_Religion = 0) have a higher tolerance of ambiguity. Because accounting standards provide management significant discretion when interpreting the standards, the implementation of the accounting standards may be influenced by whether the social environment that the firm operates in is more or less tolerant of ambiguity. Throughout this chapter, I examine the implementation choices surrounding the earnings attribute of conservatism. In the next section, I develop the hypothesis for this chapter. I introduce the proxy used for conservatism in section 4.2. Section 4.3 examines the research question using a sample of non-U.S. firms cross-listed on a U.S. stock exchange. The final section of this chapter examines the research question using a sample of U.S. and non-U.S. firms listed on stock exchanges around the world.

4.1 Hypothesis Development

Conservatism is defined as "earnings reflecting 'bad news' more quickly than 'good news'" (Basu 1997), and therefore, accounting income is often considered to be asymmetric in reflecting negative economic income compared to positive economic income. Accounting income that is more conservative anticipates losses more quickly relative to gains, thereby improving transparency of earnings (Ball, Kothari, and Robin 2000). Managers often have incentives to inflate income or assets, and conservatism is a way to reduce opportunistic behavior of managers. Watts (2003) describes this aspect of conservatism in terms of a contracting

explanation where "conservative accounting is a means of addressing moral hazard caused by parties to the firm having asymmetric information, asymmetric payoffs, limited horizons, and limited liability."

Watts (2003) also suggests that conservatism is a means to reduce litigation, income taxes, and political costs. Conservatism has a significant influence on accounting practice (Basu 1997) and the principles of valuation in accounting (Sterling 1970). Accounting research examines the role of conservatism in debt contracting (for example, Ahmed et al. 2002, Zhang 2008, Beaty et al. 2008) and executive compensation contracts (for example, Smith and Watts 1992, Kwon et al. 2001). Although prior literature examines the need for conservatism in reducing moral hazard in contracting, litigation costs, income taxes, and political costs, I propose that the need for conservatism is also driven by tolerance of ambiguity induced through religion.

U.S. GAAP (FASB ASC 450-10-05) defines a contingency as "an existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur." When a loss contingency exists, a firm determines if the likelihood that the future event(s) "will confirm the loss or impairment of an asset or the incurrence of a liability" is probable, reasonably possible, or remote. U.S. GAAP defines probable, reasonably possible, and remote as "the future event or events are *likely* to occur," "the chance of the future event or events occurring is *more than remote but less than likely*," and "the chance of the future event or events occurring is *slight,*" respectively. Loss contingencies are recorded, and hence income and net assets reduced, when it is *probable* that an asset has been impaired or a liability has been incurred and the amount of the loss can be *reasonably estimated.* Gain contingencies are not recognized in the financial statements until realized. Given the recognition criteria for a loss versus a gain

contingency, it is clear that the standards follow the principle of conservatism where "earnings reflect 'bad news' more quickly than 'good news'" (Basu 1997).

The authoritative literature contains multiple probability expressions that leave room for discretion in determining whether or not a loss contingency is recognized in the financial statements. Terms such as "remote," "reasonably possible," "probable," "likely," "reasonably," among others, are all probability expressions inherent in U.S. GAAP. Prior research in psychology examines quantitative meanings of probability expressions (for example, Simpson 1963 and Reagan, Mosteller, and Youtz 1989) and finds that when it comes to interpreting the probability expressions, variability between subjects exist (Budescu and Wallsten 1985), but this variability is lower for groups from a homogeneous background (Brun and Teigen 1988) and differs across cultures (Phillips and Wright 1977).[15]

These probability expressions may be interpreted differently depending upon whether religion induces a higher or lower tolerance of ambiguity on individuals. Individuals with a lower tolerance of ambiguity are characterized by "early selection and maintenance of one solution in a perceptually ambiguous situation" (Frenkel-Brunswik 1951; Bochner 1965). This suggests that adherents of Western religions who are less tolerant of ambiguity will recognize losses in the financial statements more quickly than adherents of Eastern religions in order to reduce the ambiguity related to reporting on uncertain future events.

[15] Prior literature in accounting examines the interpretation of probability expressions across cultures. Doupnik and Richter (2003) ask individuals from Germany and the United States to interpret probability expressions found in International Accounting Standards. They find both a language and translation effect when comparing the interpretation of the results across individuals. Doupnik and Riccio (2006) tests Grays's (1988) conservatism and secrecy hypotheses on individuals from Brazil and the United States. They find support for the conservatism hypothesis when income-increasing probability expressions are used and support for the secrecy hypothesis; no support for the conservatism hypothesis is found when income-decreasing probability expressions are used.

For example, because of the uncertainty surrounding claims that may be made under warranties, losses from warranty obligations shall be accrued when it is *probable* that impairment has occurred and when the loss can be *reasonably estimated*. Adherents of Western religions with a lower tolerance of ambiguity may adopt a more cautious approach to cope with the uncertainty of future events by estimating and recording the loss from the warranty obligation sooner. This would be consistent with Frekel-Brunswik (1951) and Bochner (1965) who describe individuals with a lower tolerance of ambiguity as individuals who select one solution to an ambiguous situation earlier in the decision process.

If firms domiciled in Western religious countries recognize losses in financial statements more quickly than firms domiciled in Eastern religious countries in order to reduce the ambiguity related to uncertain future events, this would suggest that firms domiciled in Western religious countries will report more conservative earnings compared to firms domiciled in Eastern religious countries. Therefore, I make the following prediction:

> *Hypothesis 1 (H1): Firms domiciled in Western religious countries will report more conservative earnings compared to firms domiciled in Eastern religious countries.*

4.2 Earning Attribute Proxy - Conservatism

The attribute of earnings that I examine in this chapter is conservatism, where, as discussed in Section 4.1, conservatism is defined as "earnings reflecting 'bad news' more quickly than 'good news'" (Basu 1997). To measure conservatism, I follow prior literature (Basu 1997; Ball, Kothari, and Robin 2000; Ball, Robin and Wu 2003) and use the following equation:

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon \quad (1)$$

where

Neg = equals 1 if the return is negative and zero otherwise;
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items reported under U.S. GAAP deflated by beginning of period price.

In equation 1, accounting income is represented by *NI* and current-period economic income is represented by *Ret.* Because accounting income is shown to be conservatively asymmetric (Basu 1997), a dummy variable *Neg* is included in equation 1 where *Neg* is equal to one if *Ret* is negative, zero otherwise. This is used to account for negatively skewed accounting income in which losses are typically recognized before gains. 'Bad news' is proxied by negative stock returns and 'good news' is proxied by positive stock returns.

In equation 1, β_2 measures how quickly positive news is incorporated into earnings and β_3 measures the *incremental* sensitivity of accounting income to economic losses. $\beta_{2+}\ \beta_3$ measures the *total* sensitivity of accounting income to negative economic income. β_3 is a common measures of conservatism used in prior literature. To test the hypothesis that firms domiciled in Western religious countries report more conservative earnings than firms domiciled in Eastern religious countries, I add to equation 1 a dummy variable for firms domiciled in Western religious countries (*W_Religion = 1)* and its interaction with other variables. This is reflected in equation 2 below:[16]

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4\ W\_Religion*Neg + \beta_5\ W\_Religion*Ret + \beta_6\ W\_Religion*Ret*Neg + \gamma_n\ Country\ dummies + \varepsilon \quad (2)$$

where:

[16] Because *W_Religion* is a time-invariant variable, it is excluded from the model when country fixed effects are included in the model because *W_Religion* is perfectly correlated with the country fixed effects. According to Wooldridge (2009), "Although time-constant variables cannot be included by themselves in a fixed effects model, they can be interacted with variables that change over time and, in particular, with year dummy variables."

Neg = equals 1 if the return is negative and zero otherwise;
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items reported under U.S. GAAP deflated by beginning of period price;
W_Religion = one if the country in which the firm operates in has a primary religion that is a Western religion, zero otherwise.

The main coefficient of interest is $\beta_{6,}$ which captures the *incremental* conservatism of firms domiciled in a Western religious country relative to firms domiciled in an Eastern religious country. If β_6 is positive and significant, then the *incremental* recognition of bad news relative to good news recognition in current period earnings is significantly higher for firms domiciled in Western religious countries. This would support the hypothesis that firms domiciled in Western religious countries will report more conservative earnings compared to firms domiciled in Eastern religious countries.

4.3 Non-U.S. Firms Cross-listed on a U.S. Stock Exchange

In this section, I test hypothesis 1 using a sample of non-U.S. firms cross-listed on a U.S. stock exchange. In the section that follows, I also test hypothesis 1 using a broader sample of U.S. and non-U.S. firms listed on exchanges around the world. Advantages and disadvantages of using these samples are discussed in the sections that follow. Overall, results using both samples provide support for hypothesis 1.

4.3.1 Sample and Descriptive Statistics

The first sample is comprised of non-U.S. firms cross-listed in the U.S., i.e., U.S. foreign registrants. Using U.S. foreign registrants provides three advantages over using a broader sample of U.S. and non-U.S. firms registered on exchanges across multiple countries. First, using U.S. foreign registrants ensures all firms in the sample report under the same accounting standards,

U.S. GAAP. Prior to November 15, 2007, U.S. foreign registrants were required to report U.S. GAAP net income and stockholders' equity in their 20-F reconciliations filed with the Securities Exchange Commission (SEC). Second, using U.S. foreign registrants also ensures all firms rely on equity financing, and therefore, similarities in users of financial statements and their needs exist. In addition, by focusing on U.S. foreign registrants I am able to control for regulatory oversight, specifically the U.S. SEC, which is an important element of the infrastructure of financial reporting leading to high quality financial statements (SEC 2000).

My initial sample consists of firm-year observations in the countries used in the La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) study in which net income reported under U.S. GAAP is available in Worldscope.[17] This includes 2,081 firm year observations from 1994-2006. Net income reported under U.S. GAAP is only reported for American Depository Receipts (ADRs) trading on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or NASDAQ. U.S. foreign registrants listed on these major stock exchanges were required to report U.S. GAAP net income in their 20-F reconciliations filed with the Securities Exchange Commission (SEC). The analysis period ends in 2006 because for fiscal years ending after November 15, 2007, the SEC permits foreign private issuers to submit financial statements reported under IFRS without reconciliation to U.S. GAAP (SEC 2007).

From the initial sample of 2,081 firm-year observations, I delete firm-year observations in countries whose primary religion is "Other" (n=95). The "Other" category includes all other religions, including Taoism, atheism, indigenous beliefs, and local religions (among others).

[17] Financial market and financial statement information is obtained from DataStream and WorldScope, respectively. DataStream is from Thomson Financial and contains a variety of global data such as equity and equity indices, bond and commodities pricing, economic data, futures and options, and interest and exchange rates. WorldScope contains accounting data and is accessible via DataStream.

These religions are not included in this study due to limited variability of that religion across countries' primary religion and difficulties in drawing tolerance of ambiguity conclusions. This restriction eliminates observations in the countries of Hong Kong and South Korea. Lastly, to be consistent with prior literature, I delete observations for firms in financial services industry (n=259).[18] Table 1 Panel A presents my sample selection process and shows a final sample of 1,727 firm-year observations.

[18] Results and inferences are similar when firms in financial services industry are included in the sample (untabulated results).

