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Shades of Gray: An empirical examination of Gray's model of culture and income measurement practices using 20-F data

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A B S T R A C T

Gray (1988) developed a theory linking accounting values and systems to Hofstede's (1980) cultural dimensions. To date, no studies have used actual reported data to test the Gray model. This study addresses this shortcoming by using data from the SEC Form 20-F to test proposed relationships between Gray's (1988) accounting value of conservatism (in income measurement practices) and Hofstede's (1980) cultural values. It also tests three other non-cultural environmental variables (tax rates, relative size of capital markets, and influence of the European Union) proposed by Gray (1988) and Salter and Niswander (1995) as modifiers to cultural effects. The results of this study suggest that, as theorized by Gray (1988), the cultural variable individualism is significantly and positively related to differences in income measurement practices between countries. This study also finds that a country's membership in the EU and corporate tax rate is related to income measurement practice differences. However, unlike previous studies, this study does not find that the source of equity is related to income measurement practices.

1. Introduction

Gray's (1988) model of the influence of social values on accounting is one of the seminal articles in international accounting. A review of the citation index and list for Gray (1988) in Google Scholar indicates some 502 cites of this study with its nearest competitor having less than 200.[2] One dimension of Gray's (1988) model, the accounting value of conservatism, is particularly important and yet remains relatively untested (Doupnik and Tsakumis, 2004). As Gray (1988:10) observes, conservatism would seem to be a significant accounting value because "it is arguably the most ancient and probably the most pervasive principle of accounting valuation."

Doupnik and Tsakumis (2004) find it the most important area of Gray (1988) remaining to be explained. Doupnik and Tsakumis (2004:35) suggest "that researchers concentrate their efforts on conservatism. Conservatism is the accounting value that affects the recognition and measurement of items that appear in financial statements and therefore would have the greatest implication for the cross-national comparability of financial statements."

This study proposes to take up the challenge laid down in Doupnik and Tsakumis (2004) and search for the causes of unconditional conservatism. Drawing on the work of Hofstede (1980); Nobes (1987); Gray (1988); Salter and Niswander (1995), and Doupnik and Tsakumis (2004) we propose (1) that a country's degree of conservatism is a reflection of national societal values and norms, and (2) in determining the level of conservatism, the effects of societal values are supplemented by its institutional structure.

2. Literature review

2.1. Introduction

Conservatism is defined by Gray (1988:8) as "a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, laissez-faire, risk-taking approach." The European Federation of Accountants (1997, 10.1) states that prudence (conservatism) is practiced in Austria, Czechoslovakia, Germany, Luxembourg and Switzerland, and was incorporated in the European Union's Fourth Directive "with a view to protecting the interests of creditors … but also to protect management." Haller (1998) also makes note of this practice in Germany.

Ball et al. (2008:193) describe unconditional conservatism as an accounting bias towards reporting low earnings and book values of stockholders' equity and cross reference Gray's original 1980 measure. A review of literature on what is now called unconditional conservatism cites its crucial importance in contracting and standard setting but reveals no articles since Doupnik and Tsakumis (2004) on possible

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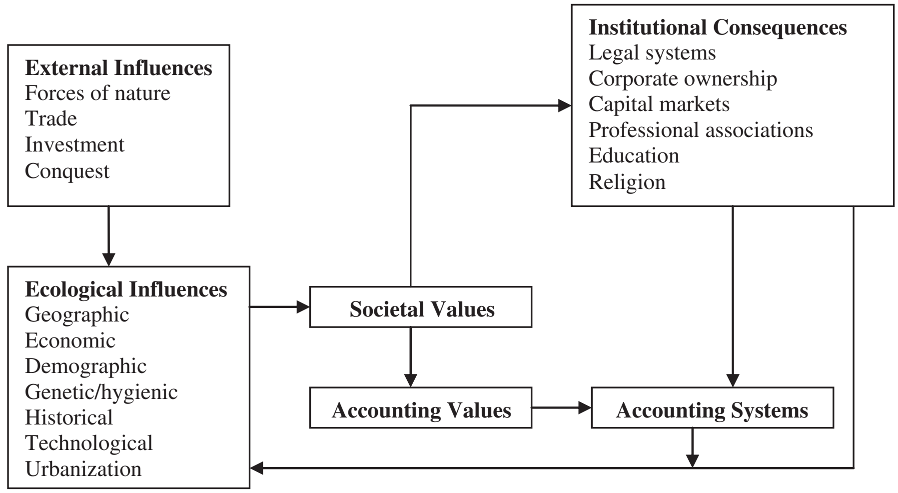

Fig. 1. Gray (1988) Original framework.
Source: Gray 1988 p. 7.

causes. Ball et al.'s (2008) own test of unconditional conservatism as a market phenomenon finds no capital market explanation for this concept. Therefore, Ball et al. (2008:195) "suggests that the origin of unconditional accounting conservatism lies outside the capital market and falls back on societal or legal requirements." Finally, a search of Google Scholar for the relevant terms also reveals nothing.