Table 1 – Sample

Panel A: Sample Selection

Number of non-U.S. firm-year observations cross listed in the U.S. from 1994-2006 with net income reported under U.S. GAAP available on NYSE, ASE, or NASDAQ and with nation data available	2,081
Less: Observations in countries whose primary religion is "Other"	95
Less: Observations in financial industries	259
Final sample of firm-year observations	**1,727**

Panel B: Final Sample of firm-year observations by Year

Year	Frequency	Percentage
1994	63	3.65
1995	70	4.05
1996	84	4.86
1997	97	5.62
1998	109	6.31
1999	123	7.12
2000	137	7.93
2001	151	8.74
2002	173	10.02
2003	175	10.13
2004	179	10.36
2005	183	10.60
2006	183	10.60

Panel C: Country Level Data

	Percentage of Adherents by Religion									Sample	
Country	**Buddhism**	**Christianity**	**Hinduism**	**Islam**	**Judaism**	**Other**	**Primary Religion**	**Western Religion (*W_Religion)***	**Legal Origin**	**n**	**%**
Argentina		94			2	4	Christianity	1	Civil	32	1.85
Australia	2.1	63.8		1.7		32.4	Christianity	1	Common	35	2.03
Austria		78.3		4.2		17.5	Christianity	1	Civil	10	0.58
Belgium		75				25	Christianity	1	Civil	7	0.41
Brazil		89				11	Christianity	1	Civil	164	9.50
Chile		87.2				12.8	Christianity	1	Civil	87	5.04
Denmark		98		2			Christianity	1	Civil	19	1.10
Finland		83.6			1.1	15.3	Christianity	1	Civil	21	1.22
France		87		7.5	1	4.5	Christianity	1	Civil	128	7.41
Germany		68		3.7		28.3	Christianity	1	Civil	70	4.05
Greece		98		1.3		0.7	Christianity	1	Civil	14	0.81
India		2.3	80.5	13.4		3.8	Hinduism	0	Common	48	2.78
Ireland		92.2				7.8	Christianity	1	Common	58	3.36
Israel		2.1		16.8	75.5	5.6	Judaism	1	Common	33	1.91
Italy		90				10	Christianity	1	Civil	42	2.43
Japan	71.4	2				26.6	Buddhism	0	Civil	180	10.42
Mexico		82.8				17.2	Christianity	1	Civil	115	6.66
Netherlands		50		5.8		44.2	Christianity	1	Civil	118	6.83
New Zealand	1.3	52.8	1.6			44.3	Christianity	1	Common	13	0.75
Norway		90.1		1.8		8.1	Christianity	1	Civil	39	2.26
Peru		93.8				6.2	Christianity	1	Civil	11	0.64
Philippines		92.5		5		2.5	Christianity	1	Civil	13	0.75

Panel C: Country Level Data (continued)

Country	Percentage of Adherents by Religion						Primary Religion	Western Religion *(W_Religion)*	Legal Origin	Sample	
	Buddhism	Christianity	Hinduism	Islam	Judaism	Other				n	%
Portugal		86.7				13.3	Christianity	1	Civil	22	1.27
South Africa		79.7		1.5		18.8	Christianity	1	Common	42	2.43
Spain		94				6	Christianity	1	Civil	13	0.75
Sweden		87				13	Christianity	1	Civil	38	2.2
Switzerland		79.3		4.3		16.4	Christianity	1	Civil	41	2.37
Taiwan	93	4.5				2.5	Buddhism	0	Civil	44	2.55
Turkey				99.8		0.2	Islam	1	Civil	8	0.46
United Kingdom		71.6	1	2.7		24.7	Christianity	1	Common	262	15.17

Table 1 Panel A presents the sample selection process. The "Other" category includes all other religions, including Taoism, atheism, indigenous beliefs, and local religions (among others). These religions are not included in this study due to limited variability of that religion across countries' primary religion and difficulties in drawing tolerance of ambiguity conclusions. Observations in countries whose primary religion is "Other" includes observations in Hong Kong and South Korea. Sample distribution by year is presented in Panel B. Panel C presents the primary religion practiced, percentage of adherents for each religion practiced, whether the primary religion is a western religion, legal origin, and firm-year frequency and percent of sample for each country. Religious data are obtained from the Central Intelligence Agency's (CIA) World Factbook's 2008 census. The major religions examined in this study are Buddhism, Christianity, Hinduism, Islam, and Judaism. W_Religion is equal to one if the country's primary religion is a western religion (includes those countries whose primary religion is Christianity, Islam, or Judaism) and zero if the country's primary religion is an eastern religion (includes those countries whose primary religion is Buddhism or Hinduism).

Table 1 Panel B presents the final sample of observations by year. The increase in the number of observations in later years is due to the increase in cross listings in the U.S. in the late 1990s and early 2000s.[19] Table 1 Panel C reports the countries' percentage of adherences for each religion practiced within that country (obtained from 2008 CIA Factbook), primary religion practiced, whether the primary religion is a Western religion (*W_Religion* = 1) or Eastern religion (*W_Religion* = 0), legal origin, and frequency and percentage of the final sample.[20] The primary religion practiced is the largest represented religion based on the percentage of adherents for each religion. Panel C shows that although Christianity is the primary religion for a number of countries, variation in primary religion exists throughout the sample of firms.

Religious adherent data is obtained from the Central Intelligence Agency's (CIA) World Factbook, available online. The data reported in Panel C are from the 2008 Census. The CIA updates religious adherent data every four years. Because my sample period is from 1994-2006, I verified with previous years' versions of the CIA World Factbook that the primary religion for that country has not changed throughout the sample period.

To test hypothesis 1, based on accounting and return data availability, 305 firm-year observations are further removed from the final sample presented in Table 1 Panel A. This results in 1,422 firm-year observations with data necessary for the earnings test of conservatism. Table 2 presents descriptive statistics for variables used in equations (1) and (2) by *W_Religion*. To mitigate the influence of outliers and the concern of a small denominator effect, variables are

[19] Standard errors are clustered by year to control for the variation in number of foreign registrations each year.

[20] Legal origin is a common construct used in international accounting research to explain variation in accounting attributes across countries (for example, see Ball, Kothari, and Robin 2000; Bushman and Piotroski 2006). Legal origin will be examined in sensitivity tests.

winsorized at the 1st and 99th percentile.[21] Although returns and net income tend to be higher for firms located in Western religious countries, Table 2 shows a reasonable distribution within both sub-samples (*W_Religion = 1* and *W_Religion = 0*).

Table 2 – Descriptive Statistics – Earnings Attributes Tests

Variable	St. Dev.	Mean	Lower Quartile	Median	Upper Quartile
W_Religion = 1 (n=1,198)					
Ret	54.6485	23.2880	-10.7370	16.7567	44.6958
NI	13.8758	5.9220	1.9236	5.0585	9.1738
Neg		33.6394			
W_Religion = 0 (n=224)					
Ret	45.3768	15.0702	-12.3619	9.5483	34.3342
NI	6.2449	3.9487	1.8704	3.5099	5.9002
Neg		40.1786			

The sample in table 2 consists of 1,422 firm year observations. This sample differs from the sample presented in Table 1 due to the deletion of 305 firm-year observations that lack the data necessary for the earnings attributes tests. Table 2 presents the sample descriptives by whether the primary religion of the country is a western religion (*W_Religion* = 1) or eastern religion (*W_Religion* = 0). To mitigate the influence of outliers, variables are winsorized at the 1st and 99th percentile.
Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

[21] In untabulated sensitivity tests, observations with r-student residuals greater than three are also eliminated. Results are qualitatively similar.

4.3.2 Results – Primary Findings

Table 3 Panel A presents the regression results for equation 2 using pooled cross sectional firm-level data. To test hypothesis 1, I examine the sign and significance of β_6 from equation 2. Consistent with hypothesis 1, β_6 is positive and significant in Panel A with a coefficient (p-value) of 0.0905 (0.012). This indicates that the *incremental* recognition of bad news relative to good news in current period earnings is higher for firms domiciled in Western religious countries relative to firms domiciled in Eastern religious countries.

Table 3 - Results

Panel A: Pooled Analysis

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

		Coefficient	**p-value**
β_0	*Intercept*	0.0408	0.001
β_1	*Neg*	-0.0093	0.475
β_2	*Ret*	0.0044	0.810
β_3	*Ret*Neg*	0.0649	0.044
β_4	*W_Religion *Neg*	0.0131	0.474
β_5	*W_Religion *Ret*	0.0146	0.419
β_6	***W_Religion *Ret*Neg***	**0.0905**	**0.012**
Country Fixed Effects		Included	
$\beta_2+\beta_3$		0.0693	
$\beta_2+\beta_3+\beta_5+\beta_6$		0.1744	
Difference		0.1051	(p-value <= 0.001)
Adjusted R^2		14.71%	
n		1,422	
W_Religion = 1		1,198	
W_Religion = 0		224	

Table 3 (*continued*)

Panel B: Pooled Analysis by Western Religion

$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon$

		W_Religion = 1		*W_Religion* = 0	
		Coefficient	**p-value**	**Coefficient**	**p-value**
β_0	*Intercept*	0.0408	0.001	-0.0485	0.004
β_1	*Neg*	0.0038	0.816	-0.0093	0.480
β_2	*Ret*	0.0191	0.231	0.0044	0.811
β_3	***Ret*Neg***	**0.1554**	**0.000**	**0.0649**	**0.046**
$\beta_2 + \beta_3$		0.1745		0.0693	
Difference in β_3				0.0905	0.012
Difference in $\beta_2 + \beta_3$				0.1052	0.000
Adjusted R^2		14.90%		3.48%	
n		1,198		224	
Significance tests of R^2 differences (Cramer 1987)				<0.0001	

The sample used in table 3 consists of 1,422 firm year observations. This sample differs from the sample presented in Table 1 due to the deletion of 305 firm-year observations with data necessary for the conservatism tests. Panels A and B present regression results for pooled cross sectional regressions and for sub-samples pooled by whether the primary religion of the country is a western religion (*W_Religion* = 1) or eastern religion (*W_Religion* = 0), respectively. Country fixed effects are included in the regressions reported in panels A and B but coefficients and p-values for country variables are not reported. In panels A and B, coefficients and p-values are presented for all other variables. Standard errors are clustered by firm and by year. Bold texts are variables of interest for tests of conservatism. $\beta_2 + \beta_3$ are $\beta_2 + \beta_3 + \beta_5 + \beta_6$ are for tests of timeliness and will be discussed in Section 5.1.
Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

Table 3 Panel B presents the regression results for equation 1 by *W_Religion*. An alternative way to examine whether accounting income is more conservative for firms with *W_Religion* = 1 is to split the sample into two sub-samples based on *W_Religion* and compare the coefficient of β_3 from equation 1 across the two sub-samples. Table 3 Panel B presents these regression results. The coefficient (p-value) on β_3 is 0.1554 (0.000) for observations categorized as *W_Religion* =1 and 0.0649 (0.046) for observations categorized as *W_Religion* = 0. The coefficient is significantly larger and more significant for the sub-sample of firm-year observations categorized as *W_Religion* = 1. These results support hypothesis 1 as the incremental recognition of bad news in current period earnings relative to good news is greater for firm-year observations domiciled in Western religious countries than those domiciled in Eastern religious countries.

Overall, the results presented in Table 3, Panels A and B support hypothesis 1. Firms domiciled in Western religious countries have more conservative earnings than firms domiciled in Eastern religious countries. This is consistent with firms domiciled in Western religious countries recognizing losses in the financial statements sooner, in order to reduce the ambiguity surrounding the reporting on uncertain future events, than firms domiciled in Eastern religious countries. A country's primary religion is an important variable when considering countries' earnings attribute of conservatism.

4.3.2 Results – Sensitivity Tests

Alternative Samples

I conduct a series of sensitivity analyses on alternative samples to test the robustness of the results reported above for equation 2. Table 4 Panels A and B presents these results. The first sensitivity test uses a reduced sample that includes only observations for firms located in

countries with a minimum of 20 firm-year observations. This is done to avoid having a small number of firms representing a country. The second sensitivity test further reduces the sample used in the first sensitivity test by removing observations for firms located in the United Kingdom. The United Kingdom is the largest represented country in the sample, and to ensure that the results are not driven by observations from the United Kingdom, I remove them from the sample in the second sensitivity test. Results using these two sub-samples are reported in columns 1 and 2 of Table 4 Panel A for the pooled sample and columns 1 and 2 of Table 4 Panel B for the pooled sample by *W_Religion*.

Table 4 – Sensitivity Tests

Panel A: Alternative Samples

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

		(1) Reduced Sample		(2) Reduced Sample, Excluding United Kingdom		(3) Matched Sample	
		Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
β_0	*Intercept*	0.0485	0.102	0.0422	0.016	0.0440	0.000
β_1	*Neg*	-0.0093	0.474	-0.0093	0.474	-0.0105	0.463
β_2	*Ret*	0.0044	0.809	0.0044	0.809	0.0028	0.883
β_3	*Ret*Neg*	0.0649	0.043	0.0649	0.044	0.0648	0.055
β_4	*W_Religion*Neg*	0.0120	0.544	0.0146	0.509	0.0081	0.711
β_5	*W_Religion*Ret*	0.0093	0.636	0.0110	0.585	-0.0248	0.464
β_6	***W_Religion*Ret*Neg***	**0.1015**	**0.006**	**0.1070**	**0.001**	**0.0996**	**0.098**
Country Fixed Effects		Included		Included		Included	
$\beta_2+\beta_3$		0.0693		0.0693		0.0676	
$\beta_2+\beta_3+\beta_5+\beta_6$		0.1801		0.1873		0.1424	
Difference		0.1108	0.000	0.1180	0.000	0.0748	0.054
Adjusted R^2		16.63%		14.92%		11.64%	
n		1,295		1,090		438	
W_Religion = 1		1,071		866		219	
W_Religion = 0		224		224		219	

Table 4 (*continued*)

Panel B: Alternative Samples by Western Religion

$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon$

		(1) Reduced Sample		(2) Reduced Sample, Excluding United Kingdom		(3) Matched Sample	
		W_Religion = 1	*W_Religion* = 0	*W_Religion* = 1	*W_Religion* = 0	*W_Religion* = 1	*W_Religion* = 0
		Coefficient (p-value)	**Coefficient (p-value)**	**Coefficient (p-value)**	**Coefficient (p-value)**	**Coefficient (p-value)**	**Coefficient (p-value)**
β_0	*Intercept*	0.0602	0.0485	0.0594	0.0485	0.0247	0.044
		(0.007)	-0.004	(0.008)	(0.004)	(0.000)	(0.000)
β_1	*Neg*	0.0027	-0.0093	0.0053	-0.0093	-0.0025	-0.0105
		(0.877)	-0.48	(0.787)	(0.480)	(0.843)	(0.458)
β_2	*Ret*	0.0138	0.0044	0.0155	0.0044	-0.022	0.0028
		(0.378)	-0.811	(0.352)	(0.811)	(0.182)	(0.882)
β_3	***Ret*Neg***	**0.1664**	**0.0649**	**0.1719**	**0.0649**	**0.1644**	**0.0648**
		(0.000)	**(0.046)**	**(0.000)**	**(0.046)**	**(0.005)**	**(0.052)**
$\beta_2 + \beta_3$		0.1802	0.0693	0.1874	0.0693	0.1424	0.0676
Difference in β_3 (p-value)		0.1015	(0.006)	0.1070	(0.001)	0.0996	(0.098)
Difference in $\beta_2 + \beta_3$ (p-value)		0.1109	(0.000)	0.1181	(0.000)	0.0748	(0.054)
Adjusted R^2		15.37%	3.48%	15.07%	3.48%	13.61%	3.38%
n		1,071	224	866	224	219	219
Significance tests of R^2 differences (Cramer 1987)			<0.0001		<0.0001		0.0013

Table 4 (*Continued*)

Table 4 presents regression results for sensitivity tests of conservatism and timeliness using alternative samples. Panel A presents regression results using the pooled sample and Panel B presents regression results using the pooled sample by *W_Religion*. Alternative samples used in Panels A and B include (1) a reduced sample requiring 20 firm year observations for each country, (2) a reduced sample requiring 20 firm-year observations for each country and excluding observations of firms domiciled in the United Kingdom, and (3) a matched sample matched by year, one-digit SIC code, and firm size (market value of equity). In all panels, coefficients and p-values are presented. Country fixed effects are included in the regressions reported in all panels but coefficients and p-values for country variables are not reported. Standard errors are clustered by firm and by year. Bold texts are variables of interest for tests of conservatism. $\beta_2 + \beta_3$ are $\beta_2 + \beta_3 + \beta_5 + \beta_6$ are for tests of timeliness and will be discussed in Section 5.1.

Variable definitions are as follows:

Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

In Table 4 Panel A, β_6 continues to be positive and significant in column 1 (2) with a coefficient equal to 0.1015 (0.1070) and a p-value equal to 0.006 (0.001). In Panel B, the coefficient (p-value) in column 1 on β_3 is 0.1664 (0.000) for observations categorized as *W_Religion* =1 and 0.0649 (0.046) for observations categorized as *W_Religion* = 0. The coefficient (p-value) in column 2 on β_3 is 0.1719 (0.000) for observations categorized as *W_Religion* =1 and 0.0649 (0.046) for observations categorized as *W_Religion* = 0. Results of the first and second sensitivity tests support hypothesis 1 and are consistent with the main analysis.[22]

To ensure that results are not driven by the small sample size of observations in the *W_Religion* = 0 sub-sample, in the third sensitivity test, I perform the analysis on a matched sample by year, industry (one-digit SIC code), and firm size (proxied by market value of equity). Matching by these characteristics also allows me to control for firm size, year, and industry. For example, Warfield and Wild (1992) show that recognition lag (timeliness) varies by industry. Matching by industry allows me to control for variation of observations across industries. This results in a final sample of 438 firm-year observations in which 219 observations are from countries where *W_Religion* = 1 and 219 observations are from countries where *W_Religion* = 0.[23] Consistent with previously reported results, in Table 4 Panel A, β_6 continues to be positive and marginally significant in column 4 with a coefficient equal to 0.0996 and a p-value equal to 0.098 (two-tailed). In Panel B, the coefficient (p-value) on β_3 is 0.1644 (0.005) for observations

[22] Because Japan is the largest represented country in the Eastern religious sub-sample, a similar sensitivity test was performed excluding firms domiciled in Japan from the sample of firms domiciled in Eastern religious countries (*W_Religion* = 0). In untabulated tests, the coefficient and two-sided p-value on β_6 was 0.0759 and 0.088, respectively (n=1,265). These results are qualitatively similar from the main results and support hypothesis 1.

[23] The mean (median) log market value of equity for *Religion* =1 observations is 7.1415 (7.1609) and for *Religion* = 0 observations is 7.0813 (7.0580). The decrease in the number of *Religion* = 0 observations from 224 in previous tests to 219 is due to missing market capitalization data needed for determination of the matched sample by size.

categorized as *W_Religion* =1 and 0.0648 (0.052) for observations categorized as *W_Religion* = 0. Results of the fourth sensitivity test also support hypothesis 1.

Legal Origin

Legal origin is a construct commonly used in the literature to explain the variation in accounting quality across countries (Ball et al. 2000; Ball et al. 2003; Leuz, Nanda, and Wysocki 2003). In the next sensitivity test using the pooled sample (n=1,422), I add an indicator variable, *Legal* to equation 2 and interact it with all other variables. The adjusted regression equation is shown below in equation 3. *Legal* is equal to one if the legal origin of the country in which the firm is domiciled is considered common law and zero if it is considered civil law (La Porta et al. 1998). All other variable definitions are as defined in equation 2.

$$\begin{aligned} NI = {} & \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret \\ & + \beta_6 W\_Religion*Ret*Neg + \beta_7 Legal*Neg + \beta_8 Legal*Ret \\ & + \beta_9 Legal*Ret*Neg + \beta_{10} W\_Religion*Legal*Ret*Neg + \gamma_n Country\ dummies + \varepsilon \end{aligned} \quad (3)$$

Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise;
Legal = indicator variable equal to one if the country's legal origin is common law, zero if the country's legal origin is civil law.

Common law countries are characterized as having 'shareholder' corporate governance models and civil law countries are characterized as having 'stakeholder' corporate governance

models.[24] In addition, civil law "directly links accounting income to current payouts to employees, managers, shareholders, and governments" (Ball et al. 2000). Prior literature shows that firms domiciled in common law countries exhibit more conservative earnings than firms domiciled in civil law countries.

Regression results using equation 3 are reported in Table 5. Results in Table 5 do not support prior literature (Ball et al. 2000, Ball et al. 2003) as β_9 is negative (coefficient = -0.0462) and insignificant (p-value = 0.578). After controlling for legal origin and country fixed effects, β_6 continues to be positive (coefficient = 0.1023) and significant (p-value = 0.005). Results reported in Table 5 are consistent with results reported in the main analysis in Table 3 Panel A.

[24] Ball et al. 2000 state that in code-law countries "politicization typically leads to a 'stakeholder' governance model, involving agents for major groups contracting with the firm…because these groups' agents are represented in corporate governance, insider communication solves the information asymmetry between managers and stakeholders." Conversely, "under the 'shareholder' governance model that is typical of common-law countries, shareholders alone elect members of the governing board, payouts are less closely linked to current-period accounting income, and public disclosure is a more likely solution for the information asymmetry problem" (Ball et al. 2000).

Table 5 – Legal Origin

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \beta_7 Legal * Neg + \beta_8 Legal *Ret + \beta_9 Legal *Ret* Neg + \beta_{10} W\_Religion* Legal *Ret* Neg + \gamma_n Country\ dummies + \varepsilon$$

		Coefficient	p-value
β_0	*Intercept*	0.0469	0.000
β_1	*Neg*	-0.0066	0.629
β_2	*Ret*	0.0140	0.568
β_3	*Ret*Neg*	0.0619	0.094
β_4	*W_Religion*Neg*	0.0128	0.514
β_5	*W_Religion*Ret*	0.0116	0.503
β_6	***W_Religion*Ret*Neg***	**0.1023**	**0.005**
β_7	*Legal *Neg*	-0.0128	0.389
β_8	*Legal *Ret*	-0.0316	0.284
β_9	***Legal *Ret*Neg***	**-0.0462**	**0.578**
β_{10}	*W_Religion* Legal*Ret*Neg*	0.0100	0.917
Adjusted R^2		14.76%	
n		1,422	
W_Religion = 1		1,198	
W_Religion = 0		224	
Legal = 1		392	
Legal = 0		1,030	

Table 5 presents regression results for equation 3, where *Legal* and its interaction with other variables are added to equation 2. In all panels, coefficients and p-values are presented. Country fixed effects are included in the regressions reported in all panels but coefficients and p-values for country variables are not reported. Standard errors are clustered by firm and by year.
Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise;
Legal = indicator variable equal to one if the country's legal origin is common law, zero if the country's legal origin is civil law.

Hofstede's Cultural Dimensions

Two additional sensitivity tests are performed to reduce the concern that results are driven by other cultural dimensions that distinguish Eastern religious countries from Western religious countries, such as collectivist versus individualistic cultures. In the first test, I reduce the sample used in Table 2 to include only observations located in countries considered to be more "collectivist" cultures.[25]

Hofstede (1980) defines collectivism as "preference for tightly knit social framework in which individuals can expect their relatives, clan, or other-in-group to look after them in exchange for unquestioning loyalty." Hofstede (1980) defines individualism as "preference for loosely knit social framework in society wherein individuals are supposed to take care of themselves and their immediate families only." Individualism and collectivism relate to people's self-concept of "I" or "We," respectively. Hofstede (1980) developed individualistic scores for each country, such that a higher score represented more individualistic countries and a lower score represented more collectivist countries. Using Hofstede's individualistic scores, I remove observations in countries with individualistic scores higher than the highest Eastern religious countries' individualistic scores. The three Eastern religious countries are India, Japan and Taiwan with individualistic scores of 48, 46, and 17, respectively. India has the highest individualistic score. Therefore, to test the prediction on a sample of firms domiciled in countries considered to be more collectivist, I remove any observation from a country with an

[25] Hofstede (2001) considers polytheist religions to be more collectivist (and therefore have a low individualism score). Per Hofstede (2001), "Polytheist religions are professed in collectivist societies; their gods are constrained by family relations, friendships, and enmities, just as humans are" (250). However, as Gray (1988) suggests, this should result in higher ranking in terms of conservatism as "emphasis on individual achievement and performance is likely to foster a less conservative approach to measurement." Therefore, if the influence of collectivism/individualism outweighed the influence of low/high tolerance of ambiguity due to religion, then I would expect results opposite of the predictions of hypothesis 1.

individualistic score higher than 48. This results in 609 observations, 385 of which are from countries with *W_Religion* = 1 and 224 of which are from countries with *W_Religion* = 0. In Table 6 Panel A, β_6 continues to be positive and significant with a coefficient equal to 0.1825 and a p-value equal to 0.000. These results support hypothesis 1.