Further examples of the role of culture can be found in the broader literature in which national GAAPs are found to be as diverse as the cultures that support them even after IASB convergence efforts. Examples of literature finding culturally based explanations for GAAP differences not specifically linked to conservatism since the Doupnik and Tsakumis (2004) summary include Doupnik (2008); Nobes (2008), and Ding, Jeanjean and Stolowy (2005).

Further evidence that (1) national values shape institutions and (2) that these institutions in turn influence GAAP diversity (including conservatism) can be found throughout the international accounting literature. Some examples include the importance of taxation (Salter and Niswander 1995), legal systems (Hope, 2003) and economic institutions (Han et al., 2010; Ball et al., 2008; Doidge et al. 2007) and other political institutions, Lewis and Salter (2006). Further as Doupnik and Tsakumis (2004) and Doupnik (2008) have concluded, this diversity will be reflected in de facto accounting long after de jure differences in accounting may have disappeared.

Research has shown that differences in financial reporting practices between countries have costs associated with those differences. For example, Choi and Levich (1991) provide evidence that accounting diversity can affect the actions of individual investors. Saudagaran and Biddle (1995) show that accounting diversity can adversely affect the number and volume of listings on stock exchanges. Most recently, Karamanou and Raedy (2004) and Ashbaugh and Pincus (2001) demonstrate that differences in financial reporting practices and resultant accounting outcomes between countries can adversely affect the performance of securities analysts. Recent studies have continued to conclude that these financial reporting differences are not going away. Chatham, Larson and Vietze (2010); Lewis and Salter (2006); Jones and Wolnizer (2003); d'Arcy (2001), and Larson and Kenny (1999) all show that there are still significant differences in financial reporting practices between countries. While it can be argued that as IFRS based financial statements become more common this will change, Doupnik and Tsakumis (2004) point out that the flexibility of interpretation contained within IFRS and the ability of any country to carve out unacceptable portions of particular IFRS standards will continue to lead to different accounting outcomes among countries.

2.2. The Gray (1988) model and framework

Why has it been so difficult to arrive at a single accounting language, i.e., a single set of financial income measurement practices? Perhaps the reason is that accounting is as deeply rooted in a country's collective experience as it is in its legal system or other social systems. Building on the work of Mueller (1968); Nair and Frank (1980); and Nobes (1983); Gray (1988) presents a theoretical case that the differences between countries in financial reporting practices are related to societal culture and institutional development. Gray's (1988) original framework diagram is reproduced in Fig. 1 and reviewed in Doupnik and Tsakumis (2004).

Gray (1988) takes Hofstede's (1980) general model of the origins of societal values and institutional structure and extends it to the world of financial reporting.[3] Gray (1988:5) hypothesizes the existence of an accounting sub-culture where "the value systems or attitudes of accountants may be expected to be related to and derived from societal values." These accounting values also interact with institutional arrangements such as the form of capital markets, legal system, and taxation to determine the attributes of the accounting system in place – (source of) authority, enforcement, measurement, and disclosure. This paper focuses on measurement. Gray (1988) proposes measurement will be determined by the interaction of conservatism and institutions. Conservatism is defined by Gray (1988:8) as "a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, laissez-faire, risk-taking approach." This definition is almost identical to the concept of unconditional conservatism used in the capital markets literature by Ball et al. (2008:193) "an accounting bias toward reporting low earnings and book values of stockholders equity". Gray (1988:10) hypothesizes that conservatism will be greater "the higher a country ranks in terms of uncertainty avoidance and the lower it ranks in terms of individualism and masculinity" and this is the basis of Hypotheses 1–3 described in the hypothesis section.

2.3. Tests of Gray (1988)

Gray's (1988) model has been tested at a number of levels. Since this study focuses on Gray's (1988) conservatism dimension, we will

[3] Gray's (1988) model is itself an extension of Hofstede's (1980) work, which defines four different value dimensions that can be used to classify nations and predict likely behavior in any one nation. Values provide the context within which a society's norms or accepted behavior patterns are established, justified, and enforced. The work of Hofstede (1980) demonstrated that countries could be separated along four major cultural dimensions. Those four dimensions are individualism, uncertainty avoidance, power distance, and masculinity.