Table 6 – Cultural Dimensions

Panel A: Collectivist Countries

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

		Coefficient	**p-value**
β_0	*Intercept*	0.0542	0.206
β_1	*Neg*	-0.0093	0.477
β_2	*Ret*	0.0044	0.810
β_3	*Ret*Neg*	0.0649	0.045
β_4	*W_Religion*Neg*	0.0351	0.346
β_5	*W_Religion*Ret*	0.0502	0.147
β_6	***W_Religion*Ret*Neg***	**0.1825**	**0.000**
Country Fixed Effects		Included	
Adjusted R^2		16.08%	
n		609	
W_Religion = 1		385	
W_Religion = 0		224	

Table 6 (*Continued*)

Panel B: Hofstede Cultural Dimensions

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \beta_7 PDI* Neg + \beta_8 PDI*Ret + \beta_9 PDI*Ret* Neg + \beta_{10} IDV* Neg + \beta_{11} IDV*Ret + \beta_{12} IDV*Ret* Neg + \beta_{13} MAS* Neg + \beta_{14} MAS*Ret + \beta_{15} MAS*Ret* Neg + \beta_{16} UAI* Neg + \beta_{17} UAI*Ret + \beta_{18} UAI*Ret* Neg + \gamma_n Country\ dummies + \varepsilon$$

		Coefficient	**p-value**
β_0	*Intercept*	0.0565	0.000
β_1	*Neg*	-0.0269	0.770
β_2	*Ret*	0.0708	0.102
β_3	*Ret*Neg*	-0.0708	0.719
β_4	*W_Religion*Neg*	0.0211	0.524
β_5	*W_Religion*Ret*	0.0435	0.121
β_6	***W_Religion*Ret*Neg***	0.1466	0.001
β_7	*PDI*Neg*	0.0002	0.868
β_8	*PDI*Ret*	-0.0006	0.447
β_9	*PDI*Ret*Neg*	0.0028	0.386
β_{10}	*IDV*Neg*	-0.0002	0.863
β_{11}	*IDV*Ret*	-0.0015	0.038
β_{12}	*IDV*Ret*Neg*	-0.0006	0.793
β_{13}	*MAS*Neg*	-0.0003	0.591
β_{14}	*MAS*Ret*	-0.0001	0.808
β_{15}	*MAS*Ret*Neg*	0.0006	0.669
β_{16}	*UAI*Neg*	0.0004	0.597
β_{17}	*UAI*Ret*	0.0004	0.583
β_{18}	*UAI*Ret*Neg*	-0.0007	0.778
Country Fixed Effects		Included	
Adjusted R^2		15.68%	
N		1,422	
W_Religion = 1		1,198	
W_Religion = 0		224	

Table 6 (*Continued*)

Table 6 presents regression results for sensitivity tests of conservatism including various cultural dimensions in the regression analysis. Panel A presents regression results using an alternative sample of observations of firms domiciled in countries with an individualistic score (Hofstede 1980) lower than the highest individualistic score for countries with *W_Religion* = 0 (India). Panel B presents regression results for equation 4, where Hofstede's country-level cultural dimensions and their interaction with other variables are added to equation 2. In both panels, coefficients and p-values are presented. Country fixed effects are included in the regressions reported in all panels but coefficients and p-values for country variables are not reported. Standard errors are clustered by firm and by year.
Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise;
PDI = Hofstede's country-level score for Power Distance;
IDV = Hofstede's country-level score for Individualism;
MAS = Hofstede's country-level score for Masculinity;
UAI = Hofstede's country-level score for Uncertainty Avoidance.

An alternative way to address whether the results are driven by other cultural dimensions that distinguish Eastern religious countries from Western religious countries is to add Hofstede's other cultural dimensions and their interactions with other variables to equation 2. The adjusted regression equation is shown below in equation 4.[26]

$$\begin{aligned} NI = {} & \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret \\ & + \beta_6 W\_Religion*Ret*Neg + \beta_7 PDI* Neg + \beta_8 PDI*Ret + \beta_9 PDI*Ret* Neg \\ & + \beta_{10} IDV* Neg + \beta_{11} IDV*Ret + \beta_{12} IDV*Ret* Neg + \beta_{13} MAS* Neg \\ & + \beta_{14} MAS*Ret + \beta_{15} MAS*Ret* Neg + \beta_{16} UAI* Neg + \beta_{17} UAI*Ret \\ & + \beta_{18} UAI*Ret* Neg + \gamma_n Country\ dummies + \varepsilon \end{aligned} \quad (4)$$

where:

Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise;
PDI = Hofstede's country-level score for Power Distance;
IDV = Hofstede's country-level score for Individualism;
MAS = Hofstede's country-level score for Masculinity;
UAI = Hofstede's country-level score for Uncertainty Avoidance.

PDI is Hofstede's (1980) country-level score for Power Distance, where Power Distance is defined as "the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally;" countries with large power distance scores accept hierarchical order. *IDV* is Hofstede's (1980) country-level score for Individualism

[26] Similar to *W_Religion, PDI, IDV, MAS* and *UAI* are time-invariant variables. Therefore, the main effects are excluded from the model when country fixed effects are included in the model because they are perfectly correlated with the country fixed effects. According to Wooldridge (2009), "Although time-constant variables cannot be included by themselves in a fixed effects model, they can be interacted with variables that change over time and, in particular, with year dummy variables."

(defined above); countries with higher scores are considered to have more individualistic cultures and countries with lower scores are considered to have more collectivist cultures. *MAS* is Hofstede's (1980) country-level score for Masculinity, where higher Masculinity scores refers to cultures with a "preference in society for achievement, heroism, assertiveness, and material success." *UAI* is Hofstede's (1980) country-level score for Uncertainty Avoidance, where Uncertainty Avoidance is the "extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations;" higher Uncertainty Avoidance scores are associated with societies less comfortable with uncertainty and ambiguity. [27] All other variable definitions are as defined in equation 2.

Table 6 Panel B presents regression results for equation 4. Even after Hofstede's country-level cultural dimensions are included in the regression analysis, β_6 continues to be positive and significant with a coefficient equal to 0.1466 and a p-value equal to 0.001, consistent with hypothesis 1. None of Hofstede's cultural proxies appear to be significant in explaining variation in conservatism across the sample.

Percentage of Adherents

Rather than using an indicator variable, *W_Religion,* equal to one if the country's primary religion is a western religion or zero otherwise, an alternative way to measure the variable of interest is to use the percentage of religious adherents in the country that the firm is headquartered in of Western Religious (Christianity, Judaism, Islam), Eastern Religious (Buddhism, Hinduism), or of Other Religious (or Non-Religious) faiths (all other religions,

[27] The Pearson correlations (p-values) of *W_Religion* with *PDI, IDV, MAS,* and *UAI* are -0.1791 (<0.0001), 0.3278 (<0.0001), -0. 5003 (<0.0001), and -0.2943 (<0.0001), respectively.

including Taoism, atheism, indigenous beliefs, local religions, etc.).[28] This results in using either equation 5 or equation 6 shown below:

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 \%W\_Religion + \beta_5 \%W\_Religion*Neg + \beta_6 \%W\_Religion*Ret + \beta_7 \%W\_Religion*Ret*Neg + \beta_8 \%Other + \beta_9 \%Other*Neg + \beta_{10} \%Other*Ret + \beta_{11} \%Other*Ret*Neg + \gamma_n Country\ dummies + \varepsilon \quad (5)$$

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 \%E\_Religion + \beta_5 \%E\_Religion*Neg + \beta_6 \%E\_Religion*Ret + \beta_7 \%E\_Religion*Ret*Neg + \beta_8 \%Other + \beta_9 \%Other*Neg + \beta_{10} \%Other*Ret + \beta_{11} \%Other*Ret*Neg + \gamma_n Country\ dummies + \varepsilon \quad (6)$$

where:

Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
%W_Religion = percentage of country's religious adherents that identify as adherents of Christianity, Judaism or Islam;
%E_Religion = percentage of country's religious adherents that identify as adherents of Buddhism or Hinduism;
%Other = percentage of country's religious adherents that identify as adherents of all other religions, including Taoism, atheism, indigenous beliefs, local religions, among others.

In equation 5, the main variable of interest is *%W_Religion*Ret*Neg,* which hypothesis 1 predicts will have a positive and significant coefficient. In equation 6, the main variable of interest is *%E_Religion*Ret*Neg,* which hypothesis 1 predicts will have a negative and significant coefficient. Consistent with predictions, Table 7 column (1) shows that the coefficient (p-value) on *%W_Religion*Ret*Neg* is 0.0012 (0.076) suggesting that firms in countries with a higher percentage of adherents belonging to a Western Religion report more conservative earnings than firms in countries with a higher percentage of adherents belonging to an Eastern

[28] The Central Intelligence Agency's (CIA) World Factbook, available online, updates religious adherent data every four years. Therefore, for years in which the CIA does not update the World Factbook, I estimate the percentage of adherents of each world religion using linear interpolation.

religion. Similarly, Table 7 column (2) shows that the coefficient (p-value) on *%E_Religion*Ret*Neg* is -0.0012 (0.016), suggesting that firms in countries with a higher percentage of adherents belonging to an Eastern Religion report less conservative earnings than firms in countries with a higher percentage of adherents belonging to a Western Religion. Interestingly enough, results for both equations 5 and 6 show an insignificant coefficient on *%Other*Ret*Neg,* of 0.0001 in column (1) and -0.0001 in column (2), respectively. This suggests no statistically significant difference in conservatism between firms domiciled in countries with a higher percentage of Eastern Religious adherents compared to firms domiciled in countries with a higher percentage of Other Religious (or Non-Religious) adherents and between firms domiciled in countries with a higher percentage of Western Religious adherents compared to firms domiciled in countries with a higher percentage of Other Religious (or Non-Religious) adherents.

Table 7 – Percentage of Adherents

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 \%W\_Religion + \beta_5 \%W\_Religion*Neg + \beta_6 \%W\_Religion*Ret + \beta_7 \%W\_Religion*Ret*Neg + \beta_8 \%Other + \beta_9 \%Other*Neg + \beta_{10} \%Other*Ret + \beta_{11} \%Other*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

OR

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 \%E\_Religion + \beta_5 \%E\_Religion*Neg + \beta_6 \%E\_Religion*Ret + \beta_7 \%E\_Religion*Ret*Neg + \beta_8 \%Other + \beta_9 \%Other*Neg + \beta_{10} \%Other*Ret + \beta_{11} \%Other*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

		(1)		(2)	
		Coefficient	**p-value**	**Coefficient**	**p-value**
β_0	*Intercept*	0.0155	0.677	0.3199	0.403
β_1	*Neg*	-0.0013	0.952	0.0161	0.244
β_2	*Ret*	0.0139	0.514	0.0370	0.016
β_3	*Ret*Neg*	0.0530	0.124	0.1693	0.000
β_4	*%W_Religion*	0.0030	0.463		
β_5	*%W_Religion*Neg*	0.0002	0.569		
β_6	*%W_Religion*Ret*	0.0002	0.306		
β_7	***%W_Religion*Ret*Neg***	**0.0012**	**0.076**		
β_8	*%E_Religion*			-0.0030	0.463
β_9	*%E_Religion*Neg*			-0.0002	0.515
β_{10}	*%E_Religion*Ret*			-0.0002	0.272
β_{11}	***%E_Religion*Ret*Neg***			**-0.0012**	**0.016**
β_{12}	*%Other*	0.0054	0.129	0.0023	0.116
β_{13}	*%Other*Neg*	-0.0006	0.642	-0.0008	0.501
β_{15}	*%Other*Ret*	-0.0010	0.278	-0.0012	0.148
β_{16}	*%Other*Ret*Neg*	0.0001	0.966	-0.0010	0.688
Country Fixed Effects		Included		Included	
Adjusted R^2		14.82%		14.82%	
N		1,422		1,422	

Table 7 presents regression results for sensitivity tests using alternative measurements of the main variable of interest, *W_Religion*, using equation 5 in column (1) and equation 6 in column (2). Country fixed effects are included in the regressions reported but coefficients and p-values for country variables are not reported. Standard errors are clustered by firm and by year.

Variable definitions are as follows:

Table 7 (*continued)*

Ret = annual buy-and-hold security return inclusive of dividends ending three months after the fiscal year-end;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
%W_Religion = percentage of country's religious adherents that identify as adherents of Christianity, Judaism or Islam;
%E_Religion = percentage of country's religious adherents that identify as adherents of Buddhism or Hinduism;
%Other = percentage of country's religious adherents that identify as adherents of all other religions, including Taoism, atheism, indigenous beliefs, local religions, among others.

4.3.3 Summary

In summary, in section 4.3, I test hypothesis one using a sample of non-U.S. firms cross-listed on a U.S. stock exchange. My main analyses show that after controlling for country-fixed effects and clustering by firm and year, firms domiciled in Western religious countries report more conservative earnings under U.S. GAAP than firms domiciled in Eastern religious countries. Sensitivity analyses show that results still hold after using reduced samples, controlling for legal origin, controlling for various other cultural dimensions, and using percentage of adherents rather than an indicator variable for the primary religion as the main variable of interest. In untabulated results, I include all controls described above in the same regression and results remain consistent with hypothesis 1 (coefficient = 0.1469 and p-value = 0.000 on *W_Religion*Ret*Neg*).[29]

[29] Prior literature suggests conservatism varies with size, market-to-book, and leverage (LaFond and Watts 2008, Khan and Watts 2009). In untabulated results, I also add these variables and their interactions into this regression. However, because the SEC only required firms to report net income and stockholders' equity under U.S. GAAP, only 1,258 firm-year observations of the 1,422 firm-year observations remain in the sample as these firms voluntarily report total assets in U.S. GAAP, which is needed in the calculation of some of the variables. Using the reduced sample of 1,258 firm-year observations, results remain consistent with hypothesis one as the coefficient and p-value on *W_Religion*Ret*Neg* is 0.1329 and 0.073, respectively.

4.4 Large Sample Analysis

In this section, I test hypothesis 1 using a broader sample of U.S. and non-U.S. firms listed on exchanges around the world. The advantage of using this larger sample is that it allows for a larger number of countries that subscribe to Eastern religions. The disadvantage of using this larger sample relative to the sample of U.S. foreign registrants used in section 4.3 is that firms used in this analysis are reporting net income using various accounting standards. Therefore, it is difficult to determine whether the results are driven by the accounting standards themselves or the implementation of the accounting standards. Overall, results using this sample of firms are consistent with results reported in section 4.3.

4.4.1 Sample and Descriptive Statistics

The initial sample consists of non-financial firms with data necessary to test my hypothesis. They are located in the countries used in the La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) study. This includes 156,785 firm-year observations across 49 countries from Europe, North America, South America, Africa, Asia, and Australia.[30, 31]

I first delete countries whose primary religion is "Other" (n=26,552). The "Other" category includes all other religions, including Taoism, atheism, indigenous beliefs, and local religions (among others).[32] This is due to limited variability of that religion across countries'

[30] The tests that follow use firm-level data rather than aggregate country level measures. As Freedman (1999) demonstrates, different and potentially incorrect conclusions due to confounding and aggregation bias from aggregate data can result.

[31] Observations in financial industries (SIC one-digit = 6) are deleted because the regulation and fundamental financial nature of their operations is different from firms in other industries.

[32] Similar to religious data from section 4.3, religious adherent data is obtained from the Central Intelligence Agency's (CIA) 2008 World Factbook available online. Because this sample period is from 2002-2009, I verified with other versions of the CIA World Factbook that the primary religion for that country has not changed throughout the sample period.

primary religion, and hypotheses relating to these countries tolerance of ambiguity are not made for these countries. This restriction eliminates the countries of Hong Kong and South Korea. To mitigate the influence of outliers, observations in the 1st and 99th percentile for the variables used in the regression (*Ret* and *NI*) are deleted from the sample (n = 4,874). Lastly, consistent with prior literature, I require data availability for a minimum of one thousand non-financial publicly traded firms for each country in my sample (Ball et al. 2000). [33] Table 8 presents my sample selection process (Panel A) and the final sample of firm year observations by year (Panel B).

[33] Countries/years originally included in the La Porta et al. 1998 study that are deleted due to this restriction include all firm-year observations for Argentina, Austria, Belgium, Chile, Colombia, Denmark, Egypt, Finland, Ireland, Kenya, Mexico, New Zealand, Norway, Pakistan, Peru, Philippines, Portugal, Spain, Sri Lanka, Venezuela, and Zimbabwe. Results are qualitatively similar when I remove this restriction of a minimum of 1,000 observations per country-year. Ecuador, Nigeria, and Uruguay are not included in the initial sample of 156,785 due to missing country identifier information in Datastream and WorldScope (isin).

Table 8 - Sample

Panel A: Sample Selection

Number of firm-year observations in Datastream and WorldScope	156,785
Less: Observations in countries whose primary religion is "Other"	26,552
Less: Observations in the 1st and 99th percentile for variables of interest	4,874
Less: Observations in countries missing 1,000 firm observations	11,611
Final sample of firm-year observations	**113,748**

Panel B: Final Sample of Firm-year observations by Year

Year	Frequency	Percentage
2002	12,733	11.19
2003	13,017	11.44
2004	13,377	11.76
2005	14,170	12.46
2006	14,847	13.05
2007	15,577	13.69
2008	15,418	13.55
2009	14,609	12.84

Table 8 Panel A presents the sample selection process. The "Other" category includes all other religions, including Taoism, atheism, indigenous beliefs, and local religions (among others). These religions are not included in this study due to limited variability of that religion across countries' primary religion and difficulties in drawing tolerance of ambiguity conclusions. Observations in countries whose primary religion is "Other" includes observations in Hong Kong and South Korea. Consistent with Ball, Kothari, and Robin (2000), observations in the 1st and 99th percentile for variables of interest are deleted. I also delete observations in country years missing 1,000 firm observations. This is consistent with Ball, Kothari, and Robin (2000) and includes firm observations in Argentina, Austria, Belgium, Chile, Colombia, Denmark, Egypt, Finland, Ireland, Kenya, Mexico, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Portugal, Spain, Sri Lanka, Venezuela and Zimbabwe. Ecuador, Nigeria, and Uruguay are not included in the initial sample of 156,785 due to missing country identifier information in Datastream and WorldScope (isin). Sample distribution by year is presented in Panel B.

Table 9 Panel A presents the sample distribution by country and reports the countries' percentage of adherents for each religion practiced within that country (obtained from 2008 CIA Factbook), primary religion practiced, whether the primary religion is a Western (*W_Religion = 1*) or Eastern (*W_Religion = 0*) Religion, and legal origin. Panel A also shows the number and percentage of firm-year observations by country. Panel A shows varied distributions across countries. The countries with the largest representation include Australia (7.28%), Canada (6.37%), Japan (22.87%), Taiwan (6.83%), the United Kingdom (8.20%), and the United States (14.72%). This is consistent with prior literature (Ball, Kothari, and Robin 2000). Panel B presents descriptive statistics for variables used in equation 1 by country separated into Western and Eastern Religious countries.[34]

[34] It is noted that for Australia, Canada, Germany, Israel, Italy, Sweden, and the United Kingdom, the mean net income is negative while the mean return is positive and for Canada the median net income is negative while the median return is positive. To mitigate the influence of outliers and the concern of a denominator effect, variables in the 1st and 99th percentile have been deleted from the sample (see Table 8). In untabulated sensitivity tests, observations with r-student residuals greater than three are also eliminated. Results are qualitatively similar.

Table 9 – Country Level Data

Panel A: Religion and Legal Origin of Sample Countries

	Percentage of Adherents by Religion									Sample	
Country	**Buddhism**	**Christianity**	**Hinduism**	**Islam**	**Judaism**	**Other**	**Primary Religion**	**Western Religion *(W_Religion)***	**Legal Origin**	**n**	**%**
Australia	2.1	63.8		1.7		32.4	Christianity	1	Common	8,284	7.28
Brazil		89.0				11.0	Christianity	1	Civil	1,538	1.35
Canada		70.3		1.9		27.8	Christianity	1	Common	7,245	6.37
France		87.0		7.5	1.0	4.5	Christianity	1	Civil	4,628	4.07
Germany		68.0		3.7		28.3	Christianity	1	Civil	4,382	3.85
Greece		98.0		1.3		0.7	Christianity	1	Civil	1,819	1.60
India		2.3	80.5	13.4		3.8	Hinduism	0	Common	3,934	3.46
Indonesia		8.7	1.8	86.1		3.4	Islam	1	Civil	1,624	1.43
Israel		2.1		16.8	75.5	5.6	Judaism	1	Common	1,045	0.92
Italy		90.0				10.0	Christianity	1	Civil	1,507	1.32
Japan	71.4	2.0				26.6	Buddhism	0	Civil	26,017	22.87
Malaysia	19.2	9.1	6.3	60.4		5.0	Islam	1	Common	5,668	4.98
Singapore	42.5	14.6	4.0	14.9		24.0	Buddhism	0	Common	3,457	3.04
South Africa		79.7		1.5		18.8	Christianity	1	Common	1,684	1.48
Sweden		87.0				13.0	Christianity	1	Civil	2,220	1.95
Switzerland		79.3		4.3		16.4	Christianity	1	Civil	1,344	1.18
Taiwan	93.0	4.5				2.5	Buddhism	0	Civil	7,770	6.83
Thailand	94.6	0.7		4.6		0.1	Buddhism	0	Common	2,373	2.09
Turkey				99.8		0.2	Islam	1	Civil	1,140	1.00
United Kingdom		71.6	1.0	2.7		24.7	Christianity	1	Common	9,322	8.20
United States	0.7	78.5		0.6	1.7	18.5	Christianity	1	Common	16,747	14.72

Table 9 (continued)

Panel B: Sample Descriptive Statistics by Country

		Ret					***NI***					***Neg***
Country	n	St. Dev.	Mean	Lower Quartile	Median	Upper Quartile	St. Dev.	Mean	Lower Quartile	Median	Upper Quartile	Mean
W_Religion = 1 (n = 70,197)												
Australia	8,284	73.47	10.93	-39.39	-4.68	38.46	23.84	-8.18	-15.54	-3.46	6.13	52.62
Brazil	1,538	74.81	34.82	-13.98	18.81	69.50	29.82	2.51	-0.11	7.64	16.33	34.27
Canada	7,245	75.66	17.02	-33.51	1.45	43.96	20.90	-5.68	-11.00	-1.64	5.70	48.21
France	4,628	53.79	9.19	-24.27	4.07	31.85	20.48	0.31	-0.62	4.80	8.69	45.53
Germany	4,382	58.64	11.83	-23.90	3.61	34.05	24.14	-3.12	-5.57	3.74	8.25	44.93
Greece	1,819	56.64	1.91	-35.45	-5.05	27.12	17.63	0.18	-0.97	3.31	7.71	54.15
Indonesia	1,624	68.77	22.64	-18.36	6.46	46.44	26.47	1.12	-1.07	5.35	13.59	41.07
Israel	1,045	69.06	14.69	-32.08	4.70	38.61	20.29	-0.65	-6.01	3.43	8.29	46.32
Italy	1,507	45.36	3.12	-26.55	0.64	25.99	18.09	-1.05	-3.26	3.47	7.08	48.90
Malaysia	5,668	52.91	6.77	-26.75	-1.00	27.48	22.17	1.56	-0.72	5.88	11.83	50.95
South Africa	1,684	64.19	24.80	-16.71	17.18	55.00	25.23	5.79	3.57	9.84	15.75	36.70
Sweden	2,220	66.45	13.91	-32.08	2.94	44.48	21.10	-2.85	-7.81	3.05	8.00	47.21
Switzerland	1,344	48.28	13.33	-15.11	9.84	37.07	15.61	2.37	1.34	5.48	8.53	39.66
Turkey	1,140	66.16	29.78	-14.94	17.06	63.89	23.35	2.95	-1.91	6.57	14.07	36.23
United Kingdom	9,322	61.17	6.31	-34.85	-1.42	31.59	21.90	-3.74	-8.77	2.29	7.49	50.93
United States	16,747	60.51	16.17	-21.05	7.76	38.97	16.03	0.70	-0.08	4.40	6.97	42.40
W_Religion = 0 (n = 43,551)												
India	3,934	80.24	24.20	-31.55	4.81	54.62	19.73	6.84	3.47	7.40	13.80	46.95
Japan	26,017	50.99	4.47	-27.31	-4.54	23.30	16.31	1.28	0.78	4.30	7.63	55.02
Singapore	3,457	67.94	17.06	-27.65	3.37	44.88	21.73	3.01	0.54	6.49	12.42	45.96
Taiwan	7,770	73.80	23.06	-26.84	6.39	51.46	18.55	1.66	0.37	5.72	10.19	45.10
Thailand	2,373	63.46	18.27	-20.59	4.02	40.62	21.26	5.94	2.73	8.73	14.78	44.84

Table 9 (continued)

Table 9 presents the sample descriptives by country. For each country, the primary religion practiced, percentage of adherents for each religion practiced, whether the primary religion is a western or eastern religion, legal origin, and frequency and percent of sample are presented in Panel A. Religious data are obtained from the Central Intelligence Agency's (CIA) World Factbook's 2008 census. The major religions examined in this study are Buddhism, Christianity, Hinduism, Islam, and Judaism. W_Religion is equal to one if the country's primary religion is a western religion (includes those countries whose primary religion is Christianity, Islam, or Judaism) and zero if the country's primary religion is an eastern religion (includes those countries whose primary religion is Buddhism or Hinduism). Panel B presents descriptive statistics of returns (**Ret**), net income (**NI**), and frequency of losses (**Neg**) by country. Variable definitions are as follows:
Ret = buy-and-hold security return inclusive of dividends over the fiscal year;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return **Ret** is negative, zero otherwise.

4.4.2 Results

Table 10 presents the regression results to test whether religion explains the variation in earnings conservatism across countries (Hypothesis 1). Panel A presents regression results for pooled cross-sectional regressions (equation 2), Panel B presents the results for sub-samples pooled by whether the primary religion of the country is a Western religion (*W_Religion=1*) or Eastern religion (*W_Religion=0*) (equation 1), and Panel C presents country level weighted-average regression results for Fama-MacBeth regressions (regressions estimated by country, by year) using firm-level data (equation 1).

Table 10 - Results

Panel A: Pooled Analysis

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

		Coefficient	p-value
β_0	*Intercept*	0.0426	0.000
β_1	*Neg*	0.0003	0.969
β_2	*Ret*	0.0039	0.000
β_3	*Ret*Neg*	0.1601	0.000
β_4	*W_Religion *Neg*	-0.0156	0.136
β_5	*W_Religion *Ret*	-0.0482	0.000
β_6	***W_Religion *Ret*Neg***	**0.0757**	**0.005**
Country Fixed Effects		Included	
$\beta_2+\beta_3$		0.1640	
$\beta_2+\beta_3+\beta_5+\beta_6$		0.1915	
Difference		0.0275	(p-value = 0.347)
Adjusted R^2		10.21%	
n		113,748	
W_Religion = 1		70,197	
W_Religion = 0		43,551	

Table 10 (*continued*)

Panel B: Pooled Analysis by Western Religion

$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon$

		W_Religion = 1		*W_Religion* = 0	
		Coefficient	**p-value**	**Coefficient**	**p-value**
β_0	*Intercept*	0.0426	0.000	0.0487	0.000
β_1	*Neg*	-0.0153	0.023	0.0003	0.969
β_2	*Ret*	-0.0105	0.111	0.0377	0.000
β_3	***Ret*Neg***	**0.2358**	**0.000**	**0.1601**	**0.000**
$\beta_2 + \beta_3$		0.2253		0.1978	
Difference in β_3				0.0757	0.005
Difference in $\beta_2 + \beta_3$				0.0275	0.347
Adjusted R^2		9.45%		9.21%	
N		70,197		43,551	
Significance tests of R^2 differences (Cramer 1987)				<0.0001	

Table 10 (*continued*)

Panel C: Fama-MacBeth Regressions

$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon$

	n	β_0	$p(\beta_0)$	β_1	$p(\beta_1)$	β_2	$p(\beta_2)$	β_3	$p(\beta_3)$	Adj. R^2
W_Religion = 1										
Australia	8,284	-0.012	0.477	-0.035	0.172	-0.030	0.054	0.272	0.000	7.91%
Brazil	1,538	0.041	0.151	-0.043	0.522	0.066	0.197	0.235	0.265	8.36%
Canada	7,245	-0.005	0.933	-0.014	0.560	-0.029	0.048	0.248	0.000	7.99%
France	4,628	0.037	0.007	-0.011	0.841	0.023	0.233	0.282	0.000	10.38%
Germany	4,382	0.020	0.167	-0.005	0.897	0.001	0.875	0.411	0.000	11.56%
Greece	1,819	0.016	0.489	0.012	0.758	0.064	0.088	0.173	0.093	10.22%
Indonesia	1,624	0.024	0.503	-0.011	0.887	0.045	0.205	0.210	0.209	5.51%
Israel	1,045	0.015	0.305	-0.025	0.695	0.041	0.296	0.141	0.153	14.72%
Italy	1,507	0.036	0.275	-0.026	0.602	-0.134	0.731	0.411	0.016	12.56%
Malaysia	5,668	0.050	0.001	0.015	0.547	0.045	0.070	0.349	0.000	11.44%
South Africa	1,684	0.093	0.000	0.015	0.799	0.029	0.466	0.500	0.000	15.19%
Sweden	2,220	0.019	0.265	-0.010	0.813	0.013	0.428	0.372	0.000	16.58%
Switzerland	1,344	0.039	0.021	-0.006	0.838	0.056	0.076	0.262	0.019	17.02%
Turkey	1,140	0.028	0.331	0.005	0.905	0.086	0.033	0.235	0.172	12.51%
United Kingdom	9,322	0.026	0.011	-0.026	0.136	-0.017	0.297	0.268	0.000	10.68%
United States	16,747	0.043	0.000	0.006	0.630	-0.016	0.042	0.288	0.000	10.04%
Summary - Weighted Average β_3, $p(\beta_3)$, adjusted R^2 values:								0.292	0.019	10.38%
W_Religion = 0										
India	3,934	0.070	0.000	0.011	0.891	0.039	0.045	0.180	0.021	6.87%
Japan	26,017	0.035	0.000	-0.003	0.684	0.047	0.000	0.171	0.000	9.01%
Singapore	3,457	0.053	0.004	0.003	0.954	0.043	0.064	0.223	0.003	10.06%
Taiwan	7,770	0.036	0.000	-0.030	0.923	0.055	0.000	0.229	0.000	14.11%
Thailand	2,373	0.068	0.000	0.003	0.894	0.083	0.011	0.246	0.019	15.31%
Summary - Weighted Average β_3, $p(\beta_3)$, adjusted R^2 values:								0.190	0.003	10.15%

Table 10 (*continued*)

Table 10 presents the regression results for the sample of firms reported in Table 8 (n=113,748). Panel A present regression results for pooled cross sectional regressions. Panel B presents the results for sub-samples pooled by whether the primary religion of the country is a western religion (*W_Religion* = 1) or eastern religion (*W_Religion* = 0), respectively. Panel C presents country level weighted mean regression results for Fama Macbeth regressions using firm level data. Weighted averages of β_3, p-value for β_3, and adjusted r-square values across countries grouped by *W_Religion* are also presented within Panel C. Country fixed effects are included in the regressions reported in panels A and B but coefficients and p-values for country variables are not reported. In panels A, B, and C, coefficients and p-values are presented. Standard errors are clustered by firm and by year in Panels A and B.
Variable definitions are as follows:
Ret = annual buy-and-hold security return inclusive of dividends over the fiscal year;
NI = annual earnings per share before extraordinary items deflated by beginning of period price;
Neg = equals one if return ***Ret*** is negative, zero otherwise;
W_Religion = indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

In Panel A, the main coefficient of interest used to test hypothesis 1 is β_6 from equation 2 which captures the *incremental* recognition of bad news in current period earnings relative to good news recognition for firms domiciled in Western religious countries relative to firms domiciled in Eastern religious countries. Hypothesis 1 predicts β_6 to be positive and significant. Consistent with hypothesis 1, β_6 is positive and significant with a coefficient (p-value) of 0.0757 (0.005). This result is consistent with hypothesis 1 and suggests that firms domiciled in Western religious countries have more conservative earnings than firms domiciled in Eastern religious countries. The results of the pooled samples by *W_Religion* in Panel B support conclusions drawn from Panel A, as the coefficient on β_3 is statistically larger with a value of 0.2358 when *W_Religion* = 1 and 0.1601 when *W_Religion* = 0 (p-value = 0.005), consistent with hypothesis 1.

Panel C provides Fama-MacBeth regression results at the country level. In Panel C, using cross-sectional firm-level data, Fama-MacBeth regressions of equation 1 are run by country by year. The results reported in Panel C of Table 10 are the weighted average coefficients, p-values,

and adjusted r-squares across all years for each country. Below country groupings for *W_Religion* = 1 and *W_Religion* = 0, the weighted average β_3, weighted average p-value on β_3, and weighted average adjusted r-square are presented across all countries all years. As shown in Panel C of Table 10, the weighted average β_3 (weighted average p-value on β_3) when *W_Religion* = 1 is 0.292 (0.019) and the weighted average β_3 (weighted average p-value on β_3) when *W_Religion* = 0 is 0.190 (0.003). The weighted average β_3 when *W_Religion* = 1 is larger than the weighted average β_3 when *W_Religion* = 0. This result is consistent with H1.

4.4.3 Summary

In summary, in section 4.4, I test hypothesis one using a sample of U.S. and non-U.S. firms listed on exchanges across the world. My results show that firms domiciled in Western religious countries report more conservative earnings under their domestic GAAP than firms domiciled in Eastern religious countries. This is consistent with firms domiciled in Western religious countries, which have a lower tolerance of ambiguity recognizing the loss in the financial statements more quickly than firms domiciled in Eastern religious countries to reduce the ambiguity surrounding uncertain future events. In untabulated sensitivity analyses, results hold after controlling for legal origin, controlling for various other cultural dimensions, and using all of these variables in the model simultaneously.

CHAPTER FIVE
Additional Analyses

In this chapter, I examine the relation between religion and three additional financial reporting characteristics, the earnings attribute of timeliness, analyst following, and conference calls. Throughout this chapter, I maintain that firms domiciled in a Western religious country (*W_Religion* = 1) have a lower tolerance of ambiguity, and firms domiciled in an Eastern religious country (W_Religion = 0) have a higher tolerance of ambiguity.

In the first part of this chapter, I predict that if individuals with a lower tolerance of ambiguity induced through religion (*W_Religion* = 1) take measures to reduce the ambiguities surrounding uncertain future events, then these individuals will also desire timelier earnings. Results using both the sample of foreign firms cross-listed on U.S. stock exchanges and the sample of U.S. and non-U.S. firms listed on exchanges across the world support this prediction. In the second part of this chapter, I predict that if firms domiciled in Western religious countries have more conservative and more timely earnings, then these firms will attract greater analyst coverage relative to firms domiciled in Eastern religious countries. Using the sample of U.S. foreign registrants, I find results consistent with this prediction.

Finally, I also examine a type of voluntary information dissemination by firms – conference calls. In univariate tests, I predict and find that firms domiciled in Western religious countries have a higher frequency of conference calls than firms domiciled in Eastern religious countries. This is consistent with firms domiciled in Western religious countries releasing more voluntary information in the form of conference calls to the market to reduce ambiguities surrounding performance.

5.1 Additional Earnings Attribute – Timeliness

5.1.1 Hypothesis Development

The first additional analysis I perform is to test whether the variance in timeliness of earnings is related to religion. Timeliness is defined as "the extent to which current-period accounting income incorporates current-period economic income" (Ball, Kothari, and Robin 2000). It is well known that accounting income lags economic income (Ball and Brown 1968, Beaver et al. 1980, Easton et al. 1992, Lev 1989, Kothari and Sloan 1992, Warfield and Wild 1992). Accounting income that is timely is considered to be more informative to users of the financial statements. "Contracting parties demand timely measures of performance and net asset values for compensation and debt contract purposes" (Watts 2003).

Prior literature examines international differences in timeliness of accounting earnings (for example, Ball et al. 2000, Ball et al. 2003, Pope and Walker 1999) and attributes these differences to legal origin, incentives, and accounting standards, among others. I propose that an additional reason for the variance in timeliness of earnings is driven by the firm's preference for timeliness of accounting information which is influenced by whether religion induces a higher or lower tolerance of ambiguity on individuals. If individuals with a lower tolerance of ambiguity take measures to reduce the ambiguities surrounding reporting on uncertain future events (consistent with results from the main analysis), then these individuals will also desire timelier earnings. Given this information, I make the following prediction:

> *Hypothesis 2 (H2): Firms domiciled in Western religious countries will report more timely earnings compared to firms domiciled in Eastern religious countries.*

When measuring timeliness of earnings, I again follow Basu (1997), Ball, Kothari, and Robin (2000), and Ball, Robin and Wu (2003). My proxy for timeliness is the adjusted r-squares from equation 1 above. Large (small) adjusted r-square values imply more (less) timely earnings. In addition, $\beta_2+\beta_5$ (β_2) and $\beta_2+\beta_3+\beta_5+\beta_6$ ($\beta_2+\beta_3$) from equation 2 measures the *total* sensitivity of accounting income to positive and negative economic income, respectively, for firms domiciled in a (an) Western (Eastern) religious country. In the following paragraphs, I will discuss the results for both the sample of U.S. foreign registrants and the sample of U.S. and non-U.S. firms listed on multiple exchanges across the world.

5.1.2 U.S. Foreign Registrants

Table 3 Panels A and B present the results using the sample of U.S. foreign registrants. Results in Table 3 are consistent with Hypothesis 2. In Panel A, the summation of the coefficients $\beta_2+ \beta_3+\beta_5+ \beta_6$ for firms domiciled in Western religious countries of 0.1744 is significantly higher than the summation of coefficients $\beta_2+ \beta_3$ for firms domiciled in Eastern religious countries of 0.0693 (p-value <= 0.001). In Table 3, Panel B, the adjusted r-square for the *W_Religion* = 1 sub-sample is 14.90%, which is larger than the adjusted r-square for the *W_Religion* = 0 sub-sample of 3.48%. To test the difference in adjusted r-squares for the two-subsamples, I use the procedure outlined in Cramer (1987) which has been used in the accounting literature (Lang et al. (2003), and Ball et al. (2000)). Following Cramer (1987), the expectation and variance of adjusted r-squares are derived, and the z-statistic is then calculated to compare the adjusted r-squares across the two sub-samples. [35] The z-statistic comparing the two sub-samples' adjusted r-squares is 7.385 and the p-value is <0.0001, which indicates that the two adjusted r-squares are significantly different.

[35] One limitation of using the Cramer (1987) procedure is the assumption that r-squared is normal.

Results in Table 3 (see summary results below) suggest that the timeliness in earnings as measured by the adjusted r-square is significantly larger for firms domiciled in Western religious countries than that for firms domiciled in Eastern religious countries. Similar timeliness conclusions can be drawn using the sub-samples presented in the sensitivity tests reported in Table 4. For brevity, these will not be discussed in detail.

Table 3 – Summary of Results (see Table 3 on page 37 for full table)

Panel A: Pooled Analysis

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \beta_4 W\_Religion*Neg + \beta_5 W\_Religion*Ret + \beta_6 W\_Religion*Ret*Neg + \gamma_n Country\ dummies + \varepsilon$$

$\beta_2+\beta_3$	0.0693	
$\beta_2+\beta_3+\beta_5+\beta_6$	0.1744	
Difference	0.1051	(p-value <= 0.001)
n	1,422	
W_Religion = 1	1,198	
W_Religion = 0	224	

Panel B: Pooled Analysis by Western Religion

$$NI = \beta_0 + \beta_1 Neg + \beta_2 Ret + \beta_3 Ret*Neg + \varepsilon$$

	W_Religion = 1	*W_Religion* = 0
Adjusted R^2	14.90%	3.48%
n	1,198	224
Significance tests of R^2 differences (Cramer 1987)		<0.0001

5.1.3 Larger Sample

Table 10 Panels A and B present the results using the sample of U.S. and non-U.S. firms listed on stock exchanges around the world. With the exception of Panel A, results in Table 10

are consistent with Hypothesis 2. In Table 10 Panel A, the summation of the coefficients β_2+ β_3+β_5+ β_6 for firms domiciled in Western religious countries of 0.1915 is higher than the summation of coefficients β_2+ β_3 for firms domiciled in Eastern religious countries of 0.1640, but the difference is not statistically significant (p-value = 0.3469).

In Table 10, Panel B, the adjusted r-square for the *W_Religion* = 1 sub-sample is 9.45% which is larger than the adjusted r-squared for the *W_Religion* = 0 sub-sample of 9.21%. The Cramer (1987) z-statistic comparing the two sub-samples' adjusted r-squares is 19.750 and the p-value is <0.0001, which indicates that the two adjusted r-squares are significantly different.

Finally, in Panel C of Table 10, the weighted average adjusted r-square across the country-years characterized as *W_Religion* = 1 is 10.38% and the weighted average adjusted r-square across the country-years characterized as *W_Religion* = 0 is 10.15%. Consistent with hypothesis 2, weighted average r-squares across the Fama-MacBeth regressions show that firms domiciled in Western religious countries exhibit more timely earnings than firms domiciled in Eastern religious countries.

5.1.4 Summary

In Section 5.1 I examine whether the variance in timeliness of earnings is related to religion. Overall, I find results consistent with my hypothesis that firms domiciled in Western religious countries have timelier earnings than firms domiciled in Eastern religious countries. Results are strongest when using the sample of foreign registrants and when using the adjusted r-squares from equation 1 as my proxy for timeliness. Although results are insignificant when comparing the summation of the coefficients β_2+ β_3+β_5+ β_6 to the summation of coefficients β_2+ β_3 for the broader sample of U.S. and non-U.S. firms listed on exchanges across the world,

caution when interpreting these results is warranted as this sample reports net income under the firm's country's domestic GAAP. Therefore, results may be driven by the accounting standards themselves, rather than the implementation of the accounting standards.

5.2 Additional Consequence of Religion – Analyst Following

5.2.1 Hypothesis Development

The second additional analysis I perform is to test whether religion explains the variance in analyst following. The security analyst literature suggests that attributes of earnings are associated with analyst following where analysts prefer to follow firms with more transparent earnings, i.e., more informative earnings. If firms domiciled in Western religious countries report more conservative and more timely earnings, these firms could attract greater analyst coverage relative to firms that have less informative earnings. Therefore, I expect to find a greater analyst following for U.S. foreign registrants domiciled in Western religious countries. Stated formally:

> *Hypothesis 3 (H3): Firms domiciled in Western religious countries will have a higher analyst following than firms domiciled in Eastern religious countries.*

To test this conjecture, I collect analyst following from I/B/E/S for my sample of U.S. foreign registrants. As of 2003, I/B/E/S began reporting "GAAP Earnings Per Share" (GPS,) which refers to earnings per share calculated according to U.S. Generally Accepted Accounting Principles and analysts' forecasts of GPS. Beginning with the final sample from Table 1 Panel A of 1,727 firm-year observations, I first remove 1,007 firm-year observations prior to 2003 as I/B/E/S does not report GPS prior to this period. I then remove 177 observations missing data needed to test hypothesis 3. This results in a final sample of 543 firm-year observations with data necessary for the empirical model of analyst following; 98 observations are for firms domiciled in Eastern religious countries and 445 observations are for firms domiciled in Western religious

countries. Panel A of Table 11 reports the sample selection process. If GPS is not reported for a firm, analyst following is assumed to be zero.

The following OLS model is used to test whether religion is associated with analyst following:

$$\begin{aligned} Analyst\_Following = {} & \beta_0 + \beta_1 Firm\_Size + \beta_2 Return\_Std \\ & + \beta_3 (Return\_Earnings\_Corr) + \beta_4 Earnings\_Surprise \\ & + \beta_5\ W\_Religion + Industry\ Controls + \varepsilon \end{aligned} \tag{7}$$

where:

Analyst = number of analysts reporting a forecast for GPS (I/B/E/S);
Firm_Size = the log total assets reported under U.S. GAAP;
Return_Std = the standard deviation of returns over the previous three years;
Return_Earnings_Corr = the correlation between returns and earnings reported under U.S. GAAP over the previous three years;
Earnings_Surprise = the absolute value of the difference between current earnings per share and earnings per share from the prior year, divided by the firm's stock price;
W_Religion = one if the country in which the firm operates in has a primary religion that is a Western religion, zero otherwise;
Industry Controls = indicator variables for one-digit SIC code classification.

The test variable of interest is *W_Religion,* and I predict a positive coefficient on *W_Religion* if firms domiciled Western religious countries attract greater analyst coverage. Control variables are motivated by the work of Lang and Lundholm (1993; 1996).

Table 11 Panel B reports the descriptive statistics by religion of variables used in equation 7. The univariate tests report higher and statistically different mean values for analyst following for firms domiciled in a Western religious country (mean=0.5371) relative to firms domiciled in an Eastern religious country (mean=0.3469). However, the univariate results reported in Table 11 Panel B could be driven in part by correlations between *W_Religion* and

other variables known to affect analyst following. I control for these variables in the multivariate tests reported in Table 12.

Table 11 – Analyst Properties

Panel A: Sample Selection

Sample of firm-year observations from Table 1 Panel A	1,727
Less: Observations prior to 2003 that lack U.S. GAAP IBES data for cross-listed firms in the United States	1,007
Less: Observations missing data needed to estimate analyst following model	177
Final sample of firm-year observations with information necessary for analyst following tests	543

Panel B: Descriptive Statistics

***W_Religion* = 1**

Variable	N	Std. Dev.	Mean		Q1	Median		Q3
Analyst_Following	445	0.9012	0.5371	**	0.0000	0.0000	***	1.0000
Firm_Size	445	1.8729	15.9329	**	14.8258	16.0207	*	17.1836
Earnings_Surprise	445	0.7139	0.1176		0.0097	0.0249	**	0.0638
Returns_Earnings_Corr	445	0.5834	0.2210	**	-0.1290	0.3770	***	0.6350
Return_Std	445	0.5647	0.5418		0.1958	0.3490	*	0.6897

***W_Religion* = 0**

Variable	N	Std. Dev.	Mean	Q1	Median	Q3
Analyst_Following	98	0.8746	0.3469	0.0000	0.0000	0.0000
Firm_Size	98	1.8141	16.6390	15.2145	16.5970	18.0205
Earnings_Surprise	98	0.2122	0.0627	0.0094	0.0178	0.0324
Returns_Earnings_Corr	98	0.5767	0.0669	-0.2782	0.1075	0.4710
Return_Std	98	0.5617	0.5506	0.2379	0.5173	0.6607

Table 11 (*continued*)

Table 11 presents the sample selection (Panel A) and descriptive statistics (Panel B) for the variables used in the regression modeling analyst following.
Variable definitions are as follows:
Analyst = number of analysts reporting a forecast for GPS;
Firm_Size = the log total assets reported under U.S. GAAP;
Return_Std = the standard deviation of returns over the previous three years;
Return_Earnings_Corr = the correlation between returns and earnings reported under U.S. GAAP over the previous three years;
Earnings_Surprise = the absolute value of the difference between current earnings per share and earnings per share from the prior year, divided by the firm's stock price;
W_Religion = one if the country's primary religion is a western religion, zero otherwise;
Legal = indicator variable equal to one if the country's legal origin is common law, zero if the country's legal origin is civil law.

5.2.2 Results

The first columns in Table 12 present the regression results for equation 7. As expected, firms domiciled in Western religious countries have a larger analyst following compared to firms domiciled in Eastern religious countries, even after controlling for other factors known to impact analyst following. The coefficient and p-value for *W_Religion* in Panel C is 0.3106 and 0.0410, respectively. As discussed in the previous section, legal origin is a construct commonly used in the literature to explain the variation in accounting quality across countries (Ball et al. 2000; Ball et al. 2003; Leuz, Nanda, and Wysocki 2003). It has also been used as a country-level variable in studies examining analyst following for a matched sample of cross-listed to non-cross-listed firms (Lang, Lins, & Miller 2003). Therefore, in the second column in Table 12, I add an indicator variable that captures legal origin, *Legal*, to equation 7. After controlling for legal origin, *W_Religion* continues to be positively and significantly associated with analyst following. Results in Table 12 support hypothesis 3. These findings suggest that firms in Western religious countries are viewed by analysts to be less costly to follow than firms in Eastern religious countries.

Table 12 - Regression Results - Analyst Following

$$Analyst\_Following = \beta_0 + \beta_1 Firm\_Size + \beta_2 Return\_Std + \beta_3 Return\_Earnings\_Corr + \beta_4 Earnings\_Surprise + \beta_5 W\_Religion + \beta_6 Legal + Industry\ Controls + \varepsilon$$

		Predicted Sign	(1) Coefficient	(1) p-value	(2) Coefficient	(2) p-value
β_0	*Intercept*	+/-	0.1346	0.533	0.1818	0.447
β_1	*Firm_Size*	+/-	-3.9663	0.100	-3.9663	0.050
β_2	*Earnings_Surprise*	-	0.0524	0.036	0.0509	0.044
β_3	*Returns_Earnings_Corr*	+	0.1203	0.015	0.1185	0.018
β_4	*Return_Std*	-	0.1007	0.077	0.0964	0.091
β_5	***W_Religion***	**+**	**0.3106**	**0.041**	**0.3089**	**0.041**
β_6	*Legal*	-			-0.0764	0.195
Adjusted R^2			5.01%		4.95%	
n			543		543	
W_Religion = 1			445		445	
W_Religion = 0			98		98	
Legal = 1					151	
Legal = 0					392	

Table 12 presents regression results for the regression modeling analyst following on a number of independent variables, including, Western Religion. Coefficients and p-values are presented for all variables except industry indicator variables. Standard errors are clustered by firm and by year. Variable definitions are as follows:
Analyst_Following = number of analysts reporting a forecast for GPS;
Firm_Size = the log total assets reported under U.S. GAAP;
Return_Std = the standard deviation of returns over the previous three years;
Return_Earnings_Corr = the correlation between returns and earnings reported under U.S. GAAP over the previous three years;
Earnings_Surprise = the absolute value of the difference between current earnings per share and earnings per share from the prior year, divided by the firm's stock price;
W_Religion = one if the country's primary religion is a western religion, zero otherwise;
Legal = indicator variable equal to one if the country's legal origin is common law, zero if the country's legal origin is civil law.

5.3 Additional Consequence of Religion – Conference Calls

5.3.1 Hypothesis Development

The final additional analysis I perform is to test whether religion explains the variance in the number of conference calls. Corporate conference calls are a form of voluntary disclosure in which managers make presentations to and answers questions from market participants on the call. After the SEC adopted Regulation FD on August 15, 2000, material conveyed in the conference call was "open" to any and all market participants. Prior literature documents that conference calls disseminate material information to the market (Frankel et al. 1999; Bowen et al. 2002; Bushee et al. 2003), as evidenced by an increase in return volatility during the conference calls and a positive association with analyst forecast accuracy. In fact, Brown, Hillegeist, and Lo (2004) find that conference calls lead to long-term reductions in information asymmetry, proxied by the Probability of Informed Trade (PIN) – a firm-specific estimate of the probability that a trade order originates from privately informed investor, among equity investors.

If firms domiciled in Western religious countries with a lower tolerance of ambiguity take measures to reduce the ambiguity surrounding reporting on uncertain future events, this would suggest that compared to firms domiciled in Eastern religious countries, these firms will hold a higher frequency of conference calls with market participants. Stated formally:

> *Hypothesis 4 (H4): Firms domiciled in Western religious countries will have a higher frequency of conference calls than firms domiciled in Eastern religious countries.*

To test this prediction, I hand-collect conference call data for non-U.S. firms cross-listed on a major U.S. stock exchange for fiscal years 2008-2011. I obtain the original sample, which consists of 1,257 firm-year observations for non-U.S. firms cross-listed on a major U.S. stock exchange, from BNY Mellon's American Depository Receipts directory available on-line.

Conference call information is obtained from the Bloomberg database. The Bloomberg database contains earnings release conference call information, including the date and time of the conference call, the period under review during the conference call, market participants on the call, and transcripts, among other things. The sample period begins in 2008 because this is the first year that Bloomberg offered the earnings release conference call product. From the original sample of 1,257 firm-year observations, I delete 379 observations for firms domiciled in countries whose primary religion is something other than an Eastern or Western religion. This results in a final sample of 878 firm-year observations over the sample period 2008-2011.

Table 13 Panel A presents the sample selection process for this analysis. Panel B presents the final sample by country and panel C presents the final sample by year. Panel B shows that the largest representations in the sample are observations from Brazil (11.50%), Japan (9.45%), Mexico (74%), and the United Kingdom (12.30%). Panel C shows relatively equal representation across fiscal years 2008 through 2011.

Table 13 – Conference Calls Sample

Panel A: Sample Selection

Sample of firm-year observations from 2008-2011	1,257
Less: Observations in countries whose primary religion is "Other"	379
Final sample of firm-year observations with information necessary for conference call test	878

Panel B: Final Sample of firm-year observations by Country

Country	Frequency	Percentage
Argentina	62	7.06
Australia	34	3.87
Belgium	8	0.91
Brazil	101	11.50
Chile	42	4.78
Colombia	7	0.80
Denmark	8	0.91
Finland	4	0.46
France	33	3.76
Germany	16	1.82
Greece	7	0.80
India	52	5.92
Indonesia	8	0.91
Ireland	25	2.85
Israel	18	2.05
Italy	21	2.39
Japan	83	9.45
Luxembourg	2	0.23
Mexico	74	8.43
Netherlands	32	3.64
New Zealand	4	0.46
Norway	4	0.46
Perú	4	0.46
Philippines	4	0.46
Portugal	4	0.46
Russia	10	1.14
South Africa	26	2.96

Table 13 *(continued)*

Panel B (continued)

Country	Frequency	Percentage
Spain	15	1.71
Sweden	4	0.46
Switzerland	24	2.73
Taiwan	32	3.64
Turkey	2	0.23
United Kingdom	108	12.30

Panel C: Final Sample of firm-year observations by Year

Year	Frequency	Percentage
2008	206	23.46
2009	213	24.26
2010	226	25.74
2011	233	26.54

Table 13 presents the conference call analyses' sample selection, sample by country, and sample by year in Panels A, B, and C respectively.
Variable definitions are as follows:
Num_Conference_Calls **=** Frequency of conference calls identified on Bloomberg;
W_Religion **=** indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

5.3.2 Results

Table 14 contains descriptive statistics by *W_Religion* in Panel A and univariate tests in Panel B. In both panels, *Num_Conference_Calls* is the number of earnings release conference calls reported in Bloomberg during the fiscal year. Panel A shows that on average firms domiciled in Western religious countries (n = 711) have a higher frequency of conference calls than firms domiciled in Eastern Religious countries (n = 167). Although, the median *Num_Conference_Calls* when *W_Religion* = 1 and when *W_Religion* = 0 is 4, the average *Num_Conference_Calls* when *W_Religion* = 1 is 3.27 calls per fiscal year. This is higher than the

average *Num_Conference_Calls* when *W_Religion* = 0 of 2.84 calls per fiscal year (p-value = 0.0002).

Table 14 – Conference Calls Results

Panel A: Descriptive Statistics

***W_Religion* = 1**

Variable	N	Std. Dev.	Mean	Q1	Median	Q3
Num_Conference_Calls	711	1.3259	3.2700	3	4	4

***W_Religion* = 0**

Variable	N	Std. Dev.	Mean	Q1	Median	Q3
Num_Conference_Calls	167	1.7157	2.8383	1	4	4

Panel B: Univariate Tests – W_Religion and Num_Conference_Calls

	Correlation	Significance
Pearson Correlation	0.1196	0.0004
Spearman Correlation	0.1035	0.0021

Table 14 presents the descriptive statistics by *W_Religion* and univariate tests for the conference call analysis in Panels A and B respectively.
Variable definitions are as follows:
***Num_Conference_Calls* =** Firm-year frequency of conference calls identified on Bloomberg;
***W_Religion* =** indicator variable equal to one if the country's primary religion is a western religion, zero otherwise.

Panel B shows that both the Pearson correlation of 0.1196 and the Spearman correlation of 0.1035 for the correlation between *W_Religion* and *Num_Conference_Calls* are both positive and significant with a p-value of 0.0004 and 0.0021, respectively. Results in both Panel A and Panel B of Table 14 support hypothesis 4. Firms domiciled in Western religious countries have a higher frequency of conference calls than firms domiciled Eastern religious countries.

CHAPTER SIX
Conclusions, Limitations, and Future Research

In this thesis, I investigate whether religion is associated with differences in financial reporting. I maintain that followers of Western religions (Christianity, Islam and Judaism) have a lower tolerance of ambiguity whereas followers of Eastern religions (Hinduism and Buddhism) have a higher tolerance of ambiguity. In my main analyses, I posit that the differences in tolerances of ambiguity induced through religion influence firms to undertake different estimates and accounting choices. That culminates in differences in conservatism of earnings for firms domiciled in Western versus Eastern religious countries.

I first test this hypothesis using a sample of U.S. foreign registrants. Focusing on U.S. foreign registrants has three advantages over prior research. First, by using U.S. foreign registrants, all sample firms are reporting earnings under a common set of accounting standards, specifically U.S. GAAP, so my documented differences are more likely to be due to accounting implementation choices rather than driven by differences in domestic GAAP financial reporting standards themselves. Second, by using a sample of U.S. foreign registrants, I ensure that all firms rely on equity financing, which increases the likelihood that users of financial statements and their needs are similar. In addition, by using a sample of U.S. foreign registrants, I hold constant regulatory oversight, namely the U.S. SEC, which increases the likelihood that firms comply with the standards as a whole.

I also test this hypothesis using a sample of U.S. and non-U.S. firms listed on multiple exchanges around the world. Using a sample like this is consistent with prior literature examining institutional features' relation with earnings attributes, such as timeliness (for example, Ball et al. 2000). The advantage of using this sample is that it allows for a larger

sample size and a larger number of countries represented, particularly by Eastern religious countries. The main disadvantage of using this sample is the variability in the accounting standards used by the firms in the sample, which makes it hard to distinguish whether results are driven by differences in the accounting standards or implementation of accounting standards.

Using both samples, I find evidence that firms domiciled in Western religious countries report more conservative earnings relative to firms domiciled in Eastern religious countries. This is consistent with firms domiciled in Western religious countries recognizing losses in the financial statements more quickly in order to reduce the ambiguity surrounding reporting on uncertain future events. This result is robust to a number of sensitivity tests performed on reduced samples. Moreover, I provide evidence that suggests that, after controlling for legal origin and other cultural dimensions, religion continues to be an important determinant of conservatism of earnings across countries.

In an additional analysis, I examine another earnings attribute – timeliness – and find evidence that firms domiciled in countries where the majority of individuals follow Western religions have more timely earnings than firms domiciled in countries following Eastern religions. I also explore and find evidence that analysts are more likely to follow U.S. foreign registrants domiciled in Western religious countries. In addition, it appears that religion continues to be significant in explaining analyst coverage after controlling for legal origin. In another additional analysis, I examine whether religion is related to a form of voluntary disclosure of information by firms outside of the annual report – that is, the frequency of conference calls held by a firm. Univariate tests show that firms in Western religious countries hold a higher frequency of conference calls with market participants than firms in Eastern religious countries.

One limitation of this study is the relatively small number of foreign firms cross-listed on a major U.S. stock exchange that are domiciled in Eastern religious countries. Although I also use a sample of U.S. and non-U.S. firms listed on exchanges across multiple choices, limited inferences can be drawn with this sample on the relation of religion with implementation choices inherent in accounting standards. As more countries, particularly those primarily of Eastern religious faith, begin to adopt International Financial Reporting Standards (IFRS), data on a larger sample of firms from various countries will exist with financial statements prepared using the same set of accounting standards (IFRS). Future research can re-visit this research question as these data become available.

There is limited research in accounting examining the influence of religion on financial reporting. Given that accounting is intended to communicate economic information about firms operating in the global economy, it is important to understand how the values instilled by religion influence the application of accounting standards worldwide. Future research can also explore how religion affects other attributes of financial reporting.

